

September, 2000



INTERNATIONAL ASSOCIATION FOR STATISTICAL EDUCATION

<http://www.cbs.nl/isi/iase.htm>

Editorial Address: Joan B. Garfield, Department of Educational Psychology, University of Minnesota, Minneapolis, MN 55455, USA. Tel: +1-612-625-0337, Fax: +1-612-624-8241; E-mail: JBG@tc.umn.edu Web site: <http://education.umn.edu/EdPsych/faculty/Garfield.html>

President of the Association: Brian Phillips, School of Mathematical Sciences Swinburne University of Technology, PO Box 218 Hawthorn 3122, Australia Tel: +61 3 9214 8288, Fax: +61 3 9819 0821, E-mail: bphillips@swin.edu.au Web site: <http://www.swin.edu.au/math/iase/>

1. Report from the IASE President

The period from June to August has been a very busy one for the IASE. 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 and particularly to Maria-Gabriella Ottaviani, the IPC Chair, Dani Ben-Zvi the IPC Scientific Secretary and Dani's son Dagan who has done such a wonderful job in developing a great IPC website for the conference. 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 is given below and can be found on the IPC web site given above, so that the speakers can be put into place for a really special conference.

In early July I was involved in the Statistical Society of Australia's **Statistical Education workshop** in Adelaide. This 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. The talks ranged from research into statistical education for young children, attitudes and intuitions of school students in statistics, conceptual challenges facing senior school students, the use of multimedia, methods for teaching advanced topics students in higher education and problems facing teachers of statistics in transitional countries, see the list on <http://www.swin.edu.au/math/iase/icme9.html>. It is planned that a booklet of these papers will be available soon. IASE members were involved in a number of other conferences including the ASA and PME, see below.

The other important IASE activity over this period was the **IASE Round Table Conference on Training Researchers in the Use of Statistics**. This most successful event was due to the hard work of a lot of people and I especially wish to thank

Carmen Batanero for organising such an excellent event and to the Japanese hosts, in particular Professor Yuki Miura, President of the Japan Statistical Society and Dr Ryoichi Shimizu, the Director General, The Institute of Statistical Mathematics, Japan. Carmen has presented a longer report below.



David Moore, left with Brian Phillips

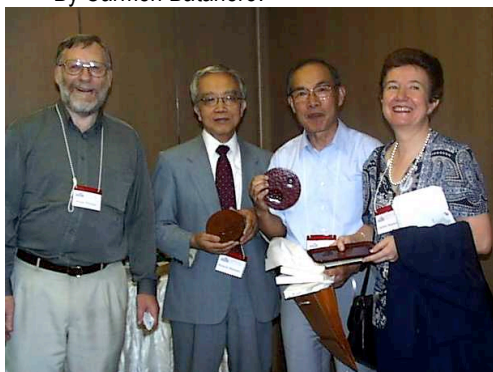
The IASE statutes were recently modified to include the possibility of nominating **Honorary Members** as a way of recognising the work and dedication of some of our members. It was with great pleasure that I was able to announce that the IASE Executive Committee approved the nominations of both David 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>

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, <http://www.beeri.org.il/srtl/> the IASE Satellite meeting on *Statistical Literacy* August 21-22, 2001, Seoul, see <http://www.swin.edu.au/math/iase/statlit.html>, the *Statistical Education Sessions* at the 53rd Session of the International Statistical Institute in Seoul, August 22-29, 2001 see <http://www.swin.edu.au/math/iase/isi53.html> and ICOTS-6. I encourage all statistical educators to attend at least one of these meetings, or a meeting in your own country. Further details of these meetings can be seen elsewhere in this newsletter or from the IASE web page <http://www.swin.edu.au/math/iase/conferences2.html>.

We are now also looking ahead to ICOTS-7 to be held in 2006. We invite expressions of interest, in particular in a South American country as we wish to continue the process of taking ICOTS to different parts of the world. Also we will soon be looking for nominations for the next IASE Executive.

2 IASE Round Table Conference on Training Researchers in the Use of Statistics, The Institute of Statistical Mathematics, Tokyo, August 7-11, 2000

By Carmen Batanero.



Brian Phillips, Dr Ryoichi Shimizu, Professor Yuki Miura and Carmen Batanero

This was a very productive conference where 45 speakers, discussants and observers representing 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 which are 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 solve all their data analysis problems by themselves. This is also perceived by the researchers themselves, according to the results of different surveys carried out by the RTC participants.

Technology is creating new didactical problems such as the teaching of techniques to deal with massive data sets, 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. Consulting experiences for 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 consulting in future researchers.

We discussed the main abilities to be emphasised in the training of researchers and there was agreement 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 sets 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 which will include 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>.

3. PME 24 HIROSHIMA, JAPAN, July 23-27 2000

Report of Discussion Group 6: Stochastic Thinking, Learning and Teaching

By Jenni Way, James Nicholson, John Truran <truranjk@camtech.net.au>

As well as the usual social opportunities and an evening at a restaurant, the Group discussed three short presentations on "The Relationship between Stochastic and Mathematical Thinking, Learning and Teaching".

Mario Barra (Italy) spoke on "The relationship between probability and geometry: a didactic use", and looked at connections between probability, which is very abstract, and geometry, which is concrete and allows students to visualise relationships. For example, he took a cube of 6 x 6 x 6 small cubes and considered how many of the small cubes have at least one extreme position. (This is equivalent to throwing a six on at least one of three dice.) Examining the different ways in which the cubes can be counted illuminated different probability forms and Mario argued that this is a powerful way for geometric thinking to assist more abstract probability thinking.

Jenni Way and Paul Ayres (UK/Australia) spoke on "The relationship between pattern and randomness". They showed how their studies with Australian students had revealed the insistence of many children to look for patterns in a series of random outcomes. This is perhaps because current mathematics teaching emphasises patterns and highlights a conflict between probabilistic thinking and mathematical thinking.

James Nicholson (Northern Ireland) spoke on his work with Gerry Mulhern on "Perspectives from Students and Teachers on the Differences in Thinking in Mathematics and Statistics". In school mathematics outcomes are almost always unique, though there may be multiple approaches possible which arrive at the same 'solution'. In statistics, however, students must do some things which are 'purely mathematical', but also provide answers requiring judgement, and so it is possible to have different answers, each of which has some merit. He presented some classroom techniques for addressing this issue, including the use of consultancies and data sets capable of different reasonable interpretations.

Numbers this year were quite small (twelve participants), but the discussions were fruitful and provided some practical ways of addressing the differences between stochastic and mathematical thinking. The same format has been approved for the next PME meeting in Utrecht in July 2001.

4. ICOTS VI GENERAL CALL FOR PAPERS



The Sixth International Conference on Teaching Statistics

Durban, South Africa

7 - 12 July 2002

IPC Website: <http://www.beeri.org.il/icots6>

LOC Website: <http://icots.itikzn.co.za/>



ICOTS 6

The International Association for Statistical Education (IASE) and the International Statistical Institute (ISI) are organizing the Sixth International Conference on Teaching Statistics (ICOTS-6) which will be hosted by the South African Statistical Association (SASA) at the International Convention Centre in Durban from July 7 - 12, 2002.

The major aim of ICOTS-6 is to provide the opportunity for people from around the world who are involved in statistics education to exchange ideas and experiences, to discuss the latest development in teaching statistics and to expand their network of statistical educators. The Conference will include keynote speakers, invited speakers, contributed papers, workshops and forums, demonstration lessons, roundtable sessions, poster sessions, book and software displays, hands-on computer sessions and many opportunities for the communication and exchange of experiences and ideas.

As the Conference theme for ICOTS-6 is "Developing a Statistically Literate Society", special sessions on statistics literacy are planned. These will include keynote presentations on statistics literacy and sessions and discussions of the role of statistics in a number of everyday contexts.

ICOTS-6 TOPICS

- Topic 1. Statistics Literacy
- Topic 2. Statistics Education at the School Level
- Topic 3. Statistics Education at the Post Secondary Level
- Topic 4. Statistics Education/Training and the Workplace
- Topic 5. Statistics Education and the Wider Society
- Topic 6. Research in Statistics Education
- Topic 7. Technology in Statistics Education
- Topic 8. Other Determinants and Developments in Statistics Education
- Topic 9. An International Perspective on Statistics Education
- Topic 10. Contributed Papers

THE SCIENTIFIC PROGRAM

The scientific program of the Conference has been prepared by the IASE International Program Committee, IPC, for ICOTS-6 on the basis of suggestions received from many members. The IPC is in charge of the overall co-ordination of the scientific program. The IPC has agreed on a list of topics for the invited paper sessions, and identified Topic Convenors who in turn suggested Session Organizers, SO's, for approval of the IPC. The SO's will assume responsibility for the organization of each invited paper session. The topics of invited paper sessions, the SO's names and addresses, and the rules and guidelines for organisers of invited paper sessions are now available on the ICOTS-6 IPC Website at <http://www.beeri.org.il/icots6/>. Full refereeing procedures will not be implemented in ICOTS-6 but if requested, the IASE is normally happy to give permission for authors to submit their papers (or a more comprehensive version) to other journals. If this occurs the author must seek approval of the editor of the ICOTS-6 Proceedings and the IASE President, and the paper is to have an acknowledgement saying "This article was written for, and published in, the ICOTS-6 Proceedings and is reprinted (in revised form, if relevant) here with the permission of the IASE."

IMPORTANT DEADLINES

Invited Papers

Expressions of interest for invited sessions are to be received by the relevant Session Organizer, or the IPC Chair by Oct. 15, 2000. *Invitations* - Session Organizers will formally invite the speakers by Jan 31, 2001.

Abstracts - each invited speaker has to present a (provisional) title and an abstract (no more than 500 words) of his/her presentation to their Session Organizer by April 1, 2001.

Final manuscript - the authors of invited papers are to submit the final manuscript of their paper to their Session Organizer by December 1, 2001.

Contributed Papers

Expression of interest for contributed paper sessions are to be submitted to Susan Starkings (starkisa@sbu.ac.uk) by December 1, 2001. Papers not accepted for an invited speaker session will also be considered for these sessions.

Other Contributions

Abstracts of posters, software demonstration and other special sessions should be submitted to the IPC Executive by February 1, 2002. Details of the final submission arrangements of papers and other presentations will be announced later.

The Committee is convinced that the ICOTS-6 academic and social program will provide a most rewarding experience. For more information please contact the Conference Chair or the IPC Scientific Secretary.

Maria-Gabriella Ottaviani
IPC Chair
ottavian@pow2.sta.uniroma1.it

Brian Phillips
International Organizer
bphillips@swin.edu.au

Dani Ben-Zvi
IPC Scientific Secretary
dani.ben-zvi@weizmann.ac.il

5. SRTL-2

The Second International Research Forum on Statistical Reasoning, Thinking, and Literacy (SRTL-2) will be held in Australia from August 15 to August 20, 2001. Our meeting will end just before the ISI-53 Conference starts on August 22 in Seoul.

The Research Forum will be held in the University of New England (UNE), Armidale. Armidale is located in the New England Tablelands, in New South Wales, mid way between Sydney and Brisbane. This gathering is sponsored by The IASE Statistical Education Research Group (IASE SERG), The Centre for Cognition Research in Learning and Teaching (CRILT) at the UNE, The School of Curriculum Studies (SCS) at the UNE, and The University of Minnesota, USA.

This Forum offers an opportunity for a small number of researchers from around the world to meet for a few days to share their work, discuss important issues, initiate collaborative projects, and contribute to the publishing of an edited book.

The topic of the Forum will be Statistical Reasoning, Thinking and Literacy, with an emphasis this time on Reasoning. One outcome of the Forum will be the publication of an edited book summarizing the work presented, discussions conducted and emerging issues. We are preparing an interesting scientific program that includes participation of several well-known international researchers in statistics education.

Sessions will be held in an informal style, with a high level of interaction given the group size. The University of New England setting offers modern facilities and opportunities to tour the surrounding area.

The SRTL-2 Advisory Committee members are:

Janet Ainley	University of Warwick, UK
Dani Ben-Zvi	Weizmann Institute of Science, Israel Co-chair
Iddo Gal	University of Haifa, Israel
Joan Garfield	University of Minnesota, USA Co-chair
John Pegg	Director of the CRILT Centre UNE, Australia
Brian Phillips	President of IASE, Swinburne University of Technology, Australia
Chris Reading	University of New England, Australia Local Organizer and Co-chair

For more information, please visit the SRTL-2 web site ([HTTP://WWW.BEERI.ORG.IL/SRTL](http://www.beeri.org.il/SRTL)) or contact:
Dr Chris Reading, Department of Curriculum Studies, University of New England
Armidale NSW 2351, Australia, Phone +61-2-67735060, Fax +61-2-67735078
E-mail: creading@metz.une.edu.au