



Summer 2004

<http://www.stat.auckland.ac.nz/~iase/>

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### **Statistics Education Research Journal (SERJ)**

Co-editors: Flavia Jolliffe and Iddo Gal

<http://www.stat.auckland.ac.nz/serj>

The *Statistics Education Research Journal* (SERJ) was developed by the IASE to encourage research in statistics education, advance our knowledge about students' knowledge, reasoning, conceptions, attitudes, and errors as regards stochastic knowledge, and to improve the teaching of statistics at all educational levels. It is a peer-reviewed ISI-sponsored journal published electronically twice a year, and is freely accessible via the Internet.

We have three papers in the fourth issue of the *Statistics Education Research Journal*. The first of these, the paper by Jane Watson and Rosemary Callingham, is very comprehensive and addresses the issue of measuring statistical literacy. This paper is likely to become a key reference for other work in this field. The second paper is by Flavia Jolliffe and addresses an important problem, organising an easily accessible database of research in statistical education. The third paper, by Jamie Mills, summarises the research she has done into texts which incorporate SPSS.

The editorial board discussed various matters relating to SERJ during the 54<sup>th</sup> Session of the International Statistical Institute (ISI54) in Berlin in August 2003. As we receive a growing number of papers which are suitable for publication, we are now in a position to concentrate on making SERJ a top quality refereed journal. Thus we are no longer including sections on summaries of publications and recent dissertations which we have published during the transition period while the newsletter *Statistics Education Research Newsletter* (SERN) has been changing into SERJ. We are now reporting and announcing in full only conferences which have been organised or supported by IASE, and for other forthcoming conferences of interest to SERJ readers we are giving the main information only. The summaries of dissertations with statistical education content were thought to be useful and we are pleased to announce that Joan Garfield will be organising the collection of such summaries and hosting a web page. Further details will be announced in SERJ 3 (1).

A special issue of SERJ is planned for November 2004. This will be on statistical reasoning about variability, a key area that has so far received relatively little attention from researchers. This special issue will be based on papers presented at the third Research Forum on Statistical Reasoning, Thinking and Literacy (STRL-3) held in 2003. The authors of the papers presented in this forum have been invited to submit their papers to SERJ for refereeing. Joan Garfield and Dani Ben-Zvi will be guest editors for this issue. The editorial board of SERJ is pleased to be co-operating with the STRL-3 organisers in this way.

Chris Reading now has a new title of Assistant Editor to acknowledge all the input she makes to SERJ, both in looking after the web page and in overseeing the final stages of production of each issue.

The members of the editorial board are most grateful to all the referees who have helped them in reviewing papers and in contributing comments to improve the quality of SERJ and, of course, to all the authors who have submitted their papers to make the SERJ project a reality.

**Inquiries and submissions** should be sent to co-editor Flavia R. Jolliffe (UK) at: <F.Jolliffe@kent.ac.uk>. Guidelines for authors and referees, a template for authors, and a copyright form, as well as prior and current issues of the journal itself can be downloaded from the SERJ web page at <http://www.stat.auckland.ac.nz/serj>

### *International Association for Statistical Education*

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

## FORTHCOMING IASE ACTIVITIES

### **IASE 2004 Research Round Table on Curricular Development in Statistics Education, Lund, Sweden, June 28 - July 3, 2004**



Plans are in place for the IASE 2004 Roundtable on *Curricular Development in Statistics Education*, which will be held at Lund Institute of Technology. The Roundtable addresses issues and concerns related to the

curriculum at the elementary, secondary, and tertiary levels along with a strong research strand.

Papers are reviewed by the Scientific Program Committee, and a list of the set of papers is available. The Scientific Program Committee is chaired by Gail Burrill (Michigan State University, United States) and consists of Dani Ben-Zvi (University of Haifa, Israel), Arthur Bakker (Freudenthal Institute, The Netherlands), Jean Claude Girard (Institut Universitaire de Formation des Maîtres de l'Académie de Lyon Centre, France), Mike Camden (Statistics New Zealand), Richard Scheaffer (University of Florida, United States), and Carmen Batanero (University of Granada, Spain).

The Local Organizing Committee, chaired by Lars Wahlgren, has secured support from Key Curriculum Press and from the Swedish Statistical Association. For information about local arrangements see

<http://www.maths.lth.se/conferences/IASE2004/>.

The conference promises to be stimulating and productive. Information about the proceedings will be available on the web.

For more information see

[http://hobbes.lite.msu.edu/~IASE\\_2004\\_Roundtable/](http://hobbes.lite.msu.edu/~IASE_2004_Roundtable/).

### **IASE Satellite Conference on Statistics Education and the Communication of Statistics, Sydney, Australia, April 4-5, 2005**

This satellite conference on Statistics Education and the Communication of Statistics is jointly organised by the IASE and the Victorian Branch of the Statistical Society of Australia and will immediately precede the ISI session in Sydney. It will give the opportunity for people to enjoy presentations given by people who have a special interest in communicating data-based results. There will be a number of invited speakers, as well as the opportunity for others to give contributed presentations.

The presentations are planned to include discussions of the main components in statistical communication

and the relevance of statistical communication in the general education of citizens. A related idea is that we should be spending more time in our courses telling students how to present statistical findings to lay audiences that do not know technical aspects of statistics. This is a major stumbling block for the discipline - the people that understand the technical side have little training in how to make results understandable, and the people who are expert at presenting a finding often have no notion of how to extract information from data. Another related idea is that, when we do talk about graphical summary in our courses, we tend to omit use of it from our tests and examinations, since it is difficult to test. This assessment omission is another reason students do not learn to "communicate statistics".

The approach will be non-technical, suitable for both a specialist and non-specialist audience who would like to learn how to better communicate the statistical ideas which occur in their everyday and working lives. This meeting will be of interest to a wide cross section of society. These include: teachers, lectures and teacher trainers; administrators in schools or elsewhere; people involved in numeracy education with an adult population; people from industry and commerce including policy makers, journalists, health professionals, finance and the law; researchers in statistical education and in probabilistic reasoning; others from the general population.

Possible topics are: Writing with numbers; Modern methods for graphical display; Quantitative Literacy and communication; Communicating educational statistics; and other areas involving communication of statistical results. It could involve presentations on topics such as the use of graphics calculators, computers and the internet in statistics classes to help with communicating statistics; the training of teachers to teach methods of communicating statistical results and showing how the results from large studies and official statistics may be used in the classroom for statistical communications.

The Program committee consists of Brian Phillips (Joint Chair, Australia), Kay Lipson (Joint Chair, Australia), Larry Weldon (Canada), Paul Darius (Belgium) and Irena Ograjensek (Slovenia).

For more information on abstracts, papers, fees, accommodation and social program see

<http://www.stat.auckland.ac.nz/~iase/>

**Submission deadline Abstracts September 30, 2004**

### **IASE Activities at the 55<sup>th</sup> Session of the ISI, Sydney, Australia, April 5-12, 2005**



Chris Wild is the IASE representative to the ISI Programme Co-ordinating Committee for ISI-55<sup>th</sup> Session, to be held in Sydney, Australia, April 5-12, 2005. The Invited Paper Meetings approved for ISI 55 in Sydney that will be sponsored or co-sponsored by IASE are as follows (titles may change slightly): Reasoning about Variation, The use of Simulation in Statistics Education, Teaching Statistics Online, Statistics for Life: What are the Statistical Ideas or Skills that Matter most and why?, Research in Statistical Education, Teaching Bayesian Statistics, Challenges in the Teaching of Survey Sampling, Using History of Statistics to Enhance the Teaching of Statistics, Promotion of Statistical Literacy among Students, Quality Assurance in Statistics Education, Educating the Media on how best to Report Statistics and Ethical Standards in Statistics Education.

For more information contact Chris Wild at [c.wild@auckland.ac.nz](mailto:c.wild@auckland.ac.nz).

**ICOTS-7, Working Cooperatively in Statistics Education, Salvador (Bahia), Brazil, July 2-7, 2006**



**Local organisers:**

Pedro Alberto Morettin, (Chair)  
Lisbeth K. Cordani  
Pedro Silva  
Clélia M. C. Tolo  
Wilton de Oliveira Bussab.

**IPC Executive:** Carmen Batanero (Chair), Susan Starkings (Programme Chair), Allan Rossman and Beth Chance (Editors of Proceedings), John Harraway (Scientific Secretary) and Lisbeth Cordani (Local organisers' representative).

The major aim of ICOTS-7 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 developments in teaching statistics and to expand their network of statistical educators. The conference theme emphasises the idea of *cooperation*, which is natural and beneficial for those involved in the different aspects of statistics education at all levels. For example, recent trends in educational psychology emphasise the role of *Cooperative learning in statistics education*. *Cooperation between statistics teachers and*

*researchers* make statistics more enjoyable for students when a teacher can call on such real applications and research in statistics education is greatly enhanced when it is informed by classroom practice. Statistical agencies need the *cooperation of statistical educators* to communicate statistical ideas to citizens and they collaborate in the development of teaching resources based on official data. Global communication and increasing interest and respect for complementarity in education are leading to an increasing number of successful *cooperative international research or educational programmes* including: Large scale statistical literacy comparative studies; Regional, National or International funded projects; International statistical education centres; International training programmes and conferences in statistics education.

We are very happy to work this time in collaboration with the Brazilian Statistical Association (ABE <http://www.redeabe.org.br/>) a big (over 600 members) and active association. ABE runs its *SINAPE* conferences every two years and publishes the *Brazilian Journal of Probability and Statistics*. Members of ABE have been involved in the Executive bodies of *ISI, IASE, Interamerican Statistical Institute, Biometric Society* and other international associations. We hope you will be interested in attending ICOTS-7 and will not miss the chance to get more deeply involved with statistics education at an International level and, in particular, with Brazilian statisticians and statistics educators.

More information is available from the IASE web page at <http://www.maths.otago.ac.nz/icots7> and from Carmen Batanero ([batanero@ugr.es](mailto:batanero@ugr.es)).

**STATISTICS EDUCATION PRESENTATIONS DURING THE INTERNATIONAL CONGRESS ON MATHEMATICAL EDUCATION**

**ICME-10, Topic Study Group 11 Teaching and Learning of Probability and Statistics, Copenhagen, Denmark, July 4-11, 2004**

Contact person: Joe Wisenbaker [joe@coe.uga.edu](mailto:joe@coe.uga.edu)  
As a part of the 10th International Congress on Mathematical Education to be held in Copenhagen, Denmark July 4-11, a set of sessions have been set aside to address issues related to research and development in the teaching and learning of probability and statistics. Jun Li of the Department of Mathematics at East China Normal University and Joe Wisenbaker of the Department of Educational Psychology at the University of Georgia, co-chairs of Topic Study Group 11, brought together presentations across a wide range of issues including: The use of technology to enhance student learning; Efforts to understand how

students learn about statistics and probability; Developing teachers' statistical knowledge; Distance education; Assessment strategies as a means of promoting learning; Efforts to introduce younger students to statistics and probability; and Developing statistical reasoning, thinking and literacy.

As part of the program, there will be four invited presentations by Joan Garfield (comparing expert and novice statistics teachers), Koeno Gravemeijer (looking at statistics concept development to aid in lesson design and classroom instruction), Mike Shaughnessey (investigating thinking in variation-rich contexts) and Jane Watson (Tasmanian research in chance and data). Other presentations and papers presented by distribution will enliven the discussions about these and other topics related to the teaching and learning about statistics and probability.

Greater detail about the overall conference can be found at <http://www.icme-10.dk/>.

#### **ICOTS-6 SPIN-OFF IN SOUTH AFRICA:**

##### **ICOTS-6 CONTINUES TO DELIVER AND DELIVER**

*Report by Jacky Galpin<sup>1</sup>, Delia North<sup>1</sup> and Jackie Scheiber<sup>2</sup>, South African Statistical Association (SASA)<sup>1</sup> and Association of Mathematics Educators of South Africa (AMESA)<sup>2</sup>*

ICOTS-6 (Cape Town, July 2002) was used to kick-start an outreach to local mathematics school teachers. South Africa (SA) is currently in the process of developing and implementing a new school curriculum, with outcomes-based education as a fundamental building block. This recognizes the cross-curricular need for data handling as an anticipated outcome, resulting in vast amounts of statistical, of the new school curriculum. Historically very little (if any!) statistics was taught at school level with the result that Mathematics teachers, with little or no training in Statistics, would be expected to ensure that school leavers in SA are statistically literate!

Funding was obtained from Statistics SA, the SA Department of Education, and UNESCO for a 5-day local teacher program, which was held as a separate stream throughout ICOTS 6. This sponsorship allowed SASA and AMESA to bring a minimum of 4 Maths teachers and provincial Maths advisors from each of our 9 provinces, to ICOTS, with the intention of developing core groups to run follow up workshops. A number of these delegates also attended the annual AMESA conference, held in the week preceding ICOTS6. Sponsorship required that they present workshops in their home areas, and that they gave up 2 weeks of their vacation at no charge. The local teacher sessions consisted of various conference talks (selected and grouped in the program so that the teachers could attend), a census@school workshop (the Royal Statistical Society Centre for Statistics

Education played a major role!), a set of talks on probability (Delia North, SASA) and on data handling (Jackie Scheiber, AMESA), as well as sessions by the Schools Development Unit of the University of Cape Town. A workshop approach prevailed throughout, with delegates receiving "ICOTS6 Papers for School Teachers", a collection of papers from ICOTS6 selected by the Local Organising Committee, as well as materials and aids to use in the class room. The sessions were captured on video with the aim of distributing the video to provincial teacher libraries. The program was a resounding success, with over 100 follow-up workshops during the year 2003, given by the delegates. What really stunned us was that the teachers were so enthusiastic about this, that NOT ONE applied for the available funding for hire of halls, reproduction of material, etc. We are humbled by their enthusiasm and dedication. A further course was presented as a 2-day workshop during SASA's 50<sup>th</sup> anniversary conference in November 2003, this course also incorporating the newly approved material for grades 10-12. This was the first time school teachers were part of a SASA conference. We initially expected around 20 participants at this workshop, as it is during exam-time, but have been absolutely stunned by the interest – over 100 delegates attended the workshop, having coaxed or bullied employers, funders, etc. into giving them the time off, and paying for their conference fees. With the remaining UNESCO funds, we were able to print a large number of books of course materials, which will be used in the workshops that will be presented this year. These workshops cover the entire data handling and probability component of Curriculum 2005 and are presented all year round, thus giving teachers all over South Africa the opportunity of upgrading their knowledge in order to achieve statistical literacy of the school leaver in South Africa. We are in the process of finalising funding applications for further work, and aim to establish a 'Centre for Statistical Education at School'. This centre will have a full time manager, who will develop further training material, set up data bases consisting of census@school data from South Africa and other countries, and co-ordinate courses. The centre will also assess the possibility of introducing the experiments@school program run by the RSS Centre for Statistical Education. This would require liaison with teachers from other areas, as to the inclusion of statistical literacy using in their classes.

#### **IASE WEBSITE AT**

<http://www.stat.auckland.ac.nz/~iase/>

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