International Association for Statistics Education
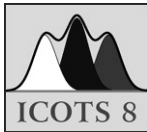
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International Conference on Teaching Statistics ICOTS-8

Data and Context in Statistics Education: Towards an Evidence-Based Society

Ljubljana, Slovenia, 11-16 July 2010

Preliminary Notice

The 2010 International Conference on Teaching Statistics will be held in the city of Ljubljana, Slovenia, July 11-16. It is being organised by the IASE and the Statistical Society of Slovenia. The venue will be the Ljubljana Cultural and Congress Centre. Statistics educators, statisticians, teachers and educators at large are invited to contribute to the Scientific Programme. Types of contributions include invited papers, contributed papers and posters. A person may not present more than one Invited Paper at the Conference, although the same person can be co-author of more than one paper, provided each paper is presented by a different person.

Voluntary refereeing procedures will be implemented for ICOTS-8. Details of how to prepare manuscripts, the refereeing process and final submission arrangements will be announced later.

Invited Papers

Invited Paper Sessions are organized within 10 Conference Topics. Session themes within each Topic are currently being discussed. The themes and Session Organisers with e-mail contact will be available on the ICOTS-8 website *http://icots8.org/*, under "Scientific Programme" by June 2008. Those interested in submitting an invited paper should contact the appropriate Session Organiser before December 1, 2008.

Contributed Papers

Contributed Paper Sessions will be arranged in a variety of areas. Those interested in submitting a contributed paper should contact either
Gilberte Schuyten (*Gilberte.Schuyten@UGent.be*),
John McKenzie (*mckenzie@babson.edu*) or
Flavia Jolliffe (*F.Jolliffe@kent.ac.uk*)
before September 1, 2009.

Posters

Those interested in submitting a poster should contact
Mojca Bavdaz (*mojca.bavdaz@ef.uni-lj.si*) or
Alesa Lotric Dolinar (*alesa.lotric.dolinar@ef.uni-lj.si*)
before January 15, 2010.

General Issues

It is important to know that all participants have to register for the Conference. Details about the registration procedure will be given later.

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 Editors of the ICOTS-8 Proceedings and the IASE President. The paper must have an acknowledgement saying "This article was written for, and published in, the ICOTS-8 Proceedings and is reprinted (in revised form, if relevant) here with the permission of the IASE".

More information is available from the ICOTS-8 website at *http://icots8.org/*, which will continue to be updated over the next three years, or from the ICOTS IPC Chair John Harraway, (*jharraway@maths.otago.ac.nz*), the Programme Chair, Roxy Peck (*rpeck@calpoly.edu*) and the Scientific Secretary, Helen MacGillivray (*h.macgillivray@qut.edu.au*).

Contributed by John Harraway

SERJ - Statistics Education Research Journal

The *Statistics Education Research Journal* (SERJ) is a peer-reviewed research journal of IASE and is published electronically twice a year. It is freely accessible at *www.stat.auckland.ac.nz/serj* or through the "publications" page of the IASE website: *www.stat.auckland.ac.nz/~iase*.

Contents of Vol. 6, No. 1 (May 2007):

Luc Budé, Margaretha W.J. Van De Wiel, Tjaart Imbos, Math J.J.M. Candel, Nick J. Broers, and Martijn P.F. Berger: *"Students' Achievements in a Statistics Course in Relation to Motivational Aspects and Study Behaviour"* .

James E. Corter and Doris C. Zahner: *"Use of External Visual Representations in Probability Problem Solving"*.

Mark A. Earley: *"Students' Expectations of Introductory Statistics Instructors"*.

Contents of Vol. 6, No. 2 (November 2007):

Dustin L. Jones and James E. Tarr: *"An Examination of the Levels of Cognitive Demand Required by Probability Tasks in Middle Grade Mathematics Textbooks"*.

Robert delMas, Joan Garfield, Ann Ooms, and Beth Chance: *"Assessing Students' Conceptual Understanding after a First Course in Statistics"*.

Scott R. Evans, Rui Wang, Tzu-Min Yeh, Jeff Anderson, Rammy Haija, Paul Madoc McBratney-Owen, Lynne Peeples, Subir Sinha, Vanessa Xanthakis, Natasa Rajcic, and Jiameng Zhang: *"Evaluation of Distance Learning in an "Introduction to Biostatistics" Class: A Case Study"*.

Dirk T. Tempelaar, Sybrand Schim van der Loeff, and Wim Gijselaers: *"A Structural Equation Model Analyzing the Relationship of Students' Attitudes toward Statistics, Prior Reasoning Abilities and Course Performance"*.

Iddo Gal has reached the end of his four-year term as SERJ Co-Editor, and will be replaced by Peter Petocz who was appointed as Co-Editor for the years 2008-2011 by the IASE Executive Committee. Peter is Associate Professor in the Department of Statistics at Macquarie University, Australia. He is an innovative statistics educator and also an accomplished researcher, who has published on pedagogical issues in statistics and mathematics education. Peter will soon begin working with Tom Short, who continues as Co-Editor through 2009.

The *Journal* is currently processing papers submitted for a special on research on *Reasoning about Informal Statistical Inference*, planned for November 2008. Guest Editors will be Dave Pratt (University of London, UK), and Janet Ainley (University of Leicester, UK). Overall, SERJ aims to advance research-based knowledge that can help to improve the teaching, learning and understanding of statistics, probability or related quantitative research methods, at all educational levels and in both formal (classroom-based) and informal (out-of-classroom) contexts. SERJ encourages the submission of quality papers, especially reports of original research (both quantitative and qualitative) and integrative and critical reviews of research literature. Papers should be written so as to make a definite contribution to current knowledge and have implications both for researchers and for practitioners interested in teaching/learning processes. All papers are reviewed internally by an Associate Editor or Editor, and are blind-reviewed by at least two external referees.

Inquiries and submissions should be sent to Co-Editor Tom Short: *tshort@iup.edu*. Details regarding possible paper types and submission processes are described in the Guidelines for Authors available on the SERJ website at *www.stat.auckland.ac.nz/serj*. Prior and current issues of the *Journal* can also be downloaded from this web page.

Contributed by Iddo Gal

The Fifth International Research Forum on Statistical Reasoning, Thinking, and Literacy SRTL-5

University of Warwick, Coventry, UK, August 11-17, 2007

The Fifth Research Forum in a series of international research forums on statistical reasoning, thinking and literacy has just drawn to a close at the Centre for New Technologies Research in Education of the University of Warwick, England. This particular gathering of researchers has played an important role in advancing our understanding of the richness and depth of reasoning about informal inference, a natural development of previous foci on variability and distribution.

The Forum was sponsored by the Royal Statistical Society (UK), the American Statistical Association's (ASA) Section on Statistical Education, the Institute of Education, University of Warwick, and the School of Education, University of Leicester.

Twenty-four researchers in statistics education from seven countries shared their work, discussed important issues, and initiated collaborative projects in a stimulating and enriching environment. Sessions were held in an informal style, with a high level of interaction. With emphasis on reasoning about informal inference, a wide range of research projects were presented spanning learners of all ages, as well as teachers and practitioners in the workplace. These demonstrated an interesting diversity in research methods, theoretical approaches and points of view. As a result of the success of this gathering, plans are already underway for the next gathering (SRTL-6) in 2009.

The Research Forum proved to be very productive in many ways. Progress was made towards identifying the key elements of statistical inference and in locating the range of resources that might be brought to bear in supporting engagement with those powerful ideas. Several types of scientific publications will be produced including proceedings on the Forum's website (*http://srtl.stat.auckland.ac.nz/*), papers in refereed journals, and a special issue of *Statistics Education Research Journal* (SERJ), expected in 2008, with Dave Pratt and Janet Ainley as Guest Editors. These outcomes will all serve as a rich resource for statistics educators and researchers.

Dave Pratt (Institute of Education, University of London) and Janet Ainley (University of Leicester) led the local planning and organizing prior to the SRTL-5 gathering. Yvette Kingston, supported by Peter Johnston-Wilder and Theodosia Prodromou (all University of Warwick) ensured that the Forum ran smoothly and was able to meet its objectives. Thanks to the efforts of this group, participants were able to not only enjoy each other's creative efforts during the Scientific Programme, but also to appreciate the local culture through a variety of social events that helped to build a sense of a community amongst the researchers.

For further information, please contact the SRTL Co-Chairs:
Joan Garfield, *jbg@umn.edu*
Dani Ben-Zvi, *dbenzvi@univ.haifa.ac.il*

Contributed by Dani Ben-Zvi

International Congress on Mathematical Education ICME-11: Topic Study Group #13
Research and Development in the Teaching and Learning of Probability
Monterrey, Mexico – July 6-13, 2008

Probability and statistics education are relatively new disciplines. Both have only recently been introduced into mainstream school curricula in many countries. While application-oriented statistics is undisputed in its relevance, discussion about probability is more ambivalent. When probability is reduced to its classical conception, mainly based on combinatorics or its formal treatment in higher mathematics, it can be seen as irrelevant, and may be abandoned to leave only the statistical element of the stochastics discipline. However, we believe that there are some powerful arguments in favour of a strong role for probability within stochastics curricula.

We invite submissions related to the following topics:

Individuals' corner
- Students' understanding and misunderstanding of fundamental probabilistic concepts;
- Ideas of probability in young children.

Impact of technology
- The use of technology for students' learning of probability;
- Using specific software to study probability and sampling distributions;
- Special issues in e-learning.

Teacher's corner
- Teacher education on the topic of probability;
- Teachers' conceptions about teaching probability.

Fundamental ideas
- The probabilistic idea of random variable; distribution, expectation;
- The central limit theorem; convergence;
- Bayes' theorem and conditional probability; independence; exchangeability;
- Probabilistic modelling – a probabilistic look at distributions.

Team Chairs
Manfred Borovcnik (Austria), *manfred.borovcnik@uni-klu.ac.at*
Dave Pratt (UK), *d.pratt@ioe.ac.uk*
Silvia Alatorre Frenk (Mexico), *alatorre@solar.sar.net*
Team members
Carmen Batanero (Spain), *batanero@ugr.es*
Wu Yingkang (China), *ykwu@math.ecnu.edu.cn*
Website: *http://tsg.icme11.org/tsg/show/14*

Contributed by Manfred Borovcnik

International Congress on Mathematical Education ICME-11: Topic Study Group #14
Research and Development in the Teaching and Learning of Statistics
Monterrey, Mexico – July 6-13, 2008

Statistics education is a growing field of research and development at school and university levels. The topic group will focus on presenting and discussing recent research. Statistics at school level is usually taught in the mathematics classroom in connection with learning probability. Inferential statistics is based on basic understandings of probability. Our topic includes probabilistic aspects in learning statistics, whereas, research with a specific focus on learning probability is being discussed by Topic Study Group #13 of ICME.

We are open to all kinds of relevant research papers, but our specific focus will be on the following topics:
- Students' thinking and reasoning about distributions (including variability, comparing distributions);
- Students' making inferences from data (from informal inference to more formal inference, inference from sample to population or process, from data to context, role of models and probability);
- Statistical literacy;
- Role of technology (tools, applets, Internet);
- Research on teachers and teaching of statistics.

Team Chairs
Rolf Biehler (Germany), *biehler@mathematik.uni-kassel.de*
Mike Shaughnessy (USA), *mikesh@pdx.edu*

Team members
Omar Rouan (Morocco), *orouan@yahoo.com*
Ernesto Sánchez (Mexico), *esanchez@cinvestav.mx*
Jane Watson (Australia), *Jane.Watson@utas.edu.au*
Website: *http://tsg.icme11.org/tsg/show/15*

Contributed by Manfred Borovcnik

ISI-57
The 2009 Session of The International Statistical Institute

Durban, South Africa, August 16–22, 2009

The IASE sponsored Invited Paper Meetings for the 57th Session in Durban are being organised by Helen MacGillivray (Australia, *h.macgillivray@qut.edu.au*). The IASE Programme Committee for ISI-57 has chosen the theme - Statistics Education for the Future. More information is available at:

http://www.statssa.gov.za/isi2009/.

Contributed by the Editors

International Statistical Literacy Project (ISLP)

Countries registered in the First International Statistical Literacy Competition so far

Registration for the First International Statistical Literacy Competition is going well. Two months before the deadline of February 28th for the northern hemisphere, there are 17 countries represented. These countries, ranked by the number of teachers they have registered – from highest to lowest – are: South Africa, Portugal, Italy, China, Brazil, Argentina, New Zealand, Spain, Mexico, Chile, United States, Colombia, Costa Rica, Sri Lanka, Indonesia, Nigeria and Russia. Visit the competition's website periodically for the updated list: *http://www.stat.auckland.ac.nz/~iase/islp/competition*. For each teacher registered, there will be several 10-18-year old students participating. Don't miss the opportunity to encourage teachers in your country to register.

Countries in the southern hemisphere have a later deadline to compensate for the fact that their long summer vacation is during December and January. We anticipate many more countries to be represented, and the number of registrations to increase in those countries mentioned above.

Statistics South Africa is sponsoring all phases of the competition in South Africa, as well as coordinating it. It also has included the competition in the ISIBALO program, and will sponsor the final, where the winners from each country will compete. It is a great honour for the ISLP and all of us involved in the competition to have a host so dedicated to the promotion of statistical literacy, nationally and internationally, and to be part of the ISIBALO program. Statistics South Africa not only sanctions some of the best statistics in the country in order to make them "official", but it also takes some of the best teachers in the country to Statistics education conferences and workshops. Statistics South Africa also took two of the eldest teachers in the country to dance and talk with other statisticians during ISI 56 in Lisboa, and to invite everybody to attend ISI 57 in Durban. These are teachers who have a school in their heart.

2009 Best Cooperative Project Award in Statistical Literacy: Call for Nominations

The International Statistical Literacy Project of the International Association for Statistics Education (ISLP/IASE), a Section of the ISI, is pleased to announce the call for nominations for the 2009 Best Cooperative Project Award in Statistical Literacy. The 2007 Award went to Project ALEA of Statistics Portugal (*http://www.alea.pt*).

This award is given every two years in recognition of outstanding, innovative, and influential statistical literacy projects that affect a broad segment of the general public and are fruit of the cooperation of different types of institutions (national statistical office and schools, schools and statistical societies, statistical societies and statistical offices, statistical societies, college, schools, etc.). A project making a good candidate for this award should have the following characteristics:

a. It is currently alive and has potential to remain so in the future, that is, the project is currently being maintained. Projects that stopped being maintained in the past should not apply.

b. Access to the project resources and membership in the project is free to all.

c. Educates on concepts of statistical theory and data analysis, their use in the development of information about countries and societies, and their application in a broad spectrum of disciplines and areas of society, with concern towards modern data handling, experimentation, and graphical methods.

d. Has content that are pedagogically sound for a general audience (adult and youth, media and statisticians, teachers and students, social and natural sciences).

e. Involves two or more institutions that would usually not work in cooperation. Examples are projects that involve the cooperation between a national statistical office, a school and a government education office, like the ALEA Project, winner of the 2007 award. (Other examples are cooperation among universities and schools, or schools and statistical societies or media experts, statistical societies, national statistical offices, schools, and combinations thereof.)

f. It is attractive to a broad audience, i.e., it has a "fun" appeal to it, invites to enter and learn, read and use the project on a daily basis as a source of knowledge and information. Some characteristics that make it such are: Color, variety, easy to find material, dynamism, updated, sound pedagogy, contemporary subject matter, interactivity.

g. Has archives that are widely available. For example, if there is a regularly run contest, past winners should be known. If current events have been interpreted statistically in the past, those interpretations should be easy to access.

h. Has international outreach and makes creative use of available resources. For example, a web page in English would help the dissemination of the resources to many countries.

To nominate a project, interested parties must submit a nomination letter and/or questions to Juana Sanchez, Director of the ISLP (*jsanchez@stat.ucla.edu*), no later than February 28th, 2009. In your letter, please explain how the project nominated satisfies all the characteristics described above. If the project does not have a web page, the ISLP reserves the

right to request additional information. Projects will be evaluated by a panel of international statistical literacy experts selected by the ISLP during the spring of 2009. The winner and finalists will be announced during the ISLP open meeting at the ISI Session in Durban, South Africa, in August 2009.

The website of the contest is

http://www.stat.auckland.ac.nz/~iase/islp/bestproject.

The ISLP Congratulates Pali Lehohla

We are very pleased to congratulate Statistician General of South Africa, Pali Lehohla for the award he received from the South African Statistical Association for his contributions to the improvement of statistical literacy in South Africa. The award was given to him during the inaugural session of the 50th Annual Conference of the South African Statistical Association, 29th October-2nd November in Misty Hills Conference Center, Muldersdrift, South Africa. The South African Statistical Association Education Committee works in close cooperation with Statistics South Africa to promote statistical literacy in the country.

The ISLP web page has more information on these news items and many others. Visit us at

http://www.stat.auckland.ac.nz/~iase/islp/.

Juana Sanchez
Director, ISLP