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## International Association for Statistics Education



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

### CATALST Group Invites Visitors and Sabbatical Scholars

We are pleased to announce the establishment of the CATALST group in the Department of Educational Psychology at the University of Minnesota. CATALST stands for Change Agents in Teaching and Learning Statistics.

We are conducting statistics education research studies, developing and evaluating new curriculum, hosting seminars and outside speakers, and more. We have several funded projects and new initiatives coming up.

Visiting scholars are welcome to come and share their work with us and form new collaborations. If you have a sabbatical coming up and would like to spend some time with us, please let us know. We also have possible teaching opportunities to supplement sabbatical support.

Please check out our website at:

<http://www.tc.umn.edu/~delma001/CATALST>.

*Contributed by Joan Garfield*

### Joint ICMI/IASE Study Conference 2008 Introduction from the IASE President

Data are everywhere. Information from around the world is at our fingertips every minute of every day. As a statistician, I am thrilled with this development. However, the ubiquitous availability of data makes all the more important the need to train all citizens in how to use data for sound, evidence-based decision-making. This Conference is addressing two very important issues: how to better incorporate the teaching of statistics into school mathematics, and how to better prepare teachers for that challenge. The issue of teacher training is paramount. The impact of school teaching of statistics will be minimal until we statistics educators help prospective teachers to appreciate the benefits of statistical thinking. Once we develop that enthusiasm on the part of prospective teachers, and support it by providing a solid understanding of statistics ideas, then those teachers can convey to their students an excitement for learning statistics. I am delighted that the IASE and ICMI (International Commission on Mathematical Instruction) are collaborating on this Conference and on the broader study of which this Conference is a part. ICMI's interest in statistics education will help to bring more attention to this important issue, and IASE is very pleased to work

collaboratively with ICMI on this study. The timing has worked out wonderfully for the 2008 IASE Round Table Conference to coincide with the ICMI Study Conference. Every four years the IASE organizes a round table conference that brings together statistics educators from around the world to share findings and discuss a particular topic. These conferences are much smaller than the ICOTS (International Conference on Teaching Statistics) meetings, and they also focus on one particular topic. The round table format allows for much more back-and-forth exchange of ideas than a typical conference. Recent IASE Round Table Conferences have focused on curricular development, training of researchers, and the role of technology in statistics education. The issue of teacher training and the role of statistics in school mathematics are extremely appropriate for the topic of this Round Table Conference. I thank all of the conference participants for their valuable contributions. Special thanks to Carmen Batanero for chairing the International Programme Committee and to Blanca Ruiz for chairing the Local Organising Committee. I also appreciate very much the support and collaboration provided by Bernard Hodgson and Michele Artigue of ICMI. I trust that all of the participants will enjoy and learn from the discussions at the Conference, and I hope that all who read articles in the Proceedings will also benefit. Moreover, I respectfully ask that you find a way to extend those benefits to school teachers of statistics, so they can, in turn, influence their students.

### Research and Development in the Teaching and Learning of Probability

**TSG 13 at ICME11 (International Congress on Mathematical Education) - Monterrey, Mexico  
July 6-13, 2008**

Probability and statistics education are relatively new disciplines. Both have only recently been introduced into the main stream school curricula in many countries. While the application oriented statistics is undisputed in its relevance, discussion about probability is more ambivalent. Reduction of probability to the classical conception, mainly based on combinatorics, or its tight connection to higher mathematics, is an argument to abandon this part of the discipline in favour of the statistics part. However, there are some arguments for a strong role for probability within stochastics curricula:

1. Misconceptions on probability affect people's decisions in important situations, such as medical tests, jury verdict, investment, assessment, etc.

2. Probability is essential to understand any inferential procedure of statistics.
3. Probability offers a tool for modelling and “creating” reality. For example, modern physics cannot be formulated without reference to probability concepts. The concepts of risk (not only in financial markets) and reliability are closely related to and dependent upon probability.

Thus, the challenge is to teach probability in order to let the students understand it. The focus has to be on creating approaches to probability that are more accessible and motivating. Additionally, the frequentist and subjectivist views of probability, and connections of probability to practical applications, should be taken into account. Simulation is one such strategy, as is visualization of abstract concepts; there are more. The use of technology also enables to reduce the calculation technicalities and focus the learner on the concepts instead. The world of personal attitudes and intuitions is another source for success or failure of teaching probability. With these challenges in mind, we have encouraged in our call for papers and presentations 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 (Fathom, probability explorer, etc.) to study probability  
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 a random variable; distribution and expectation  
The central limit theorem; convergence  
Bayes' theorem and conditional probability; independence; exchangeability  
Probabilistic modelling – a probabilistic look at distributions

Out of the papers submitted, 17 papers have been accepted after careful examination. We grouped them into the following topics, which were the themes of our sessions at the Conference:

- Issues in Probability Teaching and Learning
- Informal Conceptions
- Conditional Probability and Bayes' Theorem

A panel discussion on the topic “Fundamental Ideas in Probability Teaching at School Level” completed our programme. It was intended to focus on the impact of recent trends in school curricula, which have removed probability at early stages in favour of data analysis techniques. The authors come from Europe, USA, Australia and Latin America, the English, the Spanish world, and the “rest” were distributed “evenly”. More details of the presentations are available from the Conference website (see below), including the full papers and the PowerPoint presentations. A critical review will follow.

The hope is that ICME will continue to organize topic study groups on probability and statistics separately. By this “strategy”, we did in fact split our potential audience as all the study groups were held during the same time slots. However, the great interest in our group on probability, as well as the

number of persons who attended the parallel statistics group, confirm that we can attract many more people to our topic via two separate groups. The split into the two groups allowed also for a more convenient focus of the pertinent presentations and discussions. It showed that – against the international trend towards statistics and away from probability in all international curricula – there is still a substantial interest from the side of research in probability issues as it is highly relevant for any teaching and learning of statistics. This holds also for the joint study of ICMI and IASE, which was held one week prior to the ICME congress where a panel discussion about a vital role for probability within curricula met a strong echo and led to a lively discussion on the role of probability within educational research and in curricula.

Conference website: <http://tsg.icme11.org/tsg/show/14>

*Contributed by Allan J. Rossman*

### **Models in Developing Mathematics Education Dresden, Saxony, Germany, September 11-17, 2009**

The Mathematics Education into the 21<sup>st</sup> Century Project & the University of Applied Sciences (FH), Dresden (Germany), announce our 10<sup>th</sup> (Anniversary!) International Conference: “Models in Developing Mathematics Education”, September 11-17, 2009, in Dresden, Saxony, Germany, in full cooperation with the Saxony Ministry of Education. All our Conferences have a strong Statistics Education component.

International Organisers:

Dr. Alan Rogerson, Coordinator of the Mathematics in Society Project (Poland)

Prof. Fayez Mina, Faculty of Education, Ain Shams University (Egypt)

Chair of the Local Organising Committee:

Prof. Dr. Ludwig Paditz, Dresden University of Applied Sciences

You are warmly invited to attend our Conference in the heart of the historic city of Dresden.

Project web page: <http://math.unipa.it/~grim/21project.htm>

For Conference details and updates by e-mail:

[alan@rogerson.pol.pl](mailto:alan@rogerson.pol.pl).

*Contributed by Alan Rogerson*

### **SERJ Volume 7 Number 2 Now Available**

Dear IASE member,

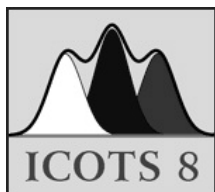
The International Association for Statistics Education and the International Statistical Institute, together with Co-Editors Peter Petocz and Tom Short, are pleased to announce the publication of a new issue of the *Statistics Education Research Journal* (SERJ).

SERJ Volume 7, Number 2 - CONTENTS:

- Dave Pratt and Janet Ainley (Guest Editors): Introducing the Special Issue on Informal Inferential Reasoning
- Allan J. Rossman (Invited): Reasoning about Informal Statistical Inference: A Statistician's View
- Ruth Beyth-Marom, Fiona Fidler, and Geoff Cumming: Statistical Cognition: Towards Evidence-Based Practice in Statistics and Statistics Education
- Andrew Zieffler, Joan Garfield, Robert delMas, and Chris Reading: A Framework to Support Research on Informal Inferential Reasoning
- Jane M. Watson: Exploring Beginning Inference With Novice Grade 7 Students

- Efi Paparistodemou and Maria Meletiou-Mavrotheris: Developing Young Students' Informal Inference Skills in Data Analysis
- Dave Pratt, Peter Johnston-Wilder, Janet Ainley, and John Mason: Local and Global Thinking in Statistical Inference
- Arthur Bakker, Phillip Kent, Jan Derry, Richard Noss, and Celia Hoyles: Statistical Inference at Work: Statistical Process Control as an Example
- Conferences
- *Statistics Education Research Journal* Referees

Please visit the main SERJ page at <http://www.stat.auckland.ac.nz/serj> for information about submitting manuscripts for review, and to access past issues.



**ICOTS 8**  
**Data and Context in**  
**Statistics Education:**  
**Towards an Evidence-**  
**Based Society**  
 Ljubljana, Slovenia,  
 11-16 July 2010 - [icots8.org](http://icots8.org)

ICOTS is held every four years. Its main purpose is to give statistics educators and professionals around the world the opportunity to exchange information, ideas and experiences, to present recent innovation and research in the field of statistics education, and to expand their range of collaborators.

**An Update**

Planning is moving ahead at a fast pace for what promises to be another successful international conference on statistics education. The ten invited paper topics are listed below. Each topic is divided into sessions. There are 75 sessions of three or four invited speakers. A total of 240 invited speakers from 34 countries have been confirmed to present in these sessions. Details of sessions, their organizers and the invited speakers can be viewed on the website ([icots8.org](http://icots8.org)).

**Invited Paper Topics**

1. Data and context in statistics education: Towards an evidence-based society
2. Statistics education at the school level
3. Learning to teach statistics
4. Statistics education at the post secondary level
5. Assessment in statistics education
6. Statistics education, training and the workplace
7. Statistics education and the wider society
8. Research in statistics education
9. Technology in statistics education
10. An international perspective on statistics education

**Contributed Papers**

Contributed paper sessions will be arranged in a variety of areas. Those interested in submitting a contributed paper should contact one of the three Convenors:

Flavia Jolliffe [F.Jolliffe@kent.ac.uk](mailto:F.Jolliffe@kent.ac.uk)  
 John McKenzie [mckenzie@babson.edu](mailto:mckenzie@babson.edu)  
 Gilberte Schuyten [gilberte.schuyten@ugent.be](mailto:gilberte.schuyten@ugent.be)

The authors of contributed papers can decide whether their paper should be refereed or not. If a contributed paper is to be refereed, an abstract should be submitted by 31<sup>st</sup> August 2009 with the final version of the paper due by 31<sup>st</sup> October 2009. If the contributed paper is not to be refereed, the abstract should be submitted by 30<sup>th</sup> November 2009 with the final version of the paper due by 15<sup>th</sup> December 2009.

**Posters**

Those interested in submitting a poster should contact the poster Convenors:

Mojca Bavdaz [mojca.bavdaz@ef.uni-lj.si](mailto:mojca.bavdaz@ef.uni-lj.si)  
 Alesa Lotric Dolina [alesa.lotric.dolar@ef.uni-lj.si](mailto:alesa.lotric.dolar@ef.uni-lj.si)

The poster abstracts are due by 15<sup>th</sup> January 2010 with the abstracts to be finalised by 15<sup>th</sup> March 2010.

**Keynote Speakers**

I am happy to report that the keynote speakers are:

- Anuska Ferligoj, University of Ljubljana
- Gerd Gigerenzer, Max Planck Institute for Human Development
- Cliff Konold, University of Massachusetts
- Hans Rosling, Karolinske Institute
- Jessica Utts, University of California

There will also be a Plenary Panel Debate organised by Chris Wild, University of Auckland.

Abstracts for the plenary papers and the plenary debate can be viewed on the Conference website ([icots8.org](http://icots8.org)).

**International Programme Committee Executive**

John Harraway (New Zealand)  
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**Local Organising Committee**

Andrej Blejec (University of Ljubljana)  
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 Irena Krizman (Statistical Office of Slovenia)  
 Katja Rostohar (Agriculture Institute of Slovenia)  
 Irena Vipavc-Brvar (University of Ljubljana)

**Venue**

The 2010 Conference will be in the city of Ljubljana, Slovenia, in conjunction with the Statistical Society of Slovenia (SSS). It will be held at the Ljubljana Cultural and Congress Centre at Cankarjev Dom, a first-class conference venue providing many halls and meeting rooms and excellent facilities.

Due to its compact size, the capital city of Ljubljana is a walking and environmentally-friendly city. It has one of the best-preserved Baroque quarters in Europe that blends harmoniously with the younger Art Nouveau buildings. Bridges abound, and it is blessed with the talent of Joze Plecnik who created the cosmopolitan image of the city with his eclectic architecture.

Easily accessible from abroad and conveniently located in the centre of the country, Ljubljana is also an ideal departure point to discover all the amazingly diverse features of Slovenia. The unique Karst region, the Adriatic coast, the Alps and lakes region, the hilly wine-growing areas, the 15 natural spas and several historic towns are all within a two-hour drive.

If you go to the Conference website ([icots8.org](http://icots8.org)) and select the option ABOUT LJUBLJANA on the home page, you will be

able to access a series of photos of Ljubljana and will be able to inspect Google Maps of the city, the country and the surrounding countries as well as locating three tourism links.

*Contributed by John Harraway*

## **2009 IASE Satellite Conference Next Steps in Statistics Education 14-15 August 2009, Durban, South Africa**

Continuing the successful tradition of satellite conferences coinciding with each ISI Session, the International Association for Statistics Education is pleased to announce that the sixth IASE Satellite Conference will be held in Durban, South Africa, on the 14<sup>th</sup> and 15<sup>th</sup> of August 2009. The IASE Satellite Conferences have proven to be a very popular component of the Statistics Education calendar. These Conferences are smaller and more personal in nature than the ICOTS conferences providing a wonderful opportunity for establishing new professional relationships and cementing existing ones. The format of this year's Conference will follow that of the 2007 Satellite Conference: plenary sessions will be supplemented by two parallel breakaway sessions. The theme of the Conference is Next Steps in Statistics Education. All submissions addressing this theme will be welcome. This theme has been chosen to particularly attract papers under the following headings:

What constitutes best practice for the curriculum beyond the "Introductory Statistics" course? What courses should follow on for those wishing to major in Statistics and what additional training should we offer to those in other disciplines?  
What elements of our undergraduate curriculum specifically

prepare our students for their careers post-graduation, either in the workplace or as masters/doctoral students? How can we improve these elements?

Since the 1949 formation of its precursor, the ISI Statistical Education Committee, the IASE has matured as an organisation. As we move towards ICOTS 8, we note that great progress has already been made in the field of Statistics Education, but the challenge we face now is to consider the next steps that we must take. How can we build on past progress to raise the profile of our field so that it becomes a more visible and vibrant pursuit?

We hope that you will be able to join us in Durban on the 14<sup>th</sup> and 15<sup>th</sup> of August 2009, so please put these dates in your diary.

For more information, visit the Conference website <http://www.sastat.org.za/iase/> or contact Patrick Murphy (Chair of the IASE Satellite Conference), School of Mathematical Sciences, University College Dublin, Belfield, Dublin 4, Ireland. Tel: +353-1-7167641, E-mail: [Patrick.Murphy@ucd.ie](mailto:Patrick.Murphy@ucd.ie).

*Adapted by the Editors from the IASE web page*

## **IASE Sessions at the 57<sup>th</sup> Session of the International Statistical Institute 16-22 August 2009, Durban, South Africa**

This is the main conference of the ISI and will be held in Durban, South Africa, 16-22 August 2009. These Conferences are held every two years. The previous one was in Lisbon in 2007. As it does at each major ISI conference, the IASE will be organizing about 10 statistics education sessions for the 57<sup>th</sup> ISI Session. Please check the website above for more information.