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Report of Section's Activities

2007-2009

Executive and Council members with nationalities and exact year-terms

President: Allan Rossman, USA, 2007-2009

President-Elect: Helen MacGillivray, Australia, 2007-2009
(President 2009-2011)

Past President: Gilberte Schuyten, Belgium, 2007-2009
(President 2005-2007)

Vice-Presidents, 2007-2009:

Andrej Blejec, Slovenia

John Harraway, New Zealand

James Nicholson, U.K.

Delia North, South Africa

Enriqueta Reston, Philippines

Mission of the Section

IASE seeks to improve statistics education at all levels from elementary (primary) school through to the training of professionals, and to increase the uptake of statistics education world wide. It fosters international cooperation, and stimulates discussion and research. IASE disseminates ideas, strategies, research findings, materials, and information using publications, international conferences, and increasingly its website.

Membership Overview

IASE is formally constituted as the education section of the ISI. It may be joined independently, however, by anyone who wishes to participate in IASE's activities, wishes to be a part of an international community of statistics educators, wishes to share experiences with and learn from the experiences of

other statistics educators around the world, or simply wishes to support those working to achieve IASE's goals. IASE has approximately 800 members - about 20% of whom belong to ISI and 80% who do not - representing more than 90 countries. The membership is largely made up of teachers, lecturers and professors of statistics, researchers in the field of statistics education, and applied and government statisticians with an interest in statistics education. Among the most rewarding aspects of IASE membership is participating in an international community of people who believe in the value of statistics education and wish to advance it.

Publications & Website (overview)

The *Statistics Education Research Journal (SERJ)* is IASE's peer-reviewed electronic journal, co-published with the ISI. *SERJ* aims to advance research-based knowledge that can help to improve the teaching, learning and understanding of statistics or probability at all educational levels and in both formal (classroom-based) and informal (out-of-classroom) contexts. Such research may examine, for example, cognitive, motivational, attitudinal, curricular, teaching-related, technology-related, organizational, or societal factors and processes that are related to the development and understanding of stochastic knowledge. In addition, research may focus on how people use or apply statistical and probabilistic information and ideas, broadly viewed.

SERJ, which is freely available from the IASE website, publishes two issues per year. The Co-Editors of *SERJ* are Tom Short (USA) and Peter Petocz (Australia), and the Assistant Editor is Beth Chance (USA). Iddo Gal (Israel), the previous Co-Editor of *SERJ*, is currently chairing a search

committee for a new Co-Editor whose term will begin in January 2010.

The IASE website (www.stat.auckland.ac.nz/~iase/) contains a wealth of information about IASE in particular and statistics education more broadly. The publications section of the website includes not only *SERJ* but also Proceedings from IASE conferences such as International Conferences on Teaching Statistics (ICOTS), IASE presentations at ISI Sessions, and IASE Roundtable Conferences. The publications section also has links to selected articles on statistics education published in *International Statistical Review* and other journals, and also to IASE components of the *ISI Newsletter* and *IASE Matters*, which is a regular feature in the journal *Teaching Statistics*.

In addition, the IASE website contains a listing of recent doctoral dissertations in statistics education, a searchable list of IASE members, information on past and upcoming IASE conferences, and much more news and information.

Conferences, Short Courses and Satellite Meetings

In June/July of 2008, IASE held its Roundtable Conference in Monterrey, Mexico, on the theme of "Statistics Education in School Mathematics: Challenges for Teachers and Teacher Training." Carmen Batanero (Spain) chaired the International Program Committee, and Blanca Ruiz chaired the Local Organizing Committee. This Conference was a joint venture with ICMI, the International Commission on Mathematical Instruction. About 80 participants from 25 countries participated in this Conference. It was especially gratifying that a large number of representatives from developing countries (including Uganda, Botswana, China, Philippines, Iran, Honduras, Panama and Costa Rica) attended, with some financial assistance from IASE. It was also encouraging that a large number of graduate students and recent graduate students participated and had very fruitful interactions with more experienced colleagues. Work is now underway on a book, to be published by Springer-Verlag, based on the presentations and discussions at this Conference.

On 14 and 15 August of this year, IASE held its Satellite Meeting in Durban on the theme of "Next Steps in Statistics Education". The Conference included 35 speakers representing 15 countries. Patrick Murphy (Ireland) has chaired the Program Committee for this Conference, with Delia North (South Africa) coordinating local arrangements. The previous Satellite Conference, held in Guimaraes, Portugal, concentrated on the theme of "Assessing Student Learning in Statistics". The Program Committee was chaired by Brian Phillips (Australia) and Beth Chance (USA), while the local arrangements were coordinated by Bruno de Sousa (Portugal). IASE also sponsored a session at the 2008 Joint Statistical Meetings in Denver (USA). Organized by Juana Sanchez (USA), this session was titled "The State of Statistics Education in Schools (K-12) Around the World."

Plans are well underway for the IASE flagship conference: International Conference on Teaching Statistics (ICOTS-8) will be held on 11-16 July 2010 in Ljubljana, Slovenia. John Harraway (New Zealand) is chairing the International Program Committee, and Andrej Blejcek (Slovenia) is chairing the Local Organizing Committee. The Conference theme is "Data and Context in Statistics Education: Toward an Evidence-Based Society." Details and updated information can be found at the ICOTS-8 website: www.icots8.org.

Cooperation with other ISI Sections or external organisations

The ISI's International Statistical Literacy Project, under the direction of Juana Sanchez (USA), has been conducting competitions on statistical literacy among school children, sparking interest in statistics in countries around the world. One such competition culminated in Portugal in 2007, and another competition was concluded in Durban. Please see the ISLP's article in this *ISI Newsletter*.

Durban Activities

Helen MacGillivray (Australia) organized IASE's Invited Paper Meetings that were held in Durban. As mentioned above, Patrick Murphy (Ireland) chaired the Program Committee for the Satellite Meeting held prior to the ISI Session. IASE has also helped to organize a Short Course for African teachers of statistics and mathematics at school levels.

Note of thanks

All of the individuals mentioned in the above report have made substantial contributions in the past two years to the mission of the IASE. These contributions, and those by many more than can be mentioned here, are much appreciated.

*Allan Rossman
IASE President 2007-2009*

New IASE Executive and Council 2009-2011

President:

Helen MacGillivray, Australia, h.macgillivray@qut.edu.au

President-Elect:

John Harraway, New Zealand, jharraway@maths.otago.ac.nz

Past President:

Allan Rossman, USA, arossman@calpoly.edu

Vice-Presidents:

Iddo Gal, Israel, iddo@research.haifa.ac.il

James Nicholson, U.K., j.r.nicholson@durham.ac.uk

Delia North, South Africa, northd@ukzn.ac.za

Irena Ograjensek, Slovenia, irena.orgajensek@ef.uni-lj.si

Enriqueta Reston, Philippines, edreston@yahoo.com

IASE thanks the 2009 Nominations Committee for their work.

Message from the Incoming President

The IASE Executive and Council members extend many thanks to all those in IASE who have supported and contributed to IASE's work in the past two years, and we look forward to a productive and fruitful two years for everyone involved with, and interested in, statistics education across all of ISI and the whole international statistical community.

Particular thanks go to our Past President and our retiring Vice-Presidents. However, all will be just as involved in the next two years in their roles on the Executive or with ICOTS8 or both. Many thanks also to Juana Sanchez who is retiring as Director of the International Statistical Literacy Project (ISLP), for her untiring dedication to this project and to her and her helpers in the ISIBALO International Statistical Literacy Competition, which achieved its wonderful culmination during the ISI Session in Durban. The new Director and executive of ISLP will be announced soon.

Thanks also to Co-Editor of *SERJ*, Tom Short, who will retire at the end of 2009 when we will welcome Bob del Mas to join Peter Petocz as Co-Editor.

The 57th Session of the ISI and all its associated activities in Durban was a very full and successful period for IASE and Statistics Education. The 11 IASE IPMs included 2 joint with

IAOS and 2 joint with Local Hosts and ranged over many interests, with particular attention given to topics of interest to all ISI members and to Africa, and with a number of these meetings attracting considerable attention. Our thanks to all those involved in making the 57th Session of the ISI a truly memorable occasion.

The ISI Sessions, pleasingly to be now called World Statistics Congresses, are a wonderful opportunity for interaction across the international diversity of statistical interests. As IASE's representative on the PCC for the 58th World Statistics Congress, Patrick Murphy has received many interesting proposals for IPMs and joint IPMs and will be maintaining IASE's commitment to quality, breadth and cooperative planning to achieve statistics education papers of interest to all IASE and ISI delegates.

IASE's tradition of a satellite meeting before the ISI Session continued in 2009 with a very successful meeting attended by more than 60 delegates with more than 30 papers, a workshop and a forum. Our thanks to Patrick Murphy for organising the program, Delia North for organising an excellent venue, Bettie Basson for the website, and all participants for their enthusiastic presentations and discussion on Next Steps in Statistics Education.

The UNESCO-funded workshops for African teachers held during ISI were an outstanding success, with approximately 150 participants each day and waiting lists for many sessions. As teachers were allowed to nominate their sessions for attendance, this means that approximately 200 teachers attended during the week. The all-day Sunday workshop, with more than 160 attendees, participated in hands-on statistical learning activities with Doreen Connor and helpers in the morning, and were able to choose in the afternoon between data analysis activities with Roxy Peck and real probability with Helen MacGillivray. The daily afternoon sessions and the Saturday session, organised so ably by Delia North and her helpers, were given by South Africa's Maths4Stats teachers and trainers. IASE thanks Denise Lievesley, the ISI and UNESCO for the support for this important work.

The ISLP activities, competition finals and presentations were a highlight of ISI 57 and a major achievement for Juana Sanchez and her helpers. The list of international winners and phase 2 winners of the International Statistical Literacy Competition may be found on the ISLP website <http://www.stat.auckland.ac.nz/~iase/islp/>. Presentations were also made to the winners of the 2009 Best Cooperative Project Award in Statistical Literacy, Maths4Stats Project (Statistics South Africa) and Early Statistics: Enhancing the Teaching and Learning of Early Statistical Reasoning in European Schools (Cyprus).

Many meetings, both formal and informal, were also held during ISI on plans and ideas. As reported to the ISI General Assembly, the planning for the IASE flagship conference, the International Conference on Teaching Statistics (ICOTS-8), which will be held 11-16 July 2010 in Ljubljana, Slovenia, is promising another excellent ICOTS (see www.icots8.org for details). Plans for the IASE Satellite to the 58th ISI World Statistics Congress to be held in Dublin in 2011, as well as for the IASE Roundtable Conference in 2011, are well underway with announcements coming soon to the IASE website. Planning for the IASE Roundtable Conference in 2012 and for ICOTS-9 in 2014 has also commenced.

These are both challenging and exciting times for statistics education worldwide, and the 2009-2011 IASE Executive looks

forward to working with all of IASE, ISI and the international statistics community in furthering statistical learning.

Helen MacGillivray
IASE President 2009-2011

Educating the public on how to use official statistics

At the recently concluded 57th Session of the International Statistical Institute, held in Durban, South Africa, in August 2009, Invited Paper Meeting 38 'Educating the public on how to use official statistics' attracted a lot of attention. Here Peter Wingfield-Digby (www.pwdigby.co.uk), Organizer and Chair of the meeting, highlights some of the issues raised.

This meeting was sponsored jointly by the International Association for Statistical Education (IASE) and the local hosts (Statistics South Africa). It aimed to address the issue of how a statistics office can best help the public to understand and use its outputs.

Three papers were presented at the meeting. The first, Making statistics attractive through partnerships with the media, was by Ben Paul Mungyereza, Director of Statistical Coordination Services at the Uganda Bureau of Statistics (UBOS - www.ubos.org). He noted four reasons for the poor reporting of statistics by the media: their failure to understand statistical concepts; their weakness in interpreting statistics; the inability of statisticians themselves to communicate statistical information to the media; and the media's own aversion to statistics. He urged the need for better training on both sides, making statistics part of the training for those required to work in the media, and making media training a requirement for budding statisticians. He suggested several possible approaches to improving the situation: employing full-time public relations staff; preparing special media kits containing simplified statistics; and involving the media in all stages of statistical activities.

The second paper, Improving use of official statistics - How marketing and IT help, was presented by Leo Yu, Senior Statistician in the Information Technology Branch of Hong Kong's Census and Statistics Department (www.censtatd.gov.hk). A statistics office needs to have a framework for optimising the product development process. He advocated a marketing analysis process: Dividing the market into various segments, analysing the statistical needs of each segment, and then devising marketing plans for each one. A statistics office faces special considerations: the need to encourage statistical applications as widely as possible; the very diverse needs of a large client base; and the fact that a statistics office has limited resources and is normally non-profit making. Four particular user segments were identified (the general public, the media, students, and the business sector), and the characteristics and statistical needs of each group were described. A 4P marketing plan was advocated, focusing on product, placement, pricing and promotion.

The third paper, Making official data relevant to students: Statistics Canada's education outreach program, had been prepared by Mary Townsend, Chief of Education Outreach at Statistics Canada (www.statcan.gc.ca). She could not attend the ISI Session, but her video presentation was introduced by Art Ridgeway, Director-General of the System of National Accounts at Statistics Canada. Mary emphasized that school-aged youth are the nation's future data users and survey respondents. If you educate them about how important official data is in forming the policies and programmes that impact

their daily lives, they will be more inclined to respond accurately and in a timely manner to the surveys that collect those data.

Statistics Canada's Education Outreach Program is structured on two pillars: a vibrant learning resources website, where students and teachers have direct access to resources designed specifically to suit their needs; and a network of regional champions who provide teachers with training, workshops and support. Canada has the great advantage that every school in the country has Internet-connected computers. There are four main challenges faced by the Outreach Program: communicating with teachers; training the teachers; understanding the Net generation; and developing engaging resources within an official environment. Mary illustrated some of the statistical products that had been developed so far by Statistics Canada.

In discussing the papers, Davaasuren Chultemjamts from Mongolia, who is Director of the United Nations Statistical Institute for Asia and the Pacific in Tokyo (SIAP - www.unsiap.or.jp), stressed three points: the importance of strengthening the communication skills of statisticians in dealing with non-statisticians; the need to improve the image of statistics and statisticians, so that people have more trust in statistics and in the decisions based on them; and the tremendous possibilities offered by the various media (Internet, television, radio, blogs, newspapers, etc.).

The second discussant, Hilary Joffe, Senior Associate Editor of Business Day, a leading newspaper in South Africa (www.bdfm.co.za) was not able to attend the meeting, but her written comments were presented by Trevor Oosterwyk, Manager of Communications at Statistics South Africa. She was impressed by Statistics Canada's use of web-based technology in its outreach programmes, but wondered how these types of programmes could be replicated in other countries, particularly in Africa where statistical literacy and Internet penetration were generally low. She welcomed the idea of the media as a 'business' partner of the official statistics agency, but noted that official statistical agencies were not always very good at partnering with the media.

Peter Wingfield-Digby

New statistics education journal: *Statistique et Enseignement*

The Société française de statistique (SFdS) decided to launch *Statistique et Enseignement*, a free-access electronic journal whose first issue (devoted to articles derived from presentations at the Lyon Meeting in September 2008) will be published some time in 2009. *Statistique et Enseignement* plans to publish papers on teaching, extracurricular training, as well as popular statistical science material. *Statistique et Enseignement* is not a resource centre but a peer-reviewed journal welcoming critical thought, analysis, commented research reviews (goals, experimental conditions, study findings). While not an online forum, *Statistique et Enseignement* will also include debates, opinions, and reading notes.

Journal website: <http://www.statistique-et-enseignement.fr/ojs>

Gilberte Schuyten

Research and development in the teaching and learning of probability

A Report on the TSG 13 at ICME11 - Monterrey, Mexico – July 6-13, 2008

The series of the ICME are among the biggest congresses dedicated to mathematics education. The 11th convention of

this kind took place in Monterrey, Mexico. This short report should only focus attention; the reader might get details on the topics, which have been dealt with at the link given below. Some of the contributions have been developed further after the conference and will appear in October 2009 at IEJME.

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. We had three meetings ("Issues in Probability Teaching and Learning", "Informal Conceptions", and "Conditional probability and Bayes' theorem") with lectures and a panel discussion "Fundamental Ideas in Probability Teaching at School Level".

The authors come from Europe, USA, Australia and Latin America, the English, the Spanish world, and the "rest" are distributed "evenly".

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 are held at 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 by 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 ICME 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.

Longer version of the report:

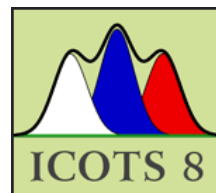
<http://www.wg.uni-klu.ac.at/stochastik.schule/aktuelles.html>

Manfred Borovcnik

ICOTS 8 Data and Context in Statistics Education: Towards an Evidence-Based Society

Ljubljana, Slovenia, 11-16 July 2010

The second circular containing information about registration procedures, registration fees, accommodation options and tours will be released around the middle of October. Links will be given to the convention centre and accommodation facilities as appropriate.



The programme is developing rapidly and those interested should visit the website www.icots8.org to access up to date information. Paper titles and abstracts are being placed on the website each day as they are received.

Contributed papers and posters are now being received and details about submission procedures and format for both papers and posters can be found in guideline documents on the website.

Those who are attending the ISBIS Conference in Ljubljana the week before ICOTS8 are advised that a one and a half day special registration will be available for you to attend ICOTS on these days. This will cover the Sunday evening welcome ceremony and all day Monday when we have the opening followed by a first plenary address which will be of interest to those attending ISBIS. At least one of the parallel sessions later on the Monday morning and afternoon will be related to

education aspects of statistics as far as they overlap with topics in business and industry.

The ICOTS Organising Committees hope that those attending ISBIS may be encouraged to join ICOTS for at least the Monday if not the rest of the ICOTS Conference. Future links with other ISI member bodies are being encouraged and the IAOS also features in the ICOTS programme.

For news, follow the conference website at <http://icots8.org>

John Harraway