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INTERNATIONAL ASSOCIATION FOR STATISTICAL EDUCATION

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

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1.0 Report from the IASE President, Brian Phillips

As reported in the IASE Review, see www.swin.edu.au/math/iase/newsletters.html, 2000 was a very busy year for the IASE. The work of the ICOTS-6 IPC is going very well and has reached a stage where most of the sessions and organizers are in place. The results from the general call for papers have been processed and invitations are being sent out. Full details are available on the ICOTS-6 IPC web site <http://www.beeri.org.il/icots6/>. It is now up to all those involved with statistical education to spread the word to their colleagues, so that we have a record participation at a really special conference.

Following the events reported in the Review, I was involved in two further very successful statistical education activities in 2000. These included the International Statistical Education Centre, ISEC, Jubilee celebrations held in India during October and the Australian informal "OZCOTS3" which attracted some 80 participants, including over 20 school teachers. These are reported elsewhere. The IASE Executive are now concentrating on preparing for future IASE events over the next two years. In particular these include the *Second International Research Forum on Statistical Reasoning, Thinking and Literacy*, *SRTL-2*, the IASE Satellite meeting on *Statistical Literacy*, the *Statistical Education Sessions* at the 53rd of the ISI and ICOTS-6 in 2002. See below and the web page www.swin.edu.au/math/iase/conferences2.html for details of these and other meetings of interest to statistics educators.

The bi-annual elections for the IASE Executive who will carry on the important tasks of the organisation will be held soon. Please show your interest in the association by returning the ballot papers you as soon as you receive them. Also please encourage anyone interested in statistics education at any level to join the IASE, see www.swin.edu.au/math/iase/ for an application form, as it is only possible to provide the activities that do by having a large and involved membership.

2.0 IASE SERN and SERG

Statistical Education Research Newsletter and Statistical Education Research Group

The first issue for 2001 of the IASE Statistical Education Research Newsletter, IASE SERN, is now available at www.ugr.es/local/batanero/sergroup.htm. This is the second year this group has been a special interest

group within the IASE. It is also open to all who share our common interest in carrying out research into the teaching and learning of statistics and probability. The main activity in 2000 was producing the IASE Statistical Education Research Newsletter, SERN. It is the most comprehensive report on what is going on in statistical education around the world and is a wonderful resource to anyone involved in research in the teaching and learning of statistics.

Carmen Batanero <batanero@goliat.ugr.es>, Joan Garfield <jbg@tc.umn.edu>, M. Gabriella Ottaviani <ottavian@pow2.sta.uniroma1.it> and John & Kath Truran <truranjk@camtech.net.au> are members of the editorial committee. Their aim is to make SERN a tool of potential interest to researchers, and, therefore they are publishing short notes, summaries of papers, dissertations and research works, information about internet resources of interest, past and future conferences and bibliographies on particular research topics. The extent to which a research newsletter is useful depends of the quality and completeness of the information published. We need your collaboration and we encourage you to send any type of information about your research projects and results that you consider of interest for other colleagues to one of the editors listed above.

3.0 Statistics Education for the Information Age

Richard L. Scheaffer, President, American Statistical Association <scheaffe@stat.ufl.edu>

It is an exciting time to be a statistician! Data are everywhere. Technology to produce and analyze data is advancing faster than most of us can comprehend (perhaps even faster than we desire). Leaders in business, industry, government, and education are beginning to see that statistics and statisticians can make important contributions to society (although not faster than we desire). More students than ever before are taking statistics courses – even at the school level.

In the United States, the increased emphasis on statistics in the K-12 curriculum, the strong interest in the high school Advanced Placement (AP) Statistics courses, and the increased need for statistics in a wide range of occupations, prompted the American Statistical Association, in conjunction with other statistical societies, to begin promoting the enhancement of undergraduate education in statistics. To this end, it organized working groups to write background papers on this issue in preparation for a Symposium on undergraduate statistics education held in conjunction with the 2000 Joint Statistics Meetings (see <http://amstat.org/education/usei.html>). The Symposium drew 150 enthusiastic participants, and led to expanded efforts on establishing guidelines for undergraduate programs in statistics.

The Curriculum Guidelines for Undergraduate Programs in Statistical Science (http://amstat.org/education/Curriculum_Guidelines.html) approved by the Board of Directors, along with supporting documents (<http://amstat.org/education/usei.html>), set the stage for exciting advances in statistics education that can be built around the key points of flexibility, innovation, and experimentation. The one-size-fits-all introductory statistics course is no longer sufficient for most undergraduate students; breadth and depth must both be expanded and teaching styles must change if statistics is to add real value to a student's undergraduate program. There are many types of undergraduate programs in the mathematical sciences and statistics is flexible enough to fit into all of them. We have a rather small research base in statistics education, so teachers should be encouraged to do their own experimentation. Once students clearly see the value added by taking more statistics, some will decide to major in the subject and the strength of the field could be noticeably improved.

The undergraduate initiative is just one of many being planned for the ASA's Center for Statistics Education (CSE). This Center should be positioned to play a leading role in the unfolding emphasis on statistics throughout the K-12 mathematics and science curriculum, as well as in the undergraduate curricula of colleges and universities. To accomplish this, the CSE is attempting to establish clear goals and guidelines

for promoting statistics education at the elementary, middle, and high school levels, and at various levels of undergraduate activity, including the preparation of future teachers of mathematics and science.

At all these levels, improving the skills of teachers is the overarching goal, although the undergraduate initiative goes beyond that. Objectives toward these goals should include intensive workshops for teachers at all levels, sessions at professional meetings of statistics and allied societies, special conferences on aspects of statistics education, innovative use of the web, and serious networking among educational and scientific groups. It is hoped that the CSE, working with various committees and sections of ASA and through programs originating in many colleges and universities around the country, can be the spearheading and coordinating agency for effecting educational programs, projects, and events in statistics education. There is much work to be done – but it is an exciting time to be a statistician!

4.0 Mathematics Association of America's New Special Interest Group for Statistics Educators

Dex Whittinghill, Rowan University, USA <whittinghill@rowan.edu>

About years ago in August of 1991, a group of "Isolated Statisticians" met for the first time at the Atlanta Joint Statistical Meetings (JSMs). This meeting was primarily for statisticians who were isolated from other statisticians by nature of their being the only, or one of two, statisticians in a mathematics department. The 'IsoStaters' have continued to meet at the JSMs, usually with 40 attendees discussing issues related to teaching statistics and to being an isolated statistician. Since then there have also been many regional conferences for isolated statisticians. The benefits reaped by the isolated statisticians at their annual and regional meetings were so positive that Tom Moore of Grinnell College and Don van Osdol of the University of New Hampshire decided to have a meeting of the mathematicians who teach statistics courses, or who are interested in statistics education, at the Joint Mathematics Meetings (JMMs) in January of each year?

In the summer of 1997, Dex Whittinghill was asked to organize and moderate such a meeting, and at the JMMs in Baltimore in January of 1998, the first Isolated Teachers of Statistics Meeting (ITSM) was held. Over 40 attendees discussed issues related to being the only, or one of very few, instructors in the department who cares about statistics education. The 'IsoTeaStaters' met again in January of 1999 at San Antonio. At about this time the MAA was developing the concept of Special Interest Groups (their counterpart to an ASA Section). There were other interest groups meeting regularly at the JMMs as well. Involved with this task force was Allan Rossman of Dickinson College, Chair of the ASA/MAA Joint Committee on Undergraduate Statistics). Before the January 2000 JMMs the concept of a SIGMAA became official, and Allan drafted charter for a SIGMAA on Statistics Education. It was presented to the IsoTeaStaters at the 2000 ITSM. At that meeting the IsoTeaStaters discussed whether to become a SIGMAA (and voted 'yes'), made suggestions to improve the draft charter.

Last June saw the end of the 'IsoTeaStat-ers' and the beginning of the official SIGMAA on Stat Ed. There are now 170 official members There are officers, and a web page and newsletter in development. Leaders in this group may be credited with the growing number of sessions on statistics education at the annual JMMs. This year there were two sessions on innovations in introductory statistics as well as a panel on the new ASA Undergraduate Statistics Education Initiative. For more information, please contact SIGMAA chair, Dex Whittinghill <whittinghill@rowan.edu>

5.0 Information on Past Conferences



Further information on the papers which were presented at these conferences are given in the Statistical Education Research Newsletter, Volume 2 Number 1 January 2001, see www.ugr.es/local/batanero/sergroup.htm

9th Didactic Conference On Modern Methodology Of Teaching Quantitative Methods, Poland, 5-6 June 2000

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The 9th annual didactic conference on *Modern Methodology of Teaching Quantitative Methods* was held in Łódź (by the Institute of Econometrics and Statistics, University of Łódź), 5-6 June 2000, and dedicated to *Professor Władysław Welfe* to celebrate his fifty years of scientific and didactic activity. Representatives of the Polish academic centres, among others, from Częstochowa, Katowice, Kraków, Łódź, Poznań, Rzeszów, Szczecin, Warszawa and Wrocław took part in the conference, as well as those of non-public universities.

IASE Teaching and Learning Statistics topic group at ICME 9, Japan, July 31-August 6, 2000

Susan Starkings, Chief Organiser TSG 4 ICME 9

The International Association for Statistical Education (IASE) organised the topic group 4 (TSG4) entitled 'Teaching and Learning Statistics' at ICME 9. The aim of this topic group was to elucidate problems, with potential solutions, involved in the teaching and learning of statistics at all levels of education.

Many issues were brought to light regarding teaching statistics in various countries, with possible methods of teaching proposed. The questions participants raised were not only interesting and the replies informative but showed that the delegates at ICME9 have a real concern over the way students learn statistics. Two sessions did not appear to be enough time for all the issues raised to be fully explored, however, many delegates carried on discussions well after the sessions had ended. Common questions raised at the sessions focused on the following areas: (1) the mathematics needed to be able to do statistics, (2) the need of developing and transitional countries to move into the realm of statistical education being advocated by developed countries, (3) the use of appropriate technology to enhance students' understanding of statistics, (4) co-operation between educational institutions in the exchange of ideas and resources, and (5) the joint presentation of research from various countries. It was agreed by all that further research into how students learn statistics would be advantageous and that new innovative ways of teaching statistics is desirable.

For more information, refer to the website www.swin.edu.au/maths/iase/icme9.html. It is planned that a booklet of the statistics education papers will be available soon. We are pleased to say that Joe Wisenbaker of University of Georgia, USA has agreed to co-ordinate our efforts at ICME-10 which will be held in Copenhagen in 2004. Hopefully we will have more sessions in this area. Please contact Joe, email: <joe@coe.uga.edu> or the IASE Executive with any suggestions on themes for statistics education topics at ICME-10.

Working Group on Statistics, Probability and Combinatorics at the SEIEM

Antonio ESTEPA, <aestepa@ujaen.es>

The Spanish Society for Research in Mathematics Education met at the University of Huelva, Spain in September, 2000 where speakers from Spain, Brazil and Argentina spoke on issues concerned with the teaching of Statistics, Probability and Combinatorics.

XXVII Jornadas Nacionales de Estadística, Valdivia, Chile, 9-11 October 2000

Pilar Loreto Iglesias Zuazola, *Departamento de Estadística, Facultad de Matemáticas, Universidad Católica de Chile*, <pliz@mat.puc.cl> and Irma MOLINA, *Universidad Austral*, <imolina@uach.cl>

The Chile Statistical Society (SOCHE) in collaboration with The Institute of Statistics at the Faculty of Economics and Administrative Sciences, Universidad Austral, Chile organised the 27th National Statistics Conference, which was held in Valdivia, October, 9-11. The activities, aimed to exchanging knowledge and experience were mainly oriented towards the role of Statistics in Science, Education, Business and

Economy. Dr. Carmen BATANERO IASE President-Elect emphasised in her plenary lecture the role of national and international associations, in particular IASE, in improving statistics education, to thus benefit research, science and technique and offer promising perspectives to future generations.

Three short courses were offered to participants:

- Teaching statistics and probability at secondary school level (Dr. Carmen BATANERO, Spain)
- Reliability methods in the analysis of product life-time data (Dr. Luis Escobar, USA)
- Statistical methods forest monitoring and research (Dr. Sylvia Mori, USA)

Association of Statistics Lecturers in Universities Annual Conference: Statistical Education at the Beginning of the Millennium (20 September, 2000)

Report by Erica MORRIS <E.J.Morris@open.ac.uk>

In September, I attended the Association of Statistics Lecturers in Universities Annual Conference, which was held in conjunction with the Royal Statistical Society Education Section, and was entitled *Statistical Education at the Beginning of the Millennium*. This interesting one-day conference involved a variety of presentations relating to areas in statistics education. These talks raised a range of concerns, such as the use of ICT in the teaching of statistics, assessment in undergraduate statistics teaching and factors that might influence the effective transfer of statistical training from the university to the workplace.

For example, Peter Holmes's (Nottingham Trent University) talk looked at current issues in undergraduate statistics teaching, and emphasised the need to use innovative methods of assessment in teaching which should be tied to teaching strategies that encourage a deep approach to learning. Professor Deborah Ashby (Queen Mary and Westfield College) presented work on developments in evidence-based medicine and provided an overview of The Cochrane Collaborative, and looked at how parts of the Cochrane Library could be used as a resource in the teaching of statistics. The Cochrane Collaborative is an international organisation that prepares, maintains and promotes the accessibility of systematic reviews of the effects of healthcare interventions, and thus aims to help people make informed decision about healthcare (www.cochrane.org/). Flavia Jolliffe (University of Greenwich) provided an interesting report on the IASE (International Association for Statistical Education) Round Table (August, 2000) which focused on *Training Researchers in the Use of Statistics*.

International Statistical Education Centre Jubilee Celebrations, October 2000

Professor Manoranjan Pal, ISEC, Calcutta and Brian Phillips, Swinburne University of Technology, Australia

The International Statistical Education Centre, ISEC, was founded in 1950 and is operated jointly by the International Statistical Institute and the Indian Statistical Institute, under the auspices of the UNESCO and the Government of India. The Centre provides training in theoretical and applied statistics at various levels to selected participants from countries in the Middle-East, South and South-East Asia, the Far East and from the Commonwealth countries in Africa. Last October, the ISEC Jubilee celebrations consisted of two meetings:

I. Delhi Conference. Theme "*Policy Issues in Demography, Health & Education, and Economics*" at India International Centre, New Delhi, 13, 14 October 2000.

II. Calcutta Conference. Theme "*Contemporary Issues in Statistical Education*" at Indian Statistical Institute, Calcutta on 17, 18 October 2000.

The summaries of the papers are available from www.swin.edu.au/math/iase/conferences1.html

OZCOTS 3 Statistical Education --- Two Day Workshop, Tuesday Dec 5 and 6, 2000

Brian Phillips, <bphillips@swin.edu.au>

In December 1998 the first Auscots was held. This gave locals the opportunity to hear Australians who presented at the ICOTS-5 meeting held in Singapore. A similar meeting was held in 1999 and this year a third meeting, more aptly called OZCOTS, continued to give the opportunity for those interested in statistical education to learn about the latest developments. In all over 80 people attended the two day workshop which comprised both teachers of statistics at post-secondary level, as well as a group of school teachers. An innovation this year was the very successful introduction of several workshops, these included two "online" workshops, two Excel workshops on Teaching and Learning Statistics and one on the Fathom software. Also in addition to the regular conference sessions, there was a special session devoted to Statistics in Psychology and a forum discussion session on assessment. Details of the meeting can be found on www.swin.edu.au/math/iase/auscots3.html which includes Powerpoint files of a number of the presentations. The feedback showed that the opportunity to hear teachers of statistics from a wide spread of disciplines was appreciated as was the opportunity to discuss the papers and the chance to be involved in a relaxing discussion group. The success of conferences such as this suggest there is a real need for local low key meetings. It is intended that a further informal meeting will be held next December.

6.0 Upcoming conferences

SRTL 2 **The Second International Research Forum on Statistical Reasoning, Thinking, and Literacy**

UNIVERSITY OF NEW ENGLAND, ARMIDALE, AUSTRALIA, AUGUST 15-20, 2001

SRTL-2 WEBSITE: [HTTP://WWW.BEERI.ORG.IL/SRTL](http://www.beeri.org.il/SRTL)

The second in a series of International Research Forums, being offered under the umbrella of the Statistical Education Research Group of the International Association for Statistical (IASE SERG), is to be held in The University of New England (UNE) in Armidale Australia from Aug 15 to Aug 20 2001. This gathering offers an opportunity for a small, interdisciplinary group of researchers from around the world to meet for a few days to share their work, discuss important issues, and initiate collaborative projects. The topic of the Forum will be statistical reasoning, thinking and literacy, with an emphasis this time on *statistical reasoning*. One outcome of the Forum will be the publication of a book summarizing the work presented, discussions conducted, and issues emerging from these gatherings.

Preparations for SRTL-2 are now well under way. Abstracts have been reviewed and a diverse group of researchers has been invited to give presentations, while others will serve as discussants for the intensive small group discussions. The scientific program will focus on the following themes: Reasoning about data and distributions, reasoning about variability, reasoning about sampling distributions, and reasoning about bivariate data. For up-to-date information about SRTL-2 visit the website at www.beeri.org.il/srtl, or for specific queries email the local organiser Chris Reading <creading@metz.une.edu.au>

IASE Satellite Conference on Statistical Literacy

Seoul, Korea, 21-22 August, 2001 www.swin.edu.au/math/iase/statlit.html

This satellite conference on statistical literacy is jointly organised by the IASE and the Korean Statistical Society and will immediately precede the ISI session in Seoul. The approach will be non-technical, suitable for a non-specialist audience who would like to learn how to make better use of probability and statistical ideas in their everyday and working lives in areas in which chance and risk is involved. This meeting is intended to be of interest to a wide cross section of society including teachers, educational administrators, researchers in statistical education and in probabilistic reasoning and others who want to gain a better grasp of statistics in general and who would like to broaden their knowledge of statistics applications.

Contacts:

Professor Yong Goo Lee <leeyg@cau.ac.kr>, Brian PHILLIPS <bphillips@swin.edu.au>

International Statistical Institute, 53rd Biennial Session Seoul, Korea, 22–29 August, 2001

IASE Invited Paper Meetings Lionel Pereira-Mendoza <lpereira@nie.edu.sg>

Planning for the IASE sessions and Seoul is reaching the final stages. The speakers and discussants are from many countries and provide an International perspective on the many issues associated with the teaching of statistics at all levels, school and post-secondary. For example, consider just two sessions. The teaching of statistics in non-statistics degrees is an ever-expanding concern for statistical educators and this session will explore the issues associated with the health sciences. The Internet is an increasingly important tool for all educators, and statistics educators are no exception. This session will include papers on online access, distance learning and classroom experience of using the net for teaching.

The ISI meeting provides an opportunity for colleagues interested in the issues of statistics education to attend sessions both designed for statistical educators as well as sessions geared to issues associated with statistics, per se. The IASE Executive is looking forward to an exciting conference. Some additional details on the speakers for the IASE sections can be found at www.swin.edu.au/math/iase/isi53.html and general details on the conference at www.nso.go.kr/isi2001/

	<p>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/</p>	 <p>ICOTS 6</p>
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January 2001 has seen another important stage in the building of a successful ICOTS-6. As we have already advertised, all the topics and sessions of the Conference are in place. Most of the Session Organisers have succeeded in suggesting many excellent speakers for their sessions. These “teams” of Organizers and speakers will develop their session’s theme. Abstracts of most sessions are presented in the Scientific Program section of the ICOTS-6 Website (<http://www.beeri.org.il/icots6>).

The provisional list of invited speakers is now in place, and the majority of the session lists contain well-known specialists from the different fields of research on teaching and learning statistics. After the IPC approve the Invited Speaker’s list in early February, the Session Organisers will officially invite the speakers and provide guidelines for authoring the manuscripts. The option to have papers refereed is being considered. We plan to publish the invited and contributed papers of ICOTS-6 as a CD-ROM and on the Internet. The proceedings will be available in print upon special request and additional fee.

There are still some sessions where we would like to have more colleagues presenting papers on the teaching of statistics in their countries and on related research. These include sessions in the important topic: “An International Perspective on Statistics Education”. In this regards, we ask colleagues from the African Countries to contact Prof. Fayez Mina, Egypt <fmmina@link.com.eg>, Portuguese-speaking countries - contact Prof. Helena Bacelar-Nicolau, Portugal, <hbacelar@fc.ul.pt>, Spanish-speaking countries - contact Prof. Teresita Teran, Argentina, <teresitateran@hotmail.com>. We also invite colleagues from East Europe to join the Conference, giving us a picture of the teaching of statistics in their countries at all levels.

Expression of interest for contributed paper sessions are to be submitted to Susan Starkings <starkisa@sbu.ac.uk> ASAP and papers are due no later than by December 1, 2001. Papers not accepted for an invited speaker session will also be considered for these sessions. Abstracts of posters, software demonstration and other special sessions should be submitted to the IPC Executive by February 1, 2002.

If you are not yet involved - now is the time! Visit the attractive ICOTS-6 IPC Website (<http://www.beeri.org.il/icots6>), learn more about our plans, and suggest your contribution to the organizers. For more information please contact the Conference Chair or the IPC Scientific Secretary. We hope to see you in beautiful Durban in July 2002!

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