December 31, membership will be terminated automatically by that date;

- If no payment has been received by October 1 of year x, a second reminder is included with the invoice for year x+1, again mentioning that membership will be terminated automatically by December 31 if no payment is received before that date;
- If no payment has been received before or at December 31, membership will be terminated, without notice.

It is hoped that these actions will help clarify the members' duties, and will reduce IASC costs for nonpaying members.

Henk Kiers. Treasurer IASC

2. Membership details on IASC Web page

IASC Council endorsed the partial listing of membership details on the IASC Home Page (see below).

The information listed is limited to:
Line 1: Title and name (as provided)
Line 2: Department and Institution (if provided, otherwise blank)
NOTE: "private" addresses NOT to be listed
Line 3: Country
Line 4: E-mail address (if provided)
Line 5: Fax address (if provided)
The information included is similar to that available for other Societies, such as the Institute for Mathematical Statistics.

If you do not wish this information about you to be made available, please inform the Scientific Secretary

3. A meeting of IASC Council will be held during IASC Second World Congress, Pasadena, 19-22 February, 1997.

Topics under discussion on the Preliminary Agenda of this meeting include:
Improving benefits to members
Future meetings
IASC Publications
Leading Edge meetings
Co-operation with other ISI Sections

PUBLICATIONS

International Statistical Review

The *International Statistical Review* is the review journal uniquely positioned to serve the international statistical community in providing high quality and timely review articles. As the flagship journal of the International Statistical Institute it reaches a large community of diverse interests. To reflect and strengthen that diversity, greater editorial responsibility has recently devolved to the sections of the ISI. For the IASC, this means that we now have the opportunity to showcase statistical computing review papers to a wide statistical audience. To help us move the journal in this direction, I urge members to prepare and submit high-quality articles to the *IS Review*. The criteria for a good review article will depend on the area and the nature of the contribution, so there is a great deal of flexibility in interpreting the term "review." Good review papers could be on computationally intensive methodology, algorithms, graphics, statistical databases, programming environments, programming languages, computational history, applications, and other topics at the interface between computing and statistics. This includes papers on mature topics as well as expository articles on new, emerging areas. Also of interest are papers that discuss statistical computing issues and applications in contemporary topics of broad interest in science and technology, business and industry, public policy, health and medicine, the environment, and so on.

In addition to these, the editors also see the journal as a forum for discussion of issues involving the statistics profession as a whole: where we are, what the future needs and challenges are, and what the statistical community should be doing to respond to these challenges—"white-papers" and discussions that deal with these issues could be published.

As one can see, there is a lot of scope for interesting review articles and for being creative.

Potential authors as well as readers with suggestions are strongly encouraged to contact myself, the editors, or any one of the other associate editors.

I look forward to your contributions in making the *IS Review* a high-quality journal of wide interest to the IASC membership and to the wider statistical and scientific community.

R.W. Oldford,
Associate Editor (IASC), International Statistical Review; (rwoldford@uwaterloo.ca)

Malcolm Hudson

INTERNATIONAL ASSOCIATION FOR STATISTICAL EDUCATION

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NOMINATIONS FOR NEW OFFICERS SOLICITED

Once again, it is time to begin the process of electing a new Executive Committee for IASE. The elections of 1997 will produce the third leadership group for IASE since it's inception. The first two have labored to make IASE a viable organization with impact on statistics education around the world and have successfully placed the organization on a firm footing. It will soon be up to a new Executive Committee to build on this foundation as it takes IASE to new heights. Please give serious thought to this matter so that we can produce a slate of nominees with energy and vision. Send your nominations by to the current president, Dr. Anne Hawkins, at the address provided above.

The current Executive Committee consists of:
-President: Anne Hawkins (UK)
-President-Elect: Maria Gabriella Ottaviani (Italy)
-Vice-Presidents: Manfred Borovcnik (Austria)
-Abdelmegid Farrag (Egypt)
-Brian Phillips (Australia)
-Richard Scheaffer (USA)

A SUMMARY OF RESEARCH ACTIVITIES IN CHANCE AND DATA PRESENTED AT PME 20, VALENCIA, SPAIN, JULY, 1996.

Dr. Robert Peard, Queensland University of Technology, Brisbane.

An international group studying the Psychology of Mathematics Education held their 20th meeting during the summer of 1996. At this meeting, reported research in stochastics focused on conception and cognition (including misconceptions), assessment issues and the influence of social and cultural factors.

Jenni Way (Australia) reported research examining strategies that young children use for comparing two types of random generators. Her conclusions generated much discussion about the fundamental nature of chance and whether the recognition of equivalent representations implied intuitive conceptual understanding. C. Batanero and L. Serrano (Spain) and J. Garfield (USA) presented results from a large study of over 300 secondary students' use of heuristics and biases, while Kath Truran (Australia) reported on the use of similar heuristics by younger children. E. Fischbein (Israel) reported that the evolution of probabilistic misconceptions with age is rather divergent. Graham Jones and colleagues from Illinois (USA) outlined a large study to determine conceptions of randomness and independence using a newly developed taxonomy to analyses responses and make use of the results to inform instruction.

John Truran (Australia) questioned the heuristics used when children predict outcomes from random generators whose outcomes are not equally likely. Robert Peard (Australia) claimed that the assumption of equal likelihood when none exists is a

type of misconception that is distinct from the others reported in the literature, and is widespread. It was noted in the discussion that in some recent research reports in the field the term "fairness" is used to mean "equally likely", when in fact "mathematical fairness" does not imply this. Furthermore, childrens' informal use of the term usually does not imply equal probability. Most introductory courses in probability start with equally likely situations and it was suggested that further research should be undertaken to examine whether this is an appropriate pedagogy.

In the field of Statistics Education, research focused on the provision of service courses, statistical innumeracy and cultural factors. John Truran in discussing service courses for economics students spoke of the "social conflict" generated by the modern approach of the "intelligent interpretation of data" in a society that does not encourage critical reasoning. Sue Gordon (Australia) described difficulties in the provision of service courses for nurses and psychologists while Linda Gatusso (Canada) discussed data handling in service courses in which no "mathematics" was required. A common question in the discussion of such courses was how much mathematics is needed to be able to use statistics. Can one, for example, use a Chi-squared test effectively without any knowledge at all of probability distributions? It was agreed that further research in this area is needed.

Future Plans

This Discussion Group will continue as a Working Group, and would be happy to receive new input from anyone interested in this area. Three tentative issues have been put forward at this stage:

(a) the development of a research agenda;

(b) the encouragement of research to examine the links between research into the psychology of the teaching and learning of probability and statistics and actual practice in the classroom;

(c) co-operation with the Advanced Mathematical Thinking Group of PME to contribute a chapter on advanced statistical thinking to a book which they are planning.

Contact with the Working Group will be via the list-server operated by the International Study Group for the Teaching and Learning of Probability and Statistics. Readers who wish to be placed on this list server should contact Carmen Batanero, University of Granada, Spain at **atanero@goliat.ugr.es**

STATISTICS AND PROBABILITY AT THE SECONDARY LEVEL: REPORT FROM ICME 8

Tibor Nemetz., Mathematics Institute of the HAS, P.O.Box 127, H-1364 Budapest, Hungary, E-mail: nemetz@math-inst.hu

The aim of Topic Group 9 at the eighth International Congress on Mathematics Education was to highlight issues involved in, and to provide directions for the future for, the teaching of statistics and probability at the secondary level. The program included an overview of the state of the art of each of these topics, discussions on children's understanding of the basic concepts of probability and statistics, and general issues such as curriculum, assessment, teacher training, and use of technology. Work was organized in 3 Sessions with invited short communications and a Forum raising some important questions. Listed here are the talks with the authors' e-mail and key words or sentences. Please contact the authors for further information. It is intended that the complete texts will be edited and available free by the end of the year from the chief organizer, Brian Phillips <bhillips@swin.edu.au>, to be published by the courtesy of his institution, The School of Mathematical Sciences, Swinburne University of Technology, Australia.

Session 1A Probability at the Secondary Level

(1) "Overview of teaching of probability in secondary schools"

Part I. Tibor Nemetz (Hungary) *nemetz@math-inst.hu* summarized responses from several countries to a questionnaire withquestions on content and methodological issues, experiences in classroom practice, and inclusion on national school examinations.

Part II. Manfred Borovcnik (Austria) *manfred.borovcnik@uni-klu.ac.at* discussed and analyzed recent trends both in practice and research.

(2) "Views on probability as reflected by student-teachers"

Yasar Ersoy (Turkey) *yersoy@tutor.fedu.metu.edu.tr* summarized opinions of student teachers about their views and experiences from the time they attended secondary school, and how these views were reconsidered having attended a university course.

(3) "Statistical Independence - One Concept or Two?"

John & Kath Truran (Australia), *jtruran@arts.adelaide.edu.au* argued that there are two quite different types of statistical independence. These were defined and it was shown that such a classification helps to remove some of the common logical and pedagogical difficulties.

Session 1B Data Analysis in Secondary Schools

(1) "International overview of data analysis within the mathematics curriculum"

Susan Starkings (UK) *starkisa@vax.sbu.ac.uk* gave an overview of the implementation of data analysis in various countries (e.g. USA, UK, Pakistan). She compared and contrasted data analysis in these countries and elucidated the importance of data analysis within the mathematics curriculum.

(2) "Curriculum issues in United States Schools"

Gail Burrill (USA) *gburrill@macc.wisc.edu* reported that the National Science Foundation has funded a variety of curriculum projects for primary, middle and secondary level that include data analysis as an appropriate and meaningful part of the curriculum. Examples selected from these projects were used to give some indication about the direction data analysis seems to be taking in the United States and how this is reflected in the schools.

(3) "Data analysis in secondary education in Hong Kong - curriculum, examination and project"

Shir-Ming Shen (Hong Kong *HRNTSSM@hkucc.hku.hk* stated that, in the first five years of the secondary school education in Hong Kong, all students have to learn some descriptive statistics within the compulsory mathematics curriculum. The syllabus, the way that data analysis is taught and examined, and the advantages and disadvantages of the situation were discussed.

(4) "An Argentinian experience of statistics teaching for masters of high school"
Teresita Teran (Argentina)
<maverick@rosario.com> informed the group of a federal law passed in 1993 in Argentina that established "Statistics and Probability Notions" as one of the 8 compulsory blocks in the school curriculum. As the teachers had not studied statistics in their degree, a process of training was organized. Experiences with these programs were discussed.

(5) "Emerging issues for research on teaching and learning probability and statistics"

Mike Shaughnessy (USA) *mike@fpa.lh.pdx.edu* reflected on some of the recent developments in research in the area of stochastics, and raised some issues for future exploration. Among the most needed studies are in depth studies over time that document students' and teachers' growth in the teaching and learning of probability and data handling.

Session 2. General Issues in Teaching Probability and Statistics in Secondary Schools

(1) "Assessing students' interpretations of data: Conceptual and pragmatic issues"

Iddo Gal (Israel) *iddo@research.haifa.ac.il* asserted that, in recent years, little attention has been given to the complex issues involved in assessment of students' emerging knowledge and understanding. This talk examined some conceptual and pragmatic aspects of assessment of students' interpretations of data.

(2) "Teachers of Statistics - Needs and Impediments"

Anne Hawkins (UK) *ash@maths.nott.ac.uk* reported that relatively few teachers of statistics have received adequate training in the statistical equivalents of these areas. For a variety of reasons, some of which were outlined, this state of affairs is persisting. Possible remedies were discussed.

(3) "Technology and the teaching of statistics"

Kay Lipson (Australia) kll@stan.xx.swin.oz.au reviewed the role of technology in statistics

education, with the following classifications: technology which enhances the statistical capabilities of the user and technology which aims at developing and furthering the statistical understanding of the user. The rationale behind each of the above was elaborated and appropriately illustrated using data obtained from the Internet.

A forum chaired by Peter Holmes *p.holmes@sheffield.ac.uk* addressed the question "How statistics and probability can best be incorporated into the overall school program?" In this, a number of questions were raised which mainly related to issues of probability and technology. A general discussion completed the session.

ICOTS 5 UPDATE

ICOTS 5 will be held at Nanyang Technological University, Singapore from 23 - 28 June 1998. Details of the conference may be obtained on http://www.nie.ac.sg:8000/~wwwmath/icots.html.

The theme of the conference is Statistical Education: Expanding the Network.

Visitors from the Northern Hemisphere might be able to fit this Conference in with either or both of the MERGA (Mathematics Education Research Group of Australasia) Conference at the Gold Coast, near Brisbane, Australia, and the (PME) Psychology of Mathematics Education Conference at Stellenbosch, near Cape Town, South Africa. These will be held in July; final dates are not yet available.

One section of the ICOTS Conference will be devoted to Cultural and Historical Factors in Statistical Education. Although the history of mathematics and mathematics education has attracted increasing interest in recent years, this interest has only just started to reach statistics and statistics education. So the section fits very well into the Conference Theme. Six papers from four countries were presented at ICOTS 4 in 1994. These addressed issues of curriculum development, and biographies of statistical educators and institutions. At least two 90 minutes sessions at ICOTS 5 will be devoted to this topic. Presentations will take 20 minutes; there will be time for 10 minutes discussion of each paper and a suitable person is being sought to provide a critical response to all the papers and to indicate possible directions for future work.

Papers will be published in the Conference Proceedings and should provide results of new research.

Anyone who would like to present a paper to this section of the conference is invited to apply to John Truran, Graduate School of Education, University of Adelaide, South Australia 5005, or on *jtruran@arts.adelaide.edu.au.* The second announcement will be printed in March 1997, so early communication is desirable.

INTERNATIONAL ASSOCIATION FOR OFFICIAL STATISTICS

Editor and President of the Society: Professor Denise Lievesley, ESRC Data Archive, The University of Essex, Colchester, Essex CO4 3SQ, UK. Tel: 44 1206 872009; FAX: 44 1206 872003; e-mail denise@essex.ac.uk; http://dawww.essex.ac.uk/

5th IAOS INDEPENDENT CONFERENCE

The 5th IAOS Independent conference took place in Iceland in the first week in July and proved to be a very special experience. Several of the participants have told me that it was the most rewarding conference from an intellectual perspective and also the most exciting socially. I wish to endorse that view. The credit for this lies mainly with Hallgrímur Snorrason the Director General of Statistics Iceland and his colleagues. They were the perfect hosts and the conference was a model of smooth organisation but all this was accomplished with a very friendly face.

Denise Lievesley and Hallgrímur Snorrason

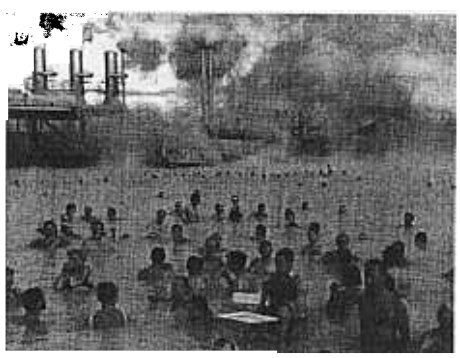
There were about 200 participants of whom 50 came from Iceland and the remaining 150 came from 36 countries, from all continents. This included 14 Directors-General of Statistics from 13 countries and international organisations in Europe, Asia and Oceania. Some 50 accompanying persons enjoyed the fun and unusual social programme.

The conference comprised eleven scientific sessions. 58 papers were presented in the first ten sessions and one paper in the final session presented very ably at the Conference Dinner by Hallgrímur Snorrason ! This was his opportunity, unanticipated by the participants, to take a light hearted look at the conference organisation, and to experience first hand the issuing of a red card - now the IAOS conference way of telling presenters they have over-run their allotted time.

The issues discussed at the conference included the need to reduce the response burden on businesses whilst securing timely and accurate information from them, and the ways in which new technology might aid this process; the measurement and improvement of quality in the context of using administrative records for statistical purposes and the combination of data from administrative sources with that from surveys; and the exchange of experiences of advanced and innovative ways of using geographic information systems for producing and presenting statistics relevant to urban and regional planning. The IAOS is an association to bring together users and producers of statistics. Unfortunately we do not have a large membership of users (if you are a user of official statistics and would like to get involved in our activities I would be pleased to hear from you). Therefore only a handful of non-official statisticians were present in Iceland to hear the fascinating and heartening sessions on creating user-oriented statistical agencies and examining new ways, including the Internet, to disseminate official statistics. These were very fruitful exchanges of information and ideas which we will pick up again at future IAOS meetings.

Two demonstrations were given by sponsors of the Conference -Ivision Datasystems Inc showed their 'visual toolset' and Samsyn Ltd their GIS software. Statistics Iceland are currently working on the conference proceedings. When these are available - probably in November- we will advertise the fact on the web pages at http://www.cbs.nl/isi/section4.htm

The social programme was hugely enjoyable with two splendid receptions, a magnificent dinner dance, an evening at the thermal pool, the Blue Lagoon, and a day's tour of the South West of Iceland. Iceland was the star !! it is such a stunningly and starkly beautiful country with richly coloured mountains, wonderful waterfalls and vast glaciers. In the ISI meeting in Madrid in 1983 the organisers dressed us in fancy dress and sent us to the funfair. Inhibitions were abandoned and hitherto reserved statisticians had fun. In Iceland this was achieved by getting us to abandon our working clothes to enjoy blue cocktails whilst steaming ourselves in the Blue Lagoon !



Group of participants at the Blue Lagoon