

Welcome to the Proceedings of IASE's 9th International Conferences on Teaching Statistics (ICOTS9): Conference theme “Sustainability in statistics education”

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The International Conferences on Teaching Statistics (ICOTS) are a key forum for of interchange that the International Association for Statistical Education (IASE) offers to the community of educators, professionals, and researchers interested in statistics education.

IASE: Our association was created in 1991 as a section of the International Statistical Institute (ISI) and is the international umbrella organization for statistics education. IASE seeks to promote, support and improve the teaching, learning, understanding, and use of statistics and probability at all educational levels and in both formal (class-based) and informal (out-of-class) contexts, around the world. IASE acts to foster international cooperation and stimulate discussion and research in these areas, and disseminates ideas, strategies, research findings, and educational resources using publications, conferences, and its website: <http://iase-web.org>.

ICOTS: well before IASE was established, the ISI Education Committee decided to hold the first International Conference on Teaching Statistics in 1982. Since then, an ICOTS has been held every 4 years in a different part of the world, lastly in 2010 in Ljubljana (Slovenia), and in 2006 in Salvador (Brazil). ICOTS meetings offer professionals from many fields (e.g., statistics, mathematics, psychology, education, business, and other disciplines), practicing teachers, graduate students, and other stakeholders, a constructive working forum. Participants can present the results of their research and work, share and discuss ideas in an informal, supporting atmosphere, and network and learn of innovations and developments around the world. The ICOTS conference proceedings, which are hosted on the IASE website, have made a valuable contribution to statistics education as an interdisciplinary field of research and practice.

About ICOTS9: The current 2014 conference is organized around the theme “Sustainability in statistics education”. Here are just a few examples of how this theme manifests itself:

- sustaining student engagement and interest in learning statistics across the diversity of student capabilities and motivations;
- sustaining the development of high-quality research and scholarship in statistics education;
- sustaining the professional development of individuals who teach statistics;
- sustaining progress in developing statistical literacy of citizens, journalists, politicians; and school pupils, despite pressures in school curricula and government funding;
- sustaining collaborations that support statistics education, including the involvement of national and international statistical offices and other statistics producers;
- sustaining capacity building for high-quality statistics education in developing and developed countries alike;
- sustaining innovation in the development of effective technologies that can help the teaching, learning, and understanding of statistics, whether as part of classroom instruction or by citizens who access official statistics.

Surely, the list could go on. But I hope the point is clear: The ability and inclination of learners, teachers, professionals, and citizens to understand, use, and communicate about statistics and probability do not evolve by themselves. Good statistics education need a lot of "sustaining" in our ever-changing world!

The ICOTS9 Scientific Program involves, among other things: 5 plenary sessions, over 65 Invited sessions with over 190 invited talks and panels, close to 40 sessions with about 160 contributed papers and 50 posters, 6 preconference hands-on workshops (including an IASE-sponsored workshop in Spanish), and other events and is complemented by a rich social program. Thus ICOTS9 lives up to its reputation as the high point in international gatherings on statistics education.

The proceedings include abstracts and papers of the Plenary talks and of the Invited Papers which are organized around the 10 main topics listed below, as well as Contributed Papers and abstracts of Posters, and other elements:

- Topic 1: Sustaining strengths and building capacity in statistics education,
- Topic 2: Statistics education at school level,
- Topic 3: Education and development of staff who teach statistics,
- Topic 4: Statistics education at the post-secondary level,
- Topic 5: Statistics education in the disciplines and the workplace,
- Topic 6: Innovation and reform in teaching probability within statistics,
- Topic 7: Statistical literacy in the wider society,
- Topic 8: Research in statistics education,
- Topic 9: Technology in statistics education,
- Topic 10: Innovative collaboration in statistics education.

ICOTS9 = many people involved, lots of hard work - Thanks! The papers, sessions, and workshops presented at the conference itself and in these proceedings, and the ICOTS9 scientific and social programs with all their underlying elements, are the product of the joint efforts and hard work of the International Program Committee (IPC), the Local Organizing Committee, the Proceedings Editors, and of the Topic Convenors, Session Organisers, all the authors and the referees, who are too numerous to be listed by name here but their details appear elsewhere in the Proceedings or on the ICOTS9 website. In addition, the planning and organization of ICOTS9 have been helped and supported by numerous IASE members who served on various Executive committees and in leadership roles within IASE over the last few years, and by the ISI Permanent Office. On behalf of the IASE, I would like to express our gratitude to all of them.

In particular, the IASE is grateful to the following people and organizations that made ICOTS9 possible and contributed to the conference in different and important ways:

- **International Program Committee:** Tim Dunne (University of Cape Town, South Africa), IPC Chair; Gillian Lancaster (Lancaster University, UK), Scientific Coordinator; Katie Makar (University of Queensland, Australia), Proceedings Editor-in-Chief; Roxy Peck (California Polytechnic State University, USA), Local representative at the IPC; Helen MacGillivray (University of Queensland, Australia), Programme Scheduler; John Shanks (University of Otago, New Zealand), Information Manager.
- **Local Organizing Committee:** Roxy Peck (California Polytechnic State University, USA), Chair; Allan Rossman (California Polytechnic State University, USA); Roy St. Laurent (Northern Arizona University, USA); Brent Burch (Northern Arizona University, USA); Ronald Wasserstein (American Statistical Association, USA).
- **Proceedings editors:** Katie Makar (University of Queensland, Australia), Editor-in-Chief; Bruno de Sousa (University of Coimbra, Portugal), co-editor; Robert Gould (University of California, Los Angeles, USA), co-editor.
- **Sponsors:** Key sponsors include the International Statistical Institute, World Bank, American Statistical Association, Northern Arizona University, and International Association for Statistical Education. Other sponsors include SAS Institute Inc. JMP Division, OpenStax College, Cengage Learning, Wiley, and Minitab.