ICMI

ICMI Newsletter 26

A Newsletter from the ICMI-International Commission on Mathematical Instruction

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1. Editorial – From the desk of ICMI Vice President Cheryl Praeger

Welcome to the March 2014 edition of ICMI News, and best wishes for 2014. I am one of the ICMI Vice Presidents, and have the privilege of serving the world-wide Mathematics Education community through the 2013-2016 term of the ICMI Executive Committee. I am a mathematician and also a member of the executive committee of ICMI's parent union, the International Mathematical Union (2007-2014). A major part of my contribution to ICMI is through liaison with the IMU, and through my perspective and networks as an academic mathematics researcher and teacher. For more than 30 years I have worked on national

educational and mathematical bodies in Australia, including terms on the Australian Government's Curriculum Development Council and Prime Minister's Science Council, and recently I was elected Foreign Secretary of the Australian Academy of Science. It is a pleasure to serve at the international level through ICMI.

Strong links between ICMI and the various mathematical sciences have great benefit for each, and for the wider community. Both mathematics and mathematics education benefit from including mathematicians on the ICMI Executive, and from

working together on mathematical initiatives. Indeed the great mathematician Felix Klein was ICMI's first President (1908-1920), and his seminal contributions are celebrated both through ICMI's Felix Klein Award for lifetime achievement in Mathematics Education, and the Klein Project launched in 2008 to support mathematics teachers to connect the mathematics they teach with the field of mathematics, taking into account the evolution of mathematics over the last century. A short and readable biography of Felix Klein, along with biographies of many other mathematicians who have served ICMI over the last hundred years can be found on the history of ICMI website launched on the occasion of the ICMI centennial conference (Rome 2008) at http://www.icmihistory.unito.it/

The first joint ICMI Study was completed in 2011. It was Study 18: "Statistics Education in School Mathematics: Challenges for Teaching and Teacher Education", and was organized collaboratively by ICMI and the International Association for Statistical Education (IASE). The most recent ICMI Study completed was also organized jointly, this time with the International Council for Industrial and Applied Mathematics (ICIAM). It is Study 20: "Educational Interfaces between Mathematics and Industry" (see later in this newsletter).

I commend to ICMI News readers the forthcoming International Congress of Mathematicians (ICM) to be held in Seoul, Republic of Korea, August 13-21, 2014. Registration is now open: http://www.icm2014.org/en/participants/registration/information
The ICM will feature a special section "Mathematics Education and Popularization of Mathematics" involving two lectures and several panel discussions, addressing "all aspects of mathematics education, from elementary school to higher education, mathematical literacy and popularization of mathematics" (http://www.icm2014.org/en/program/scientific/topics)
Meanwhile, the ICM Organising Committee has produced a very attractive mathematical calendar (see the last section below).

Several other ICMI initiatives will also be celebrated and reported on later in this newsletter, including the wonderfully successful Capacity and Networking Project (CANP) Cambodia led by the immediate past ICMI President Bill Barton in September 2013 in Phnom Penh. Meanwhile the ICMI Executive is working towards new initiatives: a new ICMI Study and a new ICMI award (see below). I hope you enjoy this edition of ICMI News in its new format, for which we thank the IMU Secretariat (especially Lena Koch).

2. The Emma Castelnuovo Award for Excellence in the Practice of Mathematics Education

The Executive Committee of ICMI has decided to create a third award alongside the Felix Klein Award and the Hans Freudenthal Award. The new award will recognize outstanding achievements in the practice of mathematics education in order to reflect a main aspect of the ICMI essence not yet recognized in the form of an award. The new award will be named after Emma Castelnuovo, an Italian mathematics educator born in 1913, in celebration of her 100th birthday and honoring her pioneer work.

The Emma Castelnuovo Award for outstanding achievements in the practice of mathematics education will honor persons, groups, projects, institutions or organizations engaged in the development and implementation of exceptionally excellent and influential work in the practice of mathematics education, such as: classroom teaching, curriculum development, instructional design (of materials or pedagogical models), teacher preparation programs and/or field projects with a demonstrated influence on schools, districts, regions or countries. The Emma Castelnuovo

Award seeks to recognize and to encourage efforts, ideas and their successful implementation in the field, as well as to showcase models and exemplars of inspirational practices to learn from.

As for the existing awards, this award will consist of a medal and a certificate, accompanied by a citation and will be awarded only once every four years (and not once every two years as is the case with the other two awards). It will be officially delivered at the International Congress on Mathematical Education (ICME) during the opening ceremony alongside the Klein and Freudenthal awards.

Professor Ferdinando Arzarello, ICMI's President, has appointed an ad-hoc Committee, separate from the existing committee established for the two other awards. Jeremy Kilpatrick was appointed the first Chair, and five other recognized and experienced scholars were appointed as Committee members and their names will remain confidential throughout their tenure. These members come from five different countries (each from a different continent). The Committee is completely autonomous, its work and records will be kept internal and confidential, except for the obvious process of soliciting advice and information from the professional community, which is done by the committee chair.

A call for nominations follows.

Nominations sought for the first ICMI Emma Castelnuovo Award

The Emma Castelnuovo Award Committee is pleased to announce that nominations are being accepted for the first ICMI Emma Castelnuovo Award. The recipient of the award will be announced early in 2015, and the award will be conferred at the 13th International Congress on Mathematics Education in July 2016 in Hamburg, Germany. The awardee (or its representative in the case of an institution, project, or organization) will be invited to present a special lecture at the Congress.

The Emma Castelnuovo Award will celebrate outstanding achievements in the practice of mathematics education. It will honor persons, groups, projects, institutions, or organizations that have done exceptionally excellent and influential work in our field. Nominees will be evaluated in light of the following criteria:

- the educational rationale for the candidate's work and what served as a catalyst for that work;
- the problems addressed by the candidate;

- the candidate's role in addressing the problems, whether they involve curriculum development, teacher education, professional development, design of instruction, or other areas of mathematics education practice;
- the conditions under which the work has taken place (the cultural and political context, infrastructure, funding, and people involved);
- the originality and creativity involved in how the candidate has addressed problems and overcome obstacles;
- the quality of networking with other key stakeholders (e.g., bridging theory and practice);
- external or internal evaluations of the work, if available;
- the extent of the influence of the work on educational practice, including quantitative or qualitative evidence of that influence; and
- the potential of the work to serve as a model (either for inspiring others addressing similar problems or because of taking an approach that could be applied elsewhere with appropriate modifications).

Nominations for the Emma Castelnuovo Award should include the following:

1) a document (max 5 pages) describing the nominee's programme and reasons for the nomination (including the nominee's impact on the field);

2) a one-page summary statement;

3) an account of the genesis and dissemination of the nominee's work and the roles of the people involved, with brief curricula vitae of the key persons (max 10 pages);

4) electronic copies of three publications that reflect the nominee's work related to the practice of mathematics education (e.g., journal articles, textbooks, other instructional materials, or CD-ROMs);

5) three letters of support (from different stakeholders and, if possible, from different countries); and

6) the names and e-mail coordinates of two persons who could provide further information, if needed.

All nominations must be sent by e-mail (jkilpat@uga.edu) to the Chair of the Committee no later than December 15, 2014.

Jeremy Kilpatrick,
Chair of the ICMI Castelnuovo Award Committee
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USA

3. NEWS IN BRIEF

- The book resulting from ICMI Study 20 entitled "Educational Interfaces Between Mathematics and Industry" has been published in December, 2013. For more details, refer to http://www.mathunion.org/icmi/news/details/?tx_ttnews%5Btt_news%5D=861&cHash=74e81cfcae1ac8262500b9564c5cdac2

- The ICMI Study 23 – "Primary Mathematics Study on Whole Numbers" was launched in January 2014 in Berlin with the first meeting of the International Program Committee chaired by Mariolina Bartolini and Sun Xuhua. The Discussion Document will be distributed in the near future and the Study Conference will take place in 2015 in Macau, China.

ICMI Study 23, IPC Meeting
Berlin, January 2014

- CANP (Capacity and Network Project) will take place in Dar es Salaam, Tanzania, September 1-12 and will gather about 45 participants from four East African countries. For details, http://www.mathunion.org/icmi/other-activities/outreach-to-developing-countries/canp-project-2014-east-africa/

- The next meeting of the Klein Project will take place in Rio de Janeiro, Brazil, during the week of 14-17 of April, 2014, and will be hosted by IMPA (Instituto Nacional de Matemática Pura e Aplicada).

Klein Project Team, September 2013

- ICME 13, which will take place in Hamburg in 2016, has already announced all the details of the plenary activities (lectures and panels), the thematic afternoon, the invited lectures (called regular lectures in previous conferences) and the Survey teams. See http://icme13.org/

- The website **Experiencing Mathematics** contains a virtual exhibition addressed to secondary school teachers and their students. It has been initiated and supported by UNESCO and it contains more than 200 mathematical situations which provide opportunities to experiment, try out, make hypotheses and try to prove them. It exists in five languages: English, Spanish, French, Portuguese and Arabic.
  The respective Pdf files can be downloaded from:
  http://www.experiencingmaths.org/pdf/DOCMATH_EN.pdf
  http://www.experiencingmaths.org/pdf/DOCMATH_SP.pdf
  http://www.experiencingmaths.org/pdf/DOCMATH_FR.pdf
  http://www.experiencingmaths.org/pdf/DOCMATH_PT.pdf
  http://www.experiencingmaths.org/pdf/DOCMATH_AR.pdf

- The Banff International Research Station (BIRS, http://www.birs.ca/) is a joint Canada-US-Mexico initiative to facilitate collaborative research in mathematics and its applications to science and industry. BIRS is located in the Rocky Mountains and it provides accommodation, board, and facilities needed for research encounters. Every year, over 2000 researchers from 400 institutions in more than 60 countries participate in over 70 different workshops. Starting in 2015, additional workshops will also run in a newly created facility called

the Casa Matemática Oaxaca (CMO) in San Agustín Etla, Mexico. The new research facility will also host summer schools and math education workshops for high schools teachers and students. (https://www.birs.ca/announcements/2014-02-07/mexico-funding-for-oaxaca)

4. Zoltan Dienes, In Memoriam

The Hungarian mathematician Zoltan Dienes has passed away on January 11, 2014 at the age of 97. His ideas and his work had a strong influence in mathematics education in many countries. Details about his interesting biography and the scope of his work can be found both in French and in English at

http://www.cfem.asso.fr/actualites/dienes_2014

5. Have you read?

- The new edition of "Ethnomathematics and Education in Africa" edited by Paulus Gerdes is a reprint of a book originally published in 1995 by the Institute of International Education of the University of Stockholm (Sweden). The book contains a collection of papers on mathematics education and African cultures, dating from the period 1986-1992, published in international journals such as "For the Learning of Mathematics", "Educational Studies in Mathematics" and "Historia Mathematica." The book can downloaded for free at http://www.lulu.com/shop/paulus-gerdes/ethnomathematics-and-education-in-africa-ebook/ebook/product-21423875.html

- A very nice "mathematical calendar" was created by the Seoul ICM Organising Committee. It is based on mathematics easily accessible to students from junior high school onwards, and can be downloaded from http://www.icm2014.org/download/calendar-ICM2014-A4.pdf

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