

ICMI

ICMI Newsletter

A Newsletter from the ICMI-International Commission on Mathematical Instruction

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1. From the desk of Jill Adler, President of the International Commission on Mathematical Instruction (ICMI).



I write this piece on the train, travelling from Utrecht, where I have participated in the CERME11 conference, to Berlin where we will hold the first IPC meeting of the newly launched Study 25. This travel is part of a busy start to a busy year for the current ICMI Executive Committee, and it also marks the mid-point or half-way mark of our (this EC's) term of office. It's a good time and a convenient place to reflect back on what we have worked on since taking office at the beginning of 2017, and what lies ahead in the last two years.

In its first year, each EC has to become familiar with the ICMI tasks and challenges for which it is now responsible.

The EC also needs to establish a working committee and the social relations that go with it. A key initial task is to work on the ICME that will take place during the EC's term in office – in our case ICME14 in Shanghai – and to prepare the ground for the next one. In 2017 we had the first International Program Committee meeting for ICME14 in Shanghai and I wrote on our deliberations in the November 2017 issue of the newsletter. In what seems like no time, though I know how hard the LOC for ICME14 has been at work, the second IPC meeting is almost upon us. The IPC will travel to Shanghai again next month to finalize the Second Announcement and work with the LOC on all the scientific planning for the conference.

Having just participated in CERME, the biennial conference of the European Society for Research in Mathematics Education (ERME), and one of ICMI's affiliate organizations, I have been reflecting on the importance of the various regional activities that take place, linked in various ways to ICMI.

CERME11 marked the 20th anniversary of CERME, and as Barbara Jaworski reflected in the panel discussion, ERME is a success story. There were 900 participants, established and emerging researchers across many topics of interest and study. I was afforded an opportunity in the opening session to express ICMI's appreciation for the links with its affiliate organizations, as well as share the ICMI important activities up ahead.

In the past year, I attended two other regional activities in mathematics education – EARCOME8 in Taiwan in May 2018 and AFRICME5 in Tanzania in August 2018. Like CERME, these ICMI regional conferences exhibited their own success story. EARCOME8 was a time and place for mathematics education research and practice in East Asia to be in the foreground and shared; and AFRICME for the extension of research in mathematics education in Southern and Eastern Africa to shift from a focus in the South in previous AFRICMEs to the East in this conference. The strength of ICMI as an inclusive and expansive international community of and for mathematics education is a function of strong regional networks. It has been a highlight of my term in office so far to experience this regional-international interface within and across continents.

Continuing this theme, we have been fortunate to be able to organize our next EC meeting to take place in Uruguay, thanks to the generosity of the local mathematics education community to host us just a few days before they hold their annual national meeting on mathematics education in which two ICMI EC members will deliver plenary lectures. This EC meeting will take place in the days before CIAEM in Medellin, Colombia, where two other members of the ICMI EC will deliver plenary lectures. This will be another opportunity for us to experiencing this inter-American regional conference, where the work of our colleagues in Latin America will be in focus.

Elsewhere in the newsletter we share the developments we have made with CANP, and look forward to progress in each of the five regions over the next two years.

And returning to where I began this piece, pointing to the first task of the EC being ICME14 and its preparation, so now as we move into the second half of our term, we head off for site visits and the process of selecting the site for ICME15 in 2024. The selected site will be announced in the July 2019 issue of this Newsletter.

At the same time, the work has begun to develop the slate for the election of the next EC – which will take place in the General Assembly immediately preceding ICME14 in Shanghai. Michèle Artigue was appointed Chairperson of the Nominating Committee (NC). Carlos Kenig (President of IMU) and I (as current ICMI President) form the core of this NC, and we are working with four other members (whose identities are not revealed until after the election), one nominated by each of the IMU and ICMI EC and two randomly selected members from a pool of candidates nominated by ICMI Country representatives. This seven-person committee is looking forward to nominations from our country representatives for the positions of President and Secretary General by April 1, 2019 and for the positions of the two Vice Presidents and five additional members-at-large by June 1, 2019. I encourage country representatives to discuss these important positions with their national colleagues and organizations and make nominations for people who will be willing to work on taking ICMI from strength to strength.

It's a busy year for the EC, and I take this opportunity to thank all its members for their ongoing work. It is worth reminding ourselves that all the work done and the time needed for this is generously given to our collective well-being. Thank you Abraham, Merrilyn, Luis, Jean-Luc, Yuriko, Binyan, Zahra and Anita for your energy and commitment.

Thank you too to all our country representatives for being the communication link between the EC and the communities you serve. We look forward to further ongoing collaboration.

2. Call for Nominations for the ICMI Awards – Important announcement

A revised version of the call for nomination for the three ICMI Awards (including a brief extension of the deadline for submission) can be found at

<https://www.mathunion.org/icmi/awards/icmi-emma-castelnuovo-award-excellence-practice-mathematics-education>

and

<https://www.mathunion.org/icmi/call-nominations-2019-felix-klein-and-hans-freudenthal-awards>

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3. Call for nominations for the ICMI Executive Committee

As described by President Jill Adler in this Newsletter (see item 1 above), the Nomination Committee (NC) has been established and started to work.

Nominations for President and Secretary General should be submitted by April 1, 2019.

Nominations for the two Vice Presidents and for Members-at-large should be submitted by June 1, 2019.

We urge all colleagues interested in proposing nominees to approach their country representatives to ICMI, since all nominations should be submitted by them.

The list of country representatives can be found at

<https://www.mathunion.org/icmi/organisation/our-members/icmi-representatives>

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4. ICMI Study 25 on Mathematics teachers working and learning in collaborative groups Discussion Document

ICMI is happy to announce that the International Program Committee in its first meeting in Berlin (11-13th of February, 2019) produced the Discussion Document (DD) of this ICMI Study (which includes a call for papers for the ICMI Study Conference).

ICMI encourages colleagues to consider submitting papers to the Study Conference.

The full DD can be found at

https://www.mathunion.org/fileadmin/ICMI/ICMI%20studies/ICMI%20Study%2025/190218%20ICMI-25_Discussion%20Document.pdf



Standing (from left to right): João Pedro da Ponte (Portugal), Ronnie Karsenty (Israel), Kelly Lynn Boles (USA, assistant), Ornella Robutti (Italy), Luc Trouche (France), Abraham Arcavi (Israel, ICMI Secretary General), Takeshi Miyakawa (Japan), Rongjing Huang (USA), Despina Potari (Greece, co-chair), Cristina Esteley (Argentina). Sitting (from left to right): Shelley Dole (Australia), Jill Adler (South Africa, ICMI President), Hilda Borko (USA, co-chair),

5. ICMI Study 24 - update

The Study Conference for ICMI Study 24 (by invitation only) took place in Tsukuba, Japan on November 26-30, 2018. The conference was very successful and at present all five Working Groups are working in the writing of the respective chapters for the Study Volume, which is intended for publication during 2020. For details on the conference and the full conference proceedings, see <http://www.human.tsukuba.ac.jp/~icmi24/>

6. PME Regional Conference: South America. A report by PME Vice President David Gómez

The International Group for the Psychology of Mathematics Education (PME) is one of several international Study Groups formally affiliated with ICMI. PME decided in 2016 to support the organization of a series of regional conferences, to strengthen bonds between the international PME community and researchers from regions that are underrepresented in it. The first call for proposals led to the organization of a South American PME Regional Conference in November 14-16, 2018 at Universidad de O'Higgins, a very young institution located in Rancagua, Chile. The conference chairs were David Gómez (Universidad de O'Higgins, Chile) and Wim Van Dooren (University of Leuven, Belgium).



The Regional Conference brought together 61 researchers and students from Chile, Brazil, Colombia, Peru, Germany, Spain, USA, Mexico, Belgium, Ireland, and Denmark. Thanks to the PME support, a sizable number of regional researchers received financial support for their travel and accommodation. The conference theme was “Understanding and promoting students’ mathematical thinking”, emphasizing the role of mathematics education research in helping educators to foster mathematical thinking in their classrooms, and dealing not only with how mathematics education can be made more effective, but also more inclusive and equitable. The opening ceremony introduced attendees to Universidad de O'Higgins (UOH) as well as to the aims of the Regional Conference, and included addresses by the UOH President, Prof. Rafael Correa, and the PME President, Prof. Peter Liljedahl.

The scientific program included three plenary lectures delivered by Merrilyn Goos (Ireland), Marcia Pinto (Brazil), and María Victoria Martínez (Chile). The usual PME presentation formats were also present with 12 research reports, 26 oral communications, and 12 poster presentations. The proceedings are available at <http://www.uoh.cl/pme-regional>. In addition, three “PME sessions” allowed regional researchers to get acquainted with PME as an organization, its goals, scientific activities, and mechanisms to support participation from underrepresented regions. Finally, two group discussion sessions allowed regional and non-regional researchers to share their views on the particular topics, contribution, and challenges of South American mathematics education research, as well as exploring avenues for a closer integration of the South American and PME communities. These sessions additionally provided feedback for a report to the PME International Committee on future regional conferences. The next PME Regional Conference will take place in Moscow, Russia, in March 18-21, 2019. For further information, you can visit <http://education.yandex.ru/pme/en/>

7. A conference honoring Tamás Varga

On the occasion of the 100th anniversary of the birth of the Hungarian mathematics educator, researcher and reform leader Tamás Varga, a conference on mathematics education will be held at the Hungarian Academy of Science.

The main aims of the conference are:

- to celebrate the 100th anniversary of Varga, situating his work in an international context and discussing its relevance for mathematics education today;
- to offer a forum to current international research on mathematics education in different domains;
- to foster the connections between Hungarian research on mathematics education and international research in the field.

The conference will combine different forms of activity: plenary lectures, panels, communication and poster sessions, workshops, as well as presentation of didactic material and videos related to Tamás Varga's work. In order to stimulate dialogue between Varga's heritage and current research in mathematics education, special emphasis will be laid on recent research developments on themes in the focus of Varga's interest. Especially:

- Teaching and learning of specific mathematical themes
- Logic and algorithmic thinking
- Discrete mathematics
- Probability and statistics

Cross-cutting themes

- Inquiry Based Education and the development of learning trajectories
- Manipulatives and semiotic tools in the development of mathematical concepts
- Mathematics education from the early grades on
- Mathematics as playful and creative activity
- Differentiation and diversity in mathematics education
- Teachers' creativity and design capacity

In addition, questions related to the history of mathematics education and to the comparison of different didactical approaches will be addressed.

Call for contributions

Prospective participants are invited to propose contributions on one or several of the themes listed above. Proposals should be submitted by April 30, 2019.

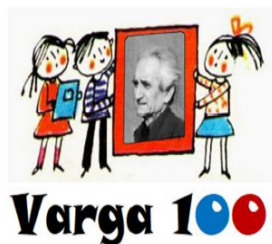
Further information will be available soon on the website of the conference:

<https://varga100.sciencesconf.org/>

Program Committee:

Michèle Artigue (co-chair), Ödön Vancsó (co-chair), Werner Blum, Katalin Gosztonyi (IPC-LOC liaison), Jeremy Kilpatrick, Miklós Laczkovich, Marta Menghini, Eva Swoboda

Chair of the Local Organizing Committee: Csaba Csapodi



Connecting Tamás Varga's Legacy and
Current Research in Mathematics Education

6-8 November 2019, Budapest

Hungarian Academy of Sciences



Once upon a time... Historical vignettes from the ICMI Archive: The (first) ICMI birth certificate. Bernard R. Hodgson, Curator of the ICMI Archive and former ICMI Secretary-General

It is for me a real pleasure, and a great honour, to accept the invitation from the *ICMI News* Editors to launch a column inspired by material drawn from the Archive of ICMI. I hope through these historical vignettes to make better known interesting moments in the life of ICMI, and also to highlight the importance for our community of maintaining a robust archive collection.

It is probably appropriate, at the outset of this journey, to explain briefly what exactly is the ICMI Archive. It exists as a subset of the archive of ICMI's mother organisation, the International Mathematical Union, located (since 2011) in the IMU permanent Secretariat, in the Mitte district of Berlin. One member of the IMU Secretariat staff, Birgit Seeliger, holds the position of IMU Archivist, and she is helped in her work by Guillermo Curbera, Curator of the IMU Archive (appointed by the IMU Executive Committee), and myself as the Curator of the ICMI Archive (appointed by the ICMI EC).



Guillermo Curbera, Birgit Seeliger and Bernard Hodgson (ICME-13, Hamburg)
(Source: IMU Archive)

The material found in the Archive can be divided into six basic categories: *customary archives* (e.g., personal or official letters, reports); the *library* part (e.g., books, proceedings); *artefacts* (e.g., cups or bags from congresses); the *media* archive (e.g., photos); *emails*; and *websites* – all these pertaining of course to IMU/ICMI activities. Part of this material is subjected to an embargo period (up to 70 years), as described in the *IMU Archiving Guidelines* [1].

Most of the ICMI-related documents belonging to the first category are from the years 1952-1997, with a higher proportion from the early decade, as the “archiving sensitivity” of the IMU and ICMI leadership may have varied from one period to the other. There are in practice few archive documents from the very early years of ICMI (predating the establishment of IMU itself in the 1950s).

Although I will sometimes speak in this column of the “ICMI Archive” and the “IMU Archive”, it is in fact a single archive, the distinction being mainly in terms of the material considered.

I now come to this vignette topic: the *birth certificate of ICMI* – or as indicated above, the *first birth certificate*, since ICMI was born again in the 1950s (but that is the topic for another vignette).

The founding of ICMI occurred on the occasion of the 4th International Congress of Mathematicians, held in Rome in 1908. The 2008 centennial symposium – thanks to the diligence of its Italian organisers (Ferdinando Arzarello, Fulvia Furinghetti, Livia Giacardi and Marta Menghini) – was held in Palazzo Corsini, home of the Accademia Nazionale dei Lincei and the very place where ICMI was born, a hundred years earlier.

Here is the document that may be considered as ICMI's “birth certificate”: it is the resolution adopted by the ICM General Assembly requesting Felix Klein, George Greenhill and Henri Fehr to form an international committee in charge of making a study on the teaching of mathematics (at secondary school, but the mandate was quickly expanded to other teaching contexts):

« Il Congresso, avendo riconosciuto la importanza di un esame accurato dei programmi e dei metodi d'insegnamento delle matematiche nelle scuole secondarie delle varie nazioni, confida ai Professori KLEIN, GREENHILL e FEHR l'incarico di costituire un Comitato internazionale che studii la questione e ne riferisca al prossimo Congresso ».

Scan from the ICM 1908 Proceedings [2], vol. I, p. 33
(Source: IMU Archive)

This resolution may be read: “The Congress, having recognized the importance of a careful examination of the programs and methods of mathematics teaching at secondary schools of the various nations, entrusts Professors Klein, Greenhill and Fehr with the task of constituting an international Committee that shall study this question and present a report at the next Congress.” It is slightly modified from a version adopted, at the instigation of David E. Smith, by the congress Section IV (Philosophy, History and Education) and submitted to the General Assembly ([2], vol. I, p. 51 and vol. III, p. 477). Smith had in fact already proposed the establishment of such a commission a few years earlier in *L'Enseignement Mathématique* ([3], p. 469), a journal launched in 1899 which became, at the inception of ICMI, its official organ.

More information about the birth of ICMI may be found in recent papers (e.g. [4], [5], [6]), or on the *History of ICMI* website, edited by Fulvia Furinghetti and Livia Giacardi [7].

Sources

- [1] *IMU Bulletin* 64 (July 2014), Appendix I, pp. 31-34. [www.mathunion.org/membership/imu-bulletins]
- [2] Castelnuovo, G. (Ed.) (1909) *Atti del IV Congresso Internazionale dei Matematici* (Roma, 6-11 Aprile 1908), 3 vols. Rome, Italy: Tipografia della R. Accademia dei Lincei. [www.mathunion.org/icm/proceedings]
- [3] Smith, D.E. (1905) “Opinion de David Eugene Smith sur les réformes à accomplir dans l’enseignement des mathématiques.” *L’Enseignement Mathématique* 7, pp. 469-471.
- [4] Schubring, G. (2008) “The origins and the early history of ICMI.” *International Journal for the History of Mathematics Education* 3(2), pp. 3-33.
- [5] Donoghue, E.F. (2008) “David Eugene Smith and the founding of the International Commission on the Teaching of Mathematics.” *International Journal for the History of Mathematics Education* 3(2), pp. 35-45.
- [6] Furinghetti, F. (to appear) “Challenges, hopes, actions and tensions in the early years of the International Commission on the Teaching of Mathematics.” In A. Karp (Ed.), *National Subcommissions of ICMI and their Role in the Reform of Mathematics Education*. Springer.
- [7] Furinghetti, F. and Giacardi, L., (Eds.), *The first century of the International Commission on Mathematical Instruction (1908-2008)*. [www.icmihistory.unito.it]

10. A review of ICMI Study 23

The February 2019 issue of *Educational Studies in Mathematics* (pp. 193-199) published an extensive review of the ICMI Study 23 volume “Building the foundation: Whole numbers in the primary grades” edited by Maria G. Bartolini Bussi and Sun Xuhua. The review, authored by Jorryt van Bommel and Hanna Palmér, concludes: “...the main aim of the book is to offer a coherent, state-of-the-art representation of the domain. From our perspective, this has been accomplished. ... The book gives a good overview of the field of research on the subject and we can only agree with one of the statements made in the book – whole number arithmetic is not a simple matter!”

ICMI would like to thank again Maria G. Bartolini Bussi and Sun Xuhua for such an important and recognized work.

9. Upcoming Conferences

- The PME Regional Conference on Technology and Psychology for Mathematics Education, will take place on March 18-21, 2019 in Moscow. The submission process has started. <https://education.yandex.ru/pme/en/>
- CIAEM-15 (XV Inter-American Conference on Mathematics Education) will be held in in Medellín, Colombia, May 5-9, 2019. For more information, visit: <http://ciaem-redumate.org/conferencia/index.php/xvciaem/xv>
- Mathematics and its Connections with the Arts and Sciences (MACAS) symposium will take place at McGill University in Montréal from June 18 - 21, 2019. <https://mcgill.ca/macass2019/>

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- MERGA 2019 will be held at the Curtin University Perth, Western Australia from June 30th, 2019 – July 4, 2019 and also feature a Teachers Day on 29th of June, 2019
<http://www.promaco.com.au/events/MERGA/>
 - The next PME Annual Conference will take place in Pretoria, South Africa, from July 7 to 12, 2019
<http://www.igpme.org/index.php/annual-conference>
 - 19th International Conference on the Teaching of Mathematical Modelling and Applications (ICTMA19). will take place at the University of Hong Kong from 21 to 26 July 2019. The co-organizers of ICTMA 19 are International Mathematical Modeling Challenge Committee -Zhonghua (IMMC-Zhonghua) and the Faculty of Education of The University of Hong Kong. <https://www.ictma19.org/>
 - Fifteenth bi-annual conference on Elementary Mathematics Teaching, SEMT '19, to be held from August 18-22, 2019, in Prague. <https://www.semt.cz/>
 - Sixth International Conference on the History of Mathematics Education (ICHME-6) CIRM, Marseille (France), September 16-20, 2019.
https://ak-mg-u.uni-mainz.de/files/2019/01/ICHME_6_1st-Announcement_CfP.pdf
 - 14th International Congress on Mathematical Education (ICME14), July 12-19, 2020, Shanghai, China,
<http://www.icme14.org/static/en/index.html>
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