

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).

• ICMI Awards

It is with enormous pleasure and happiness that ICMI announces the awardees of the 2019 ICMI Felix Klein, the 2019 Hans Freudenthal and the 2020 Emma Castelnuovo medals.



Warm congratulations to:

Professor Emeritus Tommy Dreyfus
Recipient of the ICMI 2019 Felix Klein medal

Professor Gert Schubring
Recipient of the ICMI 2019 Hans Freudenthal medal.

The National Council of Teachers of Mathematics (NCTM)
Recipient of the ICMI 2020 Emma Castelnuovo medal.

We take immense pride in being able to identify and honor members of our community who have made such significant contributions to ICMI being the thriving international mathematics education organization that it is. The depth and breadth of their collective work is evident in the citations (see below).

The ICMI Executive Committee thanks again the members of the award committees (who as you know remain anonymous during their term) and their Chairs – **Anna Sfard**, (Award Committee for the Freudenthal and Felix Klein awards) and **Konrad Krainer** (Award Committee for the Emma Castelnuovo award). We are aware of the dedication and time committed to carrying out this wonderful, but demanding activity of ICMI.

Professors Dreyfus and Schubring, and a representative of NCTM will be presented their medals at ICME14 in Shanghai in July, together with the 2017 awardees, **Professor Deborah Ball (Felix Klein)** and **Terezhina Nunez (Hans Freudenthal)**.

- **ICME14**

Our colleagues in Shanghai on the **Local Organising Committee and the International Program Committee under the leadership of ICME14 Convenor Professor Jianpan Wang** have been and are hard at work supporting all the key activities in the Congress. While the **Panels and Survey teams** have been at work for some time already, it is the **Topic Study Group (TSG) teams that are currently reviewing all submissions** as they put together their vision for their TSG at the Congress. We are looking forward to an exciting congress, and also to the innovation being introduced of the possibility for all participants to present in one TSG and participate in a second TSG.

The **Solidarity Fund Committee** will meet in Shanghai in early January to review all applications to the fund, and we hope to continue the practice of being able to support many in our community for whom the costs of the conference otherwise prohibit their participation. This is a reminder to all who seek such support to ensure their applications are in on time. The application is available at Second Announcement (see <https://www.icme14.org/static/en/news/59.htm?v=1571120235861> Item 10, page 28 for details and instructions of how to apply). Please note:

The deadline for applying to the Solidarity Fund is December 20th, 2019

- **Nominations Committee (NC) for the ICMI Executive Committee (EC) - 2021-2024**

As the current ICMI Executive Committee (EC) heads towards 2020, its final year in office, so there is a committee hard at work, with your help through nominations, to develop the slate for the next EC that will be elected at the General Assembly (GA) in Shanghai on July 11, 2020. Under the leadership of ICMI past president Michèle Artigue as Chair, the current Nominations Committee (NC), will conclude its work in time to make the slate available to all Country Representatives a few months before the GA.

2019 is the third year in office for the current Executive Committee and it has been a most demanding time. ICME preparations heat up, two ICMI Studies are working hard to make progress, the ICME15 sites for 2024 have been explored and decided (as announced in the July 2019 issue of this Newsletter) and so on and so on.

The travel has been extensive for office bearers, but we are supported by a wonderful Executive Committee, whom we take all opportunities to thank for their ongoing work for ICMI. Part of the travel commitments are also academic work, and such is the privilege of my position. I thus share some reflections from my participation in the recent third International Conference on Mathematics Textbooks- ICTM3).

- **Reflections**

In September, I had the privilege of attending and delivering a talk at the ICMT3 conference in Paderborn, and here I reflect briefly on the community of mathematics educators whose work on resources in general and textbooks in particular has flourished in the past decade.

In my talk, I listed the extensive intellectual resource base that has been collaboratively built by members of this community through special issues of key journals, and co-edited and multiple authored books. While textual resources clearly extend beyond textbooks, I was still surprised by questions to me both prior to and following the conference, questions as to whether textbooks were still relevant? And here I assumed the question referred to both their use for teaching and learning, and then research into the practices that unfold.

The short answer is, yes, and that across the world, and probably for the vast majority of those working in mathematics education in school, and possibly too University, rely on the expertise condensed into textbooks make available to support teaching and learning. As I argued in my presentation, the use of any resource, materials, textual or socio-cultural (e.g. language, time – see Adler, 2000) and through these access to mathematics, depends on their transparency. It cannot be taken for granted, that the intentions, both mathematical and pedagogical, built into these resources are realized by all who use them.

I emphasize “all” here, in that what is important to understand is the cultural orientations and values with respect again to both mathematics and pedagogy that underpin these resources. These are never easily accessible to all, given the increasing diversity of civil society across countries. It was fascinating to learn from research presented, the varying ways in which textbooks and other resources do come to be used, by whom and with what effects.

Also important, and of course somewhat obvious was a focus on the increasing availability and use of electronic textbooks, in many parts of the world. We learned during the conference of the different forms these take and the challenges in developing informative research on how different forms operate as resources for teaching and learning, and whether textbooks in mathematics education were indeed levers for educational change.

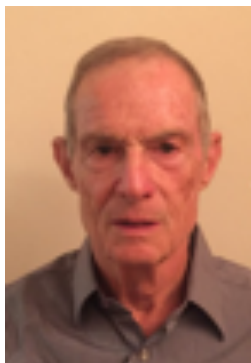
As we head into 2020, and towards ICME14, we can look forward to ongoing developments of such themes in our community. And this brings me back to my reflection on language in the previous newsletter.

Unlike Medellin, where I struggled with Spanish and Portuguese, the languages of the conference, this smaller conference took place in English, and it was colleagues from, for example, Japan, China and Latin America who despite their struggles with English, presented their work in English. As we head to Shanghai for ICME14, I hope we all are cognizant and aware of how we interact, given the many languages brought into a congress space, and the work we all need to do to optimize our opportunities to learn with and from each other across our widely different languages, contexts and conditions. As I noted in the July newsletter, I look forward to discussing language and other substantive issues when our country representatives meet in Shanghai for the ICMI General Assembly, just prior to ICME14.

2. ICMI Awardees for 2019 and 2020 – Citation

Tommy Dreyfus

2019 Felix Klein Medal



The Felix Klein Medal, with which ICMI honors the most meritorious members of the mathematics education community, is given in 2019 to **Tommy Dreyfus**, Professor Emeritus at Tel Aviv University, Israel, in recognition of his life-time achievement. This distinction acknowledges Professor Dreyfus's contribution to research as well as his leading role in shaping and consolidating the research community and in fostering communication between researchers.

For four decades, Tommy Dreyfus's research has been systematically deepening our understanding of mathematics learning. Trained as a mathematical physicist, Tommy has been drawing in this work on his deep understanding of mathematics and his first-hand familiarity with ways in which mathematical ideas come into being and evolve.

Since the late 1970s and for the next two decades his research has been focusing on students' conceptualization of mathematical objects such as function, and on the role of intuition, visualization and aesthetics in mathematical thinking. With years, his interests have been gradually shifting from the individual student to learning-teaching processes of the classroom. In the last twenty years, his empirical and conceptual work has been devoted to the study of epistemic activities such as proving and abstracting.

These efforts resulted in the theory known as AiC – Abstraction in Context, which he developed with Baruch Schwarz and Rina Hershkowitz. Conceived in the late 1990s, the AiC framework has become increasingly influential. Since its inception, it has generated much empirical research all over the world. The theory has been found to be useful also to teachers, whom it provides with tools for monitoring student learning. As impressive in its scope, breadth, depth and impact as Professor Dreyfus's research is, it constitutes only a part of the contribution for which he is honored today with this special distinction.

Another outstanding part of his work is his ongoing project of shaping and consolidating the international community of research in mathematics education, a goal that he tries to attain in multiple ways.

First and foremost, through his extensive editorial work he has been setting standards and giving directions for research in mathematics education. Particularly influential has been his 30-year long association with *Educational Studies in Mathematics*, which included his three-year long term as the editor-in-chief. Professor Dreyfus has also been serving in, and shaping, numerous professional organizations, with PME (the international group for the Psychology of Mathematics Education) and ERME (the European Society for Research in Mathematics Education) among them. In addition, he played key roles in numerous professional committees in Israel, Europe and America. His influence on research and on policy directly affecting mathematics teaching is keenly felt over the world.

In all these activities, Professor Dreyfus has been consistently promoting cross-discursive dialogues. He has done this by organizing international meetings, establishing trans-continental collaborative research projects, appearing worldwide as an invited speaker and by extensive mentoring in his own country and beyond. Probably the most important and innovative among Professor Dreyfus's consolidating activities have been his multifarious efforts to spur and improve communication among researchers working within differing theoretical frameworks. Being concerned about the fragmentation of the field of mathematics education, Professor Dreyfus has been looking for ways in which community members can engage in a productive dialogue across discursive boundaries.

These attempts began with his own cross-theoretical research collaborations. It continued with his conceptual work on the possibility of "networking theories", the activity of employing multiple theories in the attempt to produce a synergetic, cumulative effect. Through these initiatives, Professor Dreyfus has contributed to changing the dominant narratives about theoretical diversity. With his help, the multiplicity of research discourses is now seen less as a problem to solve than as an opportunity to embrace.

Born in Switzerland and now living in Israel, Tommy is fluent in a number of languages, which makes him particularly well equipped for the project of consolidating the international community. After his 1975 doctorate in mathematical physics from the University of Geneva, endowed with several prestigious fellowships and awards, Tommy began visiting universities all over the world. Since then, he never stopped.

In parallel to his work at the Weizmann Institute and at the Center for Technological Education in Holon, and later as a full professor of mathematics education at Tel Aviv University, Tommy served as a visiting professor in 14 universities over the world, including in Canada, Germany, Finland, Israel, New Zealand, Norway, Sweden, Switzerland, and the USA. On all these occasions, he spent much time teaching and working with both young and seasoned researchers. By all accounts, he left an indelible mark in all the places he visited. This owes, among others, to his ability to communicate fluently and easily, to his sensitivity to other cultures and to his general sense of inclusiveness. His willingness to listen and to share his own insights and his devotion to a common effort of understanding and improving mathematics education have touched everyone with whom he has come into contact. Officially retired since 2015, he remains as active and engaged as ever.

To sum up, over the 40 years of his career, Professor Dreyfus has been contributing to our collective endeavor of promoting mathematics education in great many ways: as a researcher, as an editor, as an organizer and policy adviser, and as a teacher and mentor. So far, he has published more than 120 research papers and book chapters, 9 edited volumes, and diverse teaching materials. His writings continue to be read and cited widely, and research programs he initiated or helped establish continue to thrive and inform the field. Even now in his retirement, he continues to shape the field, to foster young researchers and to influence research and policy, both in his own country and abroad. For all this and his many other contributions to our community, Tommy Dreyfus is an eminently worthy candidate for the Felix Klein Award.

Gert Schubring

2019 Hans Freudenthal Medal



The Hans Freudenthal Medal, with which ICMI honors innovative, consistent, highly influential and still on-going programs of research in mathematics education, is being awarded in 2019 to Professor **Gert Schubring**, a long-time member of the Institut für Didaktik der Mathematik at Bielefeld University, Germany, and an extended visiting professor at the Universidade Federal do Rio de Janeiro in Brazil. This award is being granted to Gert Schubring in recognition of his outstanding contribution to research on the history of mathematics education.

Gert's research of over four decades has opened new, important avenues of research into the phenomenon of mathematics education. Trained as a mathematician, Gert has been a member of the Institut für Didaktik der Mathematik since 1973, when this interdisciplinary research institute for mathematics education was founded. In his doctoral dissertation, defended in 1977, Gert wrote on the genetic principle in approaching historical research in mathematics. Afterwards, he extended his interests, producing wide-ranging writings on the history of mathematics education within and across countries, and publishing on the history of mathematics.

One of Schubring's earliest publications came out of the symposium, "Comparative Study of the Development of Mathematical Education as a Professional Discipline in Different Countries", presented at the Fourth ICME conference in Berkeley in 1980. This set the stage for the mathematics education community's reflection on itself as a discipline, and how its own social context had framed its objects and methods of study. By inviting us to place ourselves in front of a mirror, Gert also sparked interest in the history of earliest efforts in mathematics education, including the work of Felix Klein, on which Gert has recently published the important book, *The Legacy of Felix Klein* (2019, Springer).

His seminal works have helped to realize the importance of considering the social context in the study of the history of mathematics education. If this field of research is now well acknowledged, it is in large part due to his theoretical and methodological contributions, as well as to his leadership in scientific communication.

Another, related but separate, strand of Gert's pioneering work was the study of textbooks, which he began in his investigations on the evolution of mathematics teaching in Latin America. This is yet another area of research that he helped to recognize as worth attention. In 2017 he also chaired the International Program Committee for the Second International Conference on Mathematics Textbook Research and Development held in Rio de Janeiro, Brazil.

Schubring has also laid out the formal structures that helped in turning the study of the history of mathematics education into an academic field. He was the founding co-organiser of International Conference on the History of Mathematics Education (ICHME), a forum that since 2009 has already met six times. After leading the Study Group on the 'History of Teaching and Learning Mathematics' at the 10th ICME conference in 2004, Gert became the founding editor of the International Journal for the History of Mathematics Education. Gert also co-edited the Handbook on the History of Mathematics Education published in 2014, in which he contributed to four of the handbook chapters. He is co-editor of the new book series International Studies in the History of Mathematics and its Teaching, which includes the 2019 volume he edited himself, titled *Interfaces Between Mathematical Practices and Mathematical Education*.

An important aspect of Gert Schubring's work was his straddling of the communities of the history of mathematics and of mathematics education. His own book in the former field, *Generalization, Rigor and Intuition*, published in 2005, is a major reference in the history of mathematics focused on 17th-19th-century mathematics. Additionally, several publications in mathematics education journals (such as *For the Learning of Mathematics*) introduced tools and concepts from the history of mathematics, such as methodologies for analyzing historical texts, that greatly enrich mathematics education research.

Similarly, Gert brought ideas in mathematics education, such as the notion of “mathematics for all” back into the fold of the history of mathematics, to examine what kind of knowledge mathematics has been taken to be in different cultures and historical periods.

For decades, Gert has been actively promoting the study of the history of the field of mathematics education, while simultaneously conducting significant historical studies of his own. No other researcher has had a greater impact on establishing the social history of mathematics education as a dynamic field of scholarly endeavor.

His work has not only made us aware of the past of mathematics education but has also provided important insights into mathematics education as it stands today and sets directions for its future. It informs current teaching by showing ways in which historical mathematical texts can inspire pedagogy. It makes us aware of future possibilities and of the fact that they do not have to be merely determined by the past, but rather can be moulded by new understandings of past practices, values and ways of thinking. All these important contributions make Professor Gert Schubring an eminently deserving recipient of the Hans Freudenthal Medal for 2019.

The National Council of Teachers of Mathematics (NCTM) United States of America

2020 Emma Castelnuovo Medal



Robert Q. Berry III - NCTM President

ICMI is delighted to announce that the 2020 Emma Castelnuovo Award for Outstanding Achievements in the Practice of Mathematics Education goes to **NCTM – the National Council of Teachers of Mathematics (USA and Canada)** – in recognition of 100 years of development and implementation of exceptionally excellent and influential work in the practice of mathematics education.

Founded in 1920, NCTM is the world’s largest mathematics education organization, with 40,000 members and more than 230 state, provincial, and local affiliate organizations and other affiliates whose scope covers the USA and Canada.

The Award Committee found evidence to fulfill all criteria related to the Emma Castelnuovo Award. In the following, some exemplary activities of NCTM’s past 30 years are highlighted.

These activities fall into a wide range of domains – principles and standards as foundations for policy and practice, publications including research journals, professional development, legislative and policy leadership, and international collaboration.

In 1989, NCTM presented Curriculum and Evaluation Standards for School Mathematics, which turned out to be a highly influential document, not only in North America, but all over the world. This document was followed by a series of further book-length reports aimed at establishing a broad framework to guide reform in school mathematics, Professional Standards for Teaching Mathematics (1991), Assessment Standards for School Mathematics (1995), Principles and Standards for School Mathematics (2000), Curriculum Focal Points (2006), Principles to Actions: Ensuring Mathematical Success for All (2014) and Catalyzing Change in High School Mathematics: Initiating Critical Conversations (2018).

Since its inception in 1920, NCTM has published professional journals for teachers of mathematics. Starting with January 2020, a single journal Mathematics Teacher: Learning and Teaching PK-12, published 12 times a year, will replace what has been for the past 30 years three journals. In 1970, NCTM began publishing the Journal for Research in Mathematics Education, one of the world’s first journals devoted to this subject. These periodic publications are supplemented by an extensive publication catalogue for teachers at all levels. Some NCTM publications have been translated into other languages, including Arabic, Chinese, German, Korean, Portuguese, Spanish and Swedish.

For the professional development of teachers, principals, and other stakeholders important for mathematics teaching, NCTM holds an annual meeting and exposition along with three regional meetings each year, with a combined attendance of about 25,000. In addition, NCTM offers multiple professional development activities, professional services, and resources via its webpage. NCTM's Mathematics Education Trust (MET), established in 1976, provides funds directly to classroom teachers, affiliates, and institutions to enhance mathematics education. MET offers 30 grants annually, totaling USD 125,000. In addition, it offers scholarships, award programs, and - usually two - annual lifetime achievement awards.

NCTM is influentially engaged in constructive policy discussions among all stakeholders (in particular in the USA), focusing on improving mathematics teaching for all students. This process is supported by the NCTM Advocacy Toolkit, a collection of materials which provides NCTM members with tools and the guidance they need to advocate for mathematics and education.

For spreading NCTM ideas internationally and for establishing contacts and collaboration worldwide, NCTM founded the International Corresponding Societies, currently with 19 organizations in all continents, and has supported several initiatives with educators in Latin, Central, and South America.

NCTM's work has influenced the efforts by teachers, researchers, administrators, and other stakeholders to foster excellence in the practice of mathematics education. Here are some selected quotations from letters supporting NCTM's nomination for the Emma Castelnuovo Award.

An internationally well-known mathematics educator stresses: "I have never lived or worked in the United States, and yet, as a teacher and as an academic, I was aware of the work of the NCTM. I drew on their resources and publications knowing that I could access a wealth of high quality materials developed by expert practitioners in the field. ... (T)he NCTM Principles and Standards and the Curriculum Focal Points are curricular documents that I return to frequently when looking at putting together mathematics teacher education courses for pre- and in-service teachers in ways that ensure breadth and depth, with inclusion of the big ideas in mathematics.

I have often passed these documents on to students from many parts of the world to use to think about the relative emphases and absences in their own national and regional curricula. Later, as an academic, I made widespread use of articles published across the raft of NCTM journals. ... The NCTM has worked tirelessly to advocate for high quality mathematical access for all children. ... The NCTM is an organization that has succeeded in doing this kind of work at a scale that is bigger than any other organization that I can think of."

An internationally well-known mathematics educator from the USA emphasizes, among other considerations, the important role NCTM plays in supporting ICMI activities, for example by providing grants to NCTM members for attending ICME conferences, and by supporting the writing and distribution of documents about mathematics education in the USA since ICME-9 in 2000.

Finally, here is the voice of a former mathematics teacher in the USA: "NCTM has been an integral part of every stage of my nearly 50-year career in mathematics education, from classroom teacher, to school and district supervisor, to state mathematics director, to my varied leadership efforts that continue at the state, local, national, and international levels. ... It is clear that the National Council of Teachers of Mathematics has been the voice of mathematics education for at least these past five decades of my personal involvement. More than that, there is no doubt in my mind that the Council has also served as the leader within our profession - articulating a shared vision of professional mathematics educators, supporting and disseminating research behind that vision, and providing resources for the classroom and the board room to make that vision a reality. NCTM is absolutely indispensable to anyone who cares about or works in any area related to mathematics teaching and learning."

There are many more such quotations that could have been included. It is fully evident that NCTM is an outstanding organization that well deserves the recognition of the Emma Castelnuovo Award for excellence in the practice of mathematics education.

3. ICME14

<p style="text-align: center;">Please carefully follow the news on an ongoing basis at ICME14.org</p>
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4. News from the CANP Project - by Michèle Artigue

Those who regularly read the ICMI Newsletter have already heard about the CANP project. It was launched by ICMI in 2010, with the support of UNESCO and IMU, for strengthening the educational capacity of all those involved in teacher preparation and professional development, creating sustained and effective regional networks of teachers, mathematics educators and mathematicians, and also linking them to international support (see <https://www.mathunion.org/icmi/activities/developing-countries-support/capacity-networking-project-canp>). Within one decade, CANP has become a major ICMI-IMU project in developing countries.

The CEMAS network (Comunidad de Educación Matemática de América del Sur) was created during CANP5, which was held in Lima, Peru in February, 2016, for Andean countries (Bolivia, Ecuador, Peru) and Paraguay. And, in September 2019, it organized the first EIII CEMAS (Encuentro Internacional de Iniciativas Innovadoras) with the generous support of the Consejo Nacional de Ciencia y Tecnología (CONACYT) of Paraguay.

As explained in the document presenting these meetings: “the main purpose of the EIII is to contribute to the improvement of the quality of mathematics education through the exchange of initiatives that promote teacher training and educational innovation, and the updating of knowledge and skills in teachers”. Their specific objectives are the following:

“3.1 To contribute to the articulation of efforts in mathematics education at the national and international levels.

3.2. To be a space where specialists and researchers in mathematics education can present their initiatives, which should aim at strengthening the competences of both pre-service and in-service teachers.

3.3. To promote the link between researchers, institutions and teachers in general, so that the exchange of initiatives becomes concrete.

3.4. To provide, during the meetings, specialized updating for teachers of the Mathematics Area at all levels of education.

3.5. To contribute to the appreciation of the mathematics teacher as a professional with a high level of preparation and a fundamental participant in the training of students by dissemination among the main means of communication and information channels.” (my translation)

The first EIII CEMAS took place in Asunción (Paraguay) from September 11 to September 13, 2019. It was jointly organized by the CEMAS, the Paraguayan Mathematical Society (SMP), OMAPA (Organización Multidisciplinaria de Apoyo a Profesores y Alumnos), with the support of ICMI and of the Universidad Comuna del Paraguay where the event took place. It gathered more than 200 passionate participants: primary and secondary teachers coming from all Paraguayan regions, student teachers, teacher educators and researchers in mathematics education and in mathematics. The three days, perfectly organized, offered a very rich and intense program combining eight plenary lectures covering both general themes and the presentation and analysis of specific innovative and research projects, most of them carried out in the region, and four 1h45 slots for parallel sessions proposing workshops on diverse topics.

The event concluded with a round table where participants discussed regional problems with the international experts invited. In fact, among the 20 presenters, 7 were from Paraguay, 9 from Peru, Ecuador and Chile, and four from Brazil, France, Mexico and USA. Unfortunately, Angel Ruiz from Costa Rica, past vice-president of ICMI and organizer of CANP 2, and Beatriz Macedo from Uruguay who had supported the launching of CANP when she was working at UNESCO, could not attend. This was also the case for Yuriko Baldin Yamamoto, who has been the ICMI liaison officer for CANP 5 and accompanied the CEMAS network since 2016.

This first realization of EIII in Asunción gave the perfect image of what is made possible when, at the national level, there is a real synergy between communities, and when this synergy also benefits from regional and international support. Moreover, the communicative energy of Gabriela Gómez Pasquali, the Paraguayan representative of CEMAS and main organizer, was certainly decisive for the success of this event. An emotional moment for me occurred at the closing ceremony when Gabriela asked participants, category by category, region by region, to stand up, making clear the outreach of this event, and also when one teacher went to the stage to express his personal feeling about the event. He did so in Guaraní. I did not understand a word, but when he finished, Gabriela asked who had understood his discourse and all Paraguayan participants raised their hands!

When this first EIII CEMAS ended, some of the international presenters (Carlos Sabino and Augusta Osorio Gonzales from Peru, Freddy Rivadeneira Llor from Ecuador, Patrick Scott from the USA, and I) went to La Paz, Bolivia where a second realization of EIII was planned from September 16 to September 18 at the Universidad Mayor de San Andrés with the support of the Facultad de Ingeniería y de Ciencias Puras y Naturales – Carrera de Matemática, la Olimpiada Matemática Boliviana, ICMI and the French Embassy.

This second realization was quite different as, despite the many contacts taken with regional authorities by Sonia Cordero, the CEMAS Bolivian member in charge of the organization, we discovered that very few participants had registered (39), and not all of them were able to attend all sessions as they had not obtained the authorization from their administration - the event was to place during their teaching time. The schedule was reorganized, reducing the number of parallel workshops, and moving the plenary lectures to the afternoon to encourage better attendance. This resulted in a reduction in the number of contributions, especially to the detriment of those prepared by Bolivian colleagues. Despite these difficulties, this event made it possible to identify a group of very motivated teachers ready to contribute to the CEMAS network which obviously needs to be reinforced in Bolivia. It is also planned to present CEMAS activities and some workshops prepared by Bolivian colleagues at the congress organized by the Bolivian Mathematics Society, next November. In this problematic situation, I could also measure the commitment of the CEMAS members coming from other countries, including Patrick Scott, and their desire to offer support, to reinforce exchanges and collaborations, to find practical solutions, showing that the CEMAS community does exist and has a future.



Presenters and local organizers at the closing ceremony, Asunción, Paraguay

Group photo in the closing session of the meeting in La Paz



5. Report on XV CIAEM, Medellin, Colombia – Yuriko Yamamoto Baldin

In the July 2019 issue of the ICMI Newsletter, the president of ICMI, Jill Adler, reported on the ICMI Executive Committee meeting that took place in Montevideo, Uruguay, and was hosted generously by the Mathematical Education Society of Uruguay, whose annual national conference followed immediately after the EC meeting. ICMI Vice-Presidents Merrilyn Goos and Luis Radford, and Secretary-General Abraham Arcavi gave, respectively, the opening plenary lecture, plenary talks and workshops in this National Conference on Mathematics Education.

Jill acknowledged the tradition of ICMI supporting local communities and gaining knowledge through interactions with local colleagues. She referred to this again in her subsequent report on the XV CIAEM that followed the Montevideo Meeting, from May 5 to 10, in Medellín, Colombia – still in the Latin American community – hosted by the University of Medellín and the University of Antioquia. The CIAEM is the most important conference on mathematical education of the Americas, founded in 1961 by IACME – Inter American Committee on Mathematical Education as an affiliated organization to ICMI (www.ciaem-iacme.org). The CIAEM is organized every four years, and the XV CIAEM had the participation of 25 countries from Europe, Asia, Africa, and the Americas, with 700 participants including hundreds of school teachers from the local community. The official languages of the conference were Spanish and Portuguese.

The important reflection made by Jill in the last ICMI Newsletter referred to the direct interaction with the local community and their works as “an experience not possible through reading about them or interacting in an international conference”.

Such reflection highlights the issue of language in developing effective communication as one topic of discussion for ICMI activities. My own impression of the XV CIAEM is about how the invited speakers worked on communicating with the conference delegates. None of these plenary speakers was from Spanish-Portuguese speaking countries: Jill (ICMI president) is from South Africa, Ferdinando Arzarello (former ICMI president) is from Italy, and Yoshinori Shimizu (co-chair of ICMI Study 24) is from Japan. Ferdinando delivered his lecture in Spanish, whereas assistance in the form of simultaneous translations by Patrick Scott (for Jill) and by Yuriko (for Yoshi) was key to the success in communicating the essence of their talks. In addition, sessions offering a “Dialogue with the plenary speaker” were an important activity in the scientific program that allowed the audience to interact directly with the invited lecturers, thus supplementing the translation of their talks.

Around 400 papers were presented: in plenary and parallel sessions, plenary tables, mini-courses, thematic sessions, short communications, workshops and posters. Some 50 senior personalities in the international mathematical education community presented their research. During the event, the Luis Santaló Medal was awarded to Salvador Llinares (Spain) and the Marshall Stone Medal to Hugo Barrantes (Costa Rica) and José Chamoso (Spain). In the words of Ángel Ruiz, the president of CIAEM and former ICMI Vice-President, “the XV CIAEM once again showed that this congress is the reference of the highest scientific level and intellectual impact in the Mathematical Education of the Americas.” The next CIAEM will take place in Lima, Peru, from July 30 to August 4, 2023.



6. Once upon a time... Historical vignettes from the ICMI Archives: The ICMI Logo – Bernard Hodgson, Curator of the ICMI Archive

It would be most common nowadays for an organization like ICMI to promptly adopt a logo in order to facilitate its visual identification. But such was not the custom when ICMI was established. As a matter of fact, it is only in the early twenty-first century, almost a hundred years after its inception, that ICMI officially adopted a logo—a few years before its mother organisation, the International Mathematical Union, would itself choose a logo.

It may be worth mentioning at the outset that the International Congresses on Mathematical Education (ICMEs), a major strand of the ICMI activities since 1969, soon developed the tradition of adopting a logo for each of these events. But that will be a topic for another vignette.

The existence (or absence) of a logo is reflected in particular in the letterhead used in the official correspondence of ICMI officers. For instance, most of the letters which circulated amongst the IMU and ICMI presidents and secretaries during the presidency of Hans Freudenthal (1967-1970) would be either without any letterhead at all, or using the official stationery of the academic institution to which the sender was attached. Here is an example from a letter of Freudenthal to the IMU Secretary.



Scan from a letter of Freudenthal [1] (Source: IMU Archive)

An interesting case is seen in documents from André Delessert, ICMI Secretary for two terms (1963-1970).



Scan from a letter of Delessert [2] (Source: IMU Archive)

One can see that in this letterhead ICMI has become “ICMT”, the “T” most likely arising from the translation to “teaching” of the word “enseignement”, from the traditional name of ICMI in French shown therein—information about the various names originally used in French, German and English to refer to the body now called ICMI can be found in Furinghetti [3, p. 2].

Various letterheads were developed from one ICMI Executive Committee (EC) to the other. Here is a nice sample of letterhead, used during the two terms (1983-1990) when Jean-Pierre Kahane and Geoffrey Howson were respectively President and Secretary—with a special twist in the design for the acronym ICMI.



Scan from a letter of Howson to Lehto [4] (Source: IMU Archive)

Underneath this heading were listed the names and professional addresses of the four ICMI officers (President, Vice-Presidents and Secretary)—in those days of course without any email contact!

When I started my first term on the ICMI EC, in 1999, the practice was still for the secretary to cobble up in a similar vein with a word processor a (hopefully decent) “homemade” letterhead. But that practice was soon to change, as that EC was promptly led in a direction that unquestionably required the adoption of a logo: the creation of the first two ICMI Awards, formally decided by the ICMI EC at its 2000 meeting. The inaugural set of awardees were announced in 2003 and presented during the opening ceremony of the ICME-10 congress in 2004. As the main tangible tokens for the awards consist of a medal and a certificate, it was seen as essential to represent ICMI via a logo on these artefacts. The ICMI logo was finally adopted by the EC early in 2004 ([5]).

Following various calls for comments and suggestions about a “concept” for the logo of ICMI, more than 35 proposals had been received by the EC, heading in very diverse directions. It was far from easy for the members of the ICMI EC to reach a conclusion. Among the criteria for the final decision were issues of simplicity and efficiency of the design, as well as flexibility for the use of the logo in varied contexts (medals, letterhead, posters, book covers, website, etc.).



The ICMI medal (reverse side) (Source: Anna Sfard)



The ICMI logo (Source: IMU Archive)

The ICMI logo was designed by two students from the School of visual arts of Université Laval (Québec, Canada). The basic structure of the logo is a (blue) square, a simple geometrical object which is one of the very first shapes met by a child, explain the designers, and also a structure conveying stability, solidity and support. The letters I, C, M, I, integrated into the logo so as to facilitate recognition, are represented through (white) simple forms introducing freshness, rhythm and movement, and recalling basic mathematical symbols. The apertures created by the letters in the border of the figure reinforce its dynamics and suggest outreach commitment. (More comments on the logo can be found in [6].)

Since its introduction 15 years ago, the ICMI logo has been used in many contexts, sometimes with small variations, for instance in the colors – but the blue and white combination is the “official” one. Here is an example of its use on a business card from the time of the presidency of Michèle Artigue (2007-2009), her personalized stationery being set up similarly with part of the information appearing at the top of the page and part at the bottom, as on the card.



Business card of ICMI Past President Michèle Artigue (Source: IMU Archive)

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7. News in brief

- The ICMI Study 25 conference on “Teachers of Mathematics Working and Learning in Collaborative Groups” will be held in Lisbon, Portugal on February 3-7, 2020. See <http://icmistry25.ie.ulisboa.pt/>
- The study volume for ICMI Study 24 on “School Mathematics Curriculum Reforms: Challenges, Changes and Opportunities” is in preparation. The aim is to present the volume at ICME14.
- The ICMI Nomination Committee is in the latest stages of its work. The slate from which the next Executive Committee will be elected by the Country Representatives at the General Assembly (July 12, 2020, Shanghai) will be made public in May 2020.

8. Upcoming Events

- ICMI Study 25: Teachers of Mathematics Working and Learning in Collaborative Groups to be held in Lisbon, Portugal, February 3-7, 2020. <http://icmistry25.ie.ulisboa.pt/>
- 14th International Congress on Mathematical Education (ICME14), from July 12 to 19, 2020, Shanghai, China, <http://www.icme14.org/static/en/index.html>
- ICME15 will take place in Sydney, Australia on July 7-14, 2024.

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