

CIEAEM (Commission for the Study and Improvement of Mathematics Teaching)

July 14, 16:00–18:00 Location: T419

Gilles Aldon (University of Lyon, S2HEP, France)

Marcelo Bairral (Universidade Federal Rural do Rio de Janeiro, Brazil)

Lisa Björklund Boistrup (University of Malmö, Sweden)

Michaela Kaslova (University Charles, Praha, Czech Republic)

Andreas Moutsios-Rentzos (National and Kapodistrian University of Athens, Greece)

Cristina Sabena (Università di Torino, Italy)

16:00-16:15 Presentation of the CIEAEM by commission members

16:15–16:30 Questions to be discussed: introduction

16:30–17:30 Work in groups (one group in Shangai, other groups through break out rooms in visio conference)

17:30–17:50 Reports and general discussion

17:50–18:00 Conclusion by the president of CIEAEM

Abstract

Since the ICME 13 congress in Hamburg, the commission has organised four conferences, including one online and published at least 8 Newsletters that can be seen on line on the CIEAEM website: <https://www.cieaem.org/index.php/en/resources-en/cieaem-newsletter>.

During the conferences, discussions have focused on mathematics education and its relation to the world today. The presentation of the CIEAEM will focus both on the issues that have been discussed in these conferences and on the methods put forward to try to obtain answers that are coherent with the world in which we live, while maintaining an epistemological and ethical vigilance on the fundamental humanistic values that have presided over the creation and development of the CIEAEM:

- creating links between scientific knowledge and craft wisdom,
- reinforcing the collaboration of mathematics education research and practice.

During the session, participants will be asked to share their experience and will be involved in discussing live issues related to mathematics education in the 21st century, in a way similar to the working groups during the CIEAEM conferences.

We will draw on the proceedings of previous conferences as well as on the publications resulting from the work of the committee:

Aldon, G., Hitt, F., Bazzini, L., Gellert, U. (Eds.) (2017). Mathematics and technology, Springer Gellert,

U., Gimenez Rodriguez, J., Hahn, C., Kafoussi, S. (Eds.) (2015). Educational paths to mathematics, Springer

HPM (International Study Group on the Relations between the History and Pedagogy of Mathematics)

July 14, 16:00—18:00 Location: T423

Snezana Lawrence (chair HPM) (Middlesex University, London)

Prof. Ysette Weiss (chair TSG 27) (Mathematical Institute, Johannes Gutenberg University, Mainz)

Prof. David Guillemette (Department of mathematics, Université du Québec à Montréal)

Prof. Alexander Karp (co-chair TSG 55) (Teachers College, Columbia University, New York)

Desiree van den Bogaart (co-chair TSG 27) (Centre for Applied Research in Education, Amsterdam University of Applied Sciences)

16:00-16:15 Presentation of history of HPM, its relation to ICMI and some of its most recent activities (Ysette Weiss)

16:15–16:30 Some theoretical perspectives of HPM (David Guillemette)

16:30–16:45 The history of mathematics education: news from recent years (Alexander Karp)

16:45–17:00 History of mathematics in the classroom (Desiree van den Bogaart)

17:00–18:00 Interactive session with participants. What do they think is the relevance of HPMs topics and research questions? How does it relate to their own research interests and/or TSG's?

Abstract

HPM is the International Study Group on the Relations between the History and Pedagogy of Mathematics, affiliated to the International Commission on Mathematical Instruction (ICMI). By combining the history of mathematics with the teaching and learning of mathematics, HPM is the link between the past and the future of mathematics. The HPM study group aims to investigate different conceptions and views of mathematics. Its members study different eras, mathematicians, regional and national mathematical schools, mathematical textbooks, and many other topics from the rich history of mathematics. They seek to connect the history of mathematics as a discipline, its roles in education, and the roles that it continues to have in developing mathematical instruction and the curricula around the globe.

Among the members of this group we find researchers in mathematics education, mathematicians, historians of mathematics, teachers of mathematics and curriculum developers. The session will be held in online modus only.

ICTMA (International Study Group for Mathematical Modelling and Applications)

July 14, 16:00—18:00 Location: T519

Gabriele Kaiser (Organiser) (University of Hamburg)

16:00-16:12 Educational studies in mathematics (Stanislaw Schukajlow, Gabriele Kaiser)

16:12–16:22 Mathematical thinking and learning (Gloria Stillman, Stanislaw Schukajlow,

Gabriele Kaiser)

16:22-16:30 Quadrante

16:30–17:00 Report on mathematical modelling challenges (Jill Brown, Alfred Cheung)

17:00–17:15 Report on the planning for ICTMA20 in 2021 and 2022 (Hans Stefan Siller)

17:15–18:00 Results of a systematic literature survey on modelling competencies and possible consequences for ictma (Gabriele Kaiser, Mustafa Cevikbas)

Abstract

The International Study Group for Mathematical Modelling and Applications (ICTMA) has been in existence since 1983. It meets biennially, usually in odd numbered years. The mission of ICTMA is to promote Applications and Modelling in all areas of mathematics – primary and secondary schools, colleges and universities. Members of ICTMA have developed innovative curricular activities aiming to foster applications and modelling at all educational levels and established according research to evaluate the effectiveness of these approaches.

In the planned session, the president of ICTMA, Gabriele Kaiser, will give an overview on the current activities. Special focus will be on the edition of two special issues in Educational Studies in Mathematics and Mathematical Thinking and Learning. Gloria Stillman and Stanislaw Schukajlow will support this presentation. Furthermore, Jill Brown and Alfred Cheung will describe activities from the International Mathematical Modelling Challenges. Hans Stefan Siller, the chair of ICTMA20, will report on the planning for ICTMA20, which will be postponed from 2021 to 2022 due to the Covid-19-pandemic. The session will close with a talk by Gabriele Kaiser and Mustafa Cevikbas, in which briefly the results of a systematic literature survey on modelling competencies and possible consequences for ICTMA will be discussed. All members of ICTMA and interested scholars are highly welcome.

ISDDE (International Society for Design and Development in Education)

July 14, 16:00–18:00 Location: T523

Professor Geoff Wake (University of Nottingham, U.K.)

Lynne McClure (Director) Cambridge Mathematics, U.K.)

Professor Susan McKenney (University of Twente, Netherlands)

Professor Geoff Wake (University of Nottingham, U.K.)

Lynne McClure (Director) Cambridge Mathematics, U.K.)

16:00-16:30 What is ISDDE? Who are its members and what do they do together? (Professor Geoff Wake, Lynne McClure)

16:30–17:15 Presentation: Educational designer (Professor Geoff Wake)

17:15–18:00 Plenary (Lynne McClure)

Abstract

ISDDE, the International Society for Design and Development in Education has a strategic goal – to improve the impact on education of the design and development of educational materials in mathematics and related STEM disciplines.

In seeking to advance the development of a coherent, mutually-supportive and self-critical professional design and development community in mathematics education the work of the society's membership spans many issues in terms of research and practice: pedagogy, curriculum, assessment, professional development to name a few. Also fundamental to our aims is our desire to develop the theoretical and conceptual infrastructure of the field.

In this session we hope to give a sense of our interests and work. There will be an opportunity to gain an understanding of some of the breadth of this as we showcase our recent online international conference bringing together educational designers from across the world with a particular focus on designing for equity and diversity.

The session will be entirely online and give an insight into key issues in educational design as well as an opportunity to find out more from members of the Executive Committee. Members attending the session will be Professor Geoff Wake, University of Nottingham, U.K., Lynne McClure, Director Cambridge Mathematics, U.K. and Professor Susan McKenney University of Twente, Netherlands.

IOWME (International Organisation of Women in Mathematics Education)

July 14, 16:00–18:00 Location: T116

Jennifer Hall, Monash (University, Melbourne, Australia)

Eva Norén (Stockholm University, Sweden)

Vanessa Neto (Universidade Federal de Mato Grosso do Sul, Campo Grande, Brazil)

16:00-16:10 Welcome and opening of the meeting (Eva Norén)

16:10-17:00 Lecture (Innovations in 'gender issues' research) (Jennifer Hall)

17:00-18:00 Quadrennial meeting

- **Start of meeting**
- **Report from 2016 – 2021**
- **Election of two conveners for 2021 – 2024 (suggested are Jennifer Hall and Vanessa Neto)**

Abstract

The organization is an international network of individuals and groups who share a commitment to achieving equity in education and who are interested in the links between gender and the teaching of learning of mathematics. In our meeting at ICME 14 we will have one presentation and giving a perspective on gender issues in mathematics education. We will also deal with the quadrennial election of conveners.

MCG (International Group for Mathematical Creativity and Giftedness)

July 14, 16:00–18:00 Location: T218

Viktor Freiman (Université de Moncton, Canada)

Marianne Nolte (Universität Hamburg, Germany)

16:00-16:10 A short presentation of the International Group for Mathematical Creativity and Giftedness (MCG)

16:10–16:40 Marianne Nolte: Why should mathematically gifted students be supported?

16:40–17:00 Discussion

17:00–17:40 Viktor Freiman: Examples for fostering mathematical creativity in inclusive settings through challenge and enrichment for all

17:40–18:00 Information about our next conference and Q & A period

Abstract

Mathematical Creativity and Giftedness (MCG) is an exciting topic that draws the attention of more and more educators around the world. Many countries have made a substantial effort in supporting research and practice. Yet, more effort is still necessary in order to support the development of creativity and giftedness at different educational levels in and beyond the school settings. And this effort needs to be supported by research data on existing and novel practices in teaching and learning. Several challenges educators face, particularly during a pandemic time, need to be collectively addressed to find new ways of interaction and communication with students, with teachers and with educational researchers.

The International Group for MCG (<https://www.igmcg.org/>) brings together mathematics educators, mathematicians, researchers, and others who are inspired to nurture and support the development of mathematical creativity and the realization of mathematical promise and mathematical giftedness.

Our group aims to promote and encourage research and to develop educational practices in the field of MCG. Moreover, the group supports dissemination of information concerning the role of teacher knowledge and teacher's education in order to fulfill realization of student's mathematical potential and develop their mathematical creativity. Open to everyone interested in our work, we particularly welcome emergent researchers and practitioners who wish to join our group and to whom we will offer guidance and support in the MCG-related areas. Our overarching goal is to stimulate national and international collaboration among researchers and practitioners to promote the aims and the ideas of the Group.

Bi-annual MCG conferences since the origin of MCG in 1999 in Muenster, Germany, have contributed to the foundation of the Group itself and are vital to stimulate sharing knowledge and to boost international collaborations with people from different backgrounds and from all over the world.

Despite the continuing pandemic, which forces many conferences to be postponed or cancelled, we are cautiously optimistic in announcing the next MCG conference which will be held in Las Vegas, USA:

September 25-28, 2022

Alexis Park All Suite Resort and Conference Center, Las Vegas, NV, USA

Our team is engaged in preparing this conference and we're looking forward to seeing people on-site, not only virtually. Meeting in person with colleagues and friends, making new friends, learning and discussing together will help us to promote further development of gifted and creative students all over the world. For more information, we invite you to visit our website at www.igmcg.org!

Warm greetings to you all and stay healthy!

PME (International Group for the Psychology of Mathematics Education)

July 14, 16:00–18:00 Location: T316

Markku Hannula (President of PME) (University of Helsinki)

Einat Heyd-Metzuyanin (vice-president) (Technion, Israel Institute of Technology)

Jydy Anderson (secretary) (University of Sydney)

16:00-16:15 Welcome and meeting

16:15-16:50 Video-presentation

16:50–18:00 Online discussion (chaired by Hannula)

Abstract

The International Group for the Psychology of Mathematics Education (PME) is a well-established scientific organization focusing on research in mathematics education. The name of the organization reflects its origins in the psychological study of mathematical thinking and learning, yet currently the scientific perspectives have grown wider and the yearly conferences bring together people using, for example, educational, sociological, or neuropsychological theories and methods.

The session will give an overview of scientific and organizational activities of PME. A yearly conference is our main activity, the 44th conference taking place soon after ICME-14. Due to uncertainties with travel, the PME 44 will be a fully online event. In addition to the yearly regular conferences, PME has supported regional conferences (one in Chile, one in Russia) to make access to PME easier for researchers from underrepresented countries in these regions. In 2022 our yearly conference will be in Alicante, Spain. PME supports underprivileged researchers in various ways: an early bird submission system connects a novice researcher with an experienced mentor to support their conference submission preparation, Skemp Fund provides grants for conference participants, and Early Researcher day and seminars provide targeted programs for beginning researchers. PME has recently been accepted as a Charitable organization under UK law, and we welcome ICME participants to discuss the possible future activities that would support mathematics education around the world.

AFRICME (African Regional Congress on Mathematical Education)

July 14, 16:00–18:00 Location: T120

Contact Person: Fredrick Mtenzi, Alphonse Uworwabayeho

TBA

CIBEM (Congresso Iberoamericano de Educação Matemática / Iberoamerican Congress of Mathematics Education)

July 14, 16:00–18:00 Location: T124

Contact Person: Almeida Bairral, Agustín Carrillo de Albornoz Torres

16:00-16:05 Video-presentation

16:05-18:00 Online discussion

ERME (European society for Research in Mathematics Education)

July 14, 16:00–18:00 Location: T323

Carl Winslow (President of ERME)

16:00-16:10 A general presentation of ERME

16:10–16:20 A presentation of activities of YERME (early career scholars of ERME)

16:20–16:30 A presentation of and invitation to CERME12 (Bolzano, Italy, Feb. 2-6, 2021)

16:30–18:00 A panel of 5-6 representatives of ERME will interact with the audience, taking questions and comments in view of participants' future communication, collaboration and cooperation in and with ERME.

Abstract

The European society for Research in Mathematics Education was founded in 1997 by representatives from 16 European countries. The Society aims to enable communication of information to enhance the visibility and availability of European research on mathematics education (in Europe and all over the world). Media of communication include proceedings, journals, newsletters, books, the internet, web sites, video Congress, interactive CD-ROMs, virtual groups. The most important meeting points of the ERME are the biannual CERME congresses.

The Society supports graduate students and early career researchers in a variety of ways, including summer schools, webinars and channels that permit interaction and networking. These activities are organized in the YERME branch of ERME (“Y” indicating “young”)

The Society also supports other activities that help to achieve the objectives of communication, cooperation and collaboration between members, such as activities within emerging research communities and cooperation with other academic societies.

MERGA (Mathematics Education Research Group of Australasia)

July 14, 16:00–18:00 Location: T128

Catherine Attard (President of MERGA)

16:00-16:35 Video-presentation

- **Introduction to MERGA: President, Prof. Catherine Attard**
- **Overview of MERGA Journals: Prof. Peter Grootenboer, Editor in Chief, Mathematics Education Research Journal (MERJ) Assoc. Prof. Tracy Muir, Editor, Mathematics Teacher Education Development (MTED)**
- **Launch of Research in Mathematics Education in Australasia 2015-2019 – Assoc. Prof. Jenni Way**

16:35-18:00 Q&A

Abstract

This session will showcase the journals and conferences of the Mathematics Education Research Group of Australasia (MERGA). During the session MERGA will also launch the tenth edition of the 4-yearly review of 'Research in Mathematics Education in Australasia 2016-2019' published by Springer. Delegates are invited to attend this session to find out more about the research achievements and dissemination activities of the Australasian mathematics research community.