ICMI
International Commission on Mathematical Instruction

Report to the General Assembly
2013-2016

Hamburg, Germany

July 24, 2016
About ICMI

• Founded in Rome, in 1908

• A Commission of the International Mathematical Union (IMU) since 1952
About ICMI
Organization and Governance

- Executive Committee
- Members
- Headquarters
About ICMI
Organization and Governance

- Executive Committee (10)
  - President
  - Vice-Presidents (2)
  - Secretary General
  - Members at Large (5)
  - Ex-officio members (3)
About ICMI

Organization and Governance

- Executive Committee
  - Annual meetings
  - Ongoing communications
  - Consensual decisions
- Nomination Processes
About ICMI
Organization and Governance

• Executive Committee

• Members
  93 countries
Representatives and Adhering O.
About ICMI
Organization and Governance

• Executive Committee
• Members
• Headquarters
Alexander Mielke, Head of the Secretariat and IMU Treasurer
Sylwia Markwardt, Manager
Lena Koch, ICMI/CDC Administrator
Anita Orlowsky, IMU Accountant
Birgit Seeliger, IMU Archivist
Gerhard Telschow, IT and T.S.
Ramona Keuchel, Project Assistant
About ICMI
Organization and Governance

ICMI – IMU
About ICMI

Finances

• Sources
  IMU (!)
  ICSU, CDC, UNESCO

Individuals and institutions

Savings
About ICMI

Finances

- **Sources**
- **Budget**

\[
\text{Income} \approx \text{€58},000 + \ldots \\
\text{Expenses} \approx \text{€50},000 + \ldots
\]
About ICMI
Affiliated Study Groups
In chronological order of affiliation

- **HPM** History and Pedagogy of Mathematics (1976)
- **PME** Psychology of Mathematics Education (1976)
- **IOWME** International Organization of Women and Mathematics Education (1987)
- **WFNMC** World Federation of National Mathematics Competitions (1994)
- **MCG** The International Group for Mathematical Creativity and Giftedness (2011)
About ICMI
Affiliated Societies
In chronological order of affiliation

• CIAEM  Inter-American Committee on Mathematics Education (2009)

• ERME  European Society for Research in Mathematics Education (2010)

• CIEAEM  International Commission for the Study and Improvement of Mathematics Teaching (2010)

• MERGA  Mathematics Education Research Group of Australasia (2011)
About ICMI

Core activities

1. Conferences (ICME + Regional)
2. ICMI Studies
3. Development Activities
4. Recognition of excellence
5. Other
About ICMI

Core activities

1. Conferences (ICME + Regional)
ICME Conferences

International + Local

Multitudinous (3500 participants)

Variety of interests

Bidding process
Bidding process

Towards ICME15 in 2024:

December 1\textsuperscript{st} 2017 – Intentions to bid

November 1\textsuperscript{st} 2018 – Firm bid

During 2019 – Site visits and decision
ICME Conferences

International + Local

Multitudinous (3500 participants)

Variety of interests

Bidding process

Convenor + IPC + LOC + Contract
Regional Conferences

• EARCOME — East Asia Regional Conference on Mathematics Education (Thailand 2013; Philippines 2015)

• CIAEM — Conferencia Interamericana de Educación Matemática (Mexico 2015)

• EMF — Espace Mathématique Francophone (Algeria, 2015)

• AFRICME — Africa (Regional Congress) on Mathematical Education (Lesotho, 2013)

• EMeLP — Espaço Matemático em Lingua Portuguesa (just constituted, Portugal, 2015)
About ICMI

Core activities

1. Conferences (ICME + Regional)

2. ICMI Studies
ICMI Study 23

Building the Foundation: Whole numbers in the primary grades

Maria G. Bartolini Bussi & Xuhua Sun
ICMI Study 24

School Mathematics Curriculum Reforms: Challenges and Changes

(Tentative title)

Renuka Vithal & Yoshinori Shimizu
NEXT ICMI STUDIES?
About ICMI

Core activities

1. Conferences (ICME + Regional)
2. ICMI Studies
3. Development Activities
3. Development Activities

Outreach to developing countries

Klein Project

Collaborations
Outreach to developing countries

CANP: Capacity and Networking Project

Solidarity Funds

3. Development Activities
Capacity and Networking Project - CANP

Purpose: to enhance mathematics education at all levels in developing countries by helping to start building communities.
To develop materials that present contemporary mathematics for secondary school teachers, in order to inform, entertain and feed the enthusiasm of teachers for their subject.

3. Development Activities
“Klein Vignette”: a short piece about a mathematical topic likely to be new to most secondary teachers. Requires some undergraduate mathematical knowledge, and a willingness to engage with mathematical reading and writing.

How google works?

A tale of two triangles

Higher dimensions
Translated by:
Marta Menghini

Advisor to the translation:
Gert Schubring
http://kleinproject.org

- Design Group meetings.
- Meetings in Portugal, Spain, UK, Brazil, USA, Germany, Sweden.
- Book in the future.
- Website with 23 vignettes (some translated to different languages) - contributions sought.
- Considerable interest and excellent discussion between mathematicians, mathematics educators, and teachers.
3. Development Activities

“Experiencing Mathematics”
“Mathematics Planet Earth”

Collaborations
This virtual exhibition is addressed to math teachers and their students - especially those in secondary education - but also to anyone interested in mathematics and sciences in general.

Experiencing Mathematics

This virtual exhibition shows more than 200 mathematical situations.
They give students opportunities to experiment, try out, make hypotheses, probe them, try to validate them but also the possibility to try to demonstrate and debate about mathematical properties.

Initiated and supported by UNESCO, as for the international itinerant exhibition “Experiencing Mathematics!” It was designed and carried out by Centre Sciences and Adecum.
About ICMI

Core activities

1. Conferences (ICME + Regional)
2. ICMI Studies
3. Development Activities
4. Recognition of excellence
Felix Klein Award for lifetime achievement

Hans Freudenthal Award for a major research program

Emma Castenuovo Award for excellence in the practice of mathematics education
ICMI Awards

• Launched in 2003 and 2014

• Awarded every two/four years and presented at ICMEs

• Ad hoc Awards Committees
Felix Klein Awardees:
  Michèle Artigue, France, 2013
  Alan Bishop, Australia, 2015

Hans Freudenthal Awardes:
  Frederick Leung, China, 2013
  Jill Adler, South Africa

Emma Castelnuovo Awardees:
  Hugh Burkhardt & Malcolm Swan, UK, 2016
About ICMI

Core activities

1. Conferences (ICME + Regional)
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3. Development Activities
4. Recognition of excellence
5. Other
• DATABASE PROJECT
  Curricula all over the world

• PIPELINE PROJECT
  Supply and demand for mathematics students
  and personnel in educational institutions and
  the workplace

• COMMUNICATION, OUTREACH AND ARCHIVE
  – ICMI Website: www.mathunion.org/icmi
  – Newsletter (ICMI News) three times a year (+)
  – ICMI Facebook
  – ICMI Archive (curator: B. Hodgson)
Possible future activities

The International Network of Early Career Researchers in Mathematics Education

Outreach to teachers

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