

ICMI

International Commission on Mathematical Instruction



www.mathunion.org/icmi
www.facebook.com/icmi.math.edu
<http://blog.kleinproject.org/>

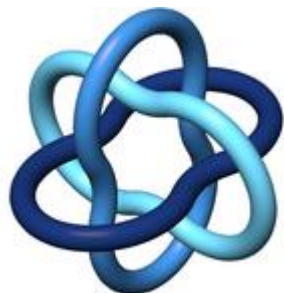
Report to the General Assembly 2013-2016

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.

GENERAL ASSEMBLY





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

Income \approx €58,000 + ...

Expenses \approx €50,000 + ...



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)
- **ICTMA** International Study Group for Mathematical Modeling and Applications (2003)



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



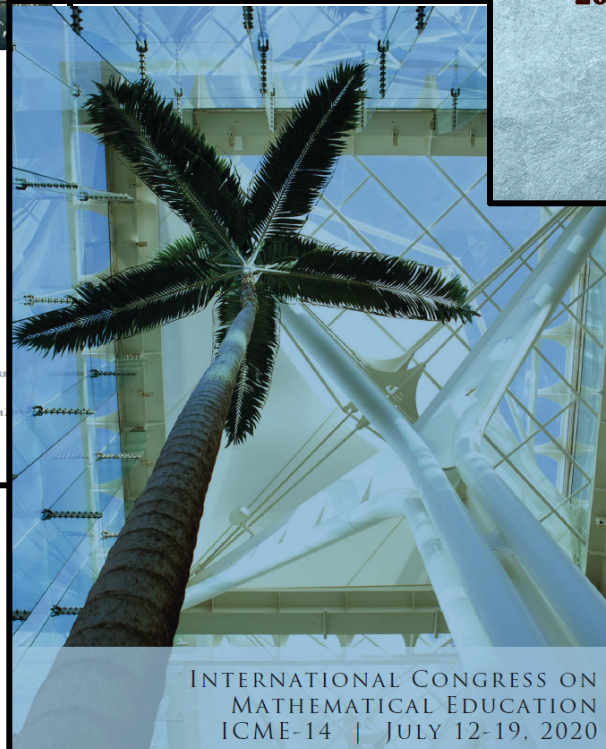
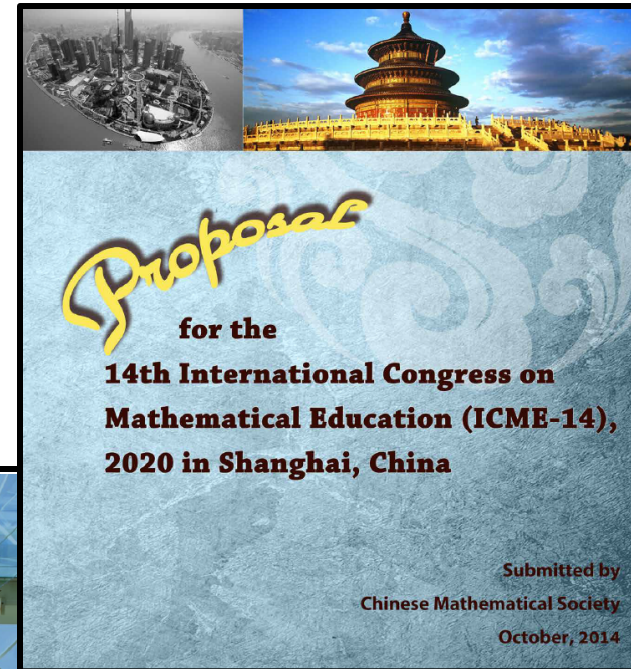
International + Local

Multitudinous (3500 participants)

Variety of interests

Bidding process

BIDS



SITE VISITS DECISION

INTERNATIONAL CONGRESS ON
MATHEMATICAL EDUCATION
ICME-14 | JULY 12-19, 2020



Bidding process

Towards ICME15 in 2024:

December 1st 2017 – Intentions to bid

November 1st 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 Língua Portuguesa (just constituted, Portugal, 2015)

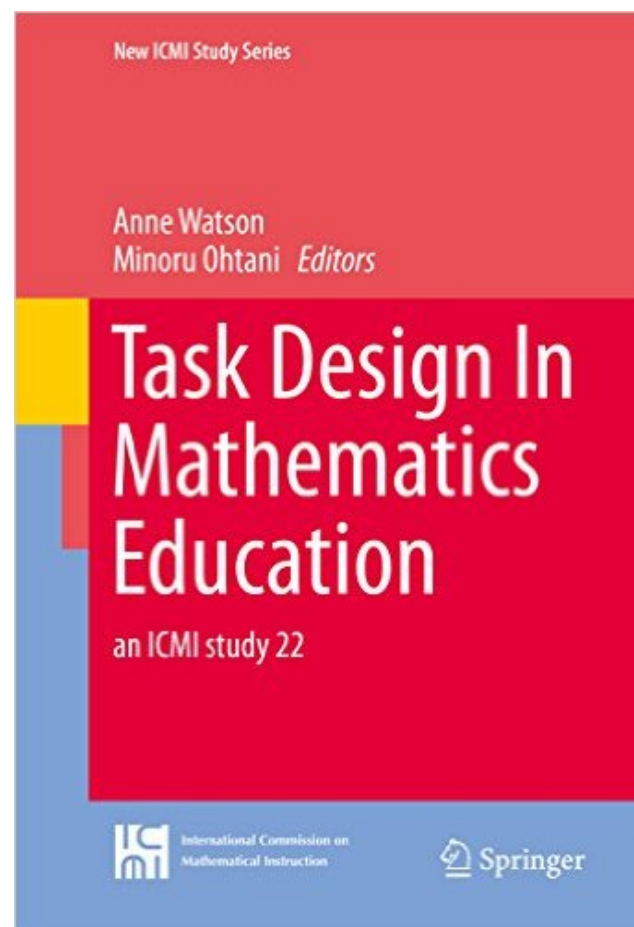
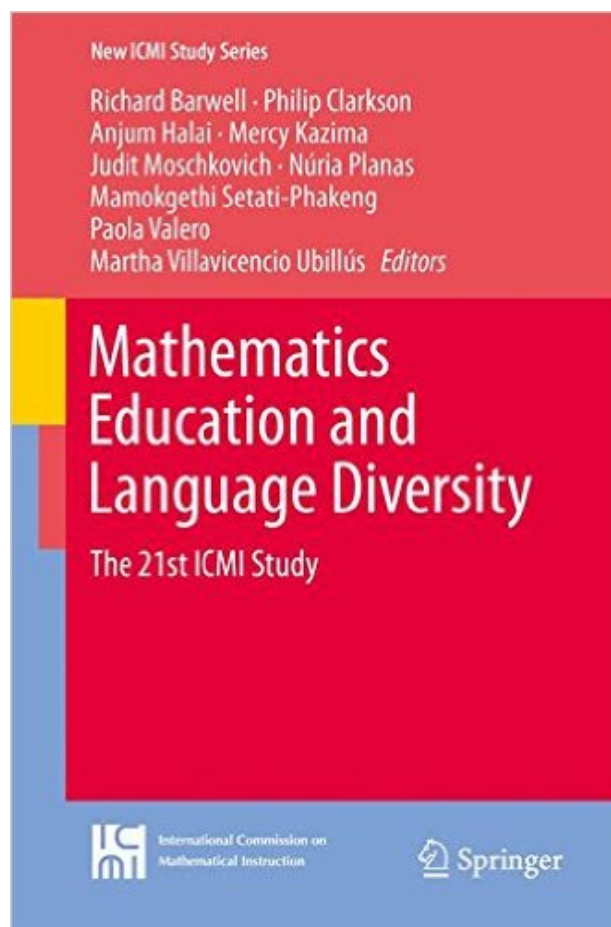
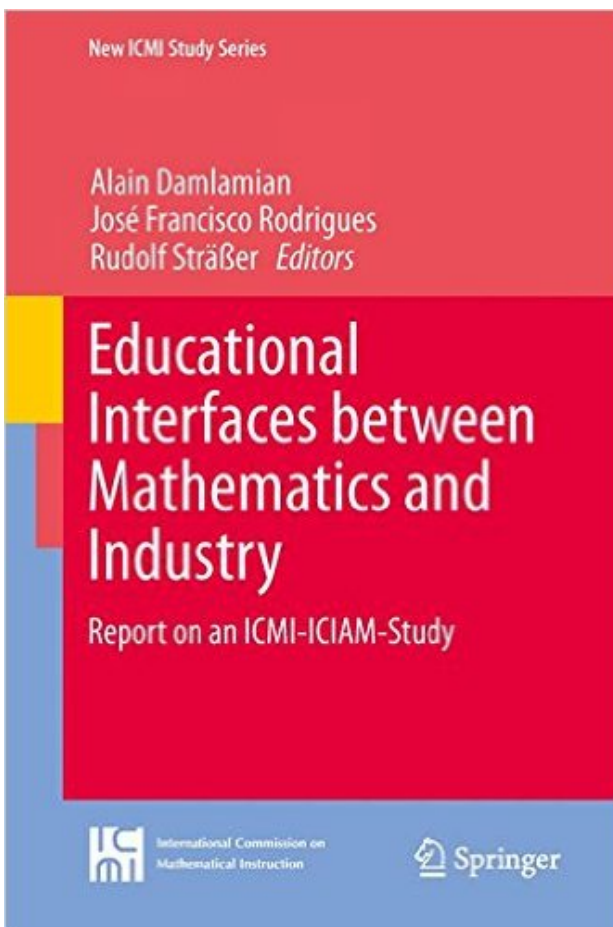
About ICMi



Core activities

1. Conferences (ICME + Regional)
2. ICMi Studies

ICMI Study 20, 2013 ICMI Study 21, 2015 ICMI Study 22, 2015



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



Outreach to
developing
countries

Klein
Project

3. Development Activities

Collaborations



**Outreach to
developing
countries**

**CANP: Capacity and
Networking Project**

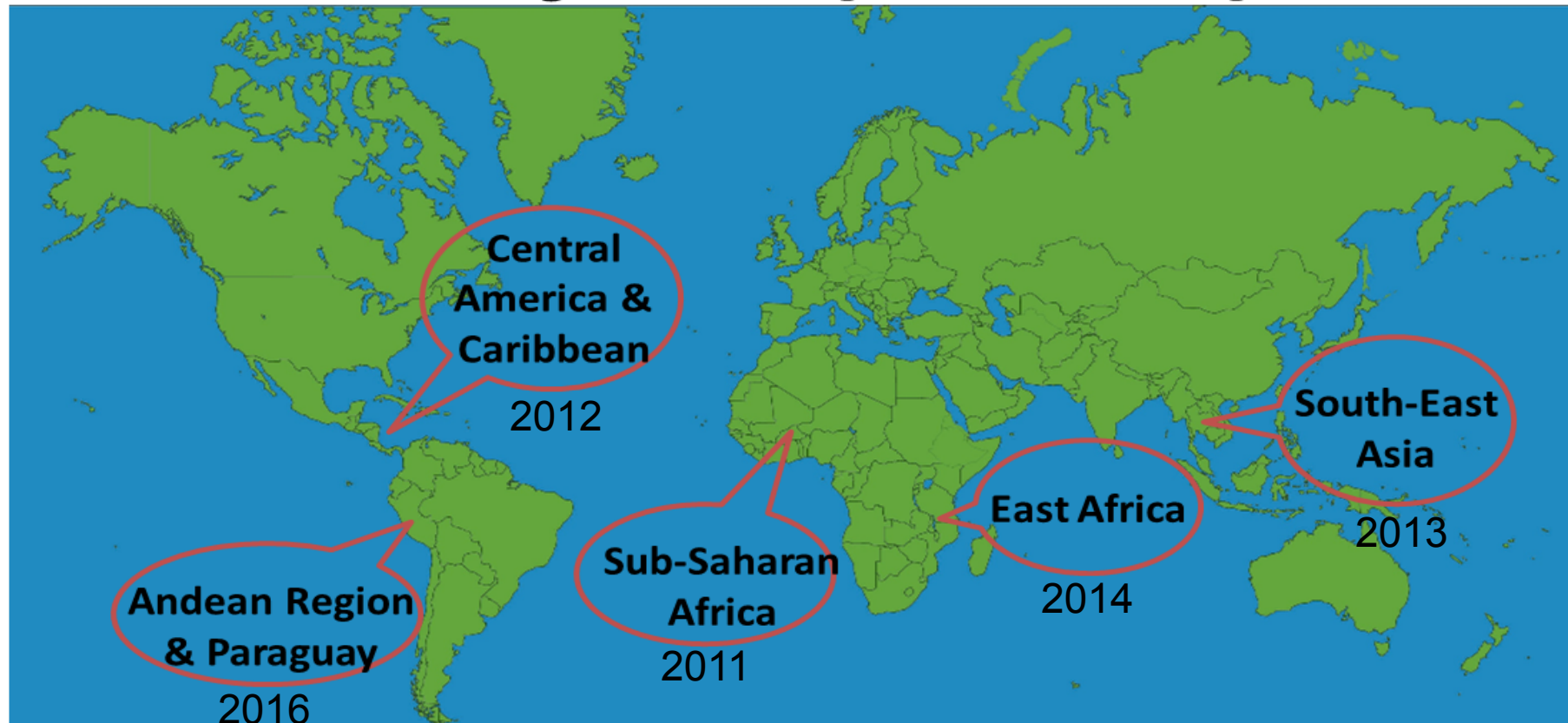
Solidarity Funds

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



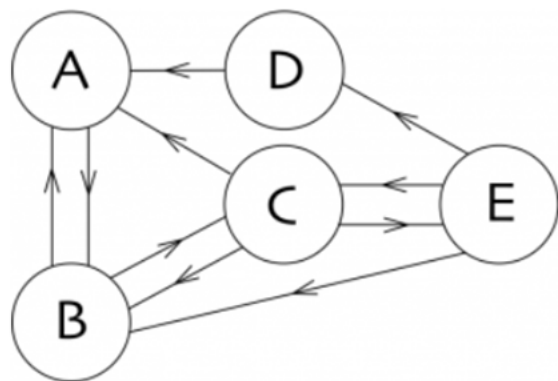
To develop materials that present contemporary mathematics for secondary school teachers, in order to inform, entertain and feed the enthusiasm of teachers for their subject.

A light blue speech bubble with a black outline and a tail pointing towards the bottom left.

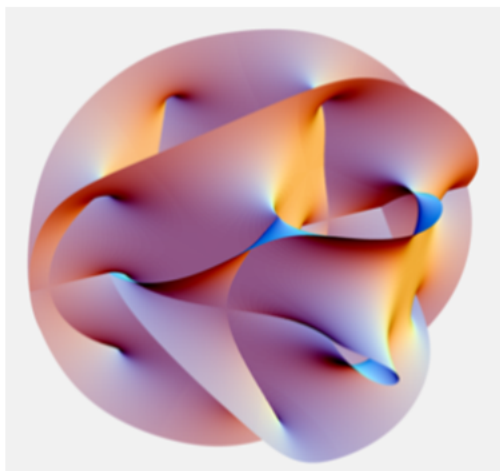
**Klein
Project**

3. Development Activities

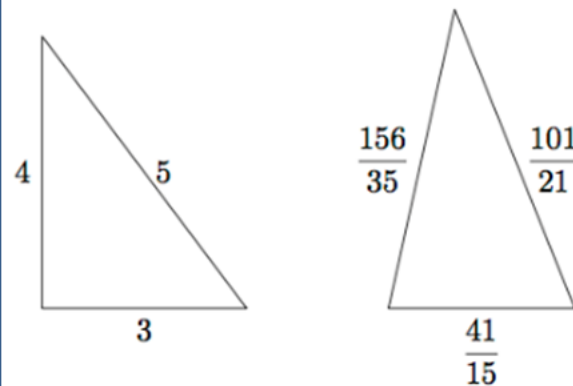
“Klein Vignette”: a short piece about a mathematical topic likely to be new to most secondary teachers. Requires some undergraduate mathematical knowledge, and a willingness to engage with mathematical reading and writing.



How google works?



Higher dimensions




A tale of two triangles

A portrait of Felix Klein, a man with a beard and mustache, wearing a suit and tie. The portrait is faded and serves as a background for the text on the left side of the image.

Felix Klein

Elementary Mathematics from a Higher Standpoint

Volume III: Precision Mathematics
and Approximation Mathematics

 Springer

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.



“Experiencing Mathematics”
“Mathematics Planet Earth”

3. Development Activities



Collaborations

Welcome

Introduction

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 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.

EN

FR

SP

PT

CT

AR

Experiencing

EXPERIENCING

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 Castelnuovo 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 Awardees:

Frederick Leung, China, 2013

Jill Adler, South Africa

Emma Castelnuovo Awardees:

Hugh Burkhardt & Malcolm Swan, UK, 2016

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- **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

...

ICMI

International Commission on Mathematical Instruction



Thank you!

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