

ICME 11

11th International
Congress
on
Mathematical
Education

Second Announcement

July 6th to 13th, 2008
Monterrey, Mexico
<http://icme11.org>



In anticipation of ICME-11

Very exciting things have been happening. During and following ICME-10 in 2004 in Denmark, ICMI (see page 4) invited twenty-three members of the international community of mathematics education to constitute the International Program Committee (IPC) and embark on the planning for the 11th quadrennial International Congress on Mathematical Education (ICME-11). The Sociedad Matemática Mexicana (Mexican Mathematical Society), with the support of the Mexican Federal Government via the Ministry of Education (SEP), had successfully bid to have ICME-11 take place in Monterrey, Mexico, in July 2008.

The IPC met in Mexico City, in November 2005, and again in January 2007, in the city of Monterrey, the whole time working hard at designing the scientific program, planning activities for this major event, and selecting the people that would organize them. Both meetings were sponsored by the *Secretaría de Educación Pública*.

Close to 900 colleagues from all over the world were contacted to constitute the ICME-11 team, which at present numbers more than 500 people and is still growing. They are working to organize Survey Teams, National Presentations, Topic Study Groups, Discussion Groups, and Plenary Panel Debates; or preparing Plenary and Regular (concurrent) Lectures.

This is only the tip of the iceberg. The teams are busily engaging still more colleagues to contribute to the development of the tasks they were assigned, and many more, some among those of you who are reading this, are working on developing Workshops and Sharing Experiences Groups, and preparing Poster presentations of their work and their experience. These contributions will be for the benefit of a still larger number of teachers, teacher educators, researchers, students of the last two, textbook and material developers, decision makers, and others, all of whose work and professional development evolves about and revolves within mathematics education. As well, they are also doing it for their own professional development.

In parallel, the Local Organizing Committee (LOC), and the Ibero American Committee (IAC) were formed; the first in charge of the logistics of ICME-11, and the latter in charge of bringing together the region's educators. In addition to scientific, academic, and educational concerns, there were also other matters of the body and the spirit. The LOC, with significant participation from and supported by the Universidad de Nuevo León and the State Ministry of Education, is taking care of making the stay comfortable and entertaining for all ICME-11 attendees and those that accompany them; as in venue facilities, accommodations, cultural events, tours and tourist information, and so on.

All in all, thanks to a large worldwide and local effort by the international and the Mexican communities of mathematics education, ICME-11 promises to be a great opportunity for mathematics education professionals from all over the world to exchange ideas, information, and viewpoints; and develop productive dialog and working relationships with their peers.

We earnestly invite you to peruse this 2nd announcement, hoping you will share our enthusiasm and join us in this most worthwhile endeavor, participating in and contributing to (see "How to contribute", page 6) the program activities before and during the Congress, and/or registering to attend in July 2008.

On behalf of the ICME-11 team,

Alejandro Díaz Barriga
Sociedad Matemática Mexicana

Marcela Santillán,
Chair of the IPC for ICME-11

Carlos Signoret
Chair of the LOC for ICME-11

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<http://icme11.org>

Be sure to visit the official ICME11 website. Participants will find a lot of useful information about every aspect of the congress in this site. The web page is being constantly updated in order to maintain all participants and interested people informed.

Congress period and place

The Congress is to be held on July 6th to 13th in Monterrey, Mexico. The venue is the *Universidad Autónoma de Nuevo León* (Autonomous University of Nuevo Leon).

Important Addresses

Venue

Universidad Autónoma de Nuevo León
Av. Pedro de Alba s/n
Ciudad Universitaria
San Nicolás de los Garza, Nuevo León.

Congress Secretariat

ICME Congress Secretariat
Casa Tlalpan
Av. Cipreses s/n
Km. 23.5 Carretera Federal México-Cuernavaca
San Andrés Totoltepec, Tlalpan
14400 México, D.F.
Mexico

Important Dates (2008)

Submitting Proposals	January 20
Grants applications	up to February 15
Changes to Proposals	up to April 1
Early Registration	before March 2
Regular Registration	up to June 1

Get in touch

Congress Secretariat

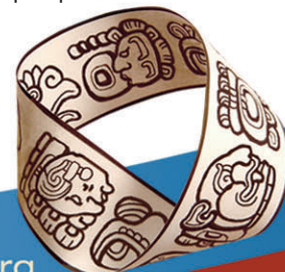
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Local Organizing Committee, Chair

Carlos Signoret Poillon
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What is ICME?

The International Congress on Mathematical Education (ICME) is held every four years under the auspices of the International Commission on Mathematical Instruction (ICMI). It is, however, planned and organized by separate committees, which operate independently of the ICMI: The International Program Committee (IPC), The Local Organizing Committee (LOC), and The Ibero American Committee (IAC). The aim of the Congress is to present the current state of and trends in mathematics education research and in the practice of mathematics teaching at all levels.

The Congress will gather a broad spectrum of participants such as researchers in mathematics education, teacher trainers, practicing teachers, mathematicians, and others interested in mathematics education.

Goals of ICME

1. To provide a forum for mathematics education professionals from all over the world, where they can exchange ideas, information, and viewpoints; and develop productive dialog with their peers. By M.E. professionals we mean to include teachers, researchers, curriculum designers, textbooks and materials authors, academic administrators, and others whose work and interests are strongly related to mathematics education.
2. To provide M.E. professionals with opportunities for professional development by presenting their work and receiving immediate feedback and establish or strengthen working relationship with their peers.
3. To promote collaboration between educators from different countries, in a wide and inclusive manner, regardless of gender, ethnic origin, religion, political ideology, citizenship, or any other difference between groups or individuals.
4. To improve the practice and research of mathematics education in all the countries represented at the congress, inasmuch as we believe that this is an expected outcome of the type of study, learning, dialog, and collaboration that the work developed prior to and at the congress promotes.

ICME in context: ICMI and IMU



The International Commission on Mathematical Instruction (ICMI) was first established at the International Congress of Mathematicians held in Rome, in 1908, with Felix Klein as its first president, and in 1952 as an official commission of IMU. As a commission, ICMI is defined by two constituent components: the Executive Committee (EC) of ICMI, elected by the General Assembly of ICMI for a four-year term, and the ICMI Representatives of the member states, appointed by or on

behalf of the Adhering Organization (typically, the national academy of science, the national mathematical society, or suchlike) or the National Committee for Mathematics (CM), also appointed by the Adhering Organization.

The members of ICMI are neither individuals nor organizations, agencies, etc., but countries. Member states are of two categories: all country members of IMU are automatically members of ICMI, and in addition, ICMI may, with the approval of the Executive Committee of IMU, co-opt on an individual basis, as so-called non-IMU members, countries which for some reason or another are unable to join the IMU. There are currently 81 member states of ICMI. Each member state, whether an IMU country or not, is entitled to appoint a National Representative.

From the very beginning, the international journal *L'Enseignement Mathématique*, founded in 1899 by Henri Fehr and Charles Laisant, was adopted as the official organ of ICMI - which it is still today. ICMI also publishes, under the editorship of the Secretary, a Bulletin appearing twice a year. (Starting with Bulletin No. 39, December 1995, the ICMI Bulletin is accessible on the internet.)

As a scientific union, IMU is a member organization of the International Council of Scientific Unions, ICSU. This implies that ICMI, through IMU, is to abide by the ICSU statutes, one of which establishes the principle of non-discrimination. This principle affirms the right and freedom of scientists to associate in international scientific activities regardless of citizenship, religion, political stance, ethnic origin, sex, and suchlike. Apart from observing general IMU and ICSU rules and principles, ICMI works with a large degree of autonomy.

ICME History

Past ICMEs have taken place at:

1	1969	Lyon, France
2	1972	Exeter, United Kingdom
3	1976	Karlsruhe, Germany
4	1980	Berkeley, United States of America
5	1984	Adelaide, Australia
6	1988	Budapest, Hungary
7	1992	Quebec, Canada
8	1996	Seville, Spain
		Visit: http://web.archive.org/web/20051109045525/ or http://thales.cica.es/icme8/
9	2000	Tokyo, Japan
		Visit: http://www.ma.kagu.sut.ac.jp/~icme9/
10	2004	Copenhagen, Denmark
		Visit: http://www.icme10.dk/
11	2008	Monterrey, Mexico
		Visit: http://icme11.org

Organizing Committees



International Commission on
Mathematical Instruction

ICMI Executive Committee (2007 - 2009)

President

Michèle Artigue, France

Vice-Presidents

Jill Adler, South Africa

Bill Barton, New Zealand

Secretary-General

Bernard R. Hodgson, Canada

Members at large

Mariolina Bartolini Bussi, Italy

Jaime Carvalho e Silva, Portugal

Celia Hoyles, England

S. Kumaresan, India

Frederick Koon-Shing Leung, Hong Kong

Alexei L. Semenov, Russia

Ex officio members

Hyman Bass (Past President), USA

László Lovász, (President of IMU),

Hungary

Martin Grötschel, (Secretary of IMU),

Germany

IPC

International Program Committee

Michèle Artigue, France

Jiansheng Bao, China

Hyman Bass, USA

Ricardo Cantoral, Mexico

Sung Je Cho, Korea

David Clarke, Australia

Lisbeth K. Cordani, Brazil

Olimpia Figueras, Mexico

Zahra Gooya, Iran

Bernard R. Hodgson, Canada

Christine Keitel, Germany

Carolyn Kieran, Canada

Maria Falk de Losada, Colombia

Mogens Niss, Denmark

Richard Noss, UK

Fidel Oteiza, Chile

João Pedro da Ponte, Portugal

Angel Ruiz, Costa Rica

Marcela Santillán, Mexico (Chair)

Cathy Seeley, USA

Mamokgethi Setati, South Africa

Carlos Signoret, Mexico

Hikma Smida, Tunisia

Victor Vassiliev, Russia

LOC

Local Organizing Committee

Esmeralda J. Chávez V. SMM

Alejandro J. Díaz Barriga, SMM

Idolina Leal Lozano, UANL

Patricia Martínez Moreno, UANL

Ubaldo Ortíz Méndez, UANL

Marcela Santillán, UPN

Carlos Signoret, SMM, Chair

IAC

Ibero American Committee

José Vicente Aymerich, España

Guillermina L. Carmona, ANPM

Rafael Correa F. UMALCA, Chile

Alejandro J. Díaz Barriga

Rosa María Farfán, RELME

Idolina Leal Lozano, UANL, Mexico

Gustavo Martínez Sierra

Teresa Navarro de Mendicuti

Angel Ruíz, CIAEM

Marcela Santillán, UPN, Mexico

Luz Manuel Santos Trigo, CINVESTAV,

Mexico

Carlos Signoret, SMM, Mexico

Ciro Adolfo Suárez



The Scientific Program

The scientific program for ICME-11 is the result of the evolution, not only of the ICME congresses but of Mathematics Education itself. The complexity of the program structure of ICME-11 responds to various characteristics and needs of the international community of mathematics education professionals, including a variety of topics and types of activities. Below you will find our attempt to explain the rationale that gave shape and structure to the Scientific Program for ICME-11.

In the pages that follow, you will find a section on How to contribute, stressing the fact that the program is built upon the work of the community. In it we describe how groups or individuals can share their work and thoughts with their peers in the various activities open to participation. The different components of the program are then described, including the names of chairs and members of organizing teams for group activities, moderators and panelists for panel debates, and lecturers.

Readers are invited to consult our web site for further details. The web site will be regularly updated. Questions and proposals concerning matters pertaining to the program should be addressed to the Chair of the IPC.



Marcela Santillán,
Chair of the IPC
for ICME-11

Rationale of the Program

The IPC has made a great effort to offer an academic program that satisfies the needs of the international mathematics education community. There were several characteristics that had to be considered:

- **Topics** - a wide coverage of topics: The interests of and problems encountered by mathematics educators and researchers fall within many different topics. The topics chosen for ICME-11 had to be sufficiently specific so that the issues and problems each encompassed were related so as to share theoretical frameworks and analytical techniques, while sufficiently broad so as to benefit from intellectual cross-pollination. We believe we reached a reasonable balance.
- **Interest** - General vs. specific: There are issues which are of interest to all the participants while others are of more specific interest. This led to having plenary and concurrent activities.
- **Participation** -Group vs individual: It has long been recognized by the international community, including ICME organizers, that dialogue and collaboration is the best way of advancing our understanding of any topic. Thus we have formed groups to address each selected topic. However, there is also a need to give individual voices the opportunity to be heard and the community the opportunity of hearing them, without having to conform to the deliberations of a group.
- **Mode of addressing a topic:** Study - discussion - exposition; and combinations like panels and round tables. It was important to recognize the importance and difference of each way of addressing a topic. This concept has evolved from one ICME to the next, attaining its present form at ICME-10. We now have seven Survey Teams, 38

Topic Study Groups and 28 Discussion Groups. In addition to nine Plenary Sessions (lectures and panel debates), and the other components of the program.

- **Recognition of expertise** - Widely recognized vs upcoming: On the one hand we were aware of the importance of having recognized experts in the various fields of Mathematics Education participating in the activities, while on the other hand we saw the need to profit from the expertise and experience of less known individuals and getting to know them. This holds true for both group and individual activities, and required us to be open when deciding on and issuing invitations.

How to contribute

Members of the international community of mathematics education are encouraged to participate in the ICME-11 program with a positive contribution in one or more of the following components of the scientific program: Topic Study Groups, Discussion Groups, Workshops, Sharing Experiences Groups, Poster Presentations, and the Ibero American Forum.

Each type of activity has its own rationale which can be taken into consideration by potential contributors when selecting activities. A perusal of the various components will allow you to choose those activities most suited to your interests.

Topic Study Groups (TSGs)

The purpose of a TSG is to gather participants interested in a certain topic in mathematics education. The organizing team (OT) of each TSG will review, select and organize contributions, some by invitation and some submitted by interested participants, that account for advances, new trends, and

important work done in the last few years on the topic the TSG addresses. Papers may be selected for presentation in one of the four sessions the TSG will have at the Congress. Usually, however, the OT receives more contributions that are considered worthwhile than can be presented orally at the Congress, so another group of papers are chosen to be distributed by hand as printed copies before the sessions and/or for downloading from the TSG's web page.

Each TSG Organizing Team will issue a *Call for papers/contributions* stating the terms for submitting contributions, including the deadline each team has set for receiving them—in any case, no later than **January 20, 2008**. Please check the list of TSGs at <http://icme11.org> and consult the page of the one that addresses the topic of your interest for this information. (The list also appears on page 13)

Discussion Groups (DGs)

DG's are meant to gather congress participants who wish to actively discuss, in a genuinely interactive way, certain challenging or controversial issues and dilemmas—of a substantial, non-rhetorical nature—pertaining to the theme of the DG. During the time we have from now up to the congress, the organizing team (OT) of the discussion group will post in their page at the ICME-11 web site, contributions that define, limit, and/or present basic premises, theoretical considerations, research findings, viewpoints, and facts that should be accounted for if a fruitful discussion is to be attained. The contributions are posted so that participants in the discussion may have the opportunity of reading this material beforehand; it will not be presented during the discussion group's three sessions. The OT may however present brief introductions to jump-start and orient the discussion. Also, it may choose some papers to be distributed in printed copy by hand before the DG's sessions.

Each DG Organizing Team will issue a *Call for papers/contributions* stating the terms for submitting contributions, including the deadline each team has set for receiving them—in any case, no later than **January 20, 2008**. Please check the list of DGs at <http://icme11.org> and consult the page of the one that addresses the topic of your interest for this information. (The list also appears on page 18)

Workshops

Workshops are hands-on activities for a limited number of participants (30-40) and targeted at a specific type of attendees, be it teachers (from pre-school to university), graduate students, and/or researchers, who are interested in learning or trying out something through active participation. Normally, a workshop will be allotted one or two one-hour time slots.

Proposals must include contact information and a description of your WS including title, target audience, number of participants, goals (what are participants expected to gain), reasons for attending, needs, and keywords.

Workshops should acquaint participants with, and provide experience in, a variety of areas such as those suggested by the following examples:

- an alternative/innovative approach to teaching or to classroom practice
- a non-traditional mathematical topic for the curriculum, or a non-traditional approach to a traditional topic
- a methodology or a technique in mathematics education research
- an innovative use of information and communication technologies in the service of mathematics education
- an approach or a method to analyze videotapes (of individual students at work, classroom sessions, etc.)
- ways to read, write, or assess academic papers in mathematics education

Sharing Experiences Groups (SEGs)

SEGs are small and intimate groups (10 to 20 participants) designed to exchange and discuss experiences pertaining to research and/or teaching concerning a well-defined theme of common interest. SEGs are formed via proposals to the IPC. It is an excellent opportunity for groups of teachers or researchers involved in projects or facing comparable conditions or theoretical frameworks to exchange and contrast viewpoints and experience with other colleagues with similar concerns. In addition, even though the IPC strived to include as many topics as possible, there may have been some left out. This allows such topics to be addressed by interested individuals. Normally, an SEG will be allotted one or two one-hour time slots.

Proposals must include contact information and a description of your SEG including title, target audience, number of participants, goals (what are participants expected to gain), reasons for attending, needs, and keywords.

The following are examples of possible themes to be discussed by an SEG.

- how to initiate and conduct a research project
- what should be the balance between course work and dissertation work in a PhD study
- problems typically encountered in planning and carrying through empirical research
- obstacles, or avenues, to innovation experienced by individual teachers who want to adopt innovative approaches to teaching or assessment
- experiences of team teaching
- problems encountered in graduate supervision
- projects involving “street mathematics”



Poster Exhibition and Round Tables

Congress participants are invited to submit proposals for the display and presentation of posters in English or Spanish. We anticipate space for several hundred posters and encourage this form of congress participation as a means of presenting a wide array of mathematics education initiatives concerning research or practice. Time slots will be made available for the presentation of posters.

Posters will be grouped, as far as possible, according to language (English or Spanish) and the themes of the 38 Topic Study Groups and the 28 Discussion Groups. Round tables will be organized with the participation of no more than ten poster presenters in the same group who accept to discuss their work in such a setting. The IPC will appoint experienced mathematics educators to chair such Round Table sessions.

Poster proposals will be asked to include a title, an abstract of 100 to 500 words, and keywords (including the TSG or DG that would form a group for the poster, see the list at <http://tsg.icme11.org> or <http://dg.icme11.org>).

Information about the size and format of posters will be given when a poster has been accepted.

Ibero American Forum: Perspective on development through collaboration

Concurrent with other ICME-11 activities, we will organize meetings that will address the issue of Latin American development and collaboration. In spite of their differences, Ibero American countries share cultural roots, ethnic diversity, and a sense of identity. We wish to provide a forum where partici-

pants will explore the possibilities for development through collaboration, not only among themselves but also with other regions. The sessions will be conducted in Spanish or Portuguese.

The organizing team for the forum will be posting a *Call for contributions* in their page found at our web site: <http://icme11.org>.

We need your contributions

Plenary 2: What do we need to know? Does research in mathematics education address the concerns of teachers and policy makers?

Whether or not you plan to attend ICME 11 –and we hope you do– you can make an important contribution by letting us know how research can help you. We need responses from all countries, all school types and all levels of the school system including teachers, policy makers and curriculum developers.

For more information on Plenary 2, see page 9, and consult the ICME-11 web site for updates and to complete the survey on line.

Acknowledgement of receipt

Acknowledgement of receipt of proposals for Workshops, SEG's and Posters will be forwarded within seven days of submission. Please observe that it is the responsibility of the proposal submitters' to contact the organizers if acknowledgement of receipt is not received.

How to submit a proposal for Workshops, Sharing Experiences Groups and Poster Presentations

Proposals for non-commercial WS*, SEGs, and Posters in English or Spanish, may be presented by individuals or groups at the ICME-11 website <http://icme11.org>. Please check the "How to submit proposals" page for instructions. Proposals will be received no later than **January 20, 2008**, for review by appointed colleagues and the decision will be posted on the same page. Decisions will be announced no later than February 15, 2008. Latest time for changes to an accepted WS/SEG program or Poster Presentation is **April 1, 2008**. Approved workshop or SEG proposals will have a web page in our web site at their disposal to present their workshop and will be listed in the final program. Approved poster presentations will also appear in our web site and will be listed in the final program. Please note that participation in a WS and/or SEG is limited and allocated on a "first come first served" basis.

We strongly recommend that you try to submit your proposal online. If you do not have access to the Internet at home or work, you may try a library, school or community center, or Internet Café near you. If, however, you are unable to do so, please prepare a document with your proposal and send it to the following address:

*Sociedad Matemática Mexicana
ICME Congress Secretariat/Proposals
Casa Tlalpan
Av. Cipreses s/n
Km. 23.5 Carretera Federal México-Cuernavaca
San Andrés Totoltepec, Tlalpan
14400 México, D.F.
Mexico*

* Commercial workshop proposals are submitted through a different channel and are not part of the scientific program. For inquiries, please contact the IPC chair at m.santillan@upn.mx

Plenary Activities

The plenary activities are those components of the scientific program that address all congress participants at the same time. For ICME-11 there will be nine different plenary activities. These will include six plenary lectures, two of which will present the outcomes of the work of Survey Teams 3 and 4 (see below). There will be three panel debates on:

- What do we need to know? Does research in mathematics education address the concerns of practitioners and policy makers?, which ties in with the Plenary Lecture on: What do we know? And how do we know it?
- History of the development of mathematics education in Latin American countries.
- Equal access to mathematics education

P1. What do we know? And how do we know it?

(Two speakers with different viewpoints) :

- a) What do we know that we did not know ten years ago, what have we achieved and what have we missed out?, b) Positive results as researchers and mathematics educators, c) The nature of evidence of results in student outputs, d) What is a good mathematics education?, e) What is society asking from us?, and f) Do we understand learning and teaching the same way? (1.5 hours)

Speakers:

Michèle Artigue (France) <artigue@math.jussieu.fr>

Jeremy Kilpatrick (USA) <jkilpat@uga.edu>

P2. What do we need to know? Does research in mathematics education address the concerns of practitioners and policy makers? (panel debate)

Plenary 2 will be a panel presentation addressing the question of whether research in mathematics education is providing the information that teachers and policy makers most need.

If this plenary is to make a useful contribution towards shaping the research agenda in mathematics education, then the essential first step is to establish the needs of teachers and policy makers and the extent to which research in mathematics education is meeting those needs. To do this, teachers and policy makers in mathematics education are invited to identify an important aspect of their professional practice and to indicate how research has been either helpful or unhelpful. This information will be submitted in English through a special page on the ICME 11 website. This webpage will become available very soon.

In the meantime, please discuss with your colleagues: How has research been helpful to your practice? How might it be more helpful? Think of a situation that has arisen recently in your professional practice, which you think could have been informed by research. Start now to prepare a short statement about how research does or should contribute to your professional practice. If possible, provide a brief example.

We hope to collect information from mathematics teachers and policy makers from all around the world about the issues

of greatest concern and the extent to which research is seen to have addressed these issues. A plenary panel of four international researchers will examine the submissions, review the communication of research to practitioners and policy makers, and make suggestions regarding how the research agenda might better address the documented needs of teachers and policy makers in mathematics education.

Watch the ICME11 website for the announcement that the Plenary 2 webpage is open for submissions! Contribute to the shaping of the research agenda in mathematics education. We look forward very much to receiving your submission.

Moderator:

David Clarke (Australia) <d.clarke@unimelb.edu.au>

Panelists:

Paul Cobb (USA) <paul.cobb@vanderbilt.edu>

Mariolina Bartolini Bussi (Italy) <bartolini@unimore.it>

Teresa Rojano (Mexico) <trojano@ilce.edu.mx>

Shiqi Li (China) <sqli@euler.math.ecnu.edu.cn>

P3. Current trends in mathematics

A panoramic view of current trends in mathematics and of the role and expression of mathematics in the development of science and technology will be offered to ICME-11 attendees. (1 hour)

Speaker:

José Antonio de la Peña (Mexico) <jap@matem.unam.mx>

P4. History of the development of mathematics education in Latin American countries (panel debate) (1.5 hours)

Moderator:

Fidel Oteiza (Chile) <foteiza@comenus.usach.cl>

Panelists:

Eugenio Filloy (Mexico) <smmeef@aol.com.mx>

Ubiratan D'Ambrosio (Brazil) <ubi@usp.br>

Luis Campistrous (Cuba) <luis.campistrous@infomed.sld.cu>

Carlos Vasco (Colombia)

<Carlos_Vasco@pz.harvard.edu>



P5. Equal access to quality mathematics education

(panel debate)

All students, regardless of age, race, ethnic group, religion, gender, socioeconomic status, geographic location, language, disability, or prior mathematics achievement, deserve equitable access to challenging and meaningful mathematics learning and achievement. This concept has profound implications for teaching and learning mathematics throughout the educational community. It suggests that ensuring equity and excellence must be at the core of systemic reform efforts in mathematics education.

A necessary component for quality mathematics education is that all students receive an education that takes into account each student's background, including prior learning, characteristics, and abilities in a way that maximizes his/her learning and does not diminish in any way the goals s/he is expected to achieve. This pertains to both high-achieving and low-achieving students. (1.5 hours)

Moderator:

Bill Atweh (Australia) <b.atweh@qut.edu.au>

Panelists:

Olimpia Figueras (Mexico) <figuerao@cinvestav.mx>

Murad Jurdak (Lebanon) <jurdak@aub.edu.lb>

Catherine Vistro-Yu (The Philippines)

<cvistro-yu@ateneo.edu>

P6. Knowledge for teaching mathematics

(two speakers representing different perspectives)

Recent presentations at PME and elsewhere suggest that knowledge of mathematics teaching has been the focus of much activity in a variety of countries. The title was considered broad enough to allow the presenters to refer to current research into pedagogical content knowledge as well as content knowledge. This also led us to consider two presenters who could ensure an extensive viewpoint. (1.5 hours)

Speakers:

Toshiakira Fujii (Japan) <tfujii@u-gakugei.ac.jp>

Ruhama Even (Israel) <ruhama.even@weizmann.ac.il>

P7. Technology and mathematics education

(1 hour)

Speaker:

Celia Hoyles (United Kingdom) <c.hoyles@ioe.ac.uk>

P8. Report of Survey Team 3: The impact of research findings in mathematics education on students' learning of mathematics

(1 hour)

Organizer on behalf of Survey Team 3:

Angel Gutiérrez (Spain) <angel.gutierrez@uv.es>

P9. Report of Survey Team 4: Representations of mathematical concepts, objects and processes in mathematics teaching and learning

(1 hour)

Organizer on behalf of Survey Team 4:

Gerald Goldin (USA) <geraldgoldin@dimacs.rutgers.edu>

Survey Teams

ICME 11 Survey Teams, first created in ICME 10, are groups entrusted to carry out a survey of the latest developments regarding a certain theme or issue of Mathematics Education. Emphasis is placed on pinpointing new knowledge, new perspectives, and emerging challenges. The teams' work will be presented at the congress in a plenary (ST 3 and 4) or regular (ST 1, 2, 5, 6, and 7) lecture. Survey Teams ensure we are made aware of developments in the field addressed since the time of the previous ICME, thus giving continuity to ICME.

ST 1: Recruitment, entrance and retention of students to university mathematics studies in different countries.

An increasing number of countries' students opt away from enrolling to university studies in which mathematics is a substantial component. This is a problem for most, if not all, societies.

The task of this ST is to survey and review all factors that may be co-responsible for this situation, including those that determine students' choice of studies, the entrance conditions, and the ways in which universities respond to student needs and preferences when shaping programs, undertaking teaching and supervision, and conducting examinations. Factors also include society's perceptions and priorities, including the career perspectives offered to graduates, as well as aspects of internationalization of study structures and programs. The task further includes the identification and review of relevant measures taken to deal with the problems under consideration.

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Oscar Adolfo Sánchez Valenzuela (Mexico)

ST 2: Challenges to mathematics education research faced by developing countries.

Mathematics education research in developing countries faces a variety of issues of priority, opportunities, and problems, such as:

- the balance between relevance and quality in research;
- access to financial and human resources to conduct research
- methodologies that are appropriate with respect to cultural diversity and societal needs
- environmental, health, and nutrition factors that influence mathematics education.

The task if this ST is to identify and explore such major challenges to mathematics education research in developing countries, as well as attempts to deal with them.

Chair:

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Nerida Ellerton (USA) <nellert@ilstu.edu>

Mónica Villarreal (Argentina) <mvilla@famaf.unc.edu.ar>

ST 3: The impact of research findings in mathematics education on students' learning of mathematics.

The ultimate (but not necessarily immediate) end of mathematics education research is to provide effective avenues for the furthering and improvement of students' learning of mathematics. The (possible) impact of mathematics education research on students' learning will predominantly take place through the teaching of mathematics in the widest sense, including components such as curricula, structure and organization of the classroom and its activities, teaching materials, student tasks, and assessment, testing and examination instruments.

The task of this ST is to identify, survey, and review the impact of research findings on the improvement of students' learning of mathematics as mediated through teaching. The task includes specifying the notion and nature of 'impact', 'research finding', and 'improvement', as well as the nature and strength of the evidence of such impact.

Chair:

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ST 4: Representations of mathematical concepts, objects and processes in mathematics teaching and learning.

Representations of mathematical concepts, objects, and processes play a key role in mathematics teaching and learning. Representations can be variformed, eg. physical, verbal, symbolic, tabular, diagrammatic, and figurative. Also they can be real or mental, and include visualization.

The task of this ST is to identify, survey, and review progress in research and development concerning mathematical representation at all levels of Mathematics Education with an emphasis on contributions made within the last decade or so.

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ST 5: Mathematics education in multicultural and multilingual environments.

To an increasing extent, mathematics teaching and learning take place in multicultural and multilingual environments. This is the case in different nations in every region in the world. Environments range from individual classrooms, over specific institutions, to local and national settings, including different kinds of urban or rural areas. Different environments face different conditions, problems, challenges, approaches, practices, and outcomes.

The task of this ST is to survey the state-of-the-art both in terms of educational practices in mathematics, including new

developments, and in terms of research contributions concerning issues such as those mentioned above.

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ST 6: Societal challenges to mathematics education in different countries.

Political, social, economic, and ideological constraints co-determine the conditions of mathematics education practices and research in various countries in different ways. It may concern access to mathematics education as determined by system structures; institutional and financial problems; various patterns of curriculum design and the quality of the curricula provided by various institutions; segregation or integration of learners; the conditions and status of teachers; and changes in the functions, values and societal perceptions of mathematics.

The task of this ST is to survey and analyze how the roles of mathematics and mathematics education have changed in various countries, and how the application of mathematics have influenced political decision-making processes and outcomes concerning social problems in general, and education problems in particular. The task is further to consider the ways in which ICT has changed the perception and use of mathematics, and affected its role and importance within the education systems in different parts of the world. Finally, it is also part of the task of this ST to consider possible scenarios for future developments in relation to the issues raised above..

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ST 7: The notion and role of theory in mathematics education research

Notions and concepts of theory play key roles in mathematics education research, as they do in any scholarly or scientific discipline. On closer inspection, the notion, concept, and nature of what is termed 'theory' in such research are very varied indeed, as are the roles, uses and implications of theories employed in mathematics education research. In other words, the term 'theory' does not have one universal meaning in our field. Moreover, concrete theories put to use with regard to mathematics education originate in several different disciplines, many of which are external to mathematics education research itself.



The task of this ST is to identify, survey, and analyze different notions and roles of 'theory' in mathematics education research, as well as the origin, nature, uses, and implications of specific theories pertaining to different types of such research.

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National Presentations

It is customary to select a small number of countries so that the international mathematics community may gain a closer knowledge on the state and trends of mathematics education in those countries.

National representatives of those countries are asked to organize the presentation. An exhibition, video shows, cd-roms and so forth may accompany a national presentation.

ICME- 11 will have a combination of regional and national presentations of mathematics education. Representatives of Latin America and the North African Arab countries as regions; and China, Iran, and The Netherlands as individual countries, are organizing the presentations.

Regular Lectures (confirmed)

The regular lectures are presented by prominent mathematics educators from different parts of the world who have been invited by the IPC. The lectures will cover a wide spectrum of topics, themes, and issues of interest to specific audiences, in contrast with plenary lectures which are of general interest. The list below contains the names in alphabetic order of those who have already accepted the invitation. The list will be updated on the web site and will eventually include titles, keywords, and abstracts. Please check the web site for details. There are will be approximately 80 regular lectures, running in five time slots in the congress timetable, each with around 16 simultaneous lectures.

Roberto Araya (Chile)

Teresa Assude (France)

Alan Bishop (Australia)

Dani Ben-Zvi (Israel)

Kristin Bjarnadottir (Iceland)

Jere Confrey (USA)

João Pedro da Ponte (Portugal)

Edison de Faria (Costa Rica)

Rijkje Dekker (The Netherlands)

Joan Ferrini-Mundy (USA)

Merrilyn Goos (Australia)

Gu Ling Yuan (China)

Anjum Halai (Pakistan)

Rina Hershkowitz (Israel)

Derek Holton (New Zealand)

Barbara Jaworski (Norway)

Mercy Kazima (Malawi)

Carolyn Kieran (Canada)

Ajit Kumar (India)

Jean-Baptiste Lagrange (France)

Gilah Leder (Australia)

Lin Pi-Jen (Taiwan)

Eduardo Mancera (Mexico)

Michela Maschietto (Italy)

Elena Nardi (United Kingdom)

Louise Poirier (Canada)

Christiane Rousseau (Canada)

Patricia Sadovsky (Argentina)

Gert Schubring (Germany)

Fritz Schweiger (Austria)

Lurdes Serrazina (Portugal)

Godfrey Sethole (South Africa)

Susan Starkings (United Kingdom)

Wagner Rodrigues Valente (Brazil)

Rosetta Zan (Italy)

Topic Study Groups

The purpose of a TSG is to gather a group of congress participants who are interested in a particular topic in mathematics education. The word 'study' suggests that the activities of the groups will include presentations and discussions of important new trends and developments in research or practice related to the topic under consideration. The purpose of TSGs is to provide both an overview of the current state-of-the-art in the topic, and expositions of outstanding recent contributions to it, as seen from an international perspective. Among the many components of the program of an ICME, the TSGs are of the utmost importance, as these are the main forums where individuals attending the congress can bring a concrete contribution and also be in direct interaction with other participants.

By their very nature, some of the topics are focused more on research than on practice. For others the opposite will be the case, in contrast several topics will have a fairly equal balance of the two. To some extent, a number of the topics in the list for the Topic Study Groups have overlaps with other topics. Even so, each topic has a well-defined and specific 'center of gravity' that makes it clearly discernible from the others in the list.

The list of topics is organized into six clusters. The first cluster, TSG 1-5, consists of Topic Study Groups that focus on New developments and trends in mathematics education at the mainstream educational levels, preschool to tertiary. The next cluster TSG 6-9 focuses on mathematics education dealing with specific categories of students or population groups. The cluster, TSG 10-17 (Research and development in the teaching and learning of ...) focuses on matters and issues pertaining to content related aspects of mathematics curricula, across educational levels, and to teaching and learning in relation to those aspects. The cluster formed by TSG 18-26 deals with the overarching perspectives and facets of mathematics education that are present across different educational levels and different curricula. We have recognized the decisive importance of teacher education with cluster TSG 27-29, giving separate attention to mathematical knowledge for teaching, in-service, and pre-service teacher education. Finally, TSG 30-38 are the groups in which meta-issues concerning mathematics education itself, as a field of practice and a discipline of research, are the focus of attention.

The TSGs will have two one-hour and two ninety-minute timeslots in the congress timetable at their disposal. TSG participants are expected to stay with their group throughout the four sessions. Each TSG organizing team will have the responsibility of updating their TSG webpage at the congress web site. On this page it will be possible to follow the planning process and eventually access all relevant documents including the timetable for TSG sessions. Participants who would like to present papers in a TSG are requested to consult the *Call for papers* (or contributions) that each TSG organizing team has (or will) post at the TSG web page (visit <http://tsg.icme11.org>) or contact the team chairs at the email address listed below. The TSG organizing teams are responsible for establishing a scheme for paper presentation by distribution. See "How to contribute". Typically proposals should be put forward before January 20, but specific guidelines, if such apply, will be made available on the web site.

The organizing team of each TSG will promote, request, review, select, and organize contributions, some by invitation and some submitted by interested participants, that account for advances, new trends, and important work done in the last few years on the topic the TSG addresses. The contributions selected will be made available in one or more of the following modalities: as a download from the web page of the TSG in the ICME-11 web site, as a printed handout previous to a TSG session during the congress, and by oral presentation during any of the four TSG sessions. There will be some discussion during the sessions, but emphasis is on presentation (in contrast to discussion groups).

TSG 1: New developments and trends in mathematics education at preschool level

Chairs:

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Catherine Taveau (France)
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TSG 2: New developments and trends in mathematics education at primary level

Chairs:

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Wan Kang (Korea) <wkang@snu.ac.kr>

Members:

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Cindy Chapman (USA) <harrisb609@aol.com>
Auijit Pattanajak (Thailand) <auipat@kku.ac.th>

TSG 3: New developments and trends in mathematics education at lower secondary level

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Members:

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Glenda Anthony (New Zealand) <g.j.anthony@massey.ac.nz>
Jonas Emanuelsson (Sweden)
 <Jonas.Emanuelsson@ped.gu.se>

TSG 4: New developments and trends in mathematics education at upper secondary level

Chairs:

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Gloria Stillman (Australia) <g.stillman@unimelb.edu.au>

Members:

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Rigoberto Gabriel (Mexico) <jgabriel@uv.mx>
Wong Ngai-Ying (China, Hong Kong SAR)
 <nywong@cuhk.edu.hk>

TSG 5: New developments and trends in mathematics education at tertiary level

Chairs:

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Oh Nam Kwon (Korea) <onkwon@snu.ac.kr>

Members:

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Fabrice Vandebrouck (France)
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Keith Weber (USA) <khweber@rci.rutgers.edu>

TSG 6: Activities and programs for gifted students

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Arne Mogensen (Denmark) <Arne.Mogensen@skolekom.dk>

TSG 7: Activities and programs for students with special needs

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TSG 8: Adult mathematics education (people who start school in an advanced age; continuing education; citizenship)

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TSG 9: Mathematics education in and for work

Chairs:

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TSG 10: Research and development in the teaching and learning of number systems and arithmetic

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Members:

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TSG 11: Research and development in the teaching and learning of algebra

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TSG 12: Research and development in the teaching and learning of geometry**Chairs:**

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TSG 13: Research and development in the teaching and learning of probability**Chairs:**

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TSG 14: Research and development in the teaching and learning of statistics**Chairs:**

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Jane Watson (Australia) <Jane.Watson@utas.edu.au>

TSG 15: Research and development in the teaching and learning of discrete mathematics (Including graph theory, combinatorics, number theory, algorithms)**Chairs:**

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TSG 16: Research and development in the teaching and learning of calculus**Chairs:**

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TSG 17: Research and development in the teaching and learning of advanced mathematical topics**Chairs:**

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TSG 18: Reasoning, proof and proving in mathematics education**Chairs:**

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TSG 19: Research and development in problem solving in mathematics education**Chairs:**

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Uldarico Malaspina (Peru) <umalasp@pucp.edu.pe>

TSG 20: Visualization in the teaching and learning of mathematics**Chairs:**

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TSG 21: Mathematical applications and modelling in the teaching and learning of mathematics

Chairs:

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TSG 22: New technologies in the teaching and learning of mathematics

Chairs:

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Allen Leung (China, Hong Kong SAR)
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TSG 23: The role of history of mathematics in mathematics education

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TSG 24: Research on classroom practice

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TSG 25: The role of mathematics in the overall curriculum

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TSG 26: Learning and cognition in mathematics: Students' formation of mathematical conceptions, notions, strategies, and beliefs

Chairs:

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Mariana Saiz (Mexico) <msaiz@upn.mx>

TSG 27: Mathematical knowledge for teaching

Chairs:

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 <heinz.steinbring@math.uni-dortmund.de>, and
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TSG 28: Inservice education, professional life and development of mathematics teachers

Chairs:

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Nora Ramirez (USA) <Nora.Ramirez@asu.edu>

TSG 29: The preservice mathematical education of teachers

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Maitree Inprasitha (Thailand) <imaitr@kku.ac.th> and
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TSG 30: Motivation, beliefs, and attitudes towards mathematics and its teaching

Chairs:

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Günter Törner (Germany) <guenter.toerner@uni-due.de>

Members:

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TSG 31: Language and communication in mathematics education

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TSG 32: Gender and mathematics education

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TSG 33: Mathematics education in a multilingual and multicultural environment

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TSG 34: Research and development in task design and analysis

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TSG 35: Research on mathematics curriculum development

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TSG 36: Research and development in assessment and testing in mathematics education

Chairs:

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TSG 37: New trends in mathematics education research

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TSG 38: The history of the teaching and learning of mathematics

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Discussion Groups

As their name suggests, Discussion Groups (DGs) are designed to gather groups of congress participants who are interested in discussing, in a genuinely interactive way, certain challenging or controversial issues and dilemmas –of a substantial, non-rhetorical nature– pertaining to the theme of the DG. During the time we have from now up to the congress, the organizing team of each DG will promote, request, review, select, and organize contributions, some by invitation and some submitted by interested participants, that define, limit, and/or present basic premises, theoretical considerations, research findings, viewpoints, and facts that should be accounted for if a fruitful discussion is to be attained on the topic the DG addresses.

The organizing team of each DG presents a short text, with key questions and issues that the discussion group will consider so as to clarify the focus of the DG. Some of the themes may appear to be closely related to topics for the TSGs, but the focus there is on the presentation and sharing of recent trends in research, development, and practice, whereas the DGs focus on the examination and discussion of issues that can be dealt with in different ways depending on different experiences, values, norms, and judgments.

The organizing team will identify more specific issues and questions for the DG, and participants in the group will be invited to propose responses to the issues thus raised, including answers to specific questions and possibly recommendations to relevant categories of policy or decision making. There will be no oral presentations in a DG, except introductions by the organizers of the group to provide the background and framework for the discussion. Information or position papers selected are expected to be made available to group participants electronically through the DGs web site (<http://dg.icme11.org>) in due time before the congress so that they are available for downloads, and may authorize some of them for distribution in hard copy before the DGs sessions according to a scheme they will define.

Each DG will be allotted two two-hour and one one-hour timeslots. At the time of the conference, DG participants will be expected to stay with their group throughout the three sessions. The OT will design the

DG program, distributing the discussion in the three sessions, and the way the sessions are organized (e.g. general discussion, panel, split into small group discussion). Consult the DG's web page for the *Call for papers (contributions)* or contact the organizing team chairs of the discussion group you are interested in (see “How to contribute”). Typically proposals should be put forward before January 20, but specific guidelines, if such apply, will be made available on the web site.

DG 1: Curriculum reform: movements, processes and policies

What are the forces that drive or inhibit curriculum reform, and what are the instruments for reform? How do we know whether reform is progress? How do the various agents responsible for mathematics education policy interact?

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DG 2: The relationship between research and practice in mathematics education

Can we or should we expect results that can be generalized from mathematics education research? How can such results lead to changes in practice? What can researchers learn from practitioners in mathematics education? What can practitioners learn from researchers? Where and how should the interaction between practitioners and researchers take place and be organized? What are the ultimate goals of mathematics education research? What are the forces that govern the evolution of mathematics education research? What are the forces that prevent mathematics teachers from benefiting adequately from research?

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DG 3: Mathematics education: for what and why?

What is mathematics education for? What are the most productive ways of characterizing “mathematical literacy”? Should school mathematics education be dominated by the discipline of mathematics, rather than reflecting the diversity of mathematical practices and, accordingly, what is the appropriate balance between forms of mathematical education for students with diverse needs? Can a balance be achieved between a homogeneous, monolithic, globalized curriculum and the diversity of people and forms of knowledge construction and use? How should technology be used in mathematics education and how should mathematics education prepare people for technology?

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DG 4: Reconceptualizing the mathematics curriculum

Notions such as numeracy, mathematical literacy, mathematical competences, mathematical proficiency, and core curriculum constitute challenges to traditional concepts of the mathematics curriculum based on mathematical topics by focusing on the outcomes of mathematics education rather than on descriptions of the specific subject matter content to be covered. What are the differences between the various notions, and what are the advantages and the drawbacks of such approaches in comparison with topics based approaches?

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DG 5: The role of philosophy in mathematics education

What is the significance of philosophy of mathematics education? To what extent are the authorities of mathematics education implicitly or explicitly influenced by “recognizable” philosophies of mathematics education? What are the relations between philosophy of mathematics education and other kinds of philosophies, such as educational philosophy, philosophy of mathematics, social philosophy, etc.? In what ways do different philosophies of mathematics education influence its theory and practice? Do researchers and practitioners of mathematics education need to adhere to a philosophy of mathematics education? Does the choice of a philosophy of mathematics education modify the results or influence their work?

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DG 6: The nature and roles of international co-operation in mathematics education

What are the goals of international co-operation? Should cooperation be global or regional? What forms could such cooperation take, and how could it be organized and implemented? What are the barriers to international cooperation? Is there a danger that international cooperation may lead to excessive homogenization of mathematics education?

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DG 7: Dilemmas and controversies in the education of mathematics teachers

How can we attain an appropriate balance and connection between main components of teacher education, e.g. mathematical, educational, and didactical components –or different educational levels? What kind and what level of mathematical knowledge do teachers need and how could it be fostered in educational activities? Seeing the development of teacher knowledge as a lifelong process, how can this process be initiated in pre-service teacher education programs, and what ways of promoting in-service mathematics teachers' professional development are effective? To what extent should teacher education be research or experience based, and what do we mean by that, e.g. when relating teaching practice and theoretical courses? What roles do teacher preparation programs play in relation to tradition and renewal within mathematics education?

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DG 8: The role of mathematics in access to tertiary education

What are the positive and the negative effects of using mathematics as a filter in access to tertiary education? It is a well-known fact that in many countries mathematics has a decisive role in determining students' access to tertiary education, also to non-mathematical study programs. This role may either be exercised by means of entrance examinations or through requirements to students' mathematical backgrounds from upper secondary education, e.g. the courses they have taken or the marks they have obtained.

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DG 9: Promoting creativity for all students in mathematics education

Mathematics educators don't agree on a common definition of mathematical creativity or whether all students can or should be creative. Discussion Group 9 will explore these and other questions. What is mathematical creativity - a property of a person, a problem, a solution, a process, or a teaching technique? Which students can or should be creative? How does mathematical creativity relate to general concepts of mathematics, problem solving, problem posing, research, and creativity? Is an in-depth knowledge of mathematics a prerequisite for becoming creative? What might teachers do to foster (or inhibit) creativity? Will a focus on creativity distract from other critical areas of mathematics education? How might we recognize and assess mathematical creativity and use technology to promote rather than inhibit mathematical creativity?

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DG 10: Public perceptions and understanding of mathematics and mathematics education

What issues and challenges relate to the public's understanding of the nature, significance, and role of mathematics in culture and society? How accurate are the general public's perceptions of the nature and importance of mathematical literacy, knowledge and competence for professions, employment and knowledgeable citizenship? How do the public's perceptions about mathematics relate to their understanding of what mathematics is important to study and how students

can best learn the mathematics they need? What can the mathematics education community do to address these challenges? What factors should be considered in designing public outreach efforts in mathematics? In addition to addressing these questions, discussions of successful public outreach initiatives are welcome, in particular those that could work in a multicultural setting.

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DG 11: Quality and relevance in mathematics education research

Considerations of the quality and relevance of mathematics education research will revolve around the broad question: What are the purposes of mathematics education research and how are these purposes determined? With this foundational question in mind, DG 11 will focus on various related questions such as: What are appropriate criteria for quality and relevance, respectively, in mathematics education research? How and by whom are such criteria established? Are there potential conflicts between the pursuit of quality and the pursuit of relevance in such research? How can criteria be established that pay due respect to the diversity of approaches and perspectives used in mathematics education research?

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DG 12: Rethinking doctoral programs in mathematics education.

The discussion group will deal with three overarching themes, one in each of the three sessions. Each session will have a short introduction, where background and frameworks are presented. Participants will then work in small groups and discuss a set of more elaborated issues and questions under each theme. Session 1 will focus on The Goals and Processes of Doctoral Programs in Mathematics Education, Session 2 will focus on Participants of doctoral programs and session 3 on A vision for doctoral programs in mathematics education. Questions will include 1) What are the goals of different programs? 2) Who are the participants? and 3) Is there a central core of knowledge that doctorates in mathematics education should possess?

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DG 13: Challenges posed by different perspectives, positions, and approaches in mathematics education research

Is it possible to distinguish today main trends in mathematics education research? Are there divergent, or convergent processes? What are the roots of these different perspectives, positions, and approaches (Cultural? Technological? Political? Epistemological?...)? What are the relationships between theoretical frameworks in mathematics, and more generally, science education? How can different “schools of thought” in mathematics education learn from one another? The DG 13 objective is to discuss these questions not only theoretically, but also from a practical perspective: in what kind of research in the field different theoretical approaches have learnt from one another (what have they learnt, what is specific to each, what is possibly contradictory)?

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DG 14: International comparisons in mathematics education

The last decades have seen a growing interest in comparative studies around the world, among politicians as well as educators. The discussion group will deal with international comparisons in mathematics education under a broad perspective considering the chances they offer for a better understanding of one's own educational system as well as its weaknesses and dangers. The discussion group will discuss international comparative studies referring to all age groups, i.e. primary school to university education (especially teacher education). The following questions will be tackled: How do international comparisons contribute to or challenge the current understanding of mathematics learning, teaching, and teacher education in various national contexts? What influences does such an understanding produce, for better or for worse, on national traditions, values, cultures, and approaches to mathematics education? How can international comparisons in mathematics education and teacher education foster and further national development?

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DG 15: The shaping of mathematics education through assessment and testing

Are current assessment and testing modes and instruments compatible with today's goals and aims of mathematics education? How do these modes and instruments influence the teaching and learning of mathematics? How much is too much in assessment and testing? Do the costs of testing match the positive results? What is the balance of positive and negative outcomes of testing? How can assessment and testing be devised and organized so as to serve as means to develop and strengthen the teaching and learning of mathematics? What are the barriers to the adoption of innovative modes of assessment and testing?

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DG 16: The evaluation of mathematics teachers and curricula within educational systems

How do current requirements for increased accountability in education, and the ensuing trends of widespread evaluation of teachers, curricula, and systems, influence the teaching and learning of mathematics, as well as teachers and learners? What forms of such evaluation can further and accelerate the development of mathematics education rather than distort it?

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DG 17: The changing nature and roles of mathematics textbooks: form, use, access

To what extents do mathematics textbooks shape the actual teaching and learning of mathematics, for better or worse? What is the balance between textbook impact and that of other forces, e.g. curricula and assessment, which influence mathematics teaching? What are the interests and forces that drive the publication and adoption of textbooks in different countries? Who are the authors of mathematics textbooks in different countries, and what are their backgrounds?

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DG 18: The role of ethnomathematics in mathematics education

What is the relationship between ethnomathematics, mathematics and anthropology and the politics of mathematics education? What evidence is there, and how do we get more, that school programmes incorporating ethnomathematical ideas succeed in achieving their (ethnomathematical?) aims? What are the implications of existing ethnomathematical studies for mathematics and mathematics education? What is the relationship of different languages (or other cultural features) to the production of different mathematics?

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DG 19: The role of mathematical competitions and other challenging contexts in the teaching and learning of mathematics

Do mathematical competitions contribute to widening the gap between “mathematics for all” and “mathematics for the élite”, or can the opposite be the case? How can competitions motivate and foster mathematical creativity with students at large? To what extent do problems typically set in mathematical competitions adequately reflect the variety and richness of mathematical activity in problem solving? What should the relations be between competitions and mathematics education?

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DG 20: Current problems and challenges in primary mathematics education

This discussion group will examine important questions on problems and challenges in primary mathematics education around the world. Questions central to the discussion will include: What is the status of the National Curricula, in different countries, regarding content coverage, organization, assessment and pedagogical approaches? What are the prominent issues around preparing primary teachers? What are the students' emerging creative mathematical ideas, can they be formalized? What challenges does language in teaching and learning mathematics pose in the early years? How are different countries managing issues of equity of gender, access, disadvantaged groups in preschool and primary years? What is the role of technology in preschool, primary and special education? How are the mathematics community and teachers responding to new strands and results of research in mathematics being introduced in early years?

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DG 21: Current problems and challenges in lower secondary mathematics education

What are the most important current problems and challenges pertaining to the teaching and learning of mathematics at the lower secondary level (that is, for 12± to 15± year olds)? What issues impact the mathematics learning experiences of students? What mathematics is seen to be critical or essential at this level of schooling? What is the role of language, technology, and culture in the provision of and access to quality mathematics instruction? What dilemmas confront teachers of mathematics at this level? What are the implications for pre-service education, professional development, school organisation, and curriculum resources? How should these problems, challenges, issues and dilemmas be addressed? What has worked, where, and why?

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DG 22: Current problems and challenges in upper secondary mathematics education

Note: The definition of “upper secondary” varies from country to country.

- Monterrey, Mexico (slightly different from the remainder of Mexico): Grades 10 and 11 (15 to 17 years of age).
- Québec, Canada (unique from the remainder of Canada): Cegeps (Collège d'enseignement général et professionnels) provide 2 years of general programs leading to university or 3 years technical programs (17 to 20 years of age).
- South Africa: FET (further education and training) phase incorporates grades 10 to 12 (16 to 18 years of age).
- United States: Grades 11 and 12 (16 to 18 years of age).

Beyond the specific problems pertaining to the teaching and learning of topics and concepts which are central to upper secondary mathematics - exp, log and trigonometric functions, limits, derivatives, matrices, etc. - some general issues build up to real challenges at that level, owing to transitional difficulties: Are the students prepared to cope with the increasing level of formalism in upper secondary maths courses, including resorting to symbolism, set theory, logic and proof? How should the pedagogical and didactical approaches evolve from lower to upper secondary, to smooth over the transition? What constitutes a mathematically rich activity at this level? What are the implications of large-size classes or of large-scale assessments? Should secondary mathematics education programs distinguish between preparing for a vocation versus preparing for post-secondary education? Should the mathematics taught be the same, or be taught in the same way? What is to be done so that reasoning and deeper understanding are not neglected, in favour of procedural and utilitarian learning? What is (or should be) the role of technology in teaching and learning upper secondary mathematics?

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DG 23: Current problems and challenges in non-university tertiary mathematics education

DG 23 gathers congress participants interested in exchanging ideas, and discussing issues and dilemmas related to mathematics education in non-university tertiary institutions (NUTI). NUTI is defined here as a post-secondary education institution other than a university. Apart from issues on faculty development and professional growth, teaching and learning facilities, policy issues, graduate placement and general work environment, some specific questions are: What are the current problems and challenges pertaining to the teaching and learning of mathematics at NUTI? How are these issues being addressed? Are there developments in research based information that enrich programs in NUTI? How are these programs evaluated e.g. in terms of conceptual understanding, procedural skills, cognitive and thinking skills, etc.? What are the current developments in the assessment of student learning at NUTI?

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DG 24: Current problems and challenges in university mathematics education

What are the most important current problems and challenges pertaining to the teaching and learning of mathematics at the university and where are they located? Are there issues or dilemmas of a controversial nature? How should these problems, issues and challenges be dealt with?

Note: Not only math majors, but also mathematics as a service discipline or mathematics education courses in teacher education programs.

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Prodipta Hore (India) <prodipta@saralabirlaacademy.org>

Members:

Nadia Azrou (Algeria) <n.azrou@caramail.com>
S. Kumaresan (India) <kumaresa@gmail.com>
Nicolas Saby (France) <saby@math.univ-montp2.fr>



DG 25: Current problems and challenges in distance teaching and learning

What are the most important current problems and challenges pertaining to distance teaching and learning of mathematics and where are they located? Are there issues or dilemmas of a controversial nature? How should these problems, issues and challenges be dealt with?

Chairs:

W. David Crowe (UK) <W.D.Crowe@open.ac.uk>
John Pegg (Australia) <jpegg@une.edu.au>

Members:

Gisela Montiel (Mexico) <gmontiel@ipn.mx>
Dani Ben Zvi (Israel) <dbenzvi@univ.haifa.ac.il>

DG 26: Current problems and challenges in the conditions and practice of mathematics teachers

What are the most important current problems and challenges pertaining to the conditions and practice of mathematics teachers? Are there principal differences in the conditions and practices of mathematics teachers and teachers of other subjects? Are there issues or dilemmas of a controversial nature? How should these problems, issues and challenges be dealt with?

Chairs:

Judy Mousley (Australia) <judith.mousley@deakin.edu.au>
Jingbin Zhang (China) <jingbinzhang@yahoo.com.cn>, <jingbinzhang@263.net>

Members:

Gail Burrill (USA) <burrill@msu.edu>
Zahra Gooya (Iran) <zahra_gooya@yahoo.com>
Tatiana Oleinik (Ukraine) <t_oleinik@mail.ru>

DG 27: How is technology challenging us to re-think the fundamentals of mathematics education?

The following questions are suggested as starting points for discussions: What are the nature and goals of mathematics education and should we rethink the goals in an ever-evolving technological world? What are the new opportunities that digital technologies offer to mathematics education? What are the consequences (both positive and negative) that are likely to result from the use of technology in mathematics education and how do these vary in different countries and learning contexts? Will the use of technology in mathematics education permit a more democratic and universal access to the development of certain sorts of mathematical insight and competencies or will it contribute to an undermining of the mathematical literacy of the student population?

Chairs:

Lulu Healy (Brazil) <lulu@pucsp.br>

Members:

Lynda Ball (Australia) <lball@unimelb.edu.au>
Ana Isabel Sacristán (Mexico)
Rudolf Strässer (Germany)
 <Rudolf.Straesser@math.uni-giessen.de>

DG 28: The role of professional associations in mathematics education: locally, regionally, and globally

Associations of mathematicians, mathematics teachers and mathematics education researchers around the world share a common aim of promoting and improving research and practice in mathematics education. How do the different groups see their roles? How do they undertake their work? What, in particular, is their role in relation to educational reform? To what extent do the different groups (mathematicians, mathematics teachers and mathematics education researchers) collaborate? Should the relations between associations be strengthened? Is there a new role for associations in the context of the current global trend for evaluation of performance through PISA, TIMSS, etc.? Would it be desirable to establish a world federation of mathematics teacher associations to help respond to this and other global trends and issues?

Chairs:

Corinne Hahn (France) <hahn@escp-eap.net>
Will Morony (Australia) <wmorony@amt.edu.au>

Members:

Tomas Recio (Spain) <tomas.recio@unican.es>
Diana Jaramillo (Colombia) <djaramillo@tux.uis.edu.co>
Lindi Tshabalala (South Africa) <tshabalalaf@yahoo.com>

Workshops

Workshops are hands-on activities for a limited number of participants (30-40) and targeted at a specific type of attendees, be it teachers (from pre-school to university), graduate students, and/or researchers, who are interested to learn or try something through active participation. Normally, a workshop will be allotted one or two one-hour time slots.

We are now receiving proposals for workshops -consult the section "How to contribute" on page 6 for more details if you wish to present a proposal. Approved workshops will appear on our web site, including all the details of the proposal. Inscriptions will be on a "first come - first served" basis.

Sharing Experiences Groups

SEGs are small and intimate groups (10 to 20 participants) designed to exchange and discuss experiences pertaining to research and/or teaching concerning a well-defined theme of common interest. SEG's are formed via proposals to the IPC. It is an excellent opportunity for groups of teachers or researchers involved in projects or facing comparable conditions or theoretical frameworks to exchange and contrast viewpoints and experience with other colleagues with similar concerns. In addition, even though the IPC strived to include as many topics as possible, there may have been some left out. This allows such topics to be addressed by interested individuals. Normally, an SEG will be allotted one or two one-hour time slots.

We are now receiving proposals for SEGs -consult the section "How to contribute" on page 6 for more details if you wish to present a proposal. Approved SEGs will appear on our web site, including all the details of the proposal. Inscriptions will be on a "first come - first served" basis.

ICMI Awards

The Executive Committee of the International Commission on Mathematical Instruction (ICMI) has created two awards in mathematics education research:

- The Hans Freudenthal Award, for a major program of research on mathematics education during the past 10 years.
- The Felix Klein Award, for a lifelong achievement in mathematics education research.

These awards consist of a certificate and a medal, and they are accompanied by a citation. They have a character similar to that of a university honorary degree, and they are given in each odd numbered year. At each ICME, the medals and certificates of the awards given after the previous ICME are presented at the Opening Ceremony.

At the opening ceremony of ICME11, four ICME awards will be formally presented: the Felix Klein and the Hans Freudenthal 2005 and 2007 awards.

Poster Presentations and Round Tables

Posters offer a presentation mode, in English or Spanish, which allows many congress participants to present their work at ICME, in addition to what will be presented at the group activities. This form of congress participation is a means of presenting a wide array of mathematics education initiatives concerning research or practice. Time slots will be made available for the presentation of posters.

Posters will be grouped, as far as possible, according to language (English or Spanish) and the themes of the 38 Topic Study Groups and the 28 Discussion Groups. Round tables will be organized with the participation of no more than ten poster presenters in the same group who accept to discuss their work in such a setting. The IPC will appoint experienced mathematics educators to chair such Round Table sessions.

We are now receiving proposals for Poster Presentations - consult the section "How to contribute" on page 6 for more details if you wish to present a proposal. Approved Poster Presentations will appear on our web site, including an abstract. Inscriptions will be on a "first come - first served" basis.



Official meetings, special sessions and other activities

General assembly of ICMI.

ICMI will hold its General Assembly (GA) on Sunday, July 6, 2008, all day. The election of the ICMI Executive Committee (EC) for the period 2010-2012 will then take place. (It will be the first time that the EC gets elected by the ICMI GA, according to the new procedure for elections.) Time and location will be announced later.

ICMI Studies

Since the mid-80s, ICMI has found it important to involve itself directly in the identification and investigation of issues or topics of particular significance to the theory or practice of contemporary mathematics education, and to invest an effort in mounting specific studies on these themes. Built around an international seminar, each Study is directed towards the preparation of a published volume intended to promote and assist discussion and action at the international, national, regional, or institutional level.

At ICME-11 we will have reports on Studies 15, 16, and 17:

- a. *ICMI Study 15: The Professional Education and Development of Teachers of Mathematics*
Contacts: Deborah Ball <dball@unimich.edu> and Ruhama Even <ruhama.even@weizmann.ac.il>
- b. *ICMI Study 16: Challenging Mathematics in and beyond the Classroom.*
Contacts: Edward J. Barbeau <barbeau@math.toronto.edu> and Peter J. Taylor <pjt@olympiad.org>
- c. *ICMI Study 17: Digital Technologies and Mathematics Teaching and Learning: Rethinking the Terrain.*
Contacts: Celia Hoyles <c.hoyles@ioe.ac.uk> and Jean-Baptiste Lagrange <jb.lagrange@reims.iufm.fr>

Study 18 is a Joint ICMI/IASE Study on "Statistics education in school mathematics. Challenges for teaching and teacher education". They will be having their conference at the ITESM in Monterrey prior to ICME-11 –sorry, too soon for a report, but those involved will be participating, so we can peek at advances from them, check TSGs 13 and 14.

Study 19 on "Proof and Proving in Mathematics Education" The Discussion Document will be available in January 2008 and the Study Conference will take place in Taipei, Taiwan, May 10-15, 2009. The two co-chairs for this Study are Gila Hanna (ghanna@oise.utoronto.ca), University of Toronto, Canada, and Michael de Villiers (profmd@mweb.co.za), University of KwaZulu-Natal, South Africa.

ICMI Affiliated Study Groups

The ICMI Affiliated Study Groups are neither appointed by ICMI nor operating on behalf or under the control of ICMI. In other words, they work independently of ICMI, also in terms of finances, but they produce quadrennial reports to be pre-

sented to the General Assemblies of ICMI, held during the International Congresses on Mathematical Education. In addition to meeting in connection with the ICMEs, each of the Affiliated Study Groups holds separate meetings on a more or less regular basis. The five Affiliated Study Groups (ASG) officially affiliated to ICMI will be allocated timeslots for their meetings during ICME-11.

- *HPM* - The International Study Group on the Relations between the History and Pedagogy of Mathematics (constituted 1976)
See <http://www.clab.edc.uoc.gr/HPM/>
- *PME* - The International Group for the Psychology of Mathematics Education (constituted 1976)
See <http://igpme.org/>
- *IOWME* - The International Organization of Women and Mathematics Education (constituted 1987)
See <http://extra.shu.ac.uk/iowme/>
- *WFNMC* - The World Federation of National Mathematics Competitions (constituted 1994)
See <http://www.amt.edu.au/wfnmc.html>
- *ICTMA* - The International Study Group for Mathematical Modelling and Applications (constituted 2003)
See <http://www.ictma.net/> and <http://www.city.ac.uk/ell/research/ictma12/past.html>

Other special events

Other kindred organizations have planned special events for ICME-11 attendees.

- *Experiencing Mathematics* - Travelling exhibition initiated by UNESCO, designed by Centre Sciences, CCSTI of Centre region (Orléans-France) in collaboration with the French team of WMY2000, the Tokai University (Tokyo-Japan) and the Ateneo of Manila University (Philippines), and supported by ICMI and IMU.
This exhibition is intended to show to all visitors that mathematics is "astonishing, interesting, useful, and accessible to everyone; that it plays an important role in daily life, leads to many different careers, and is essential for culture and development". Visiting the exhibitions, young people and their parents and teachers have the opportunity to experience current mathematics in a playful and interactive way.
Contact : mldarche@free.fr and www.MathEx.org
- *UK Stand* organized by the Joint Mathematical Council in the UK

- *The Freudenthal Institute*, now headed by Jan van Maanen, will be organizing a presentation on the “future of the F.I. and the institute's new accents in research and development”. The F.I. is also planning to have a stand.

Meetings

Groups and bodies within the community of mathematics education are invited to hold business meetings during the congress. Please send your requests for such meetings to the Chair of the IPC, Marcela Santillán, as soon as it is convenient, before *January 20*, with information regarding the estimated number of participants, number of proposed meetings (three at the most) and length (normally one hour) of the requested meeting slots. Meetings will be scheduled so there are no incompatibilities with major activities.

Timetable for ICME 11

08:00	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	
09:00	REGISTRATION (ICMI General Assembly)	Registration			EXCURSION DAY				
10:00		OPENING	P3 Lecture	P4 Panel Debate		P6 Panel Debate	P8	P9	
11:00			Coffee Break	Coffee Break		Coffee Break	Coffee Break	Coffee Break	
12:00		Coffee Break	RL1	RL2		RL3	RL4	RL5	
13:00		P1 Lecture	Coffee Break	RL2		Coffee Break	Coffee Break	Coffee Break	
14:00		TSG1	National Presentation	TSG2		TSG3	TSG4	CLOSING	
15:00		LUNCH	LUNCH	LUNCH		LUNCH	LUNCH	LUNCH	
16:00		P2 Panel Debate	NP2	Workshop SEG		P5 Panel Debate	P7 Lecture	DG3	ASG4
17:00		Coffee Break		ASG2			Coffee Break	Coffee Break	Coffee Break
18:00		DG1	Workshop SEG	Coffee Break		Coffee Break	ICMI Studies	Workshop SEG	Posters Round Tables
19:00		ASG1	Posters Round Tables	Ibero American Forum		DG2		Workshop SEG	Ibero American Forum
20:00						ASG3			

Discussion groups: 2 two-hour and 1 one-hour sessions
 Topic study groups: 2 ninety-minute and 2 one-hour sessions
 PS 1, PS2, PS4, PS5, and PS6: 90-minute session
 PS3, PS7, PS8 and PS9: one-hour session
 National Presentations: 1 ninety minute and 1 two-hour sessions
 Posters and Round Tables: 2 two-hour sessions
 Workshops: 4 one-hour sessions (2 or 4 sessions assigned)
 Sharing Experiences Groups: 4 one-hour sessions (2 or 4 sessions assigned)

P Plenary Lecture or Panel Debate
 RL Regular Lecture
 NP National Presentation
 TSG Topic Study Group
 DG Discussion Group
 ASG Affiliated Study Group
 SEG Sharing Experiences Group



Grants for participants from non-affluent countries

It is one of the aims of the ICME congresses to have a balanced representation from all over the world among the presenters as well as among the general participants. In order to achieve this goal ICMI has instigated a general policy of forming a solidarity fund established by setting aside 10% of the registration fees for grants. These grants assist delegates from non-affluent countries to attend the ICMEs.

An autonomous and anonymous Grants Committee will distribute the funds amongst the successful applicants. Priority will be given to applicants from non-affluent countries who contribute to the scientific program and to participants who are expected to be the only representative from their part of the world.

Grants will be given as *partial* support to registration fee, accommodation, meals and/or travel costs. All potential applicants are advised to apply for funding from other sources as well.

Application for an ICME-11 grant

Participants who consider themselves eligible for an ICME-11 grant are encouraged to apply on line at the ICME-11 website for review by the Grants Committee.

We strongly recommend that you try to submit your proposal online. If you do not have access to the Internet at home or work, you may try a library, school or community center, or Internet Café near you. If, however, you are unable to do so, please submit an application with the following information:.

1. Personal and professional information
- 2 .Description of the applicant's intended contribution to ICME-11
3. Possible dissemination of the congress outcomes in his/her country/local environment
4. Financial assistance anticipated from other sources and an estimate of possible own payment.

Applications should include the following information in no more than 500 words and be sent as soon as possible so that they are received no later than **February 15, 2008** at the following address:

*Sociedad Matemática Mexicana
ICME Congress Secretariat/Grants
Casa Tlalpan
Av. Cipreses s/n
Km. 23.5 Carretera Federal México-Cuernavaca
San Andrés Totoltepec, Tlalpan
14400 México, D.F.
MEXICO*

Applicants will be informed of the Grants Committee's decision as soon as possible and no later than *March 1, 2008*.

Excursions

Thursday, July 10th, is reserved for the excursions included in the registration fee. The excursions aim at showing congress participants and accompanying persons the diversity and richness of Monterrey and its surrounding area's natural wonders and cultural offerings.

Participants should indicate their choice of excursion when registering on line or in the registration form (page 35). All excursions may be subject to changes.

1) Monterrey - Parque Fundidora

- Parque Fundidora (Fundidora Park); a former iron industry transformed into a friendly and interesting cultural park. You can see not only the original big melting ovens, but also a variety of cultural exhibitions.
- Paseo Santa Lucía (Santa Lucia Riverwalk); a great work of urbanism with an artificial river that connects Parque Fundidora with Macroplaza.
- Casa de los Loros (House of parrots): Beautiful and peaceful park that houses 100 of the 300 different species of parrots that exist around the world.

2) Museums forever

- MARCO - Museo de Arte Contemporáneo (Contemporary Art Museum) -: One of the most important collections in America on the subject.
- Museo de Historia Mexicana y Museo del Noreste (Mexican History Museum and Museum of the NorthWest): Interconnecting exhibitions of Mexican and Buddhist cultures.
- Horno #3 en el Museo del Acero (Oven #3 at the Museum of Ironworks): an interesting center of science and technology in a unique place. You will be delighted with the attractions like "the Show of the Oven" or "Journey to the top of the Oven".
- Paseo Santa Lucía (Santa Lucia Riverwalk); a great work of urbanism with an artificial river that connects Parque Fundidora with Macroplaza.

3) Ecological tour

- Casa de los Loros (House of Parrots): Beautiful and peaceful park that houses 100 of the 300 different species of parrots that exist around the world. You will enjoy the "Parrot Show".
- Bioparque Estrella (Bio-park Estrella): Ecological thematic park in a wonderful site. It contains a variety of plants, birds, and animals from all around the world.
- Cueva de los Murciélagos (Bats' Cave): A natural cave that is home to millions of bats; you should see the spectacular clouds they form when getting out at night.

4) Modern Monterrey and Beer Factory

- Planetario Alfa (Alfa Planetarium): Science and Technology meet at this wonderful interactive space; there is also an IMAX projection room.
- Museo del Vidrio (Glassworks Museum): this three-story museum has a permanent exhibition unique in its type; it shows the history of glassworks in México and promotes its artistry.
- Cervecería Cuauhtémoc (Cuauhtémoc Beer Factory): Mexican beer is famous around the world; from this plant, the oldest beer factory in the country, we get the most renowned beer produced in México. Visitors are invited to taste the wide variety of light and dark brews.

5) Cultural Monterrey and Grutas de García

- Museo de la Casa Rosa (Pink House Museum): This museum shows pieces from the collection of "Grupo Pulsar", a corporate group that sponsored national contests of folk art for more than 20 years; it contains also a sample of Mexican handcrafts.
- Museo el Ojo (El Ojo Museum): This exhibition presents a private collection of folk art that was shown at the International Soccer Cup in México.
- Taller de Artesanías ArteSanArte (ArteSanArte handcrafts workshop): Learning center devoted to rescuing endangered folk art techniques, and promoting talented artisans and folk art in general.
- Grutas de García (García grottos): Discovered around 1843, these spectacular natural caverns offer 50-million years old stalagmites and stalactites. Accessed via a scenic cable-car, Grutas de García offers a Light and Sound Show at night.

6) Santiago and Natural Monterrey

- Centro de Santiago (Downtown Santiago): This new area in Fundidora Park offers the visitor interesting cultural exhibitions like "La Serpiente Emplumada" (the Feathered Snake).
- Cola de Caballo (Horsetail): wonderful 25 meter high waterfalls formed with the water from the Sierra Madre Oriental mountain range; its beautiful parabolic shape is the reason for its name.
- Presa de la Boca (De la Boca dam): an exciting boat trip across the dam in Santiago on board a catamaran and enjoying the wonderful landscape of this National Park.
- Cueva de los Murciélagos (Bats Cave): A natural cave that is home to millions of bats; you should see the spectacular clouds they form when getting out at night.



Accommodations

The designated company which will be in charge of all accommodation arrangements is *Grupos y Convenciones Internacionales (GCI)*. The congress organization will not be responsible for any arrangements regarding accommodations or reservations for the participants.

Web site: www.reservesuhabitacion.com

For icme11: www.reservesuhabitacion.com/icme11

Toll free for Mexico: 01800-3151515 and 01800-8383100

Toll free for USA and Canada: +1-888-2437405 and +1-888-2437406

From other countries: +52-81-8369-6821 and +52-55-1998-0901

Fax: +52-81-8369-6666 and +52-55-1998-0901 ext. 13

Hotel prices by category:

A. Hotel 5 star \$ 800 - 1,700 MXP (78 - 164 USD) per night

B: Hotel 4 star \$ 500 - 850 MXP (49 - 83 USD) per night

C: Hotel 3 star \$ 424 MXP (39USD) per night

D: Hostels \$ 120 - 130 MXP (12 -13 USD) per night

* continental breakfast is included; ** express breakfast is included; *** not handled by CGI, contact ICME secretariat directly.

Hotel	Category	Distance to Venue (by car)	Single or double room	Room for three	Room for four
Antarisuite Cintermex	5 Star	25 Minutes	95 USD	106 USD	117 USD
Antarisuite Galerías	5 Star	30 Minutes	85 USD	96 USD	107 USD
Crowne Plaza	5 Star	25 Minutes	104 USD	N/A	N/A
Holiday Inn Parque Fundidora	5 Star	25 Minutes	97 USD	N/A	N/A
Fiesta Americana Centro	5 Star	25 Minutes	93 USD	112 USD	N/A
Gran Hotel Ancira Radisson	5 Star	25 Minutes	91 USD	105 USD	120 USD
Holiday Inn Express Tec **	4 Star	35 Minutes	89 USD	104USD	118 USD
Novotel Monterrey Valle	4 Star	35 Minutes	83 USD	N/A	N/A
Fiesta Inn Mty. Fundidora	4 Star	25 Minutes	82 USD	102 USD	N/A
Holiday Inn Express Galerías **	4 Star	30 Minutes	82 USD	97 USD	112 USD
Holiday Inn Monterrey Centro	4 Star	25 Minutes	78 USD	93 USD	107USD
Fiesta Inn Centro	4 Star	25 Minutes	77 USD	97 USD	N/A
Hotel Royalty*	4 Star	25 Minutes	61 USD	73 USD	73 USD
Grand Viator Hotel and B.C.	4 Star	20 Minutes	59 USD	73 USD	88 USD
Hotel Son Mar*	4 Star	25 Minutes	57 USD	67 USD	77USD
Hotel Colonial*	4 Star	25 Minutes	54 USD	61 USD	68 USD
Plaza del Arco Express*	4 Star	10 Minutes	49 USD	52 USD	57 USD
Plaza del Arco *	4 Star	25 Minutes	49 USD	52 USD	57 USD
Hotel 5a Avenida*	3 Star	25 Minutes	42 USD	47 USD	51 USD
Hotel Best Western Plaza*	3 Star	25 Minutes	59 USD	N/A	N/A
Hotel Best Western Centro*	3 Star	25 Minutes	59 USD	N/A	N/A
Hotel Best Western Hacienda*	3 Star	25 Minutes	59 USD	N/A	N/A
Hotel Best Western Ma. Luisa*	3 Star	25 Minutes	59 USD	N/A	N/A
Hostal Soy Foráneo***	N/R	30 Minutes	13 USD	N/A	N/A
Hostal el Aguacate***	N/R	30 Minutes	12 USD	N/A	N/A

Registration

On line registration is available at the ICME-11 website, <http://icme11.org>. Participants are requested to register online, or on the attached registration form (page 35). Registration is valid only when accompanied by confirmation of payment. Payment can be made in Mexican pesos (MXP), US Dollars (US\$) and Euros (€). At the time of publication the currency exchange rate is around 11 pesos for 1 Dollar and 15.50 pesos for one Euro; but actual currency exchange rates are subject to market fluctuations.

Note: 10% of the registration fee is directed to the Solidarity Fund. Further contributions are welcome and can be indicated upon registration.

Registration Fees	US Dollars	Euros	Mexican Pesos
Before March 2, 2008	\$550	395€	6,050 MXP
Until June 1, 2008	\$630	450€	6,930 MXP
After June 1, 2008	\$710	505€	7,810 MXP
Accompanying persons	\$200	145€	2,200 MXP

Registration Fee for participant includes:

- Set of Final Program and abstracts booklets
- Admission to scientific program activities
- Admission to exhibition area
- Admission to social program activities
- Transportation by bus between main hotels and venue
- Excursion of your choice for Thursday, July 10th (lunch included)
- Congress Proceedings when published

Registration Fee for accompanying persons

- Admission to exhibition area
- Admission to social program activities
- Transportation by bus between main hotels and venue
- Excursion of your choice for Thursday, July 10th (lunch included)

Confirmation of registration

Confirmation of registration will be sent to you by e-mail. If requested, an invitation letter may be sent to invited contributors for visa - arrangement purposes.

Cancellation conditions

Cancellations can be made by e-mail to the congress secretariat at the following address:

icme11secretariat@smm.org.mx

All cancellations must be made before April 12th and will incur in a cancellation fee of 20% of the amount paid. Cancellations after this date will not be possible.

If the congress is cancelled for reasons beyond the control of the organizers, the registration fee will be refunded after deduction of expenses related to the handling of the registration.

Payment

Payment must accompany all registrations forms. The total registration charges must be paid in Mexican Pesos, US Dollars or Euros. All costs incurred with checks and bank transfers must be covered by the participant.

The following means of payment are accepted:

- Credit Cards: American Express, Visa, Mastercard
- Bank transfer to the account of icme11:
Bank Transfer: 014180825003894579
SWIFT/ABA Code: 021000021CHASUS33
Bank Account: 400047144BMSXMM



General Information

Congress language

The official congress language is English. Nevertheless, simultaneous translation to Spanish will be provided for the plenary activities. Some activities will be held in Spanish.

Travel Information

Monterrey airport (General Mariano Escobedo) is about 20 kilometers from downtown Monterrey. Buses for all participants from airport to main hotels will be provided on Sunday, Monday, and Tuesday.



Visa

All participants must find out if they need a visa to enter Mexico. Guidelines for obtaining a visa can be found in the *Secretaría de Relaciones Exteriores* web page www.sre.gob.mx. We strongly advise participants to make arrangements well in advance because the procedure may take several months. Be sure to obtain updated information since visa requirements may change in the near future.

Letter of invitation

Upon request, a letter of invitation will be sent to speakers and contributors to scientific program activities for visa purposes or if required by their institution. Other participants who need a letter of invitation are asked to send official documentation of their professional affiliation with Mathematics Education so that we may honor their request.

Banks and Currency

The currency in Mexico is Mexican Pesos. Paper bills have the following denominations: 20, 50, 100, 200, 500, 1,000 pesos. Coin denominations are: 10, 20, 50 cents and 1, 2, 5 and 10 pesos. USA dollars are accepted in many places including hotels and restaurants, but we advise you to obtain local currency at established currency exchange houses or banks. The current exchange rate at time of publication is around 1 dollar for 11 pesos.

Health insurance

Congress participants should make sure that their health insurance will cover their travel and stay in Mexico. Your insurance agent should be able to provide this information.

Time Zone

The official time in Monterrey during the Congress is Central Daylight Time (CDT), which is UTC -5 (Coordinated Universal Time, previously Greenwich Mean Time). CDT is a daylight saving time/summer time zone. It is generally only used during the summer, during the winter CST is used instead. During the Congress, the sun will rise at 6:55 a.m. and will set at 8:36 p.m.

In 2008, local time in Monterrey will change on Sunday April 6 from CST (UTC-6) to CDT (UTC-5), and on Sunday October 26 it will change back to CST (the exact dates could change).

Weather

In July you may expect bright sunshine and scattered showers in Monterrey. For the period of July 6 to 13 in recent years, the weather in Monterrey has had a mean temperature of 28.9°C, with an average high of 34.4°C and an average low of 23.3°C.

Dress Code

Casual clothing is recommended. Cotton and linen garments are always fresh for warm climates. Some restaurants have a stricter dress code.

Tipping

The usual tip for individual services is 10-15% of the total amount of the service. A minimum tip of 10 Pesos is recommended.

Taxes

In Monterrey, as everywhere else in Mexico, the VAT is 15%. There is an additional lodging tax of 2% in hotels.

Telephones

Public phones can be found almost everywhere. These telephones require a pre-paid card for local and long distance calls. You can purchase these cards at the stores and newspapers stands. Cellular phones are widely used.

Phone dialing to Mexico

Mexico's international country code: 52

Dialing long distance within Mexico: 01 + (area code) + local telephone. (12 digits total).

Area code for Monterrey is 81 and for Mexico city is 55

Phone dialing from Mexico

Dialing to US and Canada: 001 + (area code) + local telephone. (13 digits total).

Dialing to other countries: 00 + (country code) + (city/area code) + local number.

Taxis and Buses

Taxicabs are clean and permanently available at every hotel; they don't use a taximeter, instead, pre-established fares according to distance will be charged.

Buses have extended service Schedule. There are also air-conditioned buses for short trips to nearby towns.



The city of Monterrey

The Venue

The *Universidad Autonoma de Nuevo Leon* (UANL) is the third largest Mexican University and the most important public one with the largest academic offer in the north-east part of the country. It was ranked by the Reader's Digest-AC Nielsen Survey in 2005 as the top university (both public and private) in the northeast region of Mexico.

The UANL, presided by Ing. José Antonio González Treviño, is one of the oldest universities in Mexico, beginning in 1824 as a law school and establishing both the Academy and the Medicine School in 1859. Through the years, its reputation for outstanding academic achievement has become known throughout the whole country, and it reflects the intellectual achievement of its students, as well as the innovative research carried out by the staff of the University and its colleges.

You can find out more about the UANL at their official website: www.uanl.mx

Tourist Information

Further tourist information about Monterrey and México can be found at:

<http://www.ocvmt.com/index.html>

<http://www.turismomonterrey.com/>

<http://www.sectur.gob.mx>

Living Expenses

The participant may consider, in addition to lodging expenses, a budget of about 250 - 600 MXP (23 - 55 USD) per day, depending on the type and category of meals to be consumed.



UANL



Public Bodies Supporting ICME11

The ICME 11 organization is happy to thank for their important support in many ways the following organizations and public bodies:

Sociedad Matemática Mexicana
 International Commission on Mathematical Instruction
 Universidad Autónoma de Nuevo León
 Gobierno del Estado de Nuevo León
 Secretaría de Educación Pública
 Secretaría de Educación del Estado de Nuevo León
 Consejo Nacional de Ciencia y Tecnología
 National Council of Teachers of Mathematics
 Oficina de Convenciones y Visitantes de Monterrey
 Many public and private universities in Mexico

Main Sponsor



ICME 11 Registration Form

*We strongly suggest the on-line registration at: www.icme11.org
If you want to pay your registration fee by credit card (before the congress), you must register on-line. You may use this registration form to pay your registration fee by Bank Transfer.*

* indicates mandatory field

***Participant** please use capital letters

*Title: _____ *First Name: _____
 *Given Name(s): _____
 *Institution: _____
 *Department: _____
 *Institution Address: _____
 *City: _____ *Zip Code: _____ *State/Province: _____
 *Country: _____ *E-mail: _____
 *Phone: _____ *Fax: _____
 Accompanying Person: _____

***Program** please write the numbers of your choice

*Topic Study Groups TSG (1 - 38)	*Discussion Groups DG (1 - 28)
_____ 1st choice	_____ 1st choice
_____ 2nd choice	_____ 2nd choice
_____ 3rd choice	_____ 3rd choice

***Excursions** please write the numbers of your choice

Tour included in registration fee (Tour 1 - 6, see page 29)

_____ 1st choice
 _____ 2nd choice
 _____ 3rd choice

I do not wish to attend a tour.

***Registration Fee** please mark the correct option in the left column

Mark this column	Registration Fees	US Dollars	Euros	Mexican Pesos
<input type="checkbox"/>	Before March 2, 2008	\$550	395€	6,050 MXP
<input type="checkbox"/>	Until June 1, 2008	\$630	450€	6,930 MXP
<input type="checkbox"/>	After June 1, 2008	\$710	505€	7,810 MXP
<input type="checkbox"/>	Accompanying persons	\$200	145€	2,200 MXP

***Payment**

Payment by credit card must use on-line registration at <http://icme11.org>

Payment by bank transfer to the account of ICME-11:

Bank Transfer: 014180825003894579

SWIFT/ABA Code: 021000021CHASUS33

Bank Account: 400047144BMSXMM

Please make sure that your name appears on the transfer data

Full Participant Registration Fee: _____

Accompanying Person(s): _____

I would like to contribute to the Solidarity Fund with the amount of: _____

Total: _____

By signing below, I confirm that I have read and I am totally aware of the cancellation conditions indicated in the general information.

Name: _____ Signature: _____

Date: (dd/mm/yy) ___ / ___ / ___ / ___ Comments: _____

Please return this form by fax at +52-55-5849-6709

or mail to:
 Sociedad Matemática Mexicana
 ICME Congress
 Secretariat/Registration
 Casa Tlalpan
 Av. Cipreses s/n
 Km. 23.5 Carretera Federal -México-
 Cuernavaca
 San Andrés Totoltepec, Tlalpan
 14400 México, D.F.
 Mexico





Universidad Autónoma de Nuevo León

