



International Commission on Mathematical Instruction

Report on ICMI activities in 2010

1. Organisation

The **2010-2012 ICMI EC** took office on January 1, 2010. It had its first meeting in Auckland on 5-8 April, 2010, with all members present. IMU was represented by Cheryl Praeger. It was decided to intensify contacts in order to have more countries members of ICMI and to have the maximum number of active representatives. The financial situation of ICMI was discussed and it was decided to wait until the new IMU stable office was established by IMU General Assembly to define the new structure. The possibility of the President being supported by his university with a half-time administrative assistant also arose. The need for close cooperation with IMU was reaffirmed, and the continued expansion of ICMI development activities agreed upon.

The President and the Secretary-General of ICMI were invited as *ex officio* observers to the **General Assembly of IMU** held in Bangalore. The President of ICMI presented a Report on ICMI activities to the General Assembly, and numerous contacts were made with the delegates of different countries. We can say that the relations with IMU are excellent. In this General Assembly, IMU decided to establish its new permanent stable office at Berlin. Subsequently during the ICM, the President and the Secretary-General of ICMI had a meeting with the Secretary-General of IMU to prepare the transition to the new stable office, that would be established in early 2011. Now we have a half-time time secretary, Lena Koch, that assists ICMI in all administrative matters; the other staff at Berlin also assist ICMI, namely the financial and the computer staff.

2. ICMI members

In 2009 ICMI had 85 member countries. In the General Assembly of IMU 4 new countries

(**Cambodia, Moldova, Nepal, Oman**) were admitted as Associate Members and 1 as full member (**Montenegro**). These become automatically members of ICMI. So, there are currently 90 member countries of ICMI, 69 of which are also members of IMU and 8 are associate members of IMU.

3. ICMEs

Seoul, Korea will host **ICME-12** in 2012. The congress will take place in the COEX Convention Centre on July 8-15, 2012. The International Programme Committee is chaired by Professor Sung Je Cho, of Seoul National University. This IPC, whose composition is announced in the *ICMI Bulletin No. 63*, had its second meeting in February 2011 in Jeju, Korea. The program is already completely structured and all activities are well under way. We expect this to be a very successful conference. Registration fees will be of 400 USD, which brings a welcome substantial reduction to these fees as compared to recent ICMEs. Also there will be available 900 beds in university dormitories with prices from 12 to 30 USD per night and a lot of low budget hotels with prices ranging from 50 to 80 USD per night, all accessible by subway. This creates conditions to have a lot of participants in ICME-12 from all types of budgets. Up to date information about the congress and the First Announcement is available at <http://www.icme12.org>.

A call for bids for **ICME-13**, to be held in 2016, was made in 2008. Formal bids were due by November 1, 2010, and three bids were received. The site visits will be conducted in 2011 and the decision for ICME-13 is to be announced by the end of 2011.

4. ICMI Studies

The 2010-2012 Executive Committee launched a new Study in 2010 on Task Design, and is preparing another study on a Primary Mathematics topic. By the end of 2010 the situation is as follows.

- **ICMI Study 18:** *Statistics Education in School Mathematics: Challenges for Teaching and Teacher Education*
The NISS volume is in preparation under the editorship of Carmen Batanero, chair of the International Programme Committee, together with Gail Burrill and Chris Reading. It is expected to appear in 2011. (NISS 14)
- **ICMI Study 19:** *The Role of Mathematical Reasoning and Proving in Mathematics Education*
The NISS volume is currently in preparation under the editorship of the two co-chairs, Gila Hanna and Michael de Villiers, with publication expected in 2011 as well. (NISS 15)
- **ICMI Study 20:** *Educational Interfaces between Mathematics and Industry* is organised jointly with the International Council for Industrial and Applied Mathematics (ICIAM). The IPC is

co-chaired by Alain Alabamian (Université Paris-Est) and Rudolf Sträßer (Justus-Liebig-Universität Gießen). The IPC met in October 2008 and the Discussion Document was available early in 2009. José Francisco Rodrigues (Universidade de Lisboa) is the Local Organiser for the Study Conference, originally planned for Lisbon in April 2010, but, since the Icelandic ash cloud prevented this, really took place on 11-15 October, 2010. The Study volume was presented during the 7th International Congress on Industrial and Applied Mathematics (ICIAM 2011), held in July 2011, in Vancouver, Canada. The Secretary-General of ICMI and the two co-chairs of the Study were present and the more than 80 participants in the round table showed a lot of interest for this topic. ICMI and ICIAM should prepare some type of educational activities to address problems related to the teaching of applied mathematics and applications of mathematics. The NISS volume is currently in preparation under the editorship of Alain Damlamian, Rudolf Sträßer and José Francisco Rodrigues.

- **ICMI Study 21:** *Mathematics Education and Language Diversity*, has co-chairs Mamokgethi Setati (University of Pretoria) and Maria do Carmo Domite (Universidade de São Paulo). The first meeting of the IPC was held in February 2009 and the Discussion Document was available early in 2010. The Study Conference is planned for Águas de Lindóia, São Paulo, Brazil, on 16-20 September, 2011. The website is <http://www.icmi-21.co.za>.
- **ICMI Study 22:** The 2010-2012 Executive Committee launched a new Study late in 2010 on Task Design. The co-chairs will be Anne Watson (Oxford University) and Minoru Ohtani (University of Kanazawa, Japan). The IPC is scheduled to have its first meeting in January 2012.
- **ICMI Study 23:** The members of Executive Committee Mariolina Bussi and Roger Howe were asked to make a proposal that will support the launching a new Study on Primary School Mathematics in its meeting in 2012.

5. ICMI Regional Conferences

Several Regional Conferences to which the ICMI EC has granted the status of ICMI Regional Conference were held in the year 2010.

- **AFRICME 3** (the *Third Africa Regional Congress of ICMI on Mathematical Education*) under the theme "Mathematics as a Leading edge in the Education for All (EFA) Framework" in Gaborone, Botswana, on May 18-21, 2010. Renuka Vithal, member of the ICMI Executive Committee was a member of the Scientific Committee of AFRICME3. The president of ICMI was present at this Congress. AFRICME 3 gathered 121 participants from 14 different countries, including 15 teachers. A report on AFRICME 3 will appear in the 2011 *ICMI Bulletin*.
- **ICMI-EARCOME-5** conference (the *Fifth ICMI East Asia Regional Conference in Mathematics Education*), was held in Tokyo in 18-22 August 2010, under the theme "In search of excellence of mathematics education". The ICMI EC was represented on the International Programme Committee of this conference by Frederick Leung. A report will appear in the 2011 *ICMI Bulletin*.

- **XIII CIAEM** (Conferencia interamericana de educación matemática), took place in Recife, Brasil, on June 26-30, 2011. This meeting coincided with the 50th anniversary of the *Comité Interamericano de Educación Matemática* (CIAEM), an organisation recently affiliated to ICMI. The ICMI EC was represented on the International Programme Committee by Michèle Artigue and Bernard R. Hodgson. More than 1800 math educators, mathematicians and teachers from 33 countries met for five days and could follow 5 plenary talks, 4 plenary round tables (one of them dedicated to the work of Ubiratan D'Ambrosio), 30 parallel talks, 6 parallel round tables, and more than 700 contributed papers.
In this meeting ICMI Study 18 was launched and an update of the Klein Project was presented to the participants. A report will appear in the 2011 *ICMI Bulletin*.

The ICMI EC has granted the status of ICMI Regional Conference to the following coming conference:

- **EMF 2012** (Espace mathématique francophone), to be held in Geneva, Switzerland, in 2012. The ICMI EC is represented on the International Programme Committee of EMF 2012 by Bernard R. Hodgson and Jaime Carvalho e Silva.

The ICMI EC accompanies the organization of the following coming conferences so that they will be granted the status of ICMI Regional Conferences:

- **ICMI-EARCOME-6** conference (the *Fifth ICMI East Asia Regional Conference in Mathematics Education*), to be held in Thailand in March 2013. The ICMI EC will be represented on the International Programme Committee of this conference by Zhang Yingbo.

6. UNESCO/ICMI Exhibition

Over the last years, ICMI has been sponsoring, jointly with UNESCO and other bodies, the development of a mathematical exhibition entitled “**Experiencing mathematics**”, whose aim is to improve the image of mathematics among the general public. Three copies of the exhibition are now available and are being circulated internationally under UNESCO and ICMI auspices. Specific support for its presentation in various regions has been given in recent years by IMU and by ICMI. Support for the exhibition has also been provided by CIMPA and the French Ministry of Foreign Affairs.

During 2010, one set of the exhibition finished its circulation in Latin America by returning to Santiago of Chile (Santiago University) for the first quarter of 2010. It was then in Cordoba (Spain) in September-October on the occasion of the XIII Congreso de Enseñanza y Aprendizaje de las Matemáticas of the THALES society (Sociedad Andaluza de Educación Matemática THALES).

The second set travelled in Asia, and a 18-month travel in Korea, with the support of NateSystem

and KIDP (Korean Institute of Design Promotion) ended in Seoul in October 2010.

The third set of the exhibition travelled in 2010 in Burkina Faso, in the cities Ouagadougou, Koudougou & Bobo Dioulasso.

7. Pipeline Project

The final report of the “**Pipeline Project**” was presented at ICM 2010 in a panel chaired by the President of ICMI Bill Barton.

8. The Klein Project

The Klein Project, whose idea of this project is to revisit the vision of Felix Klein presented in his book *Elementary Mathematics from an Advanced Standpoint*, first published a century ago, continued its development.

The second meeting of the Design Group took place in Auckland in April 2010, and a third in Spain in June, 2010. Some Klein conferences took place in 2010: in Castro-Urdiales, Spain (June 2010), and in Belo Horizonte, Brasil (July 2010). Additionally, a UK Klein Workshop has been held at Oxford University in June 2010, and a special Klein session was organized at Mathfest 2010 in Pittsburg (USA) in August.

A wiki site for the project has been launched in 2009, and more information on the project and its evolution can be found there. It can be accessed at <www.kleinproject.org>.

9. Collaboration with UNESCO

A nice evolution in the ICMI context for action in recent years is the renewal and strengthening of the relationships with **UNESCO**, which had been identified as an important objective by the 1999-2002 ICMI EC. A major component of this renewed collaboration is of course the exhibition “Experiencing mathematics” mentioned above. Also UNESCO has recently been sponsoring several ICMI actions, especially as they concern the developing world.

In 2009, ICMI President Michèle Artigue was invited to contribute to a document on “**The challenges of mathematics and science basic education**”, to be published and disseminated by UNESCO in French, English and Spanish, by taking responsibility for the section on mathematics education. The document — 34 pages plus 14 appendices — has been delivered to UNESCO at the end of July, 2009, and translation assistance into English also provided. It was published later in 2010. The ICMI EC has affirmed this document as a position statement on Mathematics Education for its own purposes.

Arising from this interaction, negotiations were successful in developing a project to enhance mathematics capacity in developing regions. It is called the **Capacity & Networking Project (CANP) - The Mathematical Sciences in the Developing World**.

CANP is a major development focus of the international bodies of mathematicians and mathematics educators (International Mathematical Union, IMU & International Commission on Mathematical Instruction, ICMI) in conjunction with UNESCO and International Congress of Industrial and Applied Mathematics, ICIAM. The project is a follow-up to “Current Challenges in Basic Mathematics Education”.

CANP aims to enhance mathematics education at all levels in developing countries so that their people are capable of meeting the challenges these countries face. It will develop the educational capacity of those responsible for mathematics teachers, and create sustained and effective regional networks of teachers, mathematics educators and mathematicians, also linking them to international support.

CANP consists of an on-going series of programmes in a different developing region each year. The first programme will be in Mali in September, 2011. The second will be in Central America in 2012. The third will be in South East Asia in 2013 to build on existing developing initiatives in Cambodia and Nepal.

10. ICMI Affiliate Organizations

The Terms of Reference of ICMI were amended in 2009 to allow affiliation to ICMI not only of study groups focussing on a specific field of interest in mathematics education, as has been the case since 1976, but also of multi-national mathematical education societies, or of multi-national societies having a formal mathematical education subgroup. After **CIAEM** (Comité Interamericano de Educación Matemática / Inter-American Committee on Mathematical Education), two other organizations asked to become affiliated to ICMI: **CIEAEM** (*Commission Internationale pour l'Étude et l'Amélioration de l'Enseignement des Mathématiques / International Commission for the Study and Improvement of Mathematics Teaching*) and **ERME** (*European Society for Research in Mathematics Education*),

11. ICMI Solidarity actions

In August 2009 the Adhering Organizations of IMU decided to set up a Commission for Developing Countries (CDC) (aiming at enhancing and expanding the successful work carried out by CDE and DCSG previously) with the mission to manage, strengthen, and promote the programs of the IMU in developing and economically disadvantaged countries, to search for funding to support the corresponding activities, and to establish institutional partnerships with scientific organizations with common goals.

At the meeting of the IMU General Assembly in Bangalore 2010 the CDC Terms of Reference were approved and the CDC leadership was elected. The CDC Chairman is José-Antonio de la Peña (Mexico). The ICMI Executive Committee appoints one member of this Commission. The ICMI 2010-2012 Executive Committee nominated Vice-President Angel Ruiz as member of this Commission.

12. The ICMI Awards

The two recipients of the **ICMI Awards in mathematics education research** for the year 2009 were announced in February, 2010. The 2009 Felix Klein Medal is awarded to Gilah Leder, and the Hans Freudenthal Medal to Yves Chevallard. The awards will be presented to the recipients in 2012 at the opening ceremony of ICME-12 in Seoul, together with the 2011 ICMI Awards.

Mogens Niss ends in the end of 2010 his term as the chair the **ICMI Award Committee**, responsible for selecting the recipients of the Awards. In addition, two other members will also complete their term on the Committee and will be replaced. Only the name of the Chair is publicly known.

13. IMU/ICMI Digitisation Programme

The **ICMI Digital Library** was officially launched on July 1, 2009, with the posting online of the Proceedings of the symposium organised in 2000 on the occasion of the centennial of *L'Enseignement Mathématique*, the official organ of ICMI.

Negotiations were pursued in 2010 with ICMI publishers of past years, Springer and Cambridge University Press (CUP). A contract was signed with CUP in June, 2010 to make this material available online and negotiations with Springer are still in progress.

Now all Bulletins digitized with the help of IMU are being put online, the most recent Proceedings of ICMI Study meetings are also being put online and the ICMI Studies edited by CUP are available online for the ICMI community.

14. Information and Communication

Besides direct e-mail contact with the ICMI Representatives or other members of the international mathematics education community, the dissemination of information about the Commission and its activities is generally accessible through the yearly **ICMI Bulletin**, the **ICMI News** appearing every two months, alternating with *IMU-Net*, and the **ICMI website**, all under the editorship of the Secretary-General of ICMI.

The new **ICMI website** was launched in May 2009. The website, now hosted on the IMU server, will receive some improvements in 2011.

The website has been updated monthly with news of activities of ICMI and its Affiliate Organizations, and modified to include information about ICME-12 on the front page:

<http://www.mathunion.org/icmi/>

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August 31, 2011