



# International Commission on Mathematical Instruction

## **4 year Report on ICMI activities in the period 2006-2010<sup>1</sup>**

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## 1. Organisation

In the period 2006-2010, three Executive Committees of the International Commission on Mathematical Instruction were in office: the 2003-2006 ICMI Executive Committee (ICMI EC), the 2007-2009 ICMI EC and the 2010-2012 ICMI EC. These last two ECs were elected for a three-year term of office, instead of the usual four, because of the new procedure for the election of the ICMI EC adopted by the 2006 IMU General Assembly (GA) and bringing a shift for the election from the IMU GA to the ICMI GA (more on this new procedure below).

The **2003-2006 ICMI Executive Committee (ICMI EC)** had its sixth and final meeting in Cartagena de las Indias, Colombia, on November 18-21, 2006. This meeting was mainly devoted to the preparation of the transition to the next ICMI EC. The members of the ICMI EC took part in a Forum on the theme “Mathematical Competencies in Higher Education” organized by the Colombian Ministry of Higher Education on November 22-24 in Bogotá.

Following the agreement made in 2000 with the IMU EC, the President and Secretary-General of ICMI were invited as *ex officio* observers to the **General Assembly of IMU** held in Santiago de Compostela, Spain, in August 2006. This allowed them to present to the delegates the background and detailed content of the new procedure for the election of the Executive Committee of ICMI. The new procedure provoked some discussion but was finally adopted by the IMU Assembly. An important consequence of the new procedure is that the election of the ICMI EC from now on takes place at the General Assembly of ICMI (the first such election was held in 2008 in Monterrey, when the 2010-2012 ICMI EC was elected). The principles of the new election procedure had been agreed upon by the IMU and ICMI ECs in 2004, and fine-tuned in 2006. During these latter discussions, a new rule was then introduced stipulating, in accordance with the IMU tradition, that the President of ICMI should serve for only one term (plus a term as Past President). The Terms of Reference of ICMI were amended accordingly — the new Terms were adopted by the IMU EC early in 2007.

The Chair of the ICMI Nominating Committee for the 2006 election, Mogens Niss, also attended the IMU General Assembly in order to present the slate of candidates proposed by the Committee. The members of the **2007-2009 ICMI Executive Committee** elected by the IMU Assembly were:

President:	Michèle Artigue	(France)
Vice-Presidents:	Jill Adler	(South Africa)
	William (Bill) Barton	(New Zealand)
Secretary-General:	Bernard R. Hodgson	(Canada)
Members at Large:	Maria G. (Mariolina) Bartolini Bussi	(Italy)
	Jaime Carvalho e Silva	(Portugal)
	Celia Hoyles	(UK)
	S. Kumaresan	(India)
	Alexei Semenov	(Russia)

The Terms of Reference of ICMI allowing the co-option of up to two additional members on the EC “in order to provide for missing coverage or representation”, Frederick Koon-shing Leung (Hong Kong) was later co-opted as an additional member of the EC. The Past ICMI President, Hyman Bass (USA), as well as the President and Secretary of IMU, László Lovász (Hungary) and Martin Grötschel (Germany), were *ex officio* members of the 2007-2009 ICMI EC.

The **2007-2009 ICMI Executive Committee** took charge as of January 1, 2007. It had its first meeting at the London Knowledge Lab (London, UK) on June 13-16, 2007, with the participation of the President of the International Mathematical Union (IMU), László Lovász. The meeting was launched by a discussion of the mission of ICMI. Themes included: the importance of retaining strong links with the mother organisation of ICMI, the IMU; the international nature of ICMI and a recognition of different challenges in different countries; the importance of the “Pipeline” project (see item 8 below); the need to work on a regional basis; the value of ICMI Studies; and the need to establish sound administrative and financial foundations for the organisation. As the workload incumbent to the Executive had considerably increased, the EC made substantial efforts towards a greater sharing of the duties among the committee.

The invitation to the IMU Adhering Organisations, Committees for Mathematics, and ICMI Representatives, to nominate candidates to the **ICMI Nominating Committee** and to the 2010-2012 ICMI Executive Committee, was sent in January 2007. This ICMI Nominating Committee was originally composed of Jeremy Kilpatrick (USA), chair, Michèle Artigue (France), László Lovász (Hungary), Attia Ashour (Egypt), Lee Peng Yee (Singapore), Elon Lima (Brazil) and Evgenia Sendova (Bulgaria). But Elon Lima later withdrew from the Committee.

The **2007-2009 ICMI Executive Committee** had its second and third meetings in 2008. The EC met in Rome on March 4 and 9 on the occasion of the symposium celebrating the ICMI Centennial. On the first day of the meeting, László Lovász and Claudio Procesi, respectively President and Vice-President of the International Mathematical Union (IMU), were present. The EC also met in Monterrey on the occasion of ICME-11, on July 4-5 and 13. Two members of the IMU EC, Manuel de León and Cheryl Praeger, attended the first two days of that meeting. The regular presence of members of the IMU EC at the ICMI EC meetings is a clear reflection of the strengthening of the links between the two bodies.

The **General Assembly of ICMI** was held in Monterrey on July 6, 2008, on the day prior to the opening of ICME-11. The costs for hosting the General Assembly were generously supported by the ICME-11 organisers. For the first time, this General Assembly was responsible for the election of the ICMI Executive Committee. The Chair of the ICMI Nominating Committee for this election, Jeremy Kilpatrick, also attended the General Assembly in order to present the slate of candidates proposed by the Committee. The **2010-2012 ICMI Executive Committee** then elected is composed of:

President:	William (Bill) Barton	(New Zealand)
Vice-Presidents:	Angel Ruiz	(Costa Rica)
	Mina Teicher	(Israel)
Secretary-General:	Jaime Carvalho e Silva	(Portugal)
Members at Large:	Maria G. (Mariolina) Bartolini Bussi	(Italy)
	Sung Je Cho	(Korea)
	Roger Howe	(USA)
	Renuka Vithal	(South Africa)
	Zhang Yingbo	(China)

Again as a consequence of the shift in the ICMI EC election from the IMU GA to the ICMI GA, the term of this next EC is for three years, starting on January 1, 2010 and ending on December 31, 2012. (Starting with the next ICMI EC election, to be held in 2012, the term of office will go

back to the usual four-year span.)

The **2007-2009 ICMI Executive Committee** had its fourth and final meeting in Saint-Petersburg on September 7-10, 2009. IMU was represented on this occasion by one of its ICMI liaison persons, Manuel de León. This meeting, whose local arrangements were taken in charge by the Moscow Institute of Open Education, was also the occasion of a colloquium organised by EC member Alexei Semenov and devoted to the theme “Russian School Math and Unified State Examination in an International Perspective”.

The President and Secretary-General of ICMI were invited for part of the meeting of the **Executive Committee of IMU** held in Fuzhou, China, on April 18-19, 2009. In addition to allowing the IMU EC members to receive a direct report on ICMI and its activities, this meeting was the occasion of discussing specific issues of interest to ICMI, in particular as regards ICMI regional actions and initiative towards developing countries (see item 13 below). It also allowed the examination of joint IMU/ICMI projects, (see 8 and 9 below), and to discuss the development of the ICMI Digital Library — for which IMU offers to ICMI a crucial logistic support. ICMI presented an analysis of its financial situation and made some requests in connection with the IMU 2011-2014 budget.

Since 2007, the 2007-2009 ICMI EC had had frequent discussions with the IMU EC concerning the evolution in the governance of ICMI, and the necessity to consequently revise the ICMI **Terms of Reference**. This work was completed during the last months of 2009, the revised Terms were formally adopted by the EC of IMU on December 31, 2009, while the ICMI EC adopted on the same day Guidelines pertaining to these Terms. Besides using this opportunity for making minor corrections to the Terms essentially of a cosmetic nature, this round of revision was the occasion for introducing some substantial changes in the definition of the duties and rights of those involved in ICMI. Under this new version, the ICMI Terms are now split into two parts, the first part being (as previously) under the jurisdiction of the IMU EC, while the new second part (*Guidelines for the ICMI Terms of Reference*) is under the jurisdiction of the ICMI EC. Other changes include a statement related to importance of the presence of the ICMI representatives at the ICMI General Assembly (under Clause 2), and the fact that the only members of the ICMI GA having voting rights are the representatives of Full Member countries of IMU (under Clause 3). An important new notion of *Affiliate Organization* was added to the Terms, of which the current notion of *Affiliated Study Group* is becoming one “cas de figure”. Affiliation is now possible not only for groups devoted to specific fields of interest in mathematics education, like the current five ICMI Affiliated Study Groups, but also to multi-national organizations with interest in mathematics education. (See Section 12 below.)

The **2007-2009 ICMI EC** was succeeded on January 1, 2010, by the 2010-2012 EC, elected at the ICMI General Assembly held in July 2008 on the occasion of ICME-11. In order to facilitate the passage from one EC to the next, a transition working meeting between the outgoing and incoming secretaries-general took place in Coimbra in October 2009, thus allowing for a scrutinized review of the many dossiers incumbent to the ICMI Secretary-General.

The **2010-2012 ICMI EC** had its first meeting in Auckland on 5-8 April, 2010, with IMU represented by Cheryl Praeger. Administrative results of this meeting were the splitting of the

Secretary-General's duties to make it more manageable, with Mina Teicher being appointed Financial Officer. 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.

## 2. ICMI members

In 2006, ICMI had 81 member countries, 67 of which were also members of the International Mathematical Union (IMU). The number of **countries members of ICMI** at the end of 2009 was 85, including 13 countries that are not members of IMU.

Ecuador and Kyrgyzstan have acquired in 2007 the newly created status of "Associate members" of IMU, and Kenya acquired this status as of October 2008. As of January 2008, Colombia became a full member of IMU.. Having joined IMU, these countries thus became *de facto* members of ICMI. During 2007, as a consequence of the end of the union between the republics of Serbia and of Montenegro, the corresponding membership in the IMU (and thus in ICMI) was changed from *Serbia and Montenegro* to *Serbia*. Finally, the statute of Thailand, previously a member of ICMI that was not a member of IMU, was changed to that of "Associate member" of IMU as of August 2009.

Of the 85 member countries of ICMI, 14 had at the end of 2009 no appointed **Representative to ICMI**: *Bosnia and Herzegovina, Brunei Darussalam, Colombia, Ghana, Kazakhstan, Kenya, Kuwait, Kyrgyzstan, Pakistan, Peru, Saudi Arabia, Turkey, Uruguay, Zambia*.

Still, the efforts to reinforce the links and improve communication between ICMI and its member countries, with each EC member being directly responsible for a few countries, have begun to bear fruit. A major progress in the appointment of **ICMI representatives** should be noted: close to 50 new ICMI Representatives have been appointed in recent years. 30 of these were replacements during the years 2008 and 2009, in respect of the so-called "Kobe Rule" — i.e. Resolution 5 adopted at the IMU General Assembly held in Kobe in 1990 and stipulating that ICMI representatives should normally not serve for more than two consecutive terms. (This rule is integrated in the revised version of the ICMI Terms of Reference.) This new vitality is important, since the representatives form the ICMI General Assembly which has an increased legislative role.

## 3. ICMEs

Due to a defect in the content of the CD accompanying the book of Proceedings of **ICME-9**, it was announced in the *ICMI Bulletin* 55 that the Japanese colleagues in charge of the congress had decided to issue a revised and expanded version of the CD, to be sent to all ICME-9 participants. The shipping of the new CD took place by the end of June 2006.

Progress on the Proceedings of **ICME-10** was delayed due to health problems of a key member of the editorial team, but the publication finally appeared in 2008. It was sent to all ICME-10

participants and also made available on line on the website of the congress.

The 11th International Congress on Mathematical Education, **ICME-11**, was held in Monterrey, México, from July 6 to 13, 2008. The International Program Committee and the Local Organising Committee were respectively chaired by Marcela Santillán and Carlos Signoret. The local preparation of ICME-11 benefited from the strong support of the Sociedad Matemática Mexicana. The International Programme Committee (IPC) had its second and final meeting in Monterrey on January 27-30, 2007. Information about the congress is still available on the website <http://icme11.org/>.

**ICME-11** was attended by 2526 participants from 88 different countries, plus 180 accompanying persons. As the tradition has it since ICME-8, the ICME-11 organisers had made the commitment of devoting at least 10% of the registration fees to the ICME Solidarity Fund. This provided for an amount of 177 300 USD which, combined to a grant of 35 000 USD received from NCTM (USA), allowed to offer partial support to more than 150 participants from 41 non-affluent countries. The distribution of the money generated for the Fund was made by a Grant Committee, jointly appointed by the congress organisers and the ICMI Executive Committee, which worked autonomously and anonymously in order to minimize potential problems of pressure. The ICME-11 Congress, held for the first time in Latin America and in a country from the periphery, was a very successful event both from a scientific and social point of view.

At the opening ceremony of ICME-11, the 2005 and 2007 Felix Klein and Hans Freudenthal Medals were presented to the awardees: Ubiratan D'Ambrosio (Brazil) and Jeremy Kilpatrick (USA) — Felix Klein Medal; Paul Cobb (USA) and Anna Sfard (Israel) — Hans Freudenthal Medal.

The preparation of the Proceedings of **ICME-11** has met with substantial delay with respect to the planned schedule, and the communication at some moment difficult between the ICMI EC and those in charge of the preparation in Mexico, but as of May, 2010, the process has been re-established by the new ICMI EC and publication should occur around the end of 2010 or early 2011, as initially planned.

A call for bids to host **ICME-12** in 2012 was made in July 2004, and published in the *ICMI Bulletin* (No. 55, December 2004). Three official bids were received by the deadline of November 2006, from China (Shanghai), Korea (Seoul) and South Africa (Durban). Visits to the three sites by President Michèle Artigue, Vice-President Bill Barton and Secretary-General Bernard R. Hodgson, took place in March 2007 (Shanghai and Seoul) and May 2007 (Durban). The bids were discussed by the ICMI EC at its meeting in London in June 2007, and a final decision was made in December 2007. The high quality of the three proposed bids made the EC decision task especially difficult. As two members of the 2007-2009 ICMI EC (Jill Adler and Frederick Leung) were from countries submitting a bid for ICME-12, so the following two principles were agreed upon by the EC: (i) at no point should an EC member from a bidding country participate in any discussion relating to evaluation of the bids, or have access to information about the competing bids; (ii) no EC member may be a member of the committee that formally presents a bid to ICMI (although an EC member could be involved in the reflection leading to the decision by a country to submit or not a bid).

The ICMI Executive Committee announced by the end of 2007 its decision to accept the invitation from Korea to host ICME-12 in 2012. The congress will take place in the COEX Convention Centre, in Seoul, on July 8-15, 2012. A Korean delegation was present at ICME-11 to provide information on the 2012 ICME. The ICMI Executive Committee has expressed its deepest gratitude to the mathematics education and mathematics communities in the three bidding countries, and especially to the three persons who chaired the committees that prepared the bids, namely Professors Jianpan Wang (China), Sung Je Cho (Korea) and Renuka Vithal (South Africa).

The International Programme Committee of **ICME-12** is chaired by Professor Sung Je Cho, of Seoul National University. This IPC, whose composition is announced the *ICMI Bulletin No. 63*, had its first meeting in Seoul on June 14-17, 2009. A first set of decisions was made during the meeting, regarding in particular the plenary activities of the congress as well as the list of Topic Study Groups. It was also decided to reorganise the functioning of some of the activities, such as the Discussion Groups. The second IPC meeting will be held in February 2011. Up to date information about the congress and the First Announcement is available at <http://www.icme12.org>. Registration fees will be of 400 USD, which brings a welcome substantial reduction to these fees as compared to recent ICMEs.

A call for bids for **ICME-13**, to be held in 2016, was made by the Secretary-General at the closing ceremony of ICME-11 and in the *ICMI Bulletin (No. 63)*. Potential bidders were invited to announce their intention by November 1, 2009, and three countries did so. Formal bids are due by November 1, 2010, with the decision for ICME-13 to be announced by the end of 2011.

#### 4. ICMI Studies

Two new ICMI Studies were launched in 2006-2009. By mid 2010 the situation is as follows.

- **ICMI Study 13:** *Mathematics Education in Different Cultural Traditions: A Comparative Study of East-Asia and the West*  
The ICMI Study volume has appeared early in 2006 in the New ICMI Study Series; eds: Klaus-Dieter Graf, Frederick K.S. Leung and Francis Lopez-Real. (NISS 9)
- **ICMI Study 14:** *Applications and Modelling in Mathematics Education*  
The Study volume appeared in 2007 in the **New ICMI Study Series** under the editorship of Werner Blum, Peter Galbraith, Hans-Wolfgang Hehn and Mogens Niss. (NISS 10)
- **ICMI Study 15:** *The Professional Education and Development of Teachers of Mathematics*  
The Study volume appeared in 2009 in the **New ICMI Study Series** under the editorship of the two co-chairs, Deborah Ball and Ruhama Even. (NISS 11)
- **ICMI Study 16:** *Challenging Mathematics in and beyond the Classroom*  
The Study Conference was held at the Norwegian University of Science and Technology, in Trondheim, Norway, on June 27 to July 3, 2006. It was attended by 44 participants from 22 different countries. The Study volume appeared in 2009 in the **New ICMI Study Series**

under the editorship of the Study co-chairs Edward J. Barbeau and Peter J. Taylor. (NISS 12)

- **ICMI Study 17:** *Digital Technologies and Mathematics Teaching and Learning: Rethinking the Terrain*

The 17th ICMI Study conference, held at Hanoi University of Technology, Viet Nam, on December 3-8, 2006, was attended by 130 participants from 34 different countries, including 36 Vietnamese participants. A workshop associated with the conference and intended for local and regional teachers was attended by 44 teachers from Viet Nam, 3 teachers from Cambodia and 2 teachers from Thailand. The Study conference and the workshop were financially supported by the ICMI Solidarity Fund (2 000 USD), IMU Developing Countries Strategy Group — DCSG (5 000 USD) and UNESCO (3 000 USD), as well as by five private sponsors involved in the workshop (9 000 USD altogether). Moreover CIMPA contributed to the participation of the Cambodian and Thai teachers to the workshop.

The Study 17 conference was saddened by a tragic traffic accident to the opening keynote speaker, Seymour Papert, who was severely injured when hit by a motorcycle while crossing a street on his way to Hanoi University of Technology.

The Study co-chairs Celia Hoyles and Jean-Baptiste Lagrange were responsible for the editorial work on the NISS Study volume. The ICMI Study volume, dated 2010, appeared late in 2009 in the New ICMI Study Series. (NISS 13)

- **ICMI Study 18:** *Statistics Education in School Mathematics: Challenges for Teaching and Teacher Education*

This Study is organised jointly with the International Association for Statistical Education (IASE), and its International Programme Committee is chaired by Carmen Batanero. The IPC had a meeting on the occasion of the ICOTS-7 conference in Salvador da Bahia, Brazil, in July 2006 and the Discussion Document for the Study was posted on the Study website by mid-September 2006. The Study Conference, which was merged with an IASE Round Table Conference, took place on June 30-July 4, 2008, at the Instituto Tecnológico y de Estudios Superiores, in Monterrey, México, as a satellite conference to ICME-11. The conference was attended by more than 100 participants from 25 different countries.

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 International Programme Committee for the 19th ICMI Study is co-chaired by Gila Hanna and Michael de Villiers. The appointment of the IPC was finalised early in 2007 and the Committee met at the Universität Duisburg-Essen in November 2007. The Discussion Document for this Study was disseminated by the end of 2007. The International Programme Committee met for a second time in November 2008 to finalise the programme of the Study conference. This conference was held at the National Taiwan Normal University, in Taipei, Taiwan, on May 10-15, 2009. It was attended by 131 participants coming from more than 30 different countries. 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)



The 2007-2009 Executive Committee decided in 2008 to launch two new Studies. The **20th ICMI Study: *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 Damlamian (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, now scheduled to take place on 11-15 October, 2010. The aim is to launch the Study volume during the 7th International Congress on Industrial and Applied Mathematics (ICIAM 2011), to be held in July 2011, in Vancouver, Canada.

The **21st Study**, entitled *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 website is [www.icmi-21.co.za](http://www.icmi-21.co.za), and the Study Conference is planned for Águas de Lindóia, São Paulo, Brazil, on 16-20 September, 2011.

The 2010-2012 Executive Committee will be launching a new Study late in 2010 on Task Design, and another on a Primary Mathematics topic in 2011.

At its November 2006 meeting, the ICMI EC considered the report prepared by Steve Lerman about the ICMI Study programme and its accomplishments since its inception in the mid 1980s. EC member Peter Galbraith wrote a paper summarising the recommendations of the EC for the benefit of co-chairs of future Studies. This document appeared in *ICMI Bulletin No. 59*.

The ICMI EC completed successfully in 2008 negotiation with Springer for the renewal of the **contract for the NISS series**, the previous contract going back to 2000. Besides maintaining current conditions such as the 60 % discount available to members of the ICMI community for personal purchases of NISS volumes and the number of free copies provided to ICMI (81), the contract contains an increase in the royalties and posting the content of the NISS volumes freely accessible on ICMI website, after 3 years.. An amendment to the contract is currently being negotiated to take care of legal complications around non-English language rights.

Considering the global difficult financial situation of ICMI, it had been decided at the December 2005 meeting of the ICMI EC that the royalties on the sales of volumes of the NISS series should from then on be payable to ICMI. As a consequence of this policy, royalties of 1146,61 USD were received by ICMI from Springer in 2009 and 1619,79 USD in 2010.

## 5. ICMI Regional Conferences

Several Regional Conferences to which the ICMI EC has granted the status of ICMI Regional Conference were held in the period 2006-2010.

- **EMF 2006** (*Espace mathématique francophone 2006*) took place at the University of

Sherbrooke, Québec, Canada, on May 27-31, 2006. It was the third in this series, the first two having been held in Grenoble, France (2000) and Tozeur, Tunisia (2003). EMF 2006 gathered 258 participants from 17 different countries, including 8 African and 6 European countries. It was scheduled close to the annual meetings of two teachers' associations from the province of Québec, with one day common to the three conferences that brought together nearly 800 participants. A report on EMF 2006 appears in the *ICMI Bulletin* 59 (December 2006).

- **AFRICME 2** (the *Second Africa Regional Congress of ICMI on Mathematical Education*) took place at the Catholic University of Eastern Africa, Nairobi, Kenya, on May 23-26, 2007. It was the second in this series that aims at offering a forum for mathematics educators throughout Africa, the previous one having been held in Johannesburg, South Africa, in 2005. AFRICME 2 gathered 87 participants from 14 different countries, including the following African countries: Botswana, Burkina Faso, Kenya, Malawi, Mozambique, Namibia, Nigeria, Rwanda, South Africa, Uganda and Zimbabwe. A report on AFRICME 2 appears in the *ICMI Bulletin* 60 (June 2007).
- **ICMI-EARCOME-4** (the *Fourth ICMI East Asia Regional Conference in Mathematics Education*) was held in Penang, Malaysia, on June 16-22, 2007. It was organised by the University Sains Malaysia and attracted a total of 409 participants, including 156 foreign participants from 22 countries, 169 local mathematics educators and teachers, and 25 foreign and 28 local postgraduate students. A report on EARCOME-4 appears in the *ICMI Bulletin* 61 (December 2007).
- **XII CIAEM** (the *Twelfth Inter-American Conference on Mathematical Education – Conferencia interamericana de educación matemática*) took place in Querétaro, México, on July 15-18, 2007. The congress, whose main theme was *Educación matemática: historia y prospectiva*, was attended by more than 600 participants. A report appears in the *ICMI Bulletin* 61 (December 2007).
- **EMF 2009** (*Espace mathématique francophone 2009*) took place in Dakar, Senegal, on April 6-10, 2009. It gathered more than three hundred teachers and researchers coming from twenty countries, among which twelve from Africa. The importance given to this Conference by the Senegalese authorities can be seen through the presence at a special opening session of the president of Senegal, Abdoulaye Wade, who stressed to the participants the crucial role played by mathematics and its teaching in preparing the future of his country and region. Himself trained as a mathematician, the president offered to each participant a copy of his book on the mathematics of economic analysis. The EMF 2009 conference was organised with a financial support from UNESCO which allowed to cover part of the expenses of nine participants. A report on EMF 2009 appears in the *ICMI Bulletin* no. 64 (June 2009).
- **AFRICME 3** (the *Third Africa Regional Congress of ICMI on Mathematical Education*) took place at the University of Botswana, Gaborone, Botswana, on May 17-21, 2010. AFRICME 3 gathered 121 participants from 14 different countries, including 15 teachers.

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

- **ICMI-EARCOME-5** conference (the *Fifth ICMI East Asia Regional Conference in Mathematics Education*), to be held in Tokyo in August 2010. The ICMI EC is represented on the International Programme Committee of this conference by Frederick Leung.
- **XIII CIAEM** (Conferencia interamericana de educación matemática), to take place in Recife, Brasil, on June 26-30, 2011. This meeting will coincide with the 50th anniversary of the *Comité Interamericano de Educación Matemática* (CIAEM), an organisation recently affiliated to ICMI (see section 12 below). The ICMI EC is represented on the International Programme Committee by Michèle Artigue and Bernard R. Hodgson.
- **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 sees very positively the development of mathematics education networks both in the English and French-speaking countries of Africa, Asia and the Americas.

## 6. ICMI Centennial

The year 2008 marked the **centennial of ICMI**, as the Commission was established during the Fourth International Congress on Mathematical Education. An international symposium, entitled “The First Century of the International Commission on Mathematical Instruction: Reflecting and Shaping the World of Mathematics Education”, was held in Rome, on March 5-8, 2008 (see <http://www.unige.ch/math/EnsMath/Rome2008/>) supported by special grants from UNESCO and IMU. The International Programme Committee was chaired by Ferdinando Arzarello, while Marta Menghini represented the Organising Committee within the IPC. Palazzo Corsini, home of the Accademia Nazionale dei Lincei and the birth place of ICMI, and Palazzo Mattei di Paganica, home of the Enciclopedia Italiana, were the splendid venues for the symposium. Some 200 participants from 43 countries took part.

Taking as a point of departure the themes connected to ICMI activities over the course of its hundred year history (reforms in teaching of the sciences, preparation of teachers, relationships between mathematicians and researchers in mathematics education, etc.), the symposium sought to identify the future directions of research in didactics and possible initiatives for improving the level of mathematical culture in the various countries. The symposium was subdivided into ten plenary talks, eight parallel talks, five working groups, and an afternoon reserved for Italian teachers, with lectures by scholars from Italy and abroad. The talks on the “Italian afternoon” were broadcast via videoconference to fifty schools throughout Italy. The symposium ended with an excursion which, like a hundred years ago, took participants to visit the Villa d’Este at Tivoli and Hadrian’s Villa, both rich in historical grandeur.

On the occasion of the congress a website dedicated to the history of ICMI was created under the direction of Fulvia Furinghetti and Livia Giacardi. It delineates the most significant events and key figures through documents, images and interviews. The symposium proceedings *The first*

*century of the International Commission on Mathematical Instruction (1908-2008). Reflecting and shaping the world of mathematics education* have appeared in the “Collana Scienze e Filosofia” of the Istituto della Enciclopedia Italiana, (Roma, 2008). These proceedings will be made freely accessible on line no later than by the end of 2011. The talks of the Italian afternoon have been published in the journal *Progetto Alice*. Furthermore, the *International Journal for the History of Mathematics Education*, edited by Gert Schubring, has published as its vol. 3 no. 2 (2008) a special issue on the history of ICMI, inspired by the work carried out for celebrating ICMI Centennial. More information on this publication can be obtained on the [IJHME website](#).

The development of the website dedicated to the history of ICMI and launched on the occasion of the ICMI centennial celebration was pursued in 2009 under the direction of Fulvia Furinghetti and Livia Giacardi. ICMI has provided a grant of 1000 € to support this work <<http://www.icmihistory.unito.it/>>

## 7. 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 (1500 USD in 2007 and 3000 USD in 2008) and by ICMI (2500 USD in 2009). Support for the exhibition has also been provided by CIMPA and the French Ministry of Foreign Affairs.

The 2006 programme of travel included Namibia (15 towns, including Windhoek) — this marked the end of a one-year Austral Africa tour —, Thailand (Bangkok), Laos (Vientiane, Pakse et Luang Prabang), Viet Nam (Danang and Ho Chi Minh City), Spain (Madrid), where it was shown during and after the International Congress of Mathematicians in the Centro cultural Conde Duque (more than 30 000 visitors), and France (Lyon). The 2007 programme of travel included Cambodia (4 cities), Singapore (35 000 visitors), Viet Nam (two cities), Santiago de Chile, Lebanon (Beirut and Saida), India (Dehli, Kolkata, Bangalore, Mumbai), France, Portugal, Poland (Warsaw and Kraków) and Switzerland (Basel) in connection with the celebration of the 300th anniversary of Euler.

During 2008, the first set of the exhibition travelled in Latin America. The travel started in Chile in October 2007, and pursued with Colombia (Bogotá), México (Mexico City and Monterrey, including the period of ICME-11), Paraguay (San Lorenzo, Villarica, Asunción) and Argentina (Buenos Aires, Tandil, Rosario, Tucuman). The number of visitors is estimated at 150 000 for this travel. In 2009, it was presented in Argentina (Buenos Aires, Tandil, Rosario et Tucuman) until March, and then, from April to November, in ten cities in Brasil, from Recife to Belo Horizonte. The presentations in Brasil were carried out in cooperation with CONSECTI-CONFAP (the National Council of Ministers for Science, Technology and Innovation, and the National Council of State Foundations for Support to Research), as well as the Brazilian Association of Science Centres and Museums (ABCMC). The exhibition finished its circulation in Latin America by returning to Santiago of Chile (Santiago University) for the first quarter of

2010. It will then be 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, including India, Pakistan, and the Philippines in 2008, and these presentations were pursued with a 18-month travel in Korea, with the support of NateSystem and KIDP (Korean Institute of Design Promotion). The exhibition was first in Seoul from June to October 2009, and then presented in five other cities. The Korean journey will end in October 2010.

The third set of the exhibition travelled in 2008 for six months in Portugal. The exhibition also travelled in Turkey on the occasion of the fiftieth anniversary of Anadolu University, and with its support. It was presented in Eskisehir, Izmir and Ankara. The exhibit was then brought to West Africa, on the occasion of EMF 2009 held in April in Senegal. It has circulated in four cities in Senegal, after which it was brought to Benin (Cotonou) in October-November. Travel plans inside Africa for 2010 include Burkina Faso, where it will be visiting three cities in three months, with the support of local mathematicians and mathematics educators, and Niger.

To this must be added the development of a virtual exhibition in four different languages, connected to the one existing physically and aimed at secondary school mathematics teachers. This development was completed during the first months of 2008 and the official opening of this additional component took place in Angola in March 2008, with a specific training workshop for teachers sponsored by UNESCO and the Ministry of Education (see <[www.ExperiencingMaths.org](http://www.ExperiencingMaths.org)>). It was used again in Angola for a session of preparation of trainers who themselves, in turn, trained 80 mathematics teachers from four regions in the country in 2009. Each of the teachers received a CDrom.

On the whole, during 2009, the exhibition was presented in eighteen cities within five countries and has been seen by more than 140 000 visitors, 80% of school or student public. Since its first presentation in 2004, the exhibition has been presented in some 100 cities from 30 different countries, and has welcomed more than one million visitors, including 75% of school or student public. The year 2009 is the second best year of attendance since the launching of the exhibition.

## **8. Pipeline Project**

The “**Pipeline Project**” was launched jointly in 2004 by IMU and ICMI in reaction to the perceived decline in the numbers and quality of students who are choosing to pursue mathematics study at the university level, as well as the inadequate supply of mathematically qualified students choosing to become mathematics teachers in the schools. The task force appointed to run this project, chaired by 2003-2009 ICMI EC member Frederick Leung, had a meeting in April 2007 at the Headquarters of the American Mathematics Society (AMS) in Providence, US. The work on the Pipeline project was connected to that of the Survey Team for ICME-11, chaired by Derek Holton (New Zealand), on the topic of “Recruitment, entrance and retention of students to university mathematical studies in different countries”. A meeting of a project team (including Derek Holton, in charge of the ICME-11 Survey Team) was held in Rome in March 2008. It was

then agreed that a Case Study approach was the only one feasible, and it was decided to focus around four transition points using data from eight pilot countries. The Survey Team not only reported at Monterrey in July, but most of its findings were collected together into a Special Issue of the *International Journal of Mathematical Education in Science and Technology* 40(1), published in January, 2009, devoted to the theme “Recruitment, Entrance and Retention of Students to University Mathematics Studies in Different Countries”, under the guest editorship of Derek Holton.

The main problem for the Pipeline Project is the size of the task. The data mining that is necessary to obtain consistent, long-term data of a standard that enables it to be analysed for trends even within one country, let alone internationally, requires a very large investment of time. Each of the participating pilot countries was requested to find people who would be able to work on the project. It was only in August 2008 that any full-time person became available. Louise Sheryn, a post-doctoral researcher at the University of Auckland, was employed to work on the New Zealand Pipeline data. No other countries have managed to find or fund a Pipeline Researcher. As a result, the directorship of the project shifted to New Zealand, where Bill Barton agreed to direct the project to the end of its Pilot Phase, involving the eight pilot countries: Australia, Finland, France, Korea, New Zealand, Portugal, United Kingdom and USA. A Moodle site for contributors was established, and complementary searches for relevant data for the pilot countries undertaken. In October 2009, a presentation was made to the conference on *Paradigms in Mathematics Education for the XXI Century* in Valencia.

The pilot phase of the Pipeline Project ended at the end of 2009, and a report for IMU and ICMI is under preparation. The emerging picture is that, worldwide, there may not be a crisis in the numbers of mathematically qualified students, but that there is a crisis in some of the pilot countries. It is evident that the numbers of such students in universities is susceptible to changes in school curricula and examination systems.

## **9. The Klein Project**

The Klein Project was first mentioned during the June 2007 Executive Meeting of ICMI in the context of a discussion about worthwhile projects that would bind the mathematicians and mathematics educators communities. The 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. Klein’s aim was to provide prospective senior secondary teachers with a book that would lay out the connections between the curricula they would be teaching and research mathematics. It was intended as a stimulus for new teachers, to help them connect their university mathematics education with school mathematics.

The reflections of the ICMI EC on this project were pursued in conjunction with the IMU EC. It was decided to form a Design Team of 8 people who would be responsible for the project. The composition of this team, chaired by Bill Barton, was decided by the end of 2008.

The project will have three outputs: a book simultaneously published in several languages, a resource DVD for teachers, and a website. The book will be a presentation of the field of

mathematics in relation to school curricula and its intended audience is senior secondary teachers. It will be accessibly written, stimulating, and have a wide coverage (“mathematics” in this context is to be broadly conceived to include statistics, applied mathematics, aspects of computer science and engineering science). Finally the website is intended to be a vehicle for the many people who wish to contribute to the project in an on-going way. It will be wiki-based so that it may be continually updated.

The first meeting of the Design Group took place in Paris, in May 2009. The second meeting was in Auckland in April 2010, and a third in Spain in May, 2010. Several Klein conferences have already taken place: in Madeira, Portugal (October, 2009), in Castro-Urdales, 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 will be organized at Mathfest 2010 in Pittsburg (USA) in August.

The wiki site has been launched, and more information on the project and its evolution can be found there. It can be accessed at <[www.kleinproject.org](http://www.kleinproject.org)>.

## **10. 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 — for instance grants have been given directly to ICMI to facilitate the attendance from non-affluent countries to the ICMI Study 17 conference held in Hanoi in 2006, or the ICMI Centennial Symposium held in Rome in 2008. In 2009, as a grant of 5000 USD was provided by UNESCO for the conference of the Francophone network for mathematics education (EMF) held in Dakar.

In 2009, ICMI President Michèle Artigue was invited to be part of a meeting of experts organized by UNESCO in Paris at the end of March about the policies of mathematics and science education. She was asked 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 is due to be 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, further negotiations are currently under way for a project to enhance mathematics capacity in developing regions.

## **11. ICMI Affiliate Organizations**

As indicated in section 1 above, 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. The **CIAEM** (Comité Interamericano de Educación Matemática / Inter-American Committee on Mathematical Education) became the first organisation to make use of this new mode of affiliation to ICMI, approved in December 2009 by the 2007-2009 ICMI EC and the Executive Committee of CIAEM. The 2010-2012 Executive Committee approved affiliation in April 2010 with two other multi-national organisations: **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*).

CIAEM, CIEAEM and ERME thus join the five other organisations that were already affiliated to ICMI (under the umbrella of “Study Groups”), namely (in the chronological order of their affiliation to ICMI) **HPM** (The International Study Group on the Relations Between the History and Pedagogy of Mathematics) and **PME** (The International Group for the Psychology of Mathematics Education) — 1976, **IOWME** (The International Organization of Women and Mathematics Education) — 1987, **WFNMC** (The World Federation of National Mathematics Competitions) — 1994 and **ICTMA** (The International Study Group for Mathematical Modelling and Applications) — 2003.

The five ICMI Study Groups appeared on the programme of ICME-11. The President and Secretary-General of ICMI were invited to one of the WFNMC sessions, where the Paul Erdős Medal awarded by this Affiliated Study Group were delivered by the ICMI President to Hans-Dietrich Gronau from Germany, Bruce Henry from Australia, Leou Shian from Taiwan, and Ali Rejali from Iran.

HPM and PME held conferences as satellite meetings of ICME-11. HPM 2008 took place in the Centro Cultural del México Contemporáneo, Mexico City, México, on July 14-18, while PME 32 was held jointly with PME-NA XXX in Morelia, México, on July 17-21. These two conferences welcomed respectively about 150 and 450 participants.

More information about the activities of the ICMI Affiliated Study Groups can be found in the reports they produced for the ICMI GA in 2008, published in the *ICMI Bulletin 62* (June 2008) and in their respective websites.

## **12. ICMI Solidarity actions**

ICMI maintained in 2006 its actions for developing countries, in particular in collaboration with **IMU Developing Countries Strategy Group (DCSG)** which aimed at increasing, guiding and coordinating IMU's activities in support of mathematics and mathematics education in the developing world. ICMI was then represented in the DCSG by Vice-President Michèle Artigue. At its June 2007 meeting, the 2007-2009 ICMI EC decided that Vice-President Jill Adler would replace Michèle Artigue as the ICMI representative on the IMU DCSG and later, once created, on



the new IMU structure, namely the Committee for Developing Countries (CDC).

Activities related to ICMI have received financial support from IMU, through the DCSG and CDE. The DCSG provided a grant of 5 000 USD for the teachers' workshop organised in Hanoi on the occasion of ICMI Study 17. The ICMI Regional Conference AFRICME-2, held in Nairobi, Kenya, was given 4000 USD and AFRICME-3 (Botswana, 2010) received 5000 USD from IMU CDC. As mentioned above, the presentation of the mathematical exhibition "Experiencing Mathematics" in Latin America was supported by a grant of 3000 USD, and its travel to Cambodia, by a grant of 1500 USD (this support was for the organization of a one-day workshop on the theme "The Usefulness of Mathematics", that took place in Battambang, on 9 March 2007. Two Vietnamese teachers who had taken part in the ICMI Study 17 Conference in Hanoi, in December 2006, were invited to the 2007 International Seminar of the Park City Mathematics Institute organized by the Institute for Advanced Study (Princeton USA).

In 2007, complementing the work undertaken within the frame of the ICMI Regional Conference AFRICME-1, a report regarding the situation of teacher education in twelve African countries was published under the supervision of Vice-President Jill Adler (*Mathematics Teacher Education : Trends Across Twelve African Countries*, Jill Adler *et al.*, Eds, Marang Centre for Mathematics and Science Education, Wits University, Johannesburg, 2007).

In 2008, ICMI contributed to the work undertaken by the Developing Countries Strategy Group of IMU in order to identify mathematical resources in Africa. ICMI participated, with the collaboration of Vice-President Adler, to a report on *Mathematics in Africa: Challenges and Opportunities* prepared by the DCSG and submitted in February 2009 to the John Templeton Foundation. Together with colleagues from the Marang Centre at Wits University, she produced, a report on the state of mathematics education in some selected countries with particular interest in possibilities for identifying and supporting talented or gifted mathematics students in the 10-18 years age group. The countries involved were Burkina Faso, the Democratic Republic of the Congo, Ghana, Kenya, Lesotho, Malawi, Mozambique, Nigeria, Rwanda, South Africa, Swaziland, Tanzania, Tunisia, Uganda, Zambia, and Zimbabwe.

Together with its French sub-commission (CFEM), ICMI was involved in the fourth Conference of the Francophone Mathematics Space (*Espace mathématique francophone – EMF 2009*) held in Dakar in April 2009 (see section 5 above). On this occasion, eleven participants representing eight countries met twice during the conference to launch the basis of a network of researchers in mathematics education among Francophone African countries. Further discussions on the establishment of the RADMA (*Réseau africain de didactique des mathématiques*) were held on two occasions later in 2009: in August in Yamoussoukro, during the 7th PACOM (see below) and in October in Abidjan, during a conference on research in mathematics and science education. ICMI was represented at both these meetings.

Following the invitation made to the President of ICMI to give a lecture at the second Pan African Space on Mathematics conference, devoted to mathematics education in African countries and held in Hammamet, Tunisia, in November 2008, the Executive of the African Mathematical Union (AMU) was, at the invitation of ICMI, represented at the EMF 2009 conference. Lectures were given by Nouzha El Yacoubi, Secretary of AMU, and Daouda

Sangaré, editor of *Afrika Matematika*, the journal of the AMU. Reciprocally, the Secretary-General of ICMI was invited to give a lecture about ICMI and its activities during the 7th Pan African Congress of Mathematicians (PACOM), held in Yamoussoukro, Ivory Coast, on August 3-8, 2009.

A report to the 2007-2009 ICMI EC was presented by Vice-Presidents Jill Adler and Bill Barton at the meeting held in Saint-Petersburg, with the aim of reviving the activities of the **ICMI Solidarity Fund**. It was stressed that the original idea of the Fund, when established at the suggestion of President Miguel de Guzmán in 1992, was not to support individual attendance to ICMI events of people who otherwise found it difficult, but rather to promote the furtherance of networking by facilitating visits to developing countries to run various programmes associated with mathematics and mathematics education. Connections were made with the past actions of the Funds and with the recommendations prepared in 2004 by Alan Bishop at the ICMI EC request. It was also noted that a major component of the Solidarity Program of ICMI is happening via the support given at each ICME, since ICME-8 in 1996, to participants from non-affluent countries (this support is now well over 100 000 USD), as well as the support provided at each Study conference.

It was proposed in the report to continue the Fund within the broad terms of supporting mathematics education activities in developing countries, but to relaunch it and use the existing funds (of the order of 40 000 USD) with some given specific focus. The funding of activities that involve networking was seen as liable to have good long-term benefits and should be prioritised. In particular, anything that supports associate or lapsed membership of ICMI of developing countries into becoming strong and participating members should be favoured. The rationale is that this will maximise the individual benefits by making it possible for a large number of people to participate in, and gain benefit from, wider ICMI activities. The 2010-2012 Executive Committee has determined that the development of the Solidarity Fund must be considered in the more global context of a deeper discussion about the global long-term financing of ICMI and of its activities.

### 13. The ICMI Awards

The two recipients of the **ICMI Awards in mathematics education research** for the year 2005 were announced in a press release issued on April 3, 2006 (see *ICMI Bulletin* No. 58, June 2006, pp. 6-10). The awardees are Ubiratan D'Ambrosio for the 2005 Felix Klein Medal, and Paul Cobb for the 2005 Hans Freudenthal Medal.

ICMI Vice-President Michèle Artigue ended in 2006 her term as the first chair the **ICMI Award Committee**, responsible for selecting the recipients of the Awards. In addition, Richard Noss and Anna Sfard also completed their term on the Committee. A report from the Award Committee about the functioning of the selection process for the first two sets of awards was submitted to the 2003-2006 ICMI EC at its last meeting in November 2006. It should be noted that the Award Committee agreed on the following ethical rule: once the Committee decides to include in its lists of nominees an individual close to one of its members, that member is then excluded from all exchanges and discussions regarding the corresponding award. This was the

case for Richard Noss with respect the 2003 Freudenthal award, finally given to Celia Hoyles.

Mogens Niss has been appointed in 2007 as the chair of the ICMI Award Committee and new members have been added to bring its membership to six (three members completing the second half of their eight-year term and three beginning a new term, for eight years as well).

The two recipients of the ICMI Awards for the year 2007 were announced in a press release issued on April 1, 2008 (see *ICMI Bulletin* No. 62, June 2008, pp. 6-11). The awardees are Jeremy Kilpatrick for the 2007 Felix Klein Medal, and Anna Sfard for the 2007 Hans Freudenthal Medal. During the opening ceremony of ICME-11, held in Monterrey in July 2008, the 2005 and 2007 ICMI Awards were formally presented to Ubiratan D'Ambrosio (Klein 2005), Jeremy Kilpatrick (Klein 2007), Paul Cobb (Freudenthal 2005) and Anna Sfard (Freudenthal 2007). As a tangible token of recognition, each awardee received a certificate and a medal. Moreover regular lectures by the awardees were on the programme of ICME-11.

A call for nominations for the fourth cycle of the ICMI Awards was made in June 2009 by the chair of the ICMI Award Committee, Mogens Niss. The announcement of the 2009 ICMI Awards was made 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.

#### **14. IMU/ICMI Digitisation Programme**

In the context of IMU programme of open access to IMU publications, ICMI was offered support from the IMU Committee on Electronic Information and Communication (CEIC) for a similar project as regards ICMI publications. The aim is that the **ICMI Digital Library** would eventually make available freely online all the ICMI material. The ICMI EC is grateful to IMU for its exceptional support in this endeavour.

During 2008, the digitisation of all issues of the *ICMI Bulletin* was completed and work on the ICMI Study volumes began. Simultaneously negotiations were pursued with the copyright owners on that material so to obtain permission of making the material freely available. The case of the more recent Study volumes was positively resolved during the negotiations for the renewal of the NISS series contract with Springer (see section 4 above).

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. This was made possible by the permission generously granted by the editors of *L'EM*.

Negotiations were pursued in 2009 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 and negotiations with Springer are still in progress.

## 15. 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 *ICMI Bulletin* and the **ICMI website**, both under the editorship of the Secretary-General of ICMI.

At its June 2007 meeting, the 2007-2009 ICMI EC finalised the decision to launch an electronic newsletter. This project of establishing a means of prompt, efficient and brief communication had been under discussion for a certain time and the first issue of ICMI News has finally appeared in December 2007. The aim of this newsletter is to improve communication between ICMI and the worldwide community interested in mathematics education by regularly providing information about actions and recommendations of ICMI, highlighting issues that are under discussion and reporting about ongoing activities. The Editor of *ICMI News* is Jaime Carvalho e Silva, Secretary-General of the current ICMI Executive. *ICMI News* appears every two months, alternating with *IMU-Net*. The launching of **ICMI News** met with considerable success, as it has passed the barrier of 1000 subscriptions in 2008 — including more than 200 to the Portuguese version of *ICMI News*. A French version is also now available.

The project of redesigning and updating the **ICMI website** was done from 2007 to 2009. The new website, still hosted on the IMU server, was launched in May 2009. ICMI has adopted the recent policy of IMU to use a Content Management System (CMS). This modification brings the website design up to more recent standards as regards the size and format of the window in which the webpages are shown, <<http://www.mathunion.org/icmi/>>

## 16. Other Activities

The 2007-2009 ICMI EC pursued the work started by the previous Executive about the assessment of the quality of research in mathematics education as reflected in the inclusion (or non-inclusion) of mathematics education research journals in **scientific indexes** such as the SSCI (Social Sciences Citation Index) of ISI Thompson, the index most widely in use. A position statement of the ICMI EC on this issue was posted on the ICMI website in October 2007.

The ICMI President was invited to a conference on higher education and research in developing countries organised in Oslo in February 2008 by the Niels Henrik Abel Memorial Fund and the Oslo Center for Peace and Human Rights.

The 2007-2009 Secretary-General was invited to make a presentation of the history, structure and mission of ICMI in a lecture given at the International Congress of Science Education held in Cartagena, Colombia, on July 15-18, 2009, in relation with the 10th anniversary of the *Journal of Science Education*.

At the invitation of the President of IMU, the ICMI President and Secretary-General took part in a meeting organised in Budapest in November on the occasion of the World Science Forum. The

purpose of the meeting was to prepare a proposal for a “**Joint UNESCO Intergovernmental International Mathematical Program**” project to be submitted to UNESCO, so to have it adopted officially a mathematics programme aiming at improving the image of mathematics. Such a programme must of course have a mathematics education component. The meeting organised by IMU involved, in addition to the ICMI representatives and some members of the IMU EC, representatives from ICIAM (International Council for Industrial and Applied Mathematics), CIMPA (*Centre international de mathématiques pures et appliquées*), ICTP (Abdus Salam International Centre for Theoretical Physics) and the Hungarian Committee for UNESCO.

A few days after the Budapest meeting, a proposal was submitted to UNESCO so to have it considered at the next session (36th) of the General Conference of UNESCO, to be held in the Fall 2011. The bodies formally signing the proposal are IMU, ICMI and ICIAM.

An update on this report will be presented at the IMU General Assembly in Bangalore in August, 2010.

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