

**Bulletins of the
International
Mathematical Union**



Bulletin of the IMU, No. 45 (1999)

Bulletin of the International Mathematical Union

Bulletins of the International Mathematical Union, No. 45, 20 pp. (1999)

Copyright: © 1999 International Mathematical Union

License: CC BY 4.0

DOI: [The DOI will be assigned later]

IMU Bulletin no. 45

Table of Contents

- [Executive Committee](#)
 - [Members of the Union](#)
 - [Meeting of the Executive Committee of IMU](#)
 - World Mathematical Year 2000
 - Program Committee for ICM 2002
 - IMU Affiliates
 - Election Procedures
 - IMU Meetings and Activities
 - The IMU Book for the Turn of the Century
 - [Election Procedures](#)
 - [CEIC Terms of Reference](#)
 - [Bids for ICM 2006](#)
 - [Conferences Supported by IMU in 1999](#)
 - [Conferences Supported by IMU in 2000](#)
 - IMU Commission Reports for 1999
 1. [CDE](#)
 2. [ICHM](#)
 3. [ICMI](#)
-

Executive Committee

January 1, 1999 - December 31, 2002

President: Professor Jacob Palis
Vice-Presidents: Professor Shigefumi Mori
Professor Simon Donaldson
Secretary: Professor Phillip Griffiths
Members: Professor Vladimir Arnold
Professor Jean Michel Bismut
Professor Björn Engquist
Professor Martin Groetschel
Professor M.S. Raghunathan
Past President: Professor David Mumford

Members of the Union

The following 63 countries were members of IMU as of January 1, 2000:

- I. Armenia, Bulgaria, Cameroon, Croatia, Cuba, Egypt, Greece, Hong Kong, Iceland, Ivory Coast, Kazakhstan, Democratic Republic of Korea, Latvia, Lithuania, New Zealand, Nigeria, Philippines, Portugal, Romania, Saudi Arabia, Singapore, Slovenia, Tunisia, Turkey, Uruguay, Venezuela, Vietnam.
- II. Argentina, Austria, Chile, Czech Republic, Denmark, Finland, Georgia, Iran, Ireland, Mexico, Republic of Korea, Norway, Slovak Republic, South Africa, Ukraine, Yugoslavia.
- III. Australia, Belgium, Brazil, Hungary, India, Netherlands, Poland, Spain
- IV. Sweden, Switzerland.
- V. Canada, China, France, Germany, Israel, Italy, Japan, Russia, United Kingdom, United States

Group	I	II	III	IV	V
Number of Votes	1	2	3	4	5
Dues Unit Contributions	1	2	4	7	10

Meeting of the Executive Committee of IMU

The Executive Committee of IMU met May 10-11, 1999, at the Instituto de Matemática Pura e Aplicada (IMPA) in Rio de Janeiro, Brazil. Among the items discussed by the Executive Committee were the following:

1. The year 2000 had been proclaimed the UNESCO/ICSU World Mathematical Year. In that connection, it was decided that all IMU-funded conferences for the year would differ from the norm in focus and scope. Specifically, each would be required to be multinational and to cover several subject areas. The goal would be to support one or two such broadly conceived conferences on each continent during the year 2000. (IMU-supported conferences for the year 2000 are listed on page 10.)
2. It was noted that World Mathematical Year 2000 is being publicized and observed through exhibitions, performances, a specially designed postage stamp, posters, and a newsletter. Further information about WMY2000 can be found at <http://wmy2000.math.jussieu.fr>. Oversight and coordination of the year's special activities are being provided by Mireille Chaleyat-Maurel of Université Pierre et Marie Curie.
3. Among the main activities of IMU to celebrate the year 2000, a book was published to provide the views of outstanding mathematicians on the state of mathematics at the end of the millenium. The book, edited by V. Arnold, M. Atiyah, P. Lax, and B. Mazur, is called Mathematics: Frontiers and Perspectives. The American Mathematical Society was selected to publish the volume, which is now available for purchase from AMS.
4. The members of the Program Committee for ICM 2002 were selected. The Chairman is Professor Yuri Manin. Suggestions concerning plenary speakers, invited presentations, or the program structure may be communicated to:

Professor Yuri Manin
Max Planck Institute für Math.
Vivatsgasse 7, D-53111
P.O. Box 7280
Bonn D-53072, Germany
manin@mpim-bonn.mpg.de

5. Two mathematical societies were recommended for affiliate status within IMU and were subsequently approved by postal ballot. According to a 1998 amendment to the IMU Statutes, affiliate status was created "for the purpose of facilitating jointly sponsored activities pursuing the objectives of the IMU." The new affiliates are the European Mathematical Society and the Unión Matemática de América Latina y el Caribe (U.M.A.L.C.A.).
6. Following a discussion regarding the clarification of election procedures, a proposed new version

for Election of the Executive Committee of IMU was disseminated via circular and subsequently approved (see page 5).

7. There was a decision to bring to a vote at the General Assembly in 2002 a proposal to increase by one the number of members-at-large on the Executive Committee. Should the vote be affirmative, the first larger Executive Committee would be elected in 2006.

8. The new Committee on Electronic Information and Communications (CEIC) was discussed. The committee's Terms of Reference appear on page 7.

The meeting was followed by a two-day "International Conference on Frontiers of Mathematics" featuring talks by some of the Executive Committee members, as follows:

1. Jean-Michel Bismut (France)
"Index Theorem and the Verlinde Formulas"

 2. Björn Engquist (Sweden)
"Computational Geometrical Optics"

 3. Phillip Griffiths (USA)
"K2 (C) and Hodge Theory"

 4. Martin Grötschel (Germany)
"The Polyhedral Approach to Combinatorial Optimization"

 5. Shigefumi Mori (Japan)
"The Quotient Space as an Algebraic Space"

 6. Madabusi S. Raghunathan (India)
"Loop-Spaces of Affine Algebraic Homogeneous Spaces"
-

Procedures for the Election of the Executive Committee of IMU - 1999

1. Not less than a year before the meeting of the GA, the EC shall request proposals for the membership of the EC from the National Committees for Mathematics, to be considered before the spring EC meeting prior to the Assembly. The candidate's CV and a brief description of activities should accompany the suggestions, as should assurance of the candidate's willingness to serve if elected.
2. The EC shall then form its own slate. The slate should be mailed to the National Committees at least four months before the GA, together with background on the candidates, their fields and countries/geographic areas.
3. After the slate drawn by the EC is known, the National Committees can make further proposals of names specifically for the offices of President, Secretary, Vice-President, and Members-at-Large. These proposals shall reach the Secretary not less than two months before the GA. The same information as in (1) and (2) concerning the nominees, including their willingness to serve if elected, should be provided.
4. The Secretary will send National Committees a list of all names proposed, as well as candidates' CV's, before the GA. The National Committees are asked to cooperate in having their delegates to the GA fully informed.
5. On the first day of the meeting, the General Assembly shall appoint a Nominating Committee (NC) consisting of:
 - a. the President of IMU (chairman),
 - b. all Past Presidents who are present (ex-officio),
 - c. eight further delegates. (Election to (c) shall be from names either proposed by the President or proposed and seconded from the floor, and shall be by show of hands unless the meeting decides otherwise.)
6. The NC shall propose a slate drawn from the slate of the EC and the names in (1) and (3) and shall make it known to the meeting. No person shall be a candidate for more than one office.
7. Further nominations can be made from the floor after the slate of the NC has been declared, provided that they are drawn from names previously offered by the National Committees as in items (1) and (3), signed by at least ten delegates, and convey the same information as in (2) and (3) above.
8. The General Assembly shall then elect the new President, Vice-President, Secretary, and Members-at-Large by written ballots from the EC and NC slates as well as the list of nominations from the floor (unless a candidate withdraws), but no others. A vote shall be invalid if more names are marked in any category than the number of places to be filled (i.e., one each for

President and Secretary, two for Vice-Presidents and five for Members-at-Large).

A candidate for President or Secretary may be elected only if unopposed or if he or she obtains a majority of the votes cast. If the first ballot is indecisive, there shall be a second ballot.

In the ballots for the Vice-Presidents and Members-at-Large, the two or five candidates respectively who obtain the largest numbers of votes shall be elected. In the event of a tie, the President shall decide.

[Note: Statute (9) provides (inter alia) that: "each delegation shall be free to cast the votes to which it is entitled either as a unit or divided in such a manner as it may determine."]

Procedures for the Election of the Executive Committee of ICMI

The rules for the election of the Executive Committee of ICMI are similar to those for the election of the Executive Committee of IMU with the same Nominating Committee.

The EC of IMU shall request proposals for the membership of the EC of ICMI from the National Committees for Mathematics and will conduct extensive consultations with the existing Executive Committee of ICMI before proposing slates to the Nominating Committee.

No person can be a candidate for more than one office.

Procedures for the Election of CDE

The rules for the election of the Commission of Development and Exchange are similar to those for the election of the Executive Committees of IMU and ICMI with the same Nominating Committee.

The EC of IMU shall request proposals for the membership of CDE from the National Committees for Mathematics and will conduct extensive consultations with the existing CDE before proposing slates to the Nominating Committee.

No person can be a candidate for more than one office.

Procedures for the Election of ICHM

The rules for the election of the two IMU members of the Executive Committee of ICHM are similar to those for the election of the Executive Committees of IMU, CDE and ICMI, with the same Nominating Committee.

The EC of IMU shall request proposals for the membership of the two IMU members from the National Committees for Mathematics and will conduct extensive consultations with the existing ICHM before proposing slates to the Nominating Committee.

IMU Bulletin no. 45, December, 1999

Committee on Electronic Information and Communication Terms of Reference

Building on the enabling resolution passed by the General Assembly in Dresden on August 16, 1998, the Executive Committee of the International Mathematical Union establishes a "Committee on Electronic Information and Communication" (CEIC) with the following terms of reference:

- a. The CEIC shall be a standing committee of the Executive Committee (EC) of the IMU, to be reviewed every four years by the EC at its meeting preceding that of the GA. Members will be appointed for four-year terms by procedures similar to those for Commissions of the IMU. The Executive Committee will appoint one of its members to serve on the CEIC.
- b. The CEIC may meet as necessary in each four-year period, review the development of Electronic Information and Communication as it impacts the international mathematical community and submit a report to the EC.
- c. The CEIC may organize or sponsor international meetings or forums to bring together representatives of all interested parties, including societies, publishers, libraries, and researchers. It may publish and otherwise disseminate proceedings, reviews of recent developments, and technical surveys for the use of the mathematical community.
- d. The CEIC may recommend international standards on issues related to electronic communication. Such recommendations should be reviewed by the EC and, if approved, may be published and promoted in the name of the IMU.
- e. During its first four-year term, the CEIC is specifically asked to address the coordination of worldwide efforts to establish web-based servers for mathematical papers, preprints, journals, and books. This includes issues of uniformizing metadata, document identifiers and supported formats, promoting mirroring and the development of search engines for mathematical material and coordination of existing servers. It should publish its findings with the goal of making the use of these servers universally understood and usable by the whole mathematical community. It is also asked to consider transferring the World Directory of Mathematicians to an electronic freely accessible form.

f. Membership:

* Peter Michor (chair), Austria

Peter.Michor@esi.ac.at

* Jonathan Borwein, Canada

jborwein@cecm.sfu.ca

* John Ewing, USA

jhe@ams.org

* Jonas Gomes, Brazil

jonas@impa.br

* Martin Grötschel (EC member), Germany

groetschel@zib.de

*Wilfrid Hodges, UK

w.hodges@qmw.ac.uk

*David Morrison, USA

drm@math.duke.edu

*Kapil Paranjape, India

kapil@imsc.ernet.in

*Alfred J. (Alf) van der Poorten, Australia

alf@math.mq.edu.au

*Alexei Zhizhchenko, Russia

abz@ipsun.ras.ru

*Qing Zhou, China

qzhou@math.ecnu.edu.cn

IMU Bulletin no. 45, December, 1999

BIDS FOR ICM 2006

Following the recommendation of the 1990 General Assembly in Kobe, Japan, the Executive Committee has approved the following guidelines for the operation of the Site Committee for ICM 2006.

1. The Site Committee will consist of the members of the Executive Committee and Prof. K.C. Chang, President of the Organizing Committee of the ICM 2002.
2. All Adhering Organizations are now formally invited to place bids to hold ICM 2006. To be considered by the Site Committee, these bids must be received by the Secretary of IMU by November 30, 2000. The Site Committee will then make its recommendation by May 31, 2001. The recommendation of the Site Committee will immediately afterwards be communicated to all Adhering Organizations.
3. The final decision will be taken by the General Assembly to be held at the middle of August 2002, just prior to ICM 2002 in Beijing. The General Assembly is free to consider bids placed after November 30, 2000, but the EC considers most advisable that the Adhering Organizations comply with the above procedure.
4. While it is impossible to spell out precisely all factors that will influence the final recommendation of the Site Committee, it will take into account the mathematical ambiance, the infrastructure and the economic conditions offered by each bidder, as well as the accessibility of the proposed site and the broad geographical distribution of congresses. All countries interested in making a bid are strongly encouraged to do so.

REQUESTED INFORMATION

Among other relevant information that each potential host country may want to supply, the Site Committee wishes to know about the following items:

I. FINANCES

Clearly, costs may vary considerably from country to country. However, according to the reports of the latest ICM, a potential host country may consider a budget of about 1.5 million US dollars, of which about 0.5 or 0.6 million US dollars might be raised through registration fees (such fees should be at most about 200 US dollars). Again, these numbers may go up or down according to local costs and facilities. In considering the budget, printing costs of the Proceedings and other material (posters, announcements, summary of invited lectures), as well as mailings, deserve special attention. The host country should be prepared to lodge for free about 120 young research mathematicians from developing countries, selected by IMU; they get their trips paid by IMU through its Special Development Fund. Also, in special cases, invited speakers are expected to receive some financial support for attending the meeting when other funds to cover their expenses are not available. Registration fees are waived for invited speakers and the above young research mathematicians from developing countries. On the other hand, it is to be noted that there is an IMU subvention to the ICM as well as some provision in its budget to defray costs of the General Assembly Meeting that takes place just before the Congress; for 1998, these sums amounted to 106,000 Swiss Frs. and 16,000 Swiss Frs., respectively.

II. INFRASTRUCTURE

It is important that good facilities to hold the Congress are available. All lectures should take place in sizable, well-equipped, pleasant and audible rooms. Special attention should be given to the plenary

talks.

III. ACCESSIBILITY

The city and site of the Congress should be easily accessible. That is, flight connections from all over the world should be easily available, as well as transportation to the site of the Congress. Lodging facilities constitute an important item.

Finally, it is expected that the local mathematical community get involved in the preparations of the Congress, so as to create a nice ambiance during the meeting.

Conferences Supported by IMU - 1999

- I. RESEARCH SEMESTER - THREE WEEKEND SEMINARS
Linz, Austria, first half of 1999
Organizer: James B. Cooper
IMU Representative: Björn Engquist

 - II. XII LATIN AMERICAN SCHOOL OF MATHEMATICS
Lima, Peru, June 28-July 3, 1999
Organizer: César Camacho
IMU Representative: Jacob Palis

 - III. PAUL ERDÖS AND HIS MATHEMATICS
Budapest, Hungary, July 4-11, 1999
Organizer: Vera T. Sós
IMU Representative: László Lovász

 - IV. FOUNDATIONS OF COMPUTATIONAL MATHEMATICS (FOCM) Cambridge, England, July 18-28, 1999
Organizer: Michael Shub
IMU Representative: David Mumford

 - V. THEORY OF FIXED POINTS AND ITS APPLICATIONS
São Paulo, Brazil, July 26-30, 1999
Organizer: Daciberg Lima Conçalves
IMU Representative: A. Dold

 - VI. INTERNATIONAL CONFERENCE ON COMPLEX ANALYSIS AND THE VIIIITH ROMANIAN-FINNISH SEMINAR
Iassy, Romania, August 23-27, 1999
Organizer: C. Andreian Cazacu
IMU Representative: Olli Lehto

 - VII. PROBLEMS OF THEORETICAL AND MATHEMATICAL PHYSICS ("BOGOLIUBOV CONFERENCE")
Moscow and Dubna, Russia, September 27-October 1, 1999
Organizer: Oleg Zavialov
IMU Representative: Yakov Sinai
-

Conferences Supported by IMU - 2000

- I. TATA INSTITUTE COLLOQUIUM
Mumbai, India, January 4-12, 2000
Organizer: Balwant Singh
IMU Representatives: Shigefumi Mori, A. Suslin

- II. MATHEMATICS AND THE 21ST CENTURY
Cairo, Egypt, January 15-20, 2000
Organizer: A.A. Ashour
IMU Representatives: Jacob Palis, Phillip Griffiths

- III. SIXTH PAN AFRICAN CONFERENCE ON MATHEMATICS (PACOM 2000)
Cape Town, South Africa India, January 21-31, 2000
Organizer: Ahmed Kerkour
IMU Representatives: Jacob Palis, Phillip Griffiths

- IV. 2000 YEARS TRANSMISSION OF MATHEMATICAL IDEAS
Bellagio, Italy, May 8-12, 2000
Organizers: Joseph W. Dauben, Yvonne Dold-Samplonius
IMU Representative: Jean-Michel Bismut

- V. THIRD EUROPEAN CONGRESS OF MATHEMATICS (3ECM)
Barcelona, Spain, July 10-14, 2000
Organizer: Sebastian Xambo Descamps
IMU Representative: Simon Donaldson

- VI. INTERNATIONAL CONGRESS OF MATHEMATICAL PHYSICS XIII
London, England, July 17-22, 2000
Organizer: Boguslaw Zegarliniski
IMU Representative: Vladimir Arnold

- VII. LATIN AMERICAN CONGRESS OF MATHEMATICS
IMPA, Rio de Janeiro, July 31-August 4, 2000
Organizer: Mario Wscherbor
IMU Representative: Jacob Palis
- VIII. INTERNATIONAL CONGRESS ON THE TEACHING OF MATHEMATICS (ICME-9)
Makuhari/Chiba, Japan, July 31-August 7, 2000
Organizers: Hyman Bass, Bernard Hodgson
IMU Representative: Phillip Griffiths

IMU has offered its imprimatur, but no financial support, for the following conferences in the year 2000:

1. MODERN ANALYSIS AND ITS APPLICATIONS
Voronezh Winter Mathematical School 2000, Voronezh, Russia,
January 28-February 4, 2000
Organizer: V.G. Zuyagin

IMU Representative: Vladimir Arnold

2. SYMPOSIUM ON THE LEGACY OF J.C. FIELDS

Fields Institute, Toronto, Canada, June 18-9, 2000

Organizer: William Langford

IMU Representatives: Jacob Palis, Phillip Griffiths

3. ROLF NEVANLINNA COLLOQUIUM

Helsinki, Finland, August 8-12, 2000

Organizer: Olli Lehto

IMU Representative: Olli Lehto

4. WORKSHOP ON TOPOLOGICAL ALGEBRAS

Tartu, Estonia, September 2000

Organizer: Mati Abel

IMU Bulletin no. 45, December, 1999

Commission on Development and Exchange

Report prepared by Herb Clemens, Secretary of CDE, 1999.

In 1999 the CDE dispersed US\$8700 in research travel grants to individual mathematicians in developing countries, funding roughly 50% of the applications it received. It also dispersed US \$8700 in support of research conferences in developing countries, funding roughly 75% of the applications it received.

Administrative costs for the year were US\$3137, a remarkably low figure considering that 1999 was the year of the once-every-four-year face-to-face meeting of the members of the CDE. This meeting produced several policy decisions moving CDE into a more active role in supporting longer-term projects in mathematics research and advanced education in developing countries.

Additionally CDE provided US\$4000 in project support to the MUSA regional research/advanced education project in Southern Africa. (CDE received a dedicated two-year grant of US\$14,000 from ICSU for this project, from which this project support was taken.)

International Commission on the History of Mathematics

Report for 1999 prepared by Kirsti Andersen and Jeanne Peiffer.

The ICHM supports the regular international meetings of mathematics historians, which tend to alternate between Oberwolfach, Germany, and Luminy-Marseille, France. The 1999 meeting in Luminy, September 20-24, was organized by Michel Armatte, Université Dauphine, Paris; Hélène Gispert, Université de Paris Sud; Donald Mackenzie, University of Edinburgh; and Karen Parshall, University of Virginia. The general theme of the conference was methods in history of mathematics.

Christoph J. Scriba and Joseph W. Dauben are currently engaged in the last editorial work on *Writing the History of Mathematics: Its Historical Development*. This book, which has been prepared under the patronage of the ICHM, collects chapters on the historiography of the history of mathematics in different parts of the world, biographical notes on important historians of mathematics, and bibliographical information. It will be published in the Science Network series of Birkhäuser Verlag, Basel.

For the XXI International Congress of History of Science and Technology, Mexico City, July 8-14, 2001, which has the theme "Science and cultural diversity," the ICHM has thus far received the following proposal for symposia which it is going to support:

1. Mission et diffusion des sciences européennes ! en Amérique et en Asie: le cas jésuite, organized by Eberhard Knobloch and Antonella Romano.
2. Foundations and Practice in the History of Mathematics, organized by Craig Fraser.
3. Encounter of Greek mathematics with the mathematics as developed in the 16th and 17th centuries in Europe, organized by Ivo Schneider.

From January 1, 2000, Umberto Bottazzini and Craig Fraser will take over the editorial ship of the commission's journal *Historia Mathematica*.

Report on ICMI activities in 1999

Prepared by Bernard R. Hodgson, Secretary of ICMI, 1999.

1. Organization

A new Executive Committee of ICMI was elected at the General Assembly of the International Mathematical Union held in Dresden (Germany) in August 1998 and has taken charge as of January 1, 1999. The transition process was facilitated by a three-day working meeting in New York in February 1999 of the outgoing and incoming Presidents (Miguel de Guzmán and Hyman Bass) and Secretaries (Mogens Niss and Bernard R. Hodgson).

The new Executive Committee had its first meeting at the IREM of Université de Paris 7 on July 18-21, 1999. This meeting was in particular the occasion of a thorough study and discussion of a document prepared by the outgoing EC containing information, advice, and recommendations to this EC. Besides this meeting, the work of the EC was conducted by correspondence and electronic communication under the direction of the President and the Secretary.

It continues to be part of ICMI's general policy to encourage member states to establish National Sub-Commissions of ICMI. In 1999 Spain decided to establish a National Sub-Commission. A brief report about this was included in the ICMI Bulletin, No. 47, December 1999.

A number of countries have not (yet) appointed National Representatives in ICMI. These are Brunei Darussalem, Georgia, Greece, Mexico, Pakistan, Romania, Slovenia, and Uruguay. More generally, the need is felt to reinvigorate the contribution of National Representatives. In some cases, no news has been received for a number of years from the Representatives, so that it is unknown if the person is still active. There are instances where the rule adopted by the General Assembly of IMU in Kobe (Japan, 1990), according to which National Representatives should normally not serve for more than two consecutive terms, is not respected. A call for electronic addresses of National Representatives provoked a very slow reaction. As of the end of 1999, only 27 Representatives (out of a possible number of 72) had sent their addresses to the Secretary.

The transfer of ICMI assets from the outgoing to the incoming Secretary was accomplished in two stages. The major portion of the funds was transferred in January, some money being kept in Copenhagen for final expenses. Early March, all the ICMI funds had been transferred to Québec. Two accounts have been opened for ICMI, one in Canadian dollars and the other in US dollars. These accounts are located at the Caisse Populaire de l'Université Laval, Cité Universitaire, Québec (accounts numbers: 68 033 and 800 394).

2. ICMEs

The next International Congress on Mathematical Education, ICME-9, will be held in Tokyo/Makuhari, Japan, from July 31 to August 7, 2000. The International Program Committee was appointed in 1996 and is chaired by Professor Hiroshi Fujita, Tokai University, Tokyo, Japan. (A revised composition of the IPC appears in the ICMI Bulletin No. 46, June 1999, p. 31.) The IPC had its second meeting in Tokyo at the beginning of June 1999. The main part of the work of the Committee is being carried out electronically under the direction of Professor Fujita. Keeping on with the tradition of the recent ICMEs, the Japanese National Organizing Committee (NOC) for ICME-9 has proposed a program of financial support for participants from non-affluent countries. The money available for this program comes from a "Solidarity Tax" taken on all registrations, as was the case for ICME-8, from private sponsorship raised within Japan as well as from a grant of CHF 20,000 provided for ICME-9 by the International

Mathematical Union (IMU).

As indicated in the report on ICMI Activities in 1998 (see ICMI Bulletin No. 46, June 1999, p. 17), the Society of Mathematics Education Researchers in one country had indicated to ICMI at some point that it was working to make its country submit a bid to host ICME-10. However at the beginning of 1999 ICMI was informed that this bid would not materialize. In January 1999, the Secretary thus wrote to all the National Representatives calling for bids for ICME-10. In spite of contacts with various countries during the first months of 1999, no official bid had been received when the EC held its annual meeting in July 1999. It was then decided to launch a new series of contacts, which led to the presentation in the fall of 1999 of a bid to have ICME-10 take place in Copenhagen in July 2004. This invitation, which was made on behalf of the Nordic countries Denmark, Sweden, Norway and Finland, was officially accepted by the EC in December 1999.

3. ICMI Studies

The mounting and conducting of so-called ICMI Studies on crucial themes and issues in mathematics education were continued in 1999. The ICMI Studies are published by Kluwer Academic Publishers, Dordrecht, the Netherlands, under the general editorship of the President and the Secretary of ICMI. A synthesis paper giving basic information about the Studies since their beginning in the 1980s was prepared by the Secretary for the June 1999 issue of the ICMI Bulletin (No. 46, pp. 32-36).

After the publication of five volumes in the "New ICMI Study Series" during the period 1993-1998, it was felt appropriate to reexamine the content of the contract signed between Kluwer and ICMI. This was particularly timely as two new series editors were taking charge, and the publication of two new ICMI Study Volumes was under preparation. The negotiation with Kluwer expanded over several months and led to a new agreement (formally approved by the EC of ICMI early in 2000). New clauses in particular were adopted concerning the number of free copies made available to ICMI and to contributors to a volume, as well as the conditions under which individuals can order a copy of the volumes for their personal use.

No new Study conference took place in 1999. However progress was made concerning four different Studies.

ICMI Study 10: As indicated in the 1998 Annual Report, the Study Conference on The Role of the History of Mathematics in the Teaching and Learning of Mathematics was held in Luminy, France, in April 1998. The work on the Study Volume was essentially completed during 1999, under the editorship of John Fauvel, the Open University, UK, and Jan van Maanen, the University of Groningen, the Netherlands, co-chairs of the International Program Committee for this Study. The camera-ready copy of the text is due to be given to Kluwer in the beginning of March 2000 so that the volume will be ready in time for ICME-9 in July 2000. A report on this Study (including a picture of participants) has appeared in the ICMI Bulletin No. 47, December 1999, pp. 16-19.

ICMI Study 11: The Study Conference on the Teaching and Learning of Mathematics at University Level took place in Singapore in December 1998. This Study will result in two publications, as indicated in the report which has appeared in the ICMI Bulletin No. 47, December 1999, pp. 20-22. The first of these publications is a special issue of the International Journal of Mathematical Education in Science and Technology (iJMEST) which will be available early in 2000. Work on the Study Volume to appear in the NISS Series is also under way. It is expected that this book will be published early in 2002.

Reports of these two studies will be presented at ICME-9.

ICMI Study 12: The next study in the series, The Future of the Teaching and Learning of Algebra, was initiated in 1998 by the appointment of an International Program Committee chaired by Professor Kaye Stacey, University of Melbourne, Australia (the composition of the IPC was given the ICMI Bulletin No. 46, June 1999, p. 35 - Rosamund Sutherland has since been appointed on the IPC, following the resignation of Kenneth Ruthven). The IPC has done work through e-mail during 1999, in preparation for its first meeting in January 2000. The Discussion Document for this Study will appear in the ICMI

Bulletin No. 48, June 2000, and elsewhere. The Study Conference will take place at the University of Melbourne, Australia, in December 2001.

ICMI Study 13: The next Study has as a tentative title Mathematics Education in Different Traditions: A Comparative Study in Asian and Western Countries. The two co-chairs for this Study are Klaus-Dieter Graf, Freie Universität Berlin, Germany; and Frederick K.S. Leung, the University of Hong Kong. At the time of writing this report, the appointment of the other IPC members was under way, and the IPC was expected to begin its work during the first months of 2000. The corresponding Study Conference is planned to take place in Hong Kong in 2002.

A decision about the topic of following ICMI Study should be made by the EC during 2000.

4. Regional Conferences

The eighth South-East Asian Conference on Mathematics Education (SEACME-8) was recently held from May 30 to June 4, 1999, at the Ateneo de Manila University, Quezon City, Philippines, with the theme "Mathematics for the 21st Century." A report on SEACME-8 has appeared in the ICMI Bulletin No. 47, December 1999, pp. 64-66.

Two meetings were previously recognized as ICMI regional conferences and are now under preparation: the second ICMI-EARCOME (East Asia Regional Conference on Mathematics Education) - also designated as the Ninth Southeast Asian Conference on Mathematics Education or SEACME 9 - to be held in Singapore in June 2002, and the symposium EM 2000 (Espace Mathématique 2000) to be held in Grenoble (France) from July 15-17, 2000, on the theme "L'enseignement des mathématiques dans les pays francophones au XXe siècle et ses perspectives pour le début du XXIe siècle." These meetings are announced in the ICMI Bulletin No. 47, December 1999, pp. 78 and 96-97.

It has further been decided to grant a meeting to be held in Dubna (Russia) from September 18-23, 2000, status as an ICMI Regional Conference. The theme of this All-Russian Conference on Mathematical Education is "Mathematics and Society: Mathematical Education at the Frontier of Centuries." An announcement can be found in the ICMI Bulletin No. 47, December 1999, p. 74.

5. Other activities

The international journal *L'Enseignement Mathématique*, the official organ of ICMI since the inception of the Commission in 1908, was established in 1899 by Henri Fehr and Charles Laisant. On the occasion of the centennial of the journal, it was felt appropriate to hold a symposium with the aims of looking at the evolution of mathematics education over the last century and identifying some guidelines and trends for the future, taking into account, among other sources, the documents, debates and related papers having appeared in *L'Enseignement Mathématique*. This symposium, organized jointly by ICMI and the University of Geneva as a contribution to the celebration of the World Mathematical Year 2000, will take place in Geneva, the home of the journal since its birth, from October 20-22, 2000. The theme of the meeting is One Hundred Years of *L'Enseignement Mathématique*: Moments of Mathematics Education in the 20th Century. An announcement can be found in the ICMI Bulletin No. 47, December 1999, pp. 5-6. The Program Committee for this symposium is composed of Daniel Coray, Fulvia Furinghetti, Hélène Gispert, Bernard R. Hodgson and Gert Schubring.

6. Affiliated Study Groups

ICMI continues to have four affiliated study groups, HPM (The International Study Group on the Relations Between the History and Pedagogy of Mathematics), IOWME (The International Organization of Women and Mathematics Education), PME (The International Group for the Psychology of Mathematics Education), and WFNMC (The World Federation of National Mathematics Competitions). Some formal information about these groups (constitution, rules, etc.) has appeared in the ICMI Bulletin No. 47, December 1999, pp. 37-52.

7. The Solidarity Program

In 1992 ICMI established a Solidarity Program in Mathematics Education. The overall objective of the Solidarity Program is to increase, in a variety of ways, the commitment and involvement of mathematics

educators around the world in order to improve the situation of mathematics education, in particular in those parts of the world where the economic and socio-political contexts do not permit adequate and autonomous development. This initiative thus aims at providing means which, together with institutional or other help obtained from various sources, may support concrete initiatives and activities so to foster solidarity in mathematics education between well-defined quarters in developed and less developed countries. Particular emphasis is placed on projects, which enable the activation of a self-sustainable infrastructure within mathematics education in the region, country, or province at issue.

The first stage in this program of international assistance was the mounting of a Solidarity Fund based on contributions by individuals, organizations, etc. The Solidarity Fund has received donations from various organizations and individuals in mathematics education for which it is most grateful. Being based on voluntary donations, the Solidarity Fund is kept separate from ICMI's funds.

An ad hoc committee, chaired by Colette Laborde (Université Joseph Fourier, Grenoble, France) has been set up in 1999 by the EC of ICMI to review the functioning and the impact of the Solidarity Fund, after its eight years of existence, and to bring recommendations to the EC concerning its orientation and development.

8. ICMI Bulletins In 1999, ICMI Bulletin Nos. 46 and 47 were published under the editorship of the Secretary of ICMI. Furthermore, the ICMI Bulletin is available in the following electronic forms: in ASCII-format on direct request to the editor; and on the World Wide Web, where it can be found under the following coordinates on the IMU-server:

<http://elib.zib.de/imu/icmi/bulletin/>

In order to facilitate retrieval of information contained in past issues of the ICMI Bulletin, the Secretary has published the tables of contents of all issues, which have appeared between 1972 and 1998. See ICMI Bulletin No. 47, December 1999, pp. 79-91 for issues Nos. 1-29 (1972-1990), and ICMI Bulletin No. 46, June 1999, pp. 42-49 for issues Nos. 30-45 (1991-1998).

9. ICMI on WWW

Since the end of 1995, information concerning ICMI can be found on the ICMI-pages of the IMU-server on the World Wide Web. The pages are located at the address:

<http://elib.zib.de/imu.icmi>

The EC of ICMI is aware of the fact that the information appearing on the ICMI web site is at times partially outdated and is working to improve this situation.