IMU

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CONTENTS

List of Abbreviations

CDE   Commission on Development and Exchanges

CEIC   Committee on Electronic Information and Communication

ICHM   (Joint) International Commission on the History of Mathematics

ICMI   International Commission on Mathematical Instruction

ICSU   International Council for Science

IUHPS   International Union of the History and Philosophy of Science

INTERNATIONAL MATHEMATICAL UNION

Executive Committee

January 1, 2003-December 31, 2006

President:	John M. Ball	(United Kingdom)
Vice-Presidents:	Jean-Michel Bismut	(France)
	Masaki Kashiwara	(Japan)
Secretary:	Phillip A. Griffiths	(USA)
Members:	Andrey A. Bolibruch* (deceased, November 11, 2003)	(Russia)
	Martin Grötschel	(Germany)
	Zhi-Ming Ma	(China)
	Ragni Piene	(Norway)
	Madabusi S. Raghunathan	(India)
Past President:	Jacob Palis	(Brazil)

*IMU is deeply saddened by the death of Executive Committee member Andrey Andreevich Bolibruch (Steklov Institute, Moscow, Russia) on November 11, 2003.

Members of the Union

The following 66 countries were members of IMU as of January 1, 2004:

Group I: Armenia, Bosnia and Herzegovina, Bulgaria, Cameroon, Croatia, Cuba, Estonia, Georgia, Greece, Hong Kong, Iceland, Ivory Coast, Kazakhstan, Latvia, Lithuania, New Zealand, Nigeria, Peru, Philippines, Portugal, Romania, Saudi Arabia, Serbia and Montenegro, Singapore, Slovenia, Tunisia, Turkey, Uruguay, Venezuela, Vietnam.

Group II: Argentina, Austria, Chile, Czech Republic, Denmark, Egypt, Finland, Iran, Ireland, Republic of Korea, Mexico, Norway, Slovakia, South Africa, Ukraine.

Group III: Australia, Belgium, Brazil, Hungary, India, Poland, Spain.

Group IV: India (moved to Group IV, January 1, 2004), Netherlands, Sweden, Switzerland.

Group 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

International Congress of Mathematicians 2010 (ICM 2010)

The Site Committee of IMU is accepting bids for ICM 2010.

Following the recommendation of the 1990 General Assembly in Kobe, Japan, the IMC Site Committee guidelines are:

1. The Site Committee shall consist of the members of the Executive Committee and the President of the Local Organizing Committee of the previous ICM.

2. All Adhering Organizations are now formally invited to place bids to hold ICM-2010. To be considered by the Site Committee, bids must be received by the Secretary of IMU by November 30, 2004. The Site Committee will then make its recommendation by May 31, 2005. 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 in the middle of August 2006, just prior to ICM-2006 in Madrid. The General Assembly is free to consider bids placed after November 30, 2004, 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. Among other relevant information that each potential host country may want to supply, the Site Committee wishes to know about the following items:

1. Finances -- Clearly, costs may vary considerably from country to country. However, according to the reports of the latest ICM'S, 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 300 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 mailing, deserve special attention. The host country should be prepared to lodge freely about 120 young research mathematicians from developing countries, selected by IMU; their trips are 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, 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 amount to 106,000 Swiss Frs. and 16,000 Swiss Frs., respectively.

2. 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.

3. 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 gets involved in the preparations of the Congress, so as to create a nice ambiance during the meeting.

Conferences Supported by IMU - 2002

- RAMANUJAN INTERNATIONAL SYMPOSIUM, "KAC-MOODY LIE ALBEBRAS AND APPLICATIONS"
  Chennai, India, January 28–31, 2002
  Organizer: N. Sthanumoorthy
  IMU Representative: M. S. Raghunathan

- 200th ANNIVERSARY OF THE BIRTH OF ABEL
  Oslo, Norway, June 2-8, 2002
  Organizer: J. E. Fenstad
  IMU Representative: Phillip Griffiths

IMU offered its imprimatur, but no financial support, for the following conference in 2002:

- INTERNATIONAL CONFERENCE DEDICATED TO THE MEMORY OF J.L. LIONS
  Paris, France, July 1-5, 2002
  Organizer: Jean-Pierre Puel

Conferences Supported by IMU - 2003

- INTERNATIONAL CONGRESS ON MATHEMATICAL PHYSICS
  Lisbon, Portugal, July 28-August 2, 2003
  Organizer: Jean-Claude Zambrini
  IMU Representative: Jean-Michel Bismut

- ALGEBRAIC GROUPS AND HOMOGENEOUS SPACES
  Mumbai, India, January 2004
  Organizer: S. M. Bhatwadekar
  IMU Representative: M. S. Raghunathan and Phillip Griffiths

- KOLMOGOROV AND CONTEMPORARY MATHEMATICS
  Moscow, Russia, June 16-21, 2003,
  Organizer: Albert N. Shiryaev
  IMU Representative: Jacob Palis

- ARITHMETIC, GEOMETRY AND TOPOLOGY OF ALGEBRAIC CYCLES
  Morelia, Mexico, June 15-July 7, 2003
  Organizer: James Lewis
  IMU Representative: Phillip Griffiths

- INTERNATIONAL CONFERENCE ON GEOMETRY AND DYNAMICAL SYSTEMS
  Cuernavaca, Mexico, January 6-11, 2003
  Organizer: Jose Seade
  IMU Representative: Jacob Palis

INTERNATIONAL CONGRESS OF MATHEMATICIANS 2002 (ICM 2002)

Report prepared by Zhi-Ming Ma, Chairman of the Local Organizing Committee, April 4, 2002 (Detailed information available on the ICM 2002 website: http://www.icm2002.org.cn.)

The ICM 2002 Local Organizing Committee sends Circular Letters (CL) via e-mail to all individuals on the ICM 2002 mailing list, approximately 8000 people.

1. ICM 2002 Local Organizing Committee (LOC)

The ICM 2002 Local Organizing Committee is expanding as the Congress approaches. The Chairman of LOC is the President of Chinese Mathematical Society (CMS), Professor Ma, Zhi-Ming. Professor Chang, Kung Ching, ex-President of CMS, is the ex-Chairman of LOC. The General Secretary of LOC is Professor Yuan, Ya-xiang, Chair for the Scientific Sub-Committee is Professor Ding, Weiyue and Professor Li, Ta-tsien is the Chair for LOC of the General Assembly in Shanghai. The ICM 2002 website contains the complete list of LOC members.

Secretariat of ICM 2002 address:

   Secretariat Office, ICM 2002
   Room 711,
   Academy of Mathematics and System Sciences
   Chinese Academy of Sciences
   1A Zhong Guang Cun South 4th Street
   Beijing 100080, China
   Telephone: +86-10-6256-0649, Fax: +86-10-6261-8223
   E:mail: icmsec@beijing.icm2002.org.cn

2. Opening Ceremony and Closing Ceremony

The opening ceremony will be held in the Great Hall of the People at 3:00 p.m. on Tuesday, August 20, 2002. Welcome speeches will be delivered by the President of China, IMU president, the president and honorary president of the Congress, Deputy Prime Minister of the Chinese Government, the Minister of Science and Technology, the President of NNSF of China, and the Mayor of Beijing. The Fields Medals and the Nevanlinna Prize will be awarded.

After the opening session, there will be addresses on the work of the Fields Medal and the Nevanlinna Prize recipients.

The closing ceremony, following the final two Plenary Lectures, is scheduled for Wednesday, August 28, at 4:00 p.m. in the main lecture hall of the Beijing International Convention Center (BICC).

3. Scientific Program

3.1 Plenary and Invited Lectures, Panel Discussions.

At the recommendation of the ICM 2002 Program Committee appointed by IMU, the Organizing Committee has invited 20 mathematicians to give one-hour Plenary Lectures, 168 mathematicians to give 45-minute lectures, and eight mathematicians to give talks in two panel discussion sessions of Section 18 (Mathematics Education and Popularization of Mathematics); the names of the Plenary and invited speakers and panel members can be found in the website of ICM 2002: http://www.icm2002.org.cn/A/general.htm.

3.2 Short Communication and Posters

Since the beginning of 2002, abstracts for Short Communications and Posters can be submitted electronically on line, by e-mail or by mail. The deadline for submission of abstracts is May 1, 2002. Abstracts are being checked for proper content by the Local Scientific Committee before authors are being informed about acceptance.

Organized Sessions of Short Communications can be submitted by Ordinary Members of the Congress. Such sessions and their organizers will be included in the final program after a review and consent by the Local Scientific Committee. All participants of these organized sessions have to submit an abstract for their Short Communications.

During the Congress, it will also be possible to organize informal mathematical seminars on site. Participants who want to organize informal seminars should contact the Secretariat Office of ICM 2002. If the request is received before May 1, 2002, the sessions will also be announced in the final program.

3.3 Section of Special Activities

Special sessions will be organized during the Congress. To date, the following activities are being planned:

> Special Session organized by the Association for Women in Mathematics (AWM).
>
> Special Session organized by the IMU Committee on Electronic Information and Communication (CEIC).
>
> Special Session organized by the Organizing Committee of International Council of Industrial and Applied Mathematics 2003 (ICIAM 2003).
>
> Special symposium organized by the International Commission on History of Mathematics (ICHM).
>
> Special meeting of directors of institutes organized by the International Mathematical Sciences Institutes (IMSI).

Any sub-committee of IMU or other organizations that would like to organize a special session should contact the general secretary (Prof Ya-xiang Yuan) at yyx@lsec.cc.ac.cn.

4. Other Events for the General Public

A small number of lectures of non-technical nature will be arranged. These lectures are intended for the general public, and they will highlight the important ways in which mathematics and mathematical ways of thinking are having an important impact on everyday life. The International Congress also provides other opportunities to inform the general public about some of the recent developments and future challenges of mathematics.

5. Satellite Conferences.

The number of satellite conferences (up to April 2, 2002) is 46. A list of all the satellite conferences can be found at http://www.icm2002.org.cn/satellite/index.htm.

6. Registration

There are two ways to register for ICM 2002. One can register electronically at the following registration site: http://www.icm2002.org.cn/I/Register.htm. Alternatively, one may complete the registration form and return it to the CICCST (Mr. Liu Feng, CICCST, 86 Xueyuan Nan Road, Beijing 100081, China).

If a participant requires an invitation letter for obtaining financial support or a visa, please contact: icmagent@beijing.icm2002.org.cn.

7. Sponsoring and Finance

The Total Budget of ICM 2002 will be approximately US $2 million. About US $400,000 has been reserved for the support programs.

The most important sponsors of ICM 2002 are the Ministry of Finance of PRC, the Ministry of Science and Technology of PRC, the Ministry of Education of PRC, the National Natural Science Foundation of China, the Chinese Academy of Sciences, the Beijing Municipal Government, and the China Association for Science and Technology.

8. Support of Mathematicians from Eastern Europe and from Developing Countries

IMU and LOC are making strong efforts to ensure ICM 2002 participation of mathematicians from developing countries. In particular, IMU and LOC have established three support programs:
- Young Mathematicians from Developing Countries aged 35 or younger at the time of the Congress
- Young and Senior Mathematicians from Eastern Europe
- Senior mathematicians from Latin America and Africa

Details about the support programs can be found in the Circular Letters (CL-3, CL-10, CL-11, CL-13) and on the ICM 2002 website.

9. Social Program

After the opening ceremony, a complimentary dinner will be offered to all participants and registered accompanying persons. The dinner will be served in the Banquet Hall of the Great Hall of the People. An ICM 2002 party will take place in the evening of August 26, 2002.

On the evening of August 25, 2002, a show of Beijing Opera will be arranged at Chang'an Theater. The show contains three dramatic selections from the popular complete plays.

Besides the official (non complimentary) tourist program operated by China Travel Service Head Office, Footloose tours will be offered to special museums, parks and shopping streets. The tours are free of charge, except for possible entrance fees and transportation costs. These tours will be announced shortly before the Congress by means of Circular Letters and posted on the ICM 2002 website.

10. Public Relations

To promote ICM 2002 and mathematics in general, LOC has taken several actions:

- A press conference was held in the Great Hall of the People on August 16, 2001, to mark the one-year countdown to ICM 2002; most newspapers in China reported on ICM 2002.
- Two half-hour programs about mathematics filmed by CCTV were aired in CCTV.
- Two 45-minute TV programs about the history of mathematics are being produced. The programs will be aired on TV during or after the Congress.
- Dialogue with Fields Medalists will also be aired on CCTV during the Congress.

11. Local Arrangements

11.1 Professional Congress Organization Company

The ICM 2002 Organizing Committee has selected the China International Conference Center for Science and Technology (CICCST) as the company to support the ICM 2002 organization. CICCST will handle the registrations, run the accommodation service, and provide tourist advice.

11.2 Volunteers

Over 300 volunteers from Peking University, Tsinghua University, and other universities will be available during the conference. The volunteers will be mathematics students and graduate students. They will provide help at the Congress Venue and at the Congress designated hotels.

11.3 Public E-Mail Service

During the Congress, a public e-mail service will be available to Ordinary Members of ICM 2002. Daily from 9:00 a.m. to 8:00 p.m., a mail server and client computers will be offered in the Congress Venue.

12. Publications

12.1. Announcements and Posters

Since September 2001, approximately 10,000 copies of the First Announcement have been distributed to mathematicians via e-mail. The Second Announcement was printed in the beginning of 2002. Currently, 4000 copies of the Second Announcement have been sent to mathematics departments at hundreds of universities, national mathematical societies, and individuals.

We would like to thank the American Mathematical Society (AMS) for publishing a text version of the Second Announcement in the *Notices of the AMS* and to thank the Chinese Mathematics Society for publishing the Chinese version of the Second Announcement in the Bulletin of CMS.

12.2 Abstracts and Proceedings Volumes

During the on site registration, each participant will receive the program, an abstract volume, and Volumes II and III of the Proceedings, containing the papers of invited Section Speakers. These documents also will be available electronically shortly before the Congress. Volume I of the Proceedings will be distributed shortly after the Congress and will contain the speeches given at the Opening Ceremony, including the Laureates on the Prize Winners, and the report on the Congress, as well as the papers of the Plenary Speakers. The Proceedings will be published by Higher Education Press.

12.3 Beijing Intelligencer and Daily News

The Chinese Mathematical Society, Springer-Verlag Berlin/Heidelberg and Higher Education Press, together, will prepare, publish, and present to all participants a magazine called the "Beijing Intelligencer." This publication will welcome participants to ICM 2002 and will serve as a guide to Beijing and to its manifold aspects and attractions.

A newsletter containing program changes, announcements of informal seminars and information of general interest to ICM 2002 participants will be available each day outside the meeting rooms in the BICC. Participants with announcements for the newsletter must submit them to the conference office no later than 3:00 p.m. the day before.

13. Fees:

The registration fees are as follows:

Registration	until April 30, 2002	after April 30, 2002
Full Registration	US$240	US$280
Students*	US$120	US$140
Accompanying Persons +	US$80	US$100

* Registration as a student requires an official certificate of the university to be attached.

+ Registered accompanying persons are entitled to attend the Opening Session, Opening Reception after the Opening Session, the ICM-2002 Party, and coffee breaks.

14. General Assembly

The IMU General Assembly 2002 will be held in Shanghai, China, August 17-18, before the International Congress of Mathematicians in Beijing (ICM 2002). The Organizing Committee of ICM 2002 has appointed a Local Organizing Committee in Shanghai, chaired by Professor LI Ta-tsien. The corresponding address is:

> Prof. LI Ta-tsien (LI Daqian)
> Department of Mathematics
> Fudan University
> Shanghai 200433, China
> E-mail: dqli@fudan.edu.cn or moffice@fudan.edu.cn
> Tel: (86-21) 65642469   Fax: (86-21) 65648274

All the expenses for supporting the organization of the General Assembly in Shanghai are offered by the Shanghai Municipality. For further information concerning the General Assembly, please see the separate report in this Bulletin and the following web page: www.mathca.com/icm2002.

MEETINGS OF THE EXECUTIVE COMMITTEE (EC)

The Executive Committee met on April 2-3, 2003, in Princeton, New Jersey, USA.

- The 12th Edition of the World Directory of Mathematicians (WDM 2002) cost US$57,705 to produce. The sales of the WDM 2002 were extremely poor, totaling only US$3,386, leaving a deficit of US$54,319 in 2002. It was determined that the availability of the World Wide Web is making the World Directory less necessary. It was also noted that many of the member societies do not comply with the request to send current information, and therefore, possibly 20 percent of the information is already outdated by publication date. An online directory was discussed, but it was determined that it would be too costly to keep the information current. It was unanimously decided that, due to noncompliance of the Adhering Organizations and the increasing cost of production, IMU would no longer produce the World Directory of Mathematicians.

- EC agreed to ask Alain Bensoussan, the former President of CNES (the French Space Agency), to represent IMU at COSPAR, and John Ball will represent IMU on the Cosmology Prize Committee.

- The EC discussed how to modify the current procedures for selecting the slates in the light of Resolution 8 from the 14th General Assembly. The EC decided that it was necessary to set up a Nominating Committee, independent of the EC, to undertake this task. A subcommittee of the EC, consisting of John Ball, Phillip Griffiths, Jean-Michel Bismut and Martin Grötschel, was appointed to develop a Nominating Committee model that would be presented to the EC at their 2004 meeting.

- Herb Clemens, Secretary of CDE, and Le Dung Trang, head of ICTP's Mathematics group, joined the meeting. Herb Clemens described the two programs and the procedures of CDE, and presented his discussion document *IMU Support of Mathematics in Developing Countries*, March 2003.

  CDE awards grants of up to US$1,000 for individual support for research travel for mathematicians in developing countries with a program in progress for a minimum of one month and a maximum of six months. It also awards grants up to US$2,000-$3,000 for conferences in developing countries.

  Le Dung Trang discussed his experiences in setting up research projects in Vietnam. He emphasized the need, in setting up a successful and stable bilateral scheme in a developing country, to eventually adopt a political role (for example, in order to influence ministers and other government agencies in the country concerned). He drew attention to the presence of the Third World Academy of Sciences (TWAS) in Trieste and suggested that there might be value in IMU establishing a working relationship with TWAS. There followed a general discussion on IMU and CDE's role in supporting mathematics in developing countries.

  Because of the complexities of the issues involved, the EC agreed to form a subcommittee to advise it on what changes are needed so that IMU can effectively

increase its support for mathematics in developing countries. The committee will consist of: John Ball, Herb Clemens, Le Dung Trang, Michèle Artigue, Jean-Pierre Gossez, M. Jambu from CIMPA and M.S. Narasimhan. Sharon Laurenti from ICTP will act as secretary. The first task of the subcommittee will be to write an initial report giving recommendations to the EC on what elements should form the basis of its future strategy. This report, of about six pages (excluding supporting appendices) should be completed by July 1, 2003.

- The CEIC recommended redesigning the current IMU homepage and developed a proposal for an IMU homepage based on the Math-Net page for mathematical departments. Math-Net is a project to standardize the homepages of mathematical departments. Presently, there are almost 200 institutions with Math-Net homepages. Following the GA, the campaign to encourage additional institutions to adopt a Math-Net homepage, via circulation of GA delegates, was not successful. There was almost no response from the delegates. The CEIC will again encourage involvement after the new IMU homepage is operational.

- Noga Alon, Baumritter Professor of Mathematics and Computer Science in Tel Aviv University, Israel, agreed to Chair the ICM 2006 Program Committee.

- The EC discussed how IMU could better communicate with, and receive input from, member countries. It was decided that a circular letter will be sent to each Adhering Organization asking for views on how relations between IMU and their country might be improved and whether there are specific issues, relating to mathematics in their country, where IMU could be of assistance.

The Executive Committee met on August 16, 2002, in Shanghai, China.

- The EC recommended to the General Assembly that Egypt change from Group I to Group II and also recommend that Georgia and Yugoslavia move from Group II to Group I. Since efforts to contact the Democratic Republic of Korea have been unsuccessful for about eight years, the EC recommended to the Congress to move North Korea to observer status.

- The EC proposed members of the 14th General Assembly Credentials Committee, Resolutions Committee, Tellers Committee, Committee for Finance and Dues and Nominating Committee.

- The EC decided to re-establish CEIC for a second term as a standing committee of the Executive Committee of IMU. The CEIC was asked, in its second 4-year term, to take an active part in any development of a Digital Mathematics Library. They were also asked to draft a proposal, to be decided upon by the EC in 2006, concerning its future status. The proposal should include issues such as CEIC's institutionalization, membership, long-term financing, and sustainability of the various current CEIC efforts and activities.

The EC also discussed the "third world aspect" of CEIC. Their activities may help mathematicians in financially weak countries and developing countries to participate in mathematical progress and to reduce the "literature gap" that exists.

The EC also asked CEIC to invite Konovalev (Russia) and Gadadhar Misra (India) to one of their meetings (expenses will be covered from IMU) to involve them in future activities.

The Executive Committee met on April 12-13, 2002, at the Institute Henri-Poincaré, Paris, France.

- Zhi-Ming Ma (Chair of the Local Organizing Committee of ICM 2002) and K.C. Chang joined the meeting to discuss ICM 2002. As of April 8, 3185 people, including 557 Chinese, have either pre-registered or formally registered (252 have paid their registration fee).

  The Opening Ceremony will begin at 3:00 p.m. on August 20. Speeches will be given by Jacob Palis, a Chinese government official, and Zhi-Ming Ma, President of the Congress. Professor Chern will be the honorary President of the Congress. There is scheduled to be an appearance by President Jiang Zemin is scheduled to appear followed by the presentations of the Fields Medals and the Nevanlinna Prize. Afterward, the President will meet with IMU representatives and prize recipients. There will be a small press conference, and then the work of the Fields Medalists and the Nevanlinna prize recipient will be presented. At 7:00 p.m. a banquet will be held in the Great Hall of the People.

  LOC has arranged for one afternoon for the CEIC presentation, and ICHM will present a special symposium, "History of Mathematics in China and Asia." There are now 46 satellite conferences.

- Hyman Bass and Bernard Hodgson joined the meeting to discuss ICMI. They expressed the opinion that the Terms of Reference for 1986 should be updated and suggested increasing the number of the ICMI EC members from eight to nine, four officers and five members.

  They stressed that it is crucial to the work of ICMI to have an Executive Committee that represents many geographic areas and disciplines, and that the right mix from the education community and from statistics is very important. They also stressed that the gender issue is important to ICMI.

  A discussion ensued on mathematics education and ICMI's role. The research and practice has grown enormously over the past decades. It was noted that the ICMI Congress, which is held every four years, is now comparable to and perhaps larger than ICMs. In developing countries, ICMI fills an important role.

- The EC voted to propose to the General Assembly a dues increase of 10% per member country per year and that the dues would continue to be stated in Swiss Francs.

- Martin Grötschel reported on the work of CEIC and recommended that CEIC should continue as a committee of IMU.

  The EC agreed that the CEIC projects and recommendations should be made available in print at the General Assembly and at ICM 2002. The ICM 2002 organizers will provide up to two pages of the program booklet for CEIC information.

  The EC elected the following people to CEIC membership: Pierre Berard, Jonathan Borwein, John Ewing, Alejandro Joffre, Peter Michor, David Morrison and Alf van der Poorten.

  The EC agreed that IMU should play a formal, prominent, and active role in the Digital Library of Mathematics, which is underway with many institutions throughout the world. The goal of the DLM project is to create an open electronic archive/library of all mathematical publications of all times. This project is very ambitious with many legal, organizational and technical obstacles. A "pre-project" has been drafted to examine its feasibility, possibly to be financed by NSF.

- Martin Grötschel reported that the International Union of Pure and Applied Physics (IUPAP) is currently working on various aspects concerning the proposed collaboration between IMU and IUPAP. IUPAP had a recent meeting on long-term archiving and other issues and is preparing a report. After the IUPAP EC decides on these issues (probably in September 2002), negotiations about a formal collaboration between the two international unions may start.

- The Executive Committee developed a slate for 2003-2006 to propose to the General Assembly.

COMMISSION ON DEVELOPMENT AND EXCHANGES (CDE)

Reports prepared by Herb Clemens, Secretary/Treasurer

Report on the activities of the CDE for the year 2003

During the year 2003, the CDE received 50 or more requests, inquiries and applications from mathematicians in developing countries for support for research travel, conferences and projects. After initial routine screening by the Secretary/Treasurer to insure that requests fell within IMU program guidelines, 24 formal applications for individual research travel were reviewed, with support or partial support being granted in 20 cases, and 13 formal applications for conference support were reviewed with support or partial support being granted in 11 cases. Two requests for project support, using dedicated funds raised externally by IMU, were also processed.

CDE wishes to encourage wider use of its programs by developing world mathematicians. During the coming year CDE will cooperate fully with the efforts of the Executive Committee of the IMU to expand the reach of IMU support in the developing world.

Report on the activities of the CDE for the year 2002

During the year 2002, the CDE received about 35 requests, inquiries and applications from mathematicians in developing countries for support for research travel, conferences and projects. After initial routine screening by the Secretary/Treasurer to insure that requests fell within IMU program guidelines, nine formal applications for individual research travel were reviewed, with support or partial support being granted in six cases, and seven formal applications for conference support were reviewed with support or partial support being granted in six cases. Two requests for project support in Africa, using dedicated funds raised externally by IMU, were also processed. Average conference support grants were of US$2000 and individual research travel grants were on average about US$1000.

Supplements to base funding for IMU/CDE were received from the International Council of Scientific Unions (ICSU) for US$5000, and from the US State Department (US$3500 for African mathematical support).

This year marked a continuing drop in applications to IMU/CDE augmenting an already established trend. Since all CDE programs require substantial matching funds, a possible reason for the decline in applications is (ironically) the shrinking resources for mathematics and mathematicians in the developing world. The IMU/CDE may wish to consider a more vigorous advertising campaign for IMU/CDE and its programs.

CDE wishes to encourage wider use of its programs by developing world mathematicians. In the international community, a particular focus in this period is on mathematical development in Africa. Among its various projects, CDE hopes to continue its support for African mathematics.

A detailed financial report accompanies these narratives and is found at the end of Bulletin.

INTERNATIONAL COMMISSION ON THE HISTORY OF MATHEMATICS (ICHM)

Report prepared by Kirsti Andersen, 2003.

In 2003, the International Commission for the History of Mathematics continued to pursue its dual aims of encouraging the study of the history of mathematics and of promoting a high level of historically and mathematically sophisticated scholarship in the field internationally.

The year 2003 witnessed the successful editorial transition of the Commission's journal, *Historia Mathematica*, as well as a slight reorganization of the journal's hierarchy. Umberto Bottazzini (University of Palermo) stepped down as co-editor of the journal after a four-year term. Craig Fraser (University of Toronto) continues with the journal as editor-in-chief for a four-year term. He has been joined by Benno van Dalen (Frankfurt), who will serve a four-year term as managing editor. The journal, published by Elsevier, appears quarterly and runs some 525 pages annually, publishing original research on the history of the mathematical sciences in all periods and in all cultural settings.

In addition to overseeing the journal and its editorial transition, the Commission has engaged in a variety of activities in 2003. The ICHM continues to maintain and to update its website at http://www.math.uu.nl/ichm/ and to gather data for the electronic version of the World Directory of Historians of Mathematics via the questionnaire posted there. Relative to the World Directory effort, the ICHM has published "calls" to the international community of historians of mathematics to alert them to the existence of both the website and the questionnaire, most recently publishing a "Call to the International Community of Historians of Science" (in Chinese) in the Newsletter of the Chinese History of Mathematics Society. It is the ICHM's hope that a reasonably complete database of historians of mathematics will be available by the end of 2004. The ICHM's Executive Committee conducted four e-meetings with follow-up discussions throughout the year. Among the items of business considered were the organization and governance of the ICHM and its Executive Committee and the history of mathematics on the web. Relative to the former, a number of rules of governance were passed (see the ICHM's website). Relative to the latter, a subcommittee consisting of June Barrow-Green (The Open University, UK), chair, Alan Bowen (Princeton University, US), Albert Lewis (Indiana University-Purdue University of Indiana, US), Eleanor Robson (Cambridge University, UK), and Glen van Brummelen (Bennington College, US) reported to the Executive Committee of the ICHM in December 2003 with numerous recommendations. These are currently being considered. A version of the subcommittee's report will soon be available on the ICHM website.

Finally, the ICHM co-sponsored, with the British Society for the History of Mathematics, the "Wallis Tercentenary Meeting" at New College, Oxford on October 25, 2003. This international event organized by Jackie Stedall (Oxford University) brought together 43 participants in addition to six speakers from Germany and the United Kingdom to celebrate through scholarly talks the three hundredth anniversary of the death of the seventeenth-century English mathematician, John Wallis. The lectures dealt with such diverse aspects of Wallis's life, work, and times as his research in mathematics and cryptography, his grammar of the English language, his interrelations with scientists in Britain and on the Continent, seventeenth-century Oxford, his relations with Thomas Hobbes, and the influence of music in his life and works. For complete reports of this event, see the ICHM website and the BSHM website at http://www.dcs.warwick.ac.uk/bshm/

A number of other co-sponsored events were in the planning stages in 2003, including a day of lectures at the Joint Mathematics Meetings in Phoenix, Arizona (US) in January 2004 and special sessions in the history of mathematics at the International Congress for the History of Science to be held in Beijing, China in August 2005. These will be discussed in subsequent reports to the IMU.

 Members of the ICHM

Officers:
Karen Hunger Parshall, Chair (USA)
Craig Fraser, Vice President (Canada)
Jan P. Hogendijk, Secretary (Netherlands)
Menso Folkerts, Treasurer (Germany)

Members of the Executive Committee:
Natalja Ermolaeva (Russia)
Alejandro R.Garcadiego (Mexico)
Mariano Hormigon (Spain)
Giorgio Israel (Italy)
QU Anjing (China)
Chikara Sasaki (Japan)

National Members:
The complete list of 55 national members may be found on the back cover of *Historia Mathematica.*

Ex-Officio:
Kirsti Andersen (Denmark)
Joseph W. Dauben (USA)
Eberhard Knobloch (Germany)
Christoph J. Scriba (Germany)

IMU Representatives:
Jeremy J. Gray (UK)
LI Wenlin (China)

Report prepared by Karen Hunger Parshall (Chair) and Jan P. Hogendijk (Secretary)

Report on ICHM activities in 2002

The International Commission for the History of Mathematics (ICHM) aims to encourage the study of the history of mathematics and to promote a high level of historically and mathematically sophisticated scholarship in the field internationally. It works toward these goals, first and foremost, through its official journal, *Historia Mathematica*. Founded in 1974 by Kenneth O. May, *Historia Mathematica* is currently under the editorship of Craig Fraser (University of Toronto) and Umberto Bottazzini (University of Palermo). It appears quarterly, runs some 525 pages annually, and publishes original research on the history of the mathematical sciences in all periods and in all cultural settings.

In addition to overseeing *Historia Mathematica*, the ICHM engaged in a variety of activities in 2002 to bring together the international community of historians of mathematics and to support research in the history of mathematics. In the first category, the ICHM has created a website, located at http://www.math.uu.nl/ichm, that is maintained by ICHM Secretary, Jan P. Hogendijk. This site contains not only reports on ICHM activities, but it will also (beginning in 2003) carry reports on meetings of interest to historians of mathematics internationally as well as other news of the profession. The site also serves as the gateway to what will be the electronic *World Directory of Historians of Mathematics*. Currently, the site has a questionnaire that historians of mathematics have been encouraged to fill out. The ICHM has published a ``Call to the International Community of Historians of Mathematics'' thus far on the pages of the *Newsletter of the British Society for the History of Mathematics*, the *Newsletter of the Canadian Society for the History and Philosophy of Mathematics*, the *Newsletter of the History of Science Society*, and *Historia Mathematica* in order to try to reach

members of the profession and to encourage them to submit information for the directory on the ICHM website. Additional calls will be printed in Germany, India, Italy, and Japan. It is the ICHM's hope that a reasonably complete database of historians of mathematics will be available by sometime in 2004.

In the second category, the ICHM co-sponsored (with the Institute for Mathematics of the Chinese Academy of Sciences (CAS) and the Institute for History of Natural Sciences (CAS)) an ``International Colloquium for the History of Mathematics" at Northwest University in Xi'an, China, August 15-18, 2002. This colloquium was held on the occasion of the International Congress of Mathematicians (ICM) in Beijing; its organizing committee was headed by Yong Sun and Anjing Qu. The colloquium focused on the following three general themes: "Transmission and Transformation of Mathematics: East and West," "Mathematical Thought in the Twentieth Century," and "Mathematics in China."

Also on the occasion of the Beijing ICM, the ICHM co-sponsored (again with the Institute for Mathematics (CAS) and the Institute for History of Natural Sciences (CAS)) an "International Symposium on the History of Chinese Mathematics" held at the Beijing Science and Technology Museum on Tuesday, August 27, 2002. The day-long symposium was organized by Joseph W. Dauben (USA), LI Wenlin (China), and LIU Dun (China) and was comprised of six lectures given by specialists from Canada, China, France, Singapore, and Taiwan. In particular, the symposium, which was made an official part of the ICM by the ICM Organizing Committee, included a lecture by WU Wenjun, the President of the ICM, which drew very large crowds to the symposium. Well over 200 people attended the morning session, which included the presentation to Lam Lay Yong (Singapore) of the Kenneth O. May Medal for outstanding contributions to the history of mathematics (which she won in 2001 but which she was unable to receive at the International Congress of the History of Science in Mexico City that year). In the afternoon, when Professor WU gave his talk, the Museum set up a closed-circuit television broadcast. This enabled the overflow audience of several hundred more to watch the afternoon session in the Museum's IMAX theater. WANG Yusheng, the Museum's Director, also provided a very impressive buffet reception after the symposium, which was a very pleasant end to what was a busy but very successful program. (A pdf-file of the program is available on the ICHM website.)

The year 2002 also witnessed the publication of the ICHM-sponsored and -organized book, *Writing the History of Mathematics: Its Historical Development* by Birkhäuser Verlag. This more than ten-year-long international effort, co-edited by Joseph W. Dauben (USA) and Christoph Scriba (Germany), is the cooperative effort of more than twenty historians of mathematics from equally many countries. It documents the historiography of the history of mathematics in different countries throughout the world, while its appendices provide invaluable and hard-to-obtain biographical information on key scholars of the history of mathematics in addition to exhaustive bibliographical information.

As the above should make clear, 2002 was an excellent year for the ICHM. We are looking forward to a productive 2003.

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INTERNATIONAL COMMISSION ON MATHEMATICAL INSTRUCTION (ICMI)

Reports prepared by Bernard R. Hodgson, Secretary, 2003.

Report on ICMI activities in 2003

1. Organization

A new Executive Committee (EC) of ICMI was elected at the General Assembly of the International Mathematical Union held in Shanghai (China) in August 2002 and has taken charge as of January 1, 2003. Among the members of the previous EC, three were elected for a second term: Professor Hyman Bass as President, Professor Michèle Artigue as Vice-President and Professor Bernard R. Hodgson as Secretary-General. The incoming members of the 2003-2006 Executive Committee of ICMI are: Professor Jill Adler as Vice-President and Professors Carmen Batanero, Nikolai Dolbilin, Marie Falk de Losada, Peter L. Galbraith, Petar S. Kenderov and Frederick F.S. Leung as Members-at-Large. Due to a tie in the voting for Members-at-Large, the President of IMU proposed, and the General Assembly of IMU approved, that six Members-at-Large should be declared elected — which respects the number of EC members according to the new Terms of Reference of ICMI, as these Terms allow for the cooptation of up to two additional Members-at-Large. The *ex officio* members of the ICMI EC are now Professors John Ball (President of IMU) and Phillip Griffiths (Secretary of IMU), the latter for a second Term. The new Executive Committee expressed its sincere thanks to the outgoing members of the previous EC: Professors Néstor Aguilera

(Vice-President), Gilah Leder, Yukihiko Namikawa, Igor Sharygin and Jian-Pan Wang (Members-at-Large), and Miguel de Guzmán and Jacob Palis (*ex officio*).

The new EC has its first meeting on June 2-7, 2003, at Université Laval, Québec, the home institution of the Secretary-General. Part of this meeting was devoted to a discussion on the structure and mission of ICMI and the type of contribution that each EC member could bring to the work of the Committee. In addition to this meeting, the work of the EC in 2003 was conducted by electronic communication under the direction of the President and the Secretary-General.

Decisions made by the General Assembly of IMU in August 2002 have had an effect on the ICMI membership. Bosnia and Herzegovina was admitted as a member of IMU as of January 1, 2003, and thus *de facto* as a member of ICMI. On the other hand, the status of the Democratic People's Republic of Korea was changed, as of January 1, 2003, to that of an observer, due to non-communication with IMU. While it continues to be part of ICMI's general policy to encourage member states to establish Sub-Commissions of ICMI, no new ones were created during 2003.

The issue of contact and communications with the ICMI member countries has remained for a number of years a source of concerns for the ICMI EC. While in many cases the links with the Adhering Organizations (to IMU, or directly to ICMI for the non-IMU members) and with the ICMI Representatives are very good, there are quite a few instances where these links are extremely precarious, and even non-existent for some member countries. (Among the 81 member countries of ICMI, 18 had in 2003 no appointed ICMI Representative; and among the 64 Representatives — including one each for China mainland and for Taiwan —, only 44 could be reached by e-mail.) The call for information about the infrastructure supporting ICMI-related matters in each country made by the Secretary-General in 2000 did not give the expected results, as only a dozen replies had been received. In this context it was decided by the EC in June 2003 to launch again a process aiming at gathering information and reinforcing the links with the member countries. To that effect each EC member has accepted to take responsibility for a few ICMI member countries to help develop a better understanding of the organization inside the country as regards ICMI matters.

One of the aims of this endeavor is to reinforce the role of the ICMI Representatives. While the "system" of Representatives is functioning reasonably well in many aspects, the Executive Committee believes there is place for improvement and wishes to involve more regularly the Representatives in various aspects of ICMI life. In particular, there is a need for closer and more frequent contacts between the EC and the ICMI Representatives and also for a better use of the local and regional expertise of the Representatives. Moreover the ICMI Representatives constitute, together with the members of the ICMI Executive Committee, the General Assembly of ICMI. In this connection an objective of the ICMI EC for the 2004 meeting of this Assembly is to identify ways of making it a more meaningful and purposeful event.

During 2003, three messages giving information or asking for input were e-mailed collectively to the ICMI Representatives.

The ICMI EC identified as a mid-term goal to increase the membership in ICMI. The total number of countries member of IMU (65) or even of ICMI (81, including the 65 IMU members) is still extremely low when compared to the 191 member states of the United Nations (as of 2003). While the criteria for admission to the IMU rest essentially on the scientific activity, in terms of mathematical research, in the country, such should not the case for ICMI. ICMI is dedicated to mathematics education, at all levels, which is both a field of scholarship (research, in the preceding sense) as well as a vast domain of practice, involving professional communities of teachers, teachers educators, mathematicians and scientists, school administrators, curriculum developers, policy makers, etc. ICMI sees itself as representing this whole enterprise. Mathematics education research has a very important and influential presence in ICMI, but this kind of scholarship is strongly present only in a subset of the ICMI member countries. Every country, on the other hand, has some system and culture of mathematical education and as such is potentially eligible for participation in ICMI. The reinvigoration of the links of ICMI with its member countries can be seen as having as a corollary the establishment of relations with potential new members of ICMI. While no rigorous scientific criteria are currently imposed for membership in ICMI, it does not seem appropriate to understand membership as freely open to any country that asks. ICMI sees mathematics education as a more or less coordinated enterprise involving several professional communities, as mentioned above, so that membership in ICMI should be implemented through identification, in each country, of an Adhering Organization, a committee (or sub-commission) as well as a representative for ICMI that can credibly claim to speak for the aggregate of all of the relevant major professional communities and organizations vested in mathematics education in that country.

Related to the presence among ICMI members of non-IMU members is the question of possible dues which could be asked from those countries. IMU, which collects the funds it gives to ICMI mainly through the dues paid by its 65 members, has explicitly raised this question for consideration by ICMI. No decision has yet been made.

The election of the ICMI EC 2003-2006 was done under the scheme in place for a number of years, through which the IMU EC was responsible, after consultation with the ICMI EC, for building a slate of candidates. On the occasion of the 2002 election the contacts between IMU and ICMI were quite positive, as the President and Secretary-General of ICMI were invited, in April 2002, to the IMU EC meeting where this slate was constituted. At the General Assembly of IMU, a Nominating Committee was then appointed who proposed the final slate drawing, in particular, from the slate of the IMU EC. Past experience shows that the IMU EC proposals get a high priority at the IMU GA. In responses to concerns of the IMU GA that the whole election procedures be made more transparent and avoid the potential for conflict of interest, the IMU EC has proposed a way of constituting a Nominating Committee to address these concerns, in particular by removing the highly influential role played by the IMU EC. Proposals for new rules of appointment of the Nominating Committee were sent to the ICMI EC early May 2003. At its June meeting, the ICMI EC concluded that the proposals of the IMU did not pay sufficient attention to the specificity of ICMI and were *de facto* moving away from a context where the ICMI community could play a significant role in the selection of its governing body. The comments of the ICMI EC were sent to the IMU EC shortly after the June meeting and the discussion on this issue is still ongoing.

2. ICMEs

The 10th International Congress on Mathematical Education, ICME-10, will be held in Copenhagen, Denmark, from July 4 to 11, 2004. The International Program Committee, chaired by Professor Mogens Niss, Roskilde University, had its second and final meeting on May 2-4, 2003 at Skjoldenæsholm in Jystrup, near Roskilde, Denmark. The costs inherent to this meeting were alleviated by the organisation in Malmö, Sweden, on May 5-7 of an international symposium on the theme *Preparation of Mathematics Teachers for the Future*. The organization of such a symposium in connection with the IPC meeting took place at the initiative of the Swedish Committee for ICMI (ICMI-SE) at the Royal Academy of Science and with the support of National Centre for Mathematics Education in Trondheim, Norway, Malmö University, the Swedish Society for Research in Mathematics Education (SMDF), the Swedish Research Council and others.

Up to date information about ICME-10 is available on the website http://www.icme-10.dk.

A call for bids to host ICME-11 in 2008, the year of the centennial of the Commission, was launched by the Secretary-General of ICMI during the closing session of ICME-9, in August 2000, and published in the *ICMI Bulletin* (No. 49, December 2000). The Secretary-General has been in regular contact in recent years with a few countries working on the preparation of an official bid for ICME-11. The ICMI EC had received, by the beginning of 2003, three proposals for hosting ICME-11 in 2008: (in alphabetical order) from China, Korea and Mexico. Site visits by members of ICMI Executive Committee were organized early in 2003, in order to allow the EC to appreciate the quality of the local infrastructure, the support the project was receiving in the country as well as the expertise of the organizing team. Hence three members of the EC visited Acapulco at the end of March and Seoul early April. This second visit was to take place jointly with a visit to Shanghai, but this latter part had then to be postponed because of the SARS crisis in China. A preliminary study of the bids and the reports on the site visits was made by the EC at its June 2003 meeting. Discussions with the three bidding countries were then pursued over the following months, the aim of the EC being to reach a final decision by the end of 2003. Eventually China withdrew its bid, on the basis of the difficulty of finalizing their formal proposal in the context of the SARS crisis. More information was obtained from Korea and Mexico, which resulted in a second visit by three members of the ICMI to Mexico in November 2003, this time to Guadalajara and Monterrey. The ICMI Executive Committee finally decided to accept the invitation from Mexico to host ICME-11 in 2008. At the moment of this decision, the precise dates and site had not yet been finalized.

The ICMI EC has expressed its gratitude to the mathematics education and mathematics communities in the three bidding countries, and especially the committee that prepared the Korean bid, chaired by Professor Sung Je Cho, ICMI Representative from Korea and President of Korean Sub-Commission for ICMI, and the committee that prepared the Mexican bid, chaired by Professor Carlos Signoret, President of the Mexican Mathematical Society. The EC was highly impressed by the quality of the two dossiers they presented.

ICMI has been approached by the ERIC Clearinghouse for Science, Mathematics, and Environmental Education (ERIC/CSMEE), one of 16 clearinghouses within the ERIC (Educational Resource Information Center) system. ERIC has developed a large education database with over 1 million records of journal articles, curriculum and teaching guides,

reports, conference papers, and other documents and has expressed interest in including material for the ICME congresses in their database. Contacts have been established with the ICME-9 and 10 Chairs of the International Programme Committees on this account. Care must be taken in identifying the kind of material that may be included in the database, taking into consideration among others that fact that a substantial portion of the scientific documents presented within an ICMI program (lectures, presentations in Working Groups, etc.) often appear in vehicles subjected to copyright.

3. ICMI Studies

At its June 2003 meeting, the ICMI EC examined the stage of progress of the various ongoing ICMI Studies (see below). However before launching new Studies, a need was felt to reflect on the ICMI Study program and its accomplishments since its inception in the mid 1980s. The ICMI Studies appear in general to be successful and well received by the community. However it may be useful to better understand their actual contribution to the growth of the field of mathematics education and its knowledge base, and also to assess the weight given in any Study to theoretically oriented (or analytical) reflection and to practically oriented reflection possibly leading to action. Moreover the Study program ought to be considered in a context where ICMI aims at being closer to the needs of developing countries.

The ICMI Studies being concretely reflected in the ICMI Study volumes (currently appearing in the New ICMI Study Series — NISS — published by Kluwer Academic Publishers), one way of assessing the impact of the ICMI Studies was through a review and analysis of the research papers published in the Study volumes. As the ICMI EC was aware that Professor Stephen Lerman (London South Bank University) was involved in a project of review of research texts in mathematics education, an invitation was extended to him to do a similar review of some of the ICMI Study volumes.

In addition to the launching of this "study of Studies", the following progress was made in 2003 as regards the on-going ICMI Studies:

ICMI Study 12 (*The Future of the Teaching and Learning of Algebra*): preparation of the ICMI Study volume (NISS 8), under the editorship of Kaye Stacey, Helen Chick and Margaret Kendal (University of Melbourne).

ICMI Study 13 (*Mathematics Education in Different Cultural Traditions: A Comparative Study of East-Asia and the West*): preparation of the ICMI Study volume (NISS 9), under the editorship of Klaus-Dieter Graf (Freie Universität Berlin), Frederick K.S. Leung and Francis Lopez-Real (University of Hong Kong).

ICMI Study 14 (*Applications and Modelling in Mathematics Education*): review of the submitted contributions by the IPC, chaired by Werner Blum (Universität Kassel), in preparation for the Study Conference to be held on February 13-17, 2004, in Dortmund, Germany.

ICMI Study 15 (*The Professional Education and Development of Teachers of Mathematics*): preparation of the Discussion Document, co-chaired by Deborah Ball (University of Michigan) and Ruhama Even (Weizmann Institute of Science).

ICMI Study 16 (*Challenging mathematics in and beyond the classroom*): meeting, in November 2003 in Modena (Italy), of the IPC co-chaired by Peter J. Taylor (University of Canberra) and Edward J. Barbeau (University of Toronto).

ICMI Study 17 (*Technology revisited*): completion of the appointment of the IPC, co-chaired by Celia Hoyles (University of London) and Jean-Baptiste Lagrange (IUFM of Reims).

4. Regional Conferences
There were two ICMI Regional Conferences held in 2003, sponsored by the Commission both morally and financially.

The 11th Inter-American Conference on Mathematics Education, IACME-11 (XI Conferencia Inter-Americana de Educación Matemática, XI CIAEM), was held at the Universidade Regional de Blumenau — FURB, Blumenau, SC, Brazil, on July 13-17, 2003. The conference was organised under the theme *Mathematical Education for the 21st Century: Challenges and Perspectives* by the Comité Inter-Americano de Educación Matemática (CIAEM/IACME) and was dedicated to the memory Luis Antonio Santaló. The XI CIAEM was attended by some 600 participants from 18 countries in the Americas and Europe.

Following the success of the international symposium organized in July 2000 by the French Sub-Commission for ICMI on the occasion of the World Mathematical Year 2000, a second conference was granted the status of an ICMI Regional Conference where the "region" is defined in linguistic, rather than geographical, terms. The symposium EMF 2003 (Espace Mathématique Francophone 2003) was held in Tozeur, Tunisia, on December 19-23, 2003, and gathered participants form various countries of the Francophone community, especially from Maghreb and Sub-Saharan Africa.

At its June meeting, the ICMI EC decided to grant the status of an ICMI Regional Conference to a conference taking place in South Africa. in July 2005   This conference will be organized in connection with the 2005 meeting of the Executive Committee.

5. Other activities
The Commission has organized in October 2000, jointly with the University of Geneva, a symposium celebrating the centennial of the international journal *L'Enseignement Mathématique*, the official organ of ICMI since the inception of the Commission in 1908. The Proceedings of this symposium have appeared in July 2003 under the editorship of Daniel Coray, Fulvia Furinghetti, Hélène Gispert, Bernard R. Hodgson and Gert Schubring. The book, entitled "One Hundred Years of *L'Enseignement Mathématique*: Moments of Mathematics Education in the Twentieth Century", is published by L'Enseignement Mathématique as Monograph No. 39. Information on the content of the Proceedings is available on the website http://www.unige.ch/math/EnsMath/.

In the same vein the celebration of the centennial of the Commission, in 2008, is now under preparation. As ICMI was established in Italy, during the 1908 Congress of Mathematicians held in Rome, the EC is grateful that the Italian mathematicians and mathematics educators communities have accepted the task of hosting the symposium to be organized on this occasion.

The participation of ICMI, together with UNESCO and other bodies, in the development of an international exhibition entitled "Why Mathematics?" has been pursued in 2003. The aim of this traveling exhibition on mathematics is to improve the image of mathematics among the general public. ICMI is represented in this project by Vice-President Michèle Artigue. In February 2003, an application was submitted by ICMI to the ICSU Grants Programme 2004 to support this project, but it was unsuccessful. ICMI has agreed to provide a grant of US$10000 to this exhibition, and IMU, US$1000. The exhibition is expected to be launched during the European Congress of Mathematics held in Stockholm just prior to ICME-10, and then to be presented during ICME-10. The exhibition should be traveling in various regions in the future and it is already known it will be presented, in partnership with the Mairie of the Cité de Paris, in the Maison des Métallos (Paris) from 9 December 2004 to 14 January 2005.

At its meeting held in April 2003, the EC of IMU appointed an Ad Hoc Committee on "Supporting Mathematics in Developing Countries". ICMI is represented by Vice-President Michèle Artigue, while IMU Commission on Development and Exchanges (CDE) is represented by its Secretary, Herbert Clemens. The Ad Hoc Committee is asked to make recommendations to the IMU EC on a strategy for IMU action in developing countries. The Committee has prepared a preliminary document, which was discussed by the ICMI EC at its June meeting. Following this President Hyman Bass and Secretary-General Bernard R. Hodgson met with Herb Clemens during the July 2003 Park City Mathematics Institute and a new draft of the document was then prepared where the contribution of ICMI to such a project was much more explicit and elaborated. The discussion with IMU on this matter is still ongoing. This possible collaboration with IMU or CDE on specific actions in developing countries is quite timely from ICMI perspective, as the need for more articulated outreach actions by ICMI in developing countries has been considered a high priority for a long time, for instance through the ICMI Solidarity Programme. But recent attempts, for instance in collaboration with UNESCO, had not yet provoked the expect level of impact.

The President and Secretary-General were pleased to receive an invitation from the Korean Sub-Commission of ICMI and the Korea Society of Mathematics Education to contribute an article to the journal *The Mathematical Education*, one of the journals published by the Korea Society of Mathematics Education, on the occasion of its 100th issue. Their message of congratulation has appeared in Vol. 42, No. 2, May 2003 (pp. 81-83) of the journal, as well as in another journal of the KSME, *Research in Mathematical Education*, Vol. 7, No. 2, June 2003 (pp. 69-72).

6. ICMI-Related Activities at ICM-06

In preparation for the 2006 International Congress of Mathematicians, the President of ICMI was contacted by the Chair of the International Programme Committee for ICM-2006, Professor Noga Alon (Tel-Aviv University), for advice on the composition of the Selection Panel of the section on "Mathematics education and popularisation of mathematics". This is in line with the discussions which the President and Secretary-General of ICMI had with the IMU EC in May 2000 about the input of ICMI in the program of the ICMs and the presence of ICMI EC members on the core of this Selection Panel (see the report on this meeting in the *ICMI Bulletin* No. 50, June 2001, pp. 15-17). The composition of all the Selection Panels is kept confidential until the ICM.

7. Affiliated Study Groups

An exceptional event took place in 2003, as a new Study Group has been accepted by ICMI for affiliation with the Commission. In July 2003, the EC of ICMI has approved the request presented by the International Community of Teachers of Mathematical Modelling and Applications (ICTMA) to become an Affiliated Study Group of ICMI. The group will be known as *The International Study Group for Mathematical Modelling and Applications* and will be designated under the acronym ICTMA, which has been in use for a long time among members of the international community that support its activities. It had been known for a while that such a request would be presented to ICMI. Information about ICTMA and its activities can be found on the website http://www.infj.ulst.ac.uk/ictma/. ICTMA is already close to activities of ICMI, as some of its members are involved in the 14th ICMI Study on "Applications and Modelling in Mathematics Education".

ICTMA thus becomes the 5th Affiliated Study Group of ICMI, the four previous ones being (in the chronological order of the 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, and WFNMC (The World Federation of National Mathematics Competitions) — 1994.

8. The Solidarity Program

Already in 1999 the ICMI Executive Committee set up an ad hoc committee 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. Unfortunately this committee was not in a position to complete its task. The EC is grateful that Alan Bishop (Monash University, Australia) has accepted to take the leadership of a new committee with the same mandate. A preliminary report is expected for the July 2004 meeting of the ICMI EC.

9. The ICMI Awards and ICMI Logo

The call made by the ICMI Award Committee, chaired by Michèle Artigue (Université de Paris 7, France), for proposals of candidates for the first ICMI Felix Klein and Hans Freudenthal Awards has appeared in a number of journals and was widely disseminated through the Internet. The suggestions for future awardees, which had to be carefully supported, were requested by the end of June 2003. At the end of 2003, the Committee was completing its review task so that the announcement of the Awards could be made early in 2004.

Efforts were pursued in 2003 by the ICMI EC as regards the conception of the medals to accompany the Awards, as well as the design of an ICMI logo to be represented on one of the sides of the medals. Contacts were made with École Boulle, in Paris, for the work on the medals. As regards the logo, proposals were received from three groups, in Copenhagen, in Paris and in Québec. The EC is expecting to make a final decision about the logo early in 2004.

10. Information and Communication

The ICMI EC has established contacts with the IMU Committee on Electronic Information and Communication (CEIC) as regards a possible collaboration of ICMI to this project. This

is particularly timely as ICMI is considering a much wider use of communication technology such as the Internet to disseminate its work and increase its availability.

The ICMI EC has also started a project of revamping its website (www.mathunion.org/ICMI/) and making a much greater use of it for contacts with the international mathematics education community.

Issues Nos. 52 and 53 of the *ICMI Bulletin* are dated June and December 2003 respectively. However their publication has met with some delay.

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26 April 2004

<div align="center">Report on ICMI activities in 2002</div>

1. Organization

The 1999-2002 Executive Committee of ICMI had its fourth and final meeting on July 16-19, 2002, in Paris. The meeting was hosted by the IREM of the Université de Paris VII. Besides this meeting, the work of the EC during 2002 was conducted by electronic communication under the direction of the President and the Secretary-General.

There has been no modification to the list of members of ICMI in 2002, and no new Sub-Commission for ICMI has been established. There are currently 81 members of ICMI, of which 14 (to the knowledge of the Secretary-General) have established a Sub-Commission. There were a few new appointments among the ICMI Representatives in 2002, but 18 ICMI countries still have no Representative at the moment. Contact with ICMI Representatives is made through the *ICMI Bulletin* or by e-mail (for the 42 Representatives for whom an e-mail address is known).

The President and Secretary-General of ICMI were invited for part of the meeting of the Executive Committee of IMU held in Paris on April 12-13, 2002. Two main items were then discussed: the composition of the slate for the 2003-2006 ICMI EC to be submitted by the IMU Executive Committee to the General Assembly of IMU, and a proposal prepared by the ICMI EC concerning the needed updating of the Terms of Reference of the Commission — the previous version of the Terms went back to 1986. The revised Terms of Reference of ICMI were adopted by the IMU EC during that meeting.

The members of the 2003-2006 ICMI Executive Committee, elected by the General Assembly of IMU held in Shanghai in August 2002, are:

President:	Hyman Bass	(USA)
Vice Presidents:	Jill Adler	(South Africa)
	Michèle Artigue	(France)
Secretary-General:	Bernard R. Hodgson	(Canada)
Members at Large:	Carmen Batanero	(Spain)
	Mary Elizabeth Falk de Losada	(Colombia)
	Nikolai Dolbilin	(Russia)
	Peter L. Galbraith	(Australia)

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Petar S. Kenderov   (Bulgaria)

Frederick K.S. Leung   (Hong Kong)

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The President and Secretary of IMU, John Ball (UK) and Phillip Griffiths (USA) are *ex officio* members of this ICMI EC.

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 Shanghai.

2. ICMEs

The 10th International Congress on Mathematical Education, ICME-10, will be held in Copenhagen, Denmark, from July 4 to 11, 2004. A distinctive flavor of ICME-10 is the fact that it is being organized in close cooperation among the Nordic countries — Denmark, Finland, Iceland, Norway and Sweden — under the guidance of a special Nordic Contact Committee chaired by Professor Gerd Brandell, Lund University, Sweden. The International Program Committee is chaired by Professor Mogens Niss, Roskilde University, Denmark. Up to date information about the congress is available on the website http://www.icme-10.dk

A call for bids to host ICME-11 in 2008, the year of the centennial of the Commission, had been launched by the Secretary-General of ICMI during the closing session of ICME-9, in August 2000, and published in the *ICMI Bulletin* (No. 49, December 2000). The Secretary-General has been in regular contact in 2002 with a few countries working on the preparation of an official bid for ICME-11. The aim of the ICMI Executive Committee is to reach a decision about the site of ICME-11 during 2003.

3. ICMI Studies

The mounting and conducting of so-called ICMI Studies on crucial themes and issues in mathematics education were continued in 2002. The resulting ICMI Study volumes are published by Kluwer Academic Publishers, Dordrecht, the Netherlands, in the "New ICMI Study Series" (NISS) appearing under the general editorship of the President and the Secretary-General of ICMI. During the year 2002, the Study Conference for the 13th Study was held; the Discussion Document for the 14th Study was published; the International Program Committee for the 15th Study met; and two new Studies were launched by the ICMI Executive Committee during its June 2002 meeting. The current on-going Studies are:

ICMI Study 12: The Study Conference on *The Future of the Teaching and Learning of Algebra* was held at the University of Melbourne, Australia, in 2001, and the resulting Study volume is due to appear in the NISS series in time for ICME-10.

ICMI Study 13: The thirteenth ICMI Study, on the theme *Mathematics Education in Different Cultural Traditions: A Comparative Study of East-Asia and the West*, was held at the University of Hong Kong on October 20-25, 2002. It was attended by 63 participants from 18 countries. Francis Lopez-Real, University of Hong Kong, was in charge of the Local Organization and is an editor of the NISS volume, together with the two co-chairs for this Study, Klaus-Dieter Graf, Freie Universität Berlin, Germany, and Frederick K.S. Leung, University of Hong Kong.

ICMI Study 14: The next Study is devoted to the theme of *Applications and Modelling in Mathematics Education* and is chaired by Werner Blum, Universität Kassel, Germany. The

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Discussion Document has appeared in 2002 and the Study Conference will take place on February 13-17, 2004, in Dortmund, Germany. Hans-Wolfgang Henn, of the University of Dortmund, is chairing the Local Organizing Committee.

ICMI Study 15: The theme of the fifteenth ICMI Study is teacher education and development. The International Program Committee, co-chaired by Deborah Ball, University of Michigan, USA, and Ruhama Even, Weizmann Institute of Science, Israel, was appointed in 2001 and met in June 2002 for the preparation of the Discussion Document. The Study Conference is planned to take place in Brazil in April 2005.

ICMI Study 16: The next ICMI Study is entitled *Challenging mathematics in and beyond the classroom*. The two co-chairs are Peter J. Taylor, University of Canberra, Australia, and Edward J. Barbeau, University of Toronto, Canada. It is expected that the Study Conference will take place in 2005 or 2006. This Study is closely related (but not restricted) to the interests and activities of WFNMC, one of ICMI Affiliated Study Groups. ICMI Studies have thus been organized with scope linked to each of the four ASGs — Study 4 was on *Mathematics and Cognition* (PME), Study 7 on *Gender and Mathematics Education* (IOWME) and Study 10 on *The role of the history of mathematics in the teaching and learning of mathematics* (HPM).

ICMI Study 17: The seventeenth ICMI Study, co-chaired by Celia Hoyles, University of London, UK, and Jean-Baptiste Lagrange, IUFM of Reims, France, has as a provisional title *Technology revisited*, in remembrance of the very first ICMI Study held in 1985. The Study Conference is expected to take place in 2006.

4. Regional Conferences

There was one ICMI regional conferences held in 2002: 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 —, which took place in Singapore on May 28-31, 2002. There were over 600 participants with 130 foreign participants coming from 18 different countries. A report on the Conference is published in the issue No. 51 of the *ICMI Bulletin*.

Three new ICMI Regional Conferences were approved by the ICMI Executive Committee during 2002.

The Latin-American School on History and Epistemology of Mathematics, LASHEM (Escuela Latinoamericana de Historia y Epistemología de las Matemáticas, ELHEM) has organized the first LASHEM/ELHEM meeting in Cali, Colombia, on November 5-8, 2002. The main topic of the meeting was *Birth, Development, and Transmission of Mathematical Analysis*.

The 11th Inter-American Conference on Mathematics Education, IACME-11 (XI Conferencia Inter-Americana de Educación Matemática, XI CIAEM), will be held at the Universidade Regional de Blumenau FURB, Blumenau, SC, Brazil, on July 13-17, 2003. The conference theme is *Mathematical Education for the 21st Century: Challenges and Perspectives*. This conference is organized by the Comité Inter-Americano de Educación Matemática (CIAEM/IACME) and it is dedicated to the memory Luis Antonio Santaló.

Following the success of the international symposium organized in July 2000 by the French Sub-Commission for ICMI, a second conference has been granted the status of an ICMI Regional Conference where the "region" is defined in linguistic, rather than geographical, terms. The symposium EMF 2003 (Espace Mathématique Francophone 2003) will be held in Tozeur, Tunisia, on December 19-23, 2003.

5. Relations with Other Bodies

ICMI was involved in 2002 in a number of activities in relation to other bodies concerned with science and mathematics education, in particular inside the framework of the International Council for Science (ICSU), the umbrella organization to which ICMI belongs through IMU.

ICMI President represented IMU at a meeting of ICSU scientific unions organized in February 2002, at the initiative of UNESCO, to discuss strategies for developing education in basic sciences and mathematics and to establish collaboration between disciplines. The ICSU unions represented at the meeting, besides IMU, were IUPAC (International Union of Pure and Applied Chemistry), IUBMB (International Union of Biochemistry and Molecular Biology), IUBS (International Union of Biological Sciences) and IUPAP (International Union of Pure and Applied Physics), through its International Commission on Physics Education.

ICMI has closely collaborated in 2002 with ICSU Committee on Capacity Building in Science (CCBS) to the organization of an International Conference on Science and Mathematics Education held on September 21-23, 2002, in Rio de Janeiro on the occasion of ICSU General Assembly. The Commission was represented on the programme committee by the Secretary-General. Contributions related to mathematics education in the various panels on the program of the Conference were made by Michèle Artigue (France), Ferdinando Arzarello (Italy), Deborah Ball (USA), Hyman Bass (USA), Maria Salett Biembengut (Brazil), Suely Druck (Brazil), Bernard R. Hodgson (Canada) and Gilah Leder (Australia).

For a second consecutive year, ICMI has co-sponsored an international workshop organized in Utah, USA, in the context of the annual Park City Mathematics Institute hosted by the Institute for Advanced Study (Princeton, USA). This seminar took place in July 2002 under the theme "An International Perspective on the Education of K-12 Mathematics Teachers" and has received a support of US$10000 from ICSU Grant Program.

In addition to its participation to the inter-union meeting on science and mathematics education mentioned above, ICMI has been working on different ways to intensify its contacts with UNESCO which were reinitiated in 2001, after an interruption of almost a decade. On the occasion of its annual meeting in Paris, the ICMI Executive Committee met with Minella C. Alarcon, program specialist for physics and mathematics in the Division of Basic and Engineering Sciences at UNESCO main office in Paris. This meeting was the occasion for identifying various possibilities of collaboration between ICMI and UNESCO. In particular ICMI has accepted to support, jointly with UNESCO and other bodies, the development of an international exhibition entitled "Experiencing Mathematics", to be launched in October 2003 during the General Assembly of UNESCO. ICMI is represented in this project by Vice-President Michèle Artigue. In November 2002, the Secretary-General and Vice-President Artigue met with Maciej Nalecz, Director of UNESCO Division of Basic and Engineering Sciences, for further discussion of collaborative activities between ICMI and UNESCO.

6. ICMI-Related Activities at ICM-02

As agreed with IMU when ICMI President and Secretary-General met with its EC in May 2000 (see the report in the *ICMI Bulletin* No. 50, June 2001, pp. 15-17), the ICMI EC has been closely involved in the preparation of the program of Section 18, entitled *Mathematics Education and Popularisation of Mathematics*, at the International Congress of Mathematicians held in Beijing in August 2002. Three main lectures were given in that Section: by Jean-Luc Dorier (France) on "Teaching linear algebra at university"; by Vagn Lundsgaard Hansen (Denmark) on "Popularising mathematics: from eight to infinity"; and by Shutie Xiao (China) on "Reforms of university mathematics education for non-mathematical specialties". Moreover two panel sessions were organized. The first discussed the question of international comparisons in mathematics education, with presentations by Gabriele Kaiser (Germany), moderator, Frederick Koon-shing Leung (Hong Kong), Thomas A. Romberg (USA) and Ivan Yaschenko (Russia). The second panel was on the teaching of proof and involved Hans Niels Jahnke (Germany), moderator, Deborah Ball (USA), Celia Hoyles (UK) and Nitsa Movshovitz-Hadar (Israel).

7. 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).

8. 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 infra-structure within mathematics education in the region, country, or province at issue.

ICMI is currently reviewing the functioning and the impact of the Solidarity Program so to redefine its orientation and development. It is expected that a new steering committee for the program will be appointed in 2003. Alan Bishop (Australia) has accepted to chair this committee.

9. The ICMI Awards

The President of ICMI, according to the rules defining the ICMI awards (see *ICMI Bulletin* No. 50, June 2001, pp. 18-19), has appointed an Award Committee of six persons (whose identity, except for the Chair, remains unknown to the public until the end of their term). Exceptionally, the first Chair of the Award Committee, Michèle Artigue, has been chosen among the current ICMI Executive but, in the future, current members of the ICMI Executive should not be selected for membership of the Award Committee. The appointment of the Chair is for a four-year term.

A call for suggestions of awardees has been launched by the Award Committee and disseminated among the mathematics education community though various channels (ICMI Representatives, Affiliated Study Groups, national and international journals and associations).

10. 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 done through the *ICMI Bulletin* and the ICMI website, both under the editorship of the Secretary-General of ICMI. The publication of the *Bulletin* has met with delay, so that following issue No. 50, June 2001, the next publication was issue No. 51, dated December 2002.

Direct access to the *ICMI Bulletin* (starting with issue No. 39, December 1995) or to other information concerning ICMI can be found on the ICMI-pages of the IMU-server on the World Wide Web, at the address: http://www.mathunion.org/ICMI/

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12 March 2003

COMMITTEE ON ELECTRONIC INFORMATION AND COMMUNICATION (CEIC)

Report prepared by Jonathan Borwein, Secretary, 2003.

Report on CEIC activities in 2003

After a very successful and hectic 2002, the Sixth Meeting of the CEIC was held at the Konrad-Zuse-Zentrum (ZIB) Berlin, May 24th and 25th, 2003. While 2003 has been a quieter year, the increasing concentration of academic publishing in very few hands and the ongoing issues related to journal costs (as illustrated by present activities within Elsevier), intellectual property and copyright, make the CEIC 's ongoing presence very important. The following remarks summarize the principal items discussed and where appropriate mention subsequent actions:

World Digital Mathematics Library
The CEIC had noted at its fifth meeting (an informal 'five-and-a-half-hour meeting was held in Beijing during the 2002 ICM), in early 2002, that some half dozen centers in various countries had projects to scan the existing mathematical literature, thus making it available in digital form (*retrodigitization*). It had determined that the development is of great importance for mathematics and warrants the attention of the IMU. Further, the CEIC had come to the view that the value of the then efforts would be much enhanced if they were truly international and if there were some overall co-ordination and facilitation (inter alia to minimize duplication and to identify best practice). Accordingly the CEIC had urged the IMU to accept a central role in the co-ordination and facilitation of the World Digital Mathematics Library project and had offered the expertise and experience of members of the CEIC to act on behalf of the IMU. Those urgings were heeded by the EC and by the GA of the IMU. The

actions of the CEIC reported below are taken in the light of the IMU's decision to work to realize the vision of a comprehensive digital mathematics library by agreeing to coordinate the worldwide activities leading to a World Digital Mathematics Library. The CEIC has chosen to use the acronym WDML (World Digital Mathematics Library) rather than the previously used TLA, inter alia because the domain name www.wdml.org was available for registration (whereas that omitting the 'w' was not). The available domain name has accordingly been registered on behalf of the IMU/CEIC. A CEIC WDML site http://www.wdml.org has been initiated.

The CEIC recalls that the WDML is based on the DML project and on the work of the several digitization initiatives of such institutions as EMANI, Cornell University, NUMDAM, GDZ Goettingen, ERAM, ... , and notes that the digitizing institutions have indicated that they will support WDML activity under the aegis of the IMU.

The CEIC emphasizes that the WDML initiative is and will be open to all interested parties that are able to promote the goals of the WDML. {WDML Committee} On the suggestion of the Goettingen DML meeting, the IMU was to establish a WDML Committee including representatives from the digitization centers and of the publishers. The task of the Committee was to prepare and organize a scientific workshop to take place no later than summer 2004 and to be open to all parties interested in taking part in WDML projects. This has been achieved by the meeting to take place during the 4th European Math Society Meetings, organized by Bernd Wegner.

Accordingly, on the advice of the CEIC, the President of the IMU, John Ball, issued appropriate invitations resulting in Alf van der Poorten (mailto://alf@math.mq.edu.au) agreeing to chair the WDML Committee and David Mumford (mailto://David_Mumford@brown.edu), Pierre Berard (mailto://Pierre.Berard@ujf-grenoble.fr), Bernd Wegner (mailto://wegner@math.TU-Berlin.de), Thierry Bouche [for NUMDAM] (mailto://thierry.bouche@ujf-grenoble.fr), Jean Poland (mailto://jp126@cornell.edu), Rolf Jeltsch (mailto://jeltsch@math.ethz.ch) and Gertraud Griepke (mailto://Griepke@springer.de) accepting John Ball's invitation to become members of the WDML Committee.

A WDML Workshop will form part of the meeting on June 25-27, 2004, at KTH Stockholm "New Developments in Electronic Publishing of Mathematics" -- a workshop integrating mathematicians, libraries, editors and publishers, see http://eic-ecm4.sub.uni-goettingen.de. The Sunday program is dedicated essentially entirely to WDML matters.

Best Current Practices
The document 'Best Current Practices', hereafter BCP, addresses 14 topics of relevance to electronic publishing in mathematics. The CEIC plans to enhance the BCP statements by adding external documents including remarks, comments, references, and examples; for instance, comment on and definition of technical language, clarification of the underlying principles, guidelines instructions, an explanation of alternative views.

BCP should provide clear and understandable advice on the diffusion of mathematical information and on communication via the Web. BCP will be linked to related documents thus providing references, links to related material, and relevant examples.

Responsibility for the various BCP topics (Structure and Format, Linking and Enrichment, Versioning, Personal Homepages, Personal Collected Works, Preprints and Archives, Copyright, Journal Price Policy, Validation and Refereeing, Statistics, Partial Access/Free Access, Archiving Format, Archiving Responsibility, Licensing and Bundling, Development Countries) was distributed among the CEIC members, and an action timeline was nominated. While this project is still incomplete, it is reasonable to expect to see the fruits during 2004. Experts from outside CEIC (from the reorganized TAB discussed below) will be more actively involved in the enhancement of the BCP.

For example, during the last year Dr. Jofre has been involved testing a website with an updated list of links of open access math journals and related subjects. This experience has been successful and his goal is to incorporate more people to this initiative as an easy way to be proactive with mathematicians in many developing countries.

Intellectual Property Rights/Copyright
It is plain that Intellectual Property Rights/Copyright plays a key role in obstructing access to mathematical information. One might well ask whether its generally held principles are at all appropriate in the Mathematical Sciences. John Ewing is at present writing on the relevant principles. In brief, he discusses proposals that amount to copyright, as we know it, persisting on learned papers only for a limited period, with the material then going into the public domain.

World Directory of Mathematicians
Financial considerations have led the IMU to cease publication of a printed version of the World Directory of Mathematicians. The CEIC remains charged with the duty to develop feasible models for an electronic WDM. However, ``Privacy Laws'' provide a fundamental obstruction to that endeavor. Nonetheless, a first practical step towards such an electronic WDM might be a federated search ("federated search") is a popular term for search over diverse databases) of electronically available membership lists of mathematical societies. The Committee noted a plethora of problems that will have to be dealt with. A prototype search solution is to be discussed at the 2004 CEIC meeting.

Persona Mathematica
 If only because not all mathematicians are members of learned societies, it will remain relevant to continue the Math-Net approach: (a) to develop a standard for a personal professional homepage; and (b) to harvest those professional homepages by the Math-Net service 'Persona Mathematica'. Martin Groetschel's professional homepage appears to provide a fine model (http://www.zib.de/groetschel/).

Math-Net Activities. Web sites of the IMU, CEIC, Math-Net, and WDML
Under the guidance of the CEIC the various websites have been provided with uniform interfaces. See http://www.mathunion.org and linked sites. Note that the Math-Net Page http://www.math-net.org/services serves as base for the structure of the web sites providing them with a common 'look and feel'.

ICIAM 2003

The CEIC presented a special session at ICIAM with presentations by Jon Borwein, John Ewing, Martin Groetschel (given by Alf van der Poorten), and ---by invitation ---Bernd Wegner. This session's presentations are lodged at http://www.colab.sfu.ca/ICIAM03/eic.html. In addition, Jonathan Borwein represented the IMU at the ICIAM's Council Meeting and made a presentation on behalf of the CEIC. The ICIAM warmly responded to an invitation to be more closely involved with the CEIC. Similar presentations are planned for ICME11 in Copenhagen in July 2004.

Report by M. Groetschel on CEIC related activities at ZIB during 2003

IMU Server

The design of the new structure of the IMU server and the redesign of the IMU website were finished in summer 2003. The IMU website is permanently maintained and updated at the Konrad-Zuse-Zentrum (ZIB). New activities, especially EWDM and IMU-Net, were integrated into the IMU website, see below for details.

Remarks concerning the EWDM

Following the suggestion of the IMU Committee on Electronic Information and Communication (CEIC) to set up an electronic version of the World Directory of Mathematicians (EWDM), ZIB has established the necessary infrastructure so that every mathematician can offer his or her personal homepage via a central registration mechanism, see http://www.mathunion.org/ewdm/. The software guarantees that the e-mail addresses of the EWDM members can't by extracted by robots without very significant effort. IMU has called all mathematicians to enroll in the EWDM. By the end of February 2004, more than 600 mathematicians from nearly 50 countries joined this new IMU/CEIC service. The number of subscribers rises daily (but slowly).

EWDM provides a link to a Math-Net Page offering links to the member lists of mathematical societies and groups, see http://www.math-net.org/more/people. A future challenge is to provide a service allowing a metasearch of the EWDM and all available electronic member lists of mathematical societies.

Remarks concerning the Mathematician's Professional Homepages (MPH)

CEIC has developed a proposal for a standardized mathematician's homepage. However, the amount and size of topics interesting a mathematician may highly differ. Therefore each mathematician can choose between two types of such a homepage
- the "full" version with a large number of groups and subgroups
- the "light" version with a reduced number of groups and subgroups.

Intuitive tools are necessary for generating the MPH. The MPHMaker is a tool for generating easily and efficiently a standardized Mathematician's Professional Homepage (full version): http://www.mathunion.org/MPHMaker A tool for the light MPH version is under construction.

Remarks concerning IMU-Net

Since fall 2003, ZIB has been establishing the technical infrastructure to run the bimonthly IMU-Net newsletter http://www.mathunion.org/Publications/Newsletter/. In the first issue

John Ball introduced IMU-Net as follows: *"The newsletter aims to improve communication between IMU and the worldwide mathematical community, by reporting decisions and recommendations of IMU, and highlighting issues that are under discussion. In addition, IMU-Net will report on major international mathematical events and developments, and on other topics of general mathematical interest."*

The call to subscribe to the IMU-Net mailing list was sent out to nearly 41,000 mathematicians. As of now there are about 3800 IMU-Net subscribers. Three issues have been published and archived,
http://www.mathunion.org/Publications/Newsletter/archive/index.html.

Remarks concerning Math-Net
a. State of the art. Math-Net refers to and makes accessible the information of more than 1,000 mathematical departments http://www.math-net.org/navigator. Two hundred departments have generated and installed Math-Net Pages as a standardized portal to their electronic information. Moreover, the Math-Net Navigator covers country lists of Web servers of mathematical departments. Lists are served for the continents as follows:

Africa: 8 country lists
Botswana, Kenya, Mauritius, Namibia, Nigeria, South Africa, Swaziland, Zimbabwe
America: 12 country lists
Argentina, Barbados, Brazil (2), Canada (23), Chile, Colombia, Jamaica, Mexico, Puerto Rico, Trinidad and Tobago, United States (29), Venezuela
Asia: 26 country lists
Armenia, Azerbaijan, Bangladesh, Brunei, China, Georgia, India, Indonesia, Iran, Israel, Japan, Kazakhstan, Kuwait, Lebanon, Malaysia, Oman, Philippines, Republic of Korea, Russia (3), Saudi Arabia, Sri Lanka, Taiwan, Thailand, Turkey (1), Vietnam (1)
Australia: 3 country lists
Australia (2), Fiji, New Zealand (2)
Europe: 37 country lists
Austria (8), Belarus, Belgium (2), Bulgaria, Croatia, Cyprus, Czech Republic, Denmark (4), Estonia, Finland, France (3), Germany (85), Greece, Hungary (3), Iceland, Israel, Italy (6), Latvia, Lithuania, Malta, Moldova, Netherlands, Norway, Poland (1), Portugal (1), Romania, Russia (3), Serbia and Montenegro, Slovakia, Slovenia, Spain (3), Sweden (3), Switzerland, Turkey, Ukraine, United Kingdom (17)

The number in parentheses denotes the number of departments with a Math-Net Page. The number of Math-Net Pages is increasing slowly.

b. Technical Aspects: Math-Net uses the Harvest system. Harvest covers the typical components for handling distributed information in the Internet:
- Gatherer component (gathering the distributed information)
- Broker component (indexing of the gathered information)
- User Interface (to search the distributed information)

The Harvest based search would be more efficient if the page rank approach of Google was used (as developed by Stanford University):*"the analysis of hyperlinks is a suitable mean to*

advertise the relevance of a Web page for a search". The page rank is defined by the citation (link) graph of the web. It is a sparse system of linear equations, which can be solved by iteration. A test implementation is installed to calculate the page rankings within the Web servers of ZIB. ZIB will also try to use this method for Math-Net.

Further activities
a. Open Access. There are a lot of activities to establish open access to the knowledge in the sciences and humanities. CEIC has partaken in the activities and supports these initiatives, Berlin, October 20-22, 2003, see http://www.zim.mpg.de/openaccess-berlin/.

b. Web Presentation of Projects in Mathematics
A proposal for a standardized Web presentation of mathematical projects was developed, see http://www.mathematik-21.de/statussem/poster/groetschel/index.htm. The Math&Industry Web Site Maker http://soft-pc3.zib.de/create_website allows one to create such a Web presentation for a project. For an example of a Web presentation see http://soft-pc3.zib.de/MathInd/fkz03GR7ZIB-7/. German is currently used as the base language, but it would be not expensive to create an English version.

CEIC Report for 2002

Fifth Meeting of the CEIC
The Fifth Meeting of the CEIC was held at the Morris J. Wosk Centre for Dialogue, Simon Fraser University, Vancouver, February 15--17, 2002. A report on the meeting is included in the report on the four-year term of the CEIC in the IMU-Bulletin 48 (June 2002), pages 70-80.

Presentation to the General Assembly
The General Assembly of the IMU (Shanghai, August 17 and 18, 2002) received a report by Martin Groetschel, IMU EC representative, Peter Michor, Chair of the CEIC, and Alf van der Poorten, on the activities of the CEIC during the past four years.

The presentation included a brief review of mathematics on the Web, an introduction to Math-Net and the importance of Math-Net Pages for mathematical institutes and departments, a preview of standardized personal pages for mathematical researchers, an outline of the "Best Current Practices Recommendations" on electronic publishing including a review of mathematical preprint servers, a call to all mathematicians to make their publications electronically available, an explanation of CEIC's copyright recommendations, and an outline of plans for a Digital Mathematics Library.

CEIC Recommendations
The Committee prepared a booklet collecting CEIC's current recommendations on various aspects of electronic information and communication. Those recommendations had been drafted by CEIC members and were finalized in open discussions during CEIC's 1998--2002 term. They were variously endorsed by the IMU EC and by the Shanghai General Assembly.

The booklet was distributed at the GA in printed form. It is electronically available at CEIC's web site http://www.ceic.math.ca/filemgmt_data/files/recommendations.pdf.

Future of the CEIC
The CEIC was reviewed by the IMU EC at its meeting preceding the GA. The EC determined to re-establish the CEIC for a second term with revised Terms of Teference (included below).

The following resolution (Resolution 6) summarizing the work of CEIC was adopted by the General Assembly:

The General Assembly of the IMU endorses the "Best Practices" document of its Committee on Electronic Information and Communication (CEIC), also endorsed by the IMU Executive Committee at its April 13, 2002, meeting. In particular the Assembly endorses the provisions designed to ensure access by mathematicians of the developing world to current mathematical literature: the posting of the articles on personal homepages and servers and the practice now beginning with several publishers of making journal articles in electronic form freely accessible five years after they have been published, or even sooner. An important part of making mathematical literature available is coming to agreement on common standards for digitization. The Assembly commends the CEIC for its work on this matter and urges further efforts in this direction.

CEIC Activity at the ICM, Beijing
Members of the CEIC held an informal lunchtime meeting to discuss further plans of the committee.

On Monday, August 26, CEIC organized an afternoon special session: New Aspects of Electronic Publishing.

The following talks were given:
Jonathan Borwein: *What is the CEIC?*
Roland Schwaenzl: *Where should you put your papers?*
Wilfrid Hodges: *Should we give away our research?*
Martin Groetschel: *Can we make information more accessible?*
John Ewing: *How long should publishers own scholarship?*
Alf van der Poorten: *Is refereeing necessary?*

Panel discussion: *What are best practices and why should you care?*

Satellite Meeting -- Members of the CEIC participated in the satellite conference "Electronic Information and Communication in Mathematics" at Tsinghua University in Beijing (August 29--31, 2002), and gave the following talks:

Peter Michor (keynote): *Doing Mathematics in the years 1949, 1973, 2003, 2039*
Jonathan Borwein: *The next four years*
Wilfrid Hodges: *Copyright in mathematical work*
Alf van der Poorten: *The costs and benefits of refereeing*
Alexei B. Zhizhchenko: *Electronic information system in mathematics in Russia and participation of Russia in the MathNet project*
    John Ewing: *Predicting the future*

Appendix
At its 70th session on August 16, 2002, in Shanghai the IMU EC has reviewed the activities of its "Committee on Electronic Information and Communication" (CEIC) and decided to re-establish CEIC for a second term with the following revised terms of reference:

a) The CEIC is a standing committee of the Executive Committee (EC) of the IMU, reviewed every four years by the EC at its meeting preceding that of the GA. Members are appointed for four-year terms by procedures similar to those for IMU Commissions. The EC appoints one of its members to serve on the CEIC.

b) The CEIC may meet as necessary in each four-year period to review the development of electronic Information and Communication as it impacts the international mathematical community, and is asked to submit an annual 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, researchers, and sister disciplines. It may publish, electronically or on paper, and otherwise disseminate proceedings, reviews of recent developments, and technical surveys for the use of the mathematical community.

d) The CEIC may suggest international standards (`best practice recommendations`) 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) The CEIC is expected to continue its previous efforts such as the promotion and organization of Math-Net and related activities that make mathematics related material electronically available. In carrying out its activities, CEIC is asked to continue soliciting the views of the mathematical community through the CEIC and the Math-Net homepages.

The CEIC is asked to address, in its second four-year term, the following issues with special emphasis.

f) The CEIC is requested to enhance its advisory role with the aim - to make the issues involved generally understood, - to define the relevant needs of our discipline clearly, - to shape the role the mathematical community needs to play, and - to guide the practice of scholarly communication and publication.

g) The CEIC is asked to take an active part in any development of a Digital Mathematics Library, to further address copyright and archiving issues, journal licensing models, and cost models for journal production and acquisition.

h) The CEIC is requested to draft a proposal, to be decided upon by the EC in 2006, concerning its future status. The proposal should include issues such as CEIC's institutionalization, membership, long term financing, and sustainability of the various

current CEIC efforts and activities.

The composition of CEIC for the next period is as follows:

Pierre Berard (Pierre.Berard@ujf-grenoble.fr)
Jonathan Borwein, Chair (jborwein@cecm.sfu.ca)
John Ewing (jhe@ams.org)
Martin Grötschel, IMU-EC representative (groetschel@zib.de)
Alejandro Joffre (ajofre@dim.uchile.cl)
Peter Michor (Peter.Michor@esi.ac.at)
David Morrison (drm@math.duke.edu)
Alf van der Poorten (alf@math.mq.edu.au)

The following two persons are attached to CEIC with special emphasis on the further development of the World Digital Mathematical Library:

Rolf Jeltsch (jeltsch@math.ethz.ch)
David Mumford (David_Mumford@brown.edu)

IMU APPROVED BUDGET FOR THE YEARS 2003 – 2006
IN SWISS FRANCS

INTERNATIONAL MATHEMATICAL UNION

Approved Budget for the years 2003-2006, in Swiss Francs

EXPENDITURE

Schedule A:	1995-1998	1999-2002	2003-2006
Secretarial help, IMU office	15,000	17,000	20,000
Secretarial help, President	3,000	5,000	5,000
Accountant	0	0	8,000
ICMI	11,000	11,000	15,000
CDE	6,000	6,000	7,000
Office expenses (including postage)	8,400	14,400	16,000
Travel expenses of the EC	27,600	30,000	30,000
President's and Secretary's expenses	2,000	4,000	4,000
Contribution to ICSU	7,000	7,000	9,500
IMU Bulletin	2,000	3,000	5,000
Audit fee	2,000	4,500	7,000
General Assembly - 2002	4,000	4,000	4,000
World Directory of Mathematicians	20,000	20,000	20,000
Contingencies	2,000	2,000	2,000
Subtotal	**110,000**	**127,900**	**152,500**

Schedule B:			
Symposia, conferences, IMU lecturers	65,000	86,000	95,000
ICMI scientific activities	22,000	22,000	27,000
CDE scientific activities	40,000	33,000	40,000
Program Committee for ICM 06	6,000	8,000	8,000
Travel grants	25,000	40,000	42,000
Subvention to ICM 02	26,000	28,000	28,000
CEIC scientific activities			25,000
Subtotal	**184,000**	**217,000**	**265,000**
Total	**294,000**	**344,900**	**417,500**

INCOME

	1995-1998	1999-2002	2003-2006
Membership dues (212 x 1320)	210,000	254,400	279,840
ICSU subvention	26,000	10,500	10,500
Sales of W.D.M.	10,000	12,000	14,160
Special Development Fund	25,000	45,000	72,000
Interest on bank accounts	23,000	23,000	41,000
Total	**294,000**	**344,900**	**417,500**

CDE ACCTS. 2003

Transaction		Date	Type	Schedule A	Schedule B	Schedule A	Schedule B	Account Balance
			RT=Ind. Res. Trav. CS=Conf. Support PS=Proj. Support	**(Admin.)**	**($ to Ind.)**			
Beginning Balances								
Balance		1/1/2003				$10,974.87	$22,993.06	$33,967.93
AMS Nov. fee		1/14/2003		$50.19		$10,924.68	$22,993.06	$33,917.74
Sahadevan		1/30/2003	RT India->Canada		$1,000.00	$10,924.68	$21,993.06	$32,917.74
Khan		2/7/2003	RT India->Italy		$700.00	$10,924.68	$21,293.06	$32,217.74
Clemens (IMU)		3/5/2003		$213.50		$10,711.18	$21,293.06	$32,004.24
Kara		3/14/2003	RT South Africa->China		$1,000.00	$10,711.18	$20,293.06	$31,004.24
Bahouri (CDE)		3/20/2003		$572.30		$10,138.88	$20,293.06	$30,431.94
Ginovyan (FSU)		3/20/2003	CS Armenia		$1,500.00	$10,138.88	$18,793.06	$28,931.94
Desquith reimburse		3/28/2003		$25.00	($2,000.00)	$10,113.88	$20,793.06	$30,906.94
US State Dept (MUSA/MSISA)		3/28/2003			($3,500.00)	$10,113.88	$24,293.06	$34,406.94
Cordaro (CDE)		4/3/2003		$2,663.50		$7,450.38	$24,293.06	$31,743.44
Biswas		4/8/2003	RT India->ICTP		$1,000.00	$7,450.38	$23,293.06	$30,743.44
Gomez Mont		4/11/2003	RT Mexico->India		$1,000.00	$7,450.38	$22,293.06	$29,743.44
Dani (CDE)	Dani 478/Bahouri 22	5/1/2003		$500.00		$6,950.38	$22,293.06	$29,243.44
Hassouni		5/7/2003	RT Morocco->ICTP		$800.00	$6,950.38	$21,493.06	$28,443.44
Boente (CDE)		5/12/2003		$1,247.00		$5,703.38	$21,493.06	$27,196.44
AMS Dec. fee		5/15/2003		$75.73		$5,627.65	$21,493.06	$27,120.71
Gonzalez-Spinberg (CDE)	Gonzalez-Sp. 357/Bahouri 48	5/18/2003		$405.00		$5,222.65	$21,493.06	$26,715.71
Rebolledo (CDE)	E 509.80	5/25/2003		$617.47		$4,605.18	$21,493.06	$26,098.24
Jambu (IMU)	E 272.31	5/25/2003		$330.61		$4,274.57	$21,493.06	$25,767.63
Gossez (IMU)	E 294.66	5/25/2003		$356.89		$3,917.68	$21,493.06	$25,410.74
Osilike		5/25/2003			$1,000.00	$3,917.68	$20,493.06	$24,410.74
AMS fee		5/25/2003		$138.54		$3,779.14	$20,493.06	$24,272.20
Sofi		5/25/2003	RT India->ICTP		$1,000.00	$3,779.14	$19,493.06	$23,272.20
Elizondo		5/29/2003	CS Mexico		$1,500.00	$3,779.14	$17,993.06	$21,772.20
Asadollahi, Salarian		6/4/2003	RT Iran->ICTP		$1,400.00	$3,779.14	$16,593.06	$20,372.20
Laurenti (CDE)	E 372	6/6/2003		$457.00		$3,322.14	$16,593.06	$19,915.20
Math. Soc. Japan		6/6/2003			($1,274.97)	$3,322.14	$17,868.03	$21,190.17
Diep		6/9/2003	RT Vietnam->ICTP		$1,960.51	$3,322.14	$15,907.52	$19,229.66

Misra	6/23/2003	CS India		$2,000.00	$3,322.14	$13,907.52	$17,229.66
Pathan	7/1/2003	RT India->Canada		$500.00	$3,322.14	$13,407.52	$16,729.66
Békollé	7/1/2003	CS Cameroon		$2,000.00	$3,322.14	$11,407.52	$14,729.66
Solarin	7/6/2003	CS Nigeria		$2,000.00	$3,322.14	$9,407.52	$12,729.66
DHL	7/7/2003		$57.42		$3,264.72	$9,407.52	$12,672.24
AMS fee	8/1/2003		$197.60		$3,067.12	$9,407.52	$12,474.64
Hegde	8/5/2003	RT India->Australia	$52.92	$500.00	$3,014.20	$8,907.52	$11,921.72
AMS July fee	8/15/2003		$52.40		$2,961.80	$8,907.52	$11,869.32
Mawanda (MUSA)	8/15/2003	CS Cameroon		$2,000.00	$2,961.80	$6,907.52	$9,869.32
Allende	8/27/2003	CS Cuba		$2,000.00	$2,961.80	$4,907.52	$7,869.32
Ramirez	9/2/2003	CS Chile		$3,000.00	$2,961.80	$1,907.52	$4,869.32
Sahu	9/8/2003	RT India->ICTP		$820.00	$2,961.80	$1,087.52	$4,049.32
IMU Schedule B	9/9/2003			($34,559.00)	$2,961.80	$35,646.52	$38,608.32
Gurjar	9/24/2003	CS India		$2,000.00	$2,961.80	$33,646.52	$36,608.32
AMS Aug. fee	10/1/2003		$52.60		$2,909.20	$33,646.52	$36,555.72
Kara reimburse	10/10/2003			($1,000.00)	$2,909.20	$34,646.52	$37,555.72
AMS Sept. fee	10/15/2003		$65.02		$2,844.18	$34,646.52	$37,490.70
Gatsinzi	11/5/2003	RT Botswana->ICTP		$1,200.00	$2,844.18	$33,446.52	$36,290.70
Ghorpade	11/5/2003	RT India->USA		$1,250.00	$2,844.18	$32,196.52	$35,040.70
El Soufi	11/12/2003	CS Lebanon, Syria		$3,000.00	$2,844.18	$29,196.52	$32,040.70
Shum	11/15/2003	CS China		$3,000.00	$2,844.18	$26,196.52	$29,040.70
Cerminara	11/25/2003	CS Uruguay		$3,000.00	$2,844.18	$23,196.52	$26,040.70
AMS Oct. fee	11/30/2003		$130.77		$2,713.41	$23,196.52	$25,909.93
AMS Nov. fee	12/1/2003		$136.00		$2,577.41	$23,196.52	$25,773.93
Raja	12/10/2003	RT India->France		$1,200.00	$2,577.41	$21,996.52	$24,573.93
Balance	1/1/2004				$2,577.41	$21,996.52	$24,573.93

CDE ACCTS. 2002

Transaction	Date	Type	Schedule A (Admin.)	Schedule B ($ to Ind.)	Balances Schedule A	Schedule B	Account Balance
		RT=Ind. Res. Trav.					
		CS=Conf. Support					
		PS=Proj. Support					
Balance	1/1/2002				$10,945.68	$14,420.91	$25,366.59
Express mail	1/9/2002		$77.06		$10,868.62	$14,420.91	$25,289.53
AMS Dec. fee	1/23/2002		65.18		$10,803.44	$14,420.91	$25,224.35
Allende	2/13/2002	CS Cuba		$2,500.00	$10,803.44	$11,920.91	$22,724.35
Nair	2/19/2002	RT India->France		$650.00	$10,803.44	$11,270.91	$22,074.35
Nguyen	2/20/2002	CS Vietnam		$2,000.00	$10,803.44	$9,270.91	$20,074.35
IMU FSU support	2/20/2002			($5,000.00)	$10,803.44	$14,270.91	$25,074.35
AMS Jan. fee	3/19/2002		$16.57		$10,786.87	$14,270.91	$25,057.78
Hossain	3/22/2002	CS Bangladesh		$2,500.00	$10,786.87	$11,770.91	$22,557.78
Express mail	3/25/2002		$30.68		$10,756.19	$11,770.91	$22,527.10
AMS Feb. fee	3/26/2002		$70.19		$10,686.00	$11,770.91	$22,456.91
Mawanda (MUSA) reimburse	3/27/2002			($2,000.00)	$10,686.00	$13,770.91	$24,456.91
Rao	4/2/2002	CS India		$2,000.00	$10,686.00	$11,770.91	$22,456.91
Békollé	4/2/2002	CS Cameroon		$2,000.00	$10,686.00	$9,770.91	$20,456.91
Barsegian (FSU)	4/3/2002	CS Armenia		$3,000.00	$10,686.00	$6,770.91	$17,456.91
US State Dept (MUSA/MSISA)	4/9/2002			($3,500.00)	$10,686.00	$10,270.91	$20,956.91
AMS Mar. fee	5/7/2002		$63.39		$10,622.61	$10,270.91	$20,893.52
Lungu (SAMSA-MUSA)	5/8/2002	PS Botswana		$3,227.85	$10,622.61	$7,043.06	$17,665.67
New check fee	5/7/2002		$35.50		$10,587.11	$7,043.06	$17,630.17
Ghate	5/20/2002	RT India->France, Germany		$650.00	$10,587.11	$6,393.06	$16,980.17
AMS Apr. fee	6/6/2002		$53.20		$10,533.91	$6,393.06	$16,926.97
Express mail	6/6/2002		$45.36		$10,488.55	$6,393.06	$16,881.61
AMS May fee	6/19/2002		$52.38		$10,436.17	$6,393.06	$16,829.23
AMS June fee	8/7/2002		$16.57		$10,419.60	$6,393.06	$16,812.66
Gossez ICM	8/19/2002		$240.00		$10,179.60	$6,393.06	$16,572.66
Desquith	8/19/2002	CS Ivory Coast		$2,000.00	$10,179.60	$4,393.06	$14,572.66
AMS July fee	8/23/2002		$16.00		$10,163.60	$4,393.06	$14,556.66
IMU Sched. A&B	9/12/2002		($1,174.50)	($25,000.00)	$11,338.10	$29,393.06	$40,731.16
Mawanda (MUSA)	9/25/2002	PS Lesotho		$2,000.00	$11,338.10	$27,393.06	$38,731.16
AMS Aug. fee	9/25/2002		$16.57		$11,321.53	$27,393.06	$38,714.59
Mukhamedov	9/26/2002	RT Uszbekistan->ICTP		$700.00	$11,321.53	$26,693.06	$38,014.59
Lungu (SAMSA-MUSA)	10/17/2002	PS SAMSA		$2,700.00	$11,321.53	$23,993.06	$35,314.59
Express mail	10/21/2002		$27.08		$11,294.45	$23,993.06	$35,287.51
AMS Sept. fee	10/22/2002		$17.20		$11,277.25	$23,993.06	$35,270.31
OSU	11/4/2002		$250.00		$11,027.25	$23,993.06	$35,020.31
Tamizhmani	11/19/2002	CS India		$1,000.00	$11,027.25	$22,993.06	$34,020.31
AMS Oct. fee	11/25/2002		$52.38		$10,974.87	$22,993.06	$33,967.93
Tonga	12/2/2002	CS Cameroon		$2,000.00	$10,974.87	$20,993.06	$31,967.93
Mawanda (MUSA) reimburse	12/27/2002			($2,000.00)	$10,974.87	$22,993.06	$33,967.93
Balance	1/1/2003				$10,974.87	$22,993.06	$33,967.93

ICMI

International Commission on Mathematical Instruction

ACCOUNTS

ICMI Accounts Year ending December 2003

1 January – 31 December

BALANCE AS OF JANUARY 1:

ICMI	• **Canadian Dollars**	**85 442,45**
	• **US Dollars**	**60 584,70**

Solidarity Fund (US Dollars)   **35 627,75**

<u>**Canadian Dollars Account:**</u>

Income:

balance 2002	85 442,45
transfer from USD account (corresponding to 16 976,10 USD)	22 068,93
interest	1 599,76
total	109 111,14

Expenditure:

ICMI Study 14: IPC core committee meeting, Kassel, travel & local expenses	5 525,47
ICMI Study 16: IPC meeting, Modena, travel & local expenses of IPC	16 607,88
ICMI EC meeting, Québec	18 838,29
site visits for ICME-11[1]	9 063,78
review of the ICMI Study Programme[2]	4 718,70
EMF 2003, Tozeur, travel and local expenses of Secretary-General	2 139,55
symposium on *L'Enseignement Math.* (2000), purchase of 35 copies of the Proceedings	1 881,50
translation of articles for the *ICMI Bulletin*	300,00
design work on a logo for ICMI	1 100,00
transfer to USD account (corresponding to 100,00 USD)	140,15
bank charges (checks and foreign transfers)	134,60
ICMI balance 2003	48 661,22
total	109 111,14

US Dollars Account:

Income:

ICMI balance 2002	60 584,70
IMU (Schedule A: Administration — 15 000,00 CHF) [3]	11 012,50
IMU (Schedule B: Scientific Activities — 27 000,00 CHF) [3]	19 822,50
donation to ICMI from the Korean ICMI Sub-Commission [1]	1 000,00
transfer from CAD account (corresponding to 140,15 CAD)	100,00
ICMI interest	1 447,25
Solidarity Fund balance 2002 [4]	*35 627,75*
Solidarity Fund interest	851,07
total	130 445,77

Expenditure:

ICMI Study 14: IPC core committee meeting, Kassel, member's travel	952,70
ICMI EC meeting, Québec, members' travel	1 719,71
site visits for ICME-11 [1]	3 023,59
grant to IOWME [5]	400,00
grant to EMF 2003 (ICMI Regional Conference)	3 000,00
transfer to CAD account (corresponding to 22 068,93 CAD)	16 976,10
ICMI balance 2003	**67 894,85**
Solidarity Fund balance 2003	*36 478,82*
total	130 445,77

Average exchange rate, 2003   1 USD   =   1,40 CAD

Notes:

1. The ICMI Executive Committee has organised site visits to the two countries who presented a formal bid to host ICME-11, Mexico and Korea. The ICMI EC was represented by three of its members on each occasion. These visits were supported by the host countries as regards the local expenses of the visitors. Moreover the Korean Sub-Commission for ICMI made a generous donation to ICMI of 1000 USD which reduced the impact of the travel costs of the visiting EC members.

2. The ICMI EC has launched in 2003 a review of the ICMI Study Programme. The review is conducted by Professor Stephen Lerman, of the London South Bank University. ICMI has contributed the equivalent of 3500 USD to support this review.

3. At the General Assembly of the International Mathematical Union held in Shanghai in August 2002, it was decided to increase the annual support given by IMU to ICMI for the period 2003-2006. The previous amounts were respectively 11 000 CHF for Schedule A and 22 000 for Schedule B.

4. As a consequence of the ICMI General Assembly and Executive Committee meetings held in Québec, August 1992, it was decided to establish an ICMI Solidarity Fund based on private contributions. The **Solidarity Fund** was mounted to assist mathematics education and mathematics educators in less affluent countries. Its money can only be spent to serve such purposes and is therefore **not** part of ICMI's general resources. However, the appearance of the Solidarity Fund on the ICMI accounts is due to the wish to keep ICMI's number of different bank accounts low. The accounts exhibit the ICMI balance and the Solidarity Fund balance separately.

5. ICMI has contributed this amount to facilitate the conception and implementation of a new website for IOWME, one of ICMI Affiliated Study Groups.

6. In addition to the amounts displayed directly in the accounts, considerable extra sums should appear but do not and cannot. In particular Université Laval, the Secretary-General's home institution, has contributed in 2003 a substantial support to ICMI's work (e.g. telephone and fax, e-mail facilities, postage, the printing and distribution costs of the Study 14 Discussion Document, secretarial help of various sorts, plus a partially reduced teaching load for the Secretary-General). It is estimated that the total contribution of Université Laval is equivalent to more than 8 000 USD. The ICMI Executive Committee expresses its gratitude for this generous support.

The Executive Committee's thanks also go to the institutions of its other members, as well as to those of some of the individuals involved in the preparation of ICMI activities. These institutions, too, have given substantial support to ICMI's work in a variety of ways, for instance by covering travel and other expenses related to participation in meetings (EC, IPC). This was the case in particular for the meeting of the International Programme Committee of ICMI Study 16 held at the University of Modena. However this type of "invisible" support has become in recent years more and more problematic, due to the financial situation of several higher education institutions around the world, thus putting a severe constraint on ICMI finances.

Bernard R. Hodgson, Secretary-General
Université Laval, Québec, Canada
14 February 2004

ICMI Accounts Year ending December 2002

1 January – 31 December

BALANCE AS OF JANUARY 1:

| ICMI | • **Canadian Dollars** | **96 309,39** |
| | • **US Dollars** | **71 880,27** |

Solidarity Fund (US Dollars)   **34 955,41**

Canadian Dollars Account:

Income:

balance 2001	96 309,39
transfer from USD account (corresponding to 21,796,72 USD)	33 955,25
interest	2 550,43
total	132 815,07

Expenditure:

ICMI Study 11: purchase of 9 extra copies of the Study Volume	971,11
ICMI Study 12: Study Conference (Dec. 2001), Melbourne, travel of IPC members	3 762,10
ICMI Study 13: Study Conference, Hong Kong, travel & local expenses of Secretary-General and speakers	4 225,91
ICMI Study 15: IPC meeting, Prague, travel & local expenses of IPC	14 798,77
ICMI EC meeting, Paris	14 728,93
ICM02: participation of the President and Secretary-General to IMU General Assembly[1]	2 547,36
ICSU/CCBS International Conference: IPC meeting, Rio de Janeiro, travel and local expenses of Secretary-General[2]	3 127,51
EMF 2003: IPC meeting, Paris, travel and local expenses of IPC	2 770, 73

translation of articles for the *ICMI Bulletin*	400,00
bank charges (checks and foreign transfers)	40,20

ICMI balance 2002   **85 442,45**

Total   132 815,07

US Dollars Account:

Income:

ICMI balance 2001	71 880,27
IMU (Schedule A: Administration — 11 000,00 CHF)	7 333,33
IMU (Schedule B: Scientific Activities — 22 000,00 CHF)	14 666,67
ICMI interest	1 172,79
Solidarity Fund balance 2001[3]	*34 955,41*
contribution to the **Solidarity Fund**, by Joel Schneider, New York	100,00
Solidarity Fund interest	572,34

Total   130 680,81

Expenditure:

ICMI Study 13: Study Conference, Hong Kong, travel & local expenses of speakers	690,00
ICMI Study 15: IPC meeting, Prague, travel & local expenses of IPC	3 459,88
ICMI EC meeting, Paris, member's travel	1 541,81
ICM02: participation of the President and Secretary-General to IMU General Assembly[1]	1 932,50
grant to XI CIAEM (ICMI Regional Conference)	2 500,00
grant to ELHEM (ICMI Regional Conference)	2 500,00
transfer to CAD account (corresponding to 33 955,25 CAD)	21 796,72
bank charges	47,45

ICMI balance 2002   **60 584,70**

Solidarity Fund balance 2002   *35 627,75*

total   130 680,81

       Average exchange rate, 2002   *1 USD*   *=*   *1,57 CAD*

Notes:

1. According to a recent agreement with IMU, the President and Secretary-General of ICMI are *ex officio* invited observers to the General Assembly of IMU.

2. ICMI has collaborated with the Committee on Capacity Building in Science (CCBS) of ICSU to the organisation of an International Conference on Science and Mathematics Education, which took place in Rio de Janeiro in September 2002 on the occasion of the General Assembly of ICSU.

3. As a consequence of the ICMI General Assembly and Executive Committee meetings held in Québec, August 1992, it was decided to establish an ICMI Solidarity Fund based on private contributions. The **Solidarity Fund** was mounted to assist mathematics education and mathematics educators in less affluent countries. Its money can only be spent (by a committee chaired by Professor Jean-Pierre Kahane) to serve such purposes and is therefore **not** part of ICMI's general resources. However, the appearance of the Solidarity Fund on the ICMI accounts is due to the wish to keep ICMI's number of different bank accounts low. The accounts exhibit the ICMI balance and the Solidarity Fund balance separately.

4. In addition to the amounts displayed directly in the accounts, considerable extra sums should appear but do not and cannot. In particular Université Laval, the Secretary-General's home institution, has contributed in 2002 a substantial support to ICMI's work (e.g. telephone and fax, e-mail facilities, postage, all the printing and distribution costs of the Bulletin, secretarial help of various sorts, plus a partially reduced teaching load for the Secretary-General). It is estimated that the total contribution of Université Laval is equivalent to more than 8 000 USD. The ICMI Executive Committee expresses its gratitude for this generous support.

The Executive Committee's thanks also go to the institutions of its other members, as well as to those of some of the individuals involved in the preparation of ICMI activities. These institutions, too, have given substantial support to ICMI's work in a variety of ways. For instance, in many cases these institutions have paid travel and other expenses related to participation in meetings (EC, IPC), and so forth. This was the case in particular for the Conference of ICMI Study 13 held at the University of Hong Kong. However it appears that this type of "invisible" support is becoming more and more problematic, due to the financial situation of several higher education institutions around the world, thus putting a severe constraint on ICMI finances in the long run.

Bernard R. Hodgson, Secretary-General
Université Laval, Québec, Canada
5 March 2003

International Mathematical Union

Independent Auditors' Report

Financial Statements (Modified Cash Basis) and
Additional Information

Years Ended December 31, 2003 and December 31, 2002

INTERNATIONAL MATHEMATICAL UNION

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Deloitte

INDEPENDENT AUDITORS' REPORT

We have audited the statement of assets and liabilities - modified cash basis of International Mathematical Union (the "IMU") as of December 31, 2003, and the related statement of income and expenditures - modified cash basis for the year then ended. These financial statements are the responsibility of the IMU's management. Our responsibility is to express an opinion on these financial statements based on our audit. The prior year summarized comparative information has been derived from the IMU's December 31,2002 financial statements, and in our report dated March 5, 2003, we expressed an unqualified opinion on those financial statements.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

As described more fully in Note I to the financial statements, these financial statements were prepared in conformity with the accounting practices prescribed or permitted by the International Council of Scientific Unions ("ICSU"), which is a comprehensive basis of accounting other than accounting principles generally accepted in the United States of America.

In our opinion, such financial statements present fairly, in all material respects, the assets and liabilities (modified cash basis) of IMU at December 31,2003, and the income and expenditures (modified cash basis) for the year then ended, on the basis of accounting described in Note 1.

This report is intended solely for the information and use of the board of directors and the members of IMU and for ICSU to whose jurisdiction the IMU is subject and is not intended to be and should not be used by anyone other than these specified parties.

Our audit was conducted for the purposes of forming an opinion on the basic financial statements taken as a whole. The additional information listed in the table of contents is presented for the purposes for additional analysis and is not a required part of the basic financial statements. This additional information is the responsibility of IMU's management. Such information has been subjected to the auditing procedures applied in our audit of the basic financial statements and, in our opinion, is fairly stated in all material respects when considered in relation to the basic financial statements taken as a whole.

March 16, 2004

Member of
Deloitte Touche Tohmatsu

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INTERNATIONAL MATHEMATICAL UNION
Statement of Income and Expenditure For The Year Ended December 31, 2003

I – INCOME	US DOLLARS
Grant from ICSU Fund and US National Academy of Sciences	
Allocation from UNESCO to ICSU Grants Program	$10,000
UNESCO Contracts	
Contributions from National Members	$210,838
Contributions from Other Members	
Special Contributions	$26,160
Contracts	
Sales of Publications, Royalties	$9,321
Sales of Scientific Materials	
Bank Interest	$5,427
Gain on Exchange	
Other Income	
TOTAL INCOME	**$261,746**

II - EXPENDITURES	
A) SCIENTIFIC ACTIVITIES	
General Assembly or equivalent	$2,963
Scientific Meetings: Symposia/ Colloquia/ Working Groups/ Training Courses, etc.	$101,334
Representation at Scientific Meetings	
Data Gathering/ Processing	
Research Projects	
Grants to Individuals/Organizations	$79,625
Other	
Less covered by UNESCO Contracts	
Routine Meetings	
Bureau/ Executive Committee	$30,720
Other	
Publications	$0
B) OTHER ACTIVITIES	
Contribution to ICSU	$6,002
Contribution to other ICSU bodies	$5,147
Activities covered by UNESCO Contracts	
C) ADMINISTRATIVE EXPENSES	
Salaries and Related Expenses	$27,903
General Office Expenses	$3,543

Office Equipment	
Audit Fees	$5,700
Bank Charges	$1,943
Loss on Exchange	
TOTAL EXPENDITURES	$264,880
EXCESS OF EXPENDITURES OVER INCOME	($3,134)
ACCUMULATED BALANCE AT JANUARY 1, 2003	$425,645
ACCUMULATED BALANCE AT DECEMBER 31, 2003	$422,511

See notes to financial statements.

INTERNATIONAL MATHEMATICAL UNION
ASSETS and LIABILITIES in US$ Dollars
DECEMBER 31, 2003 (WITH COMPARATIVE TOTALS FOR 2002)

ASSETS

BANK ACCOUNTS and CASH (Note 2)	**2003**		**2002**	
Cash				
Current Accounts				
Deposit Accounts				
Prepayments	$12,409		$5,541	
Receivables	$471,468	$483,877	$488,942	$494,483
TOTAL ASSETS		$8,549		$3,469
		$492,426		$497,952

LIABILITIES

Creditors and Accruals				
ACCUMULATED FUNDS (Note 3)		$5,500		$33,853
General Fund				
Beginning of Year Balance				
Excess Expenditure over Income				
	$425,645		$482,098	
	($3,134)	$422,511	($56,453)	$425,645
Special Development Fund				
Beginning of Year Balance				
Provision to ICM 06				
Expenses	$0		$71,554	
	$31,111			
	$0	$31,111	($71,554)	$0
General Assembly Fund				
Beginning of Year Balance				
Provision to General Assembly 0				
Expenses	$3,563		$12,703	
	$2,963		$0	
	$0	$6,526	($9,140)	$3,563
World Directory of Mathematicians Fund				
Beginning of Year Balance				
Provision to W.D.M.				
Expenses	$34,891		$51,086	
	$0		$12,658	
	($28,853)	$6,038	($28,853)	$34,891
Fund to ICM 06				
Beginning of Year Balance				
Provision to ICM 06				

Expenses	$0		$50,087	
	$20,740		$0	
	$0	$20,740	($50,087)	$0
See notes to financial statements.		$492,426		$497,952

INTERNATIONAL MATHEMATICAL UNION

NOTES TO FINANCIAL STATEMENTS
YEAR ENDED DECEMBER 31, 2003

1. BASIS OF ACCOUNTING

The accompanying financial statements were prepared on the basis of cash receipts and disbursements modified for scheduled and contractual transactions, i.e., sales of publications receivable, audit and publication fees payable, in a manner consistent with prior year financial statements. Further, these financial statements exclude a statement of cash flow.

2. BANK ACCOUNTS and CASH

		2003	**2002**
The amount held with banks is as follows:		US$	US$
PNC Bank	USA		
- Current Account		$12,409	$5,541
- Money Market		$471,468	$488,942
		$483,877	$494,483

3. ACCUMULATED FUNDS

These funds represent the amounts set aside to cover the following:

Provided in Year Ended	2003 General Fund	2003 General Assembly	2003 World Directory	2003 Special Development	2003 Fund to ICM 06
General Fund					
Balance December 31, 2002	$425,645				
Transfer excess expenditure over income	($3,134)				
Special Development					
Balance December 31, 2002				$0	
Provision to ICM 06				$31,111	
Expenses					
General Assembly Fund					
Balance December 31, 2002		$3,563			
Provision to General Assembly 06		$2,963			
Expenses					
World Directory of Mathematicians Fund					
Balance December 31, 2002			$34,891		
Provision to W.D.M.					
Expenses			($28,853)		
Fund to ICM 06					
Balance December 31, 2002					$0
Provision to ICM 06					$20,740
Expenses					
	$422,511	$6,526	$6,038	$31,111	$20,740

INTERNATIONAL MATHEMATICAL UNION
STATEMENT OF INCOME and EXPENDITURE
FINANCIAL YEARS 2003 and 2002 COMPARED, IN US$ DOLLARS

	2003		2002	
INCOME				
Allocation from UNESCO grant to ICS	$10,000		$15,000	
Contributions from National Members	$210,838		$124,192	
Special Contributions	$26,160		$43,789	
Sale of Publications	$9,321		$6,622	
Bank Interest	$5,427		$9,319	
Gain on Exchange	$0		$0	
Other Income	$0	$261,746	$0	$198,922
EXPENDITURES				
A. MEETINGS				
Executive Committee	$14,145		$18,483	
Other	$0		$0	
Program Committee	$16,575		$4,851	
General Assembly	$2,963	$33,683	$2,398	$25,732
B. PUBLICATIONS		$0		$12,658
C. SCIENTIFIC ACTIVITIES				
ICMI	$29,822		$24,667	
CDE	$29,412		$27,148	
CEIC	$9,379		$0	
Travel Grants	$31,111		$43,038	
Conferences	$70,223		$51,797	
Other	$0	$169,947	$0	$146,650
D. ADMINISTRATIVE EXPENSES				
Contribution to ISCU	$6,002		$6,002	
Grant to CTS	$0		$0	
Grant to ICMI	$11,012		$7,333	
Grant to CDE	$5,147		$4,027	
Audit Fees	$5,700		$5,200	
Salaries and related charges	$27,903		$38,824	
General office expense	$3,543		$7,163	
Office Equipment	$0		$0	
Bank charges	$1,943		$1,786	
Loss on exchange	$0	$61,250	$0	$70,335
		$264,880		$255,375
EXCESS OF EXPENDITURE OVER INCOME		($3,134)		($56,453)
Allocated to General Fund		$3,134		$56,453

INTERNATIONAL MATHEMATICAL UNION

Statement of Contributions received from members in the year ended December 31, 2003, in US$ Dollars

MEMBER	PRE 2003	2003
Argentina	$1,702.00	$1,872.00
Australia		$3,895.76
Austria		$1,874.73
Bosnia & Herzegovina		$996.57
Brazil		$3,852.00
Cameroon		$959.93
Canada	$8,437.06	$9,340.60
Chinese Math Society, PRC		$3,732.41
Math Society, Taipei		$1,856.15
Croatia	$822.49	
Czech Republic		$1,840.23
Denmark		$1,977.84
Estonia		$1,959.22
Finland		$1,943.18
France	$7,669.57	$9,583.63
Georgia		$1,000.00
Germany		$9,377.66
Greece		$927.81
Hong Kong		$908.96
Hungary		$3,781.96
India		$3,605.76
Ireland		$1,864.98
Israel		$9,676.43
Italy		$9,193.48
Ivory Coast	$853.30	
Japan		$9,018.86
Korea, Republic of South		$1,871.09
Latvia		$928.53
Lithuania		$942.45
Mexico		$1,752.00
Netherlands		$6,635.27
New Zealand		$919.35
Norway		$1,902.14
Peru	$863.31	
Poland		$3,783.86
Romania		$965.19
Russia	$18,400.69	$10,120.36
Saudi Arabia		$952.98
Serbia & Montenegro	$616.80	$948.75
Singapore		$1,000.00

Slovenia		$967.69
South Africa		$1,888.01
Spain		$3,655.50
Sweden		$6,546.54
Switzerland		$6,744.53
Turkey	$431.25	$464.27
United Kingdom		$8,859.00
United States		$9,496.40
Uruguay	$889.00	
TOTAL	$40,685.47	$170,152.26
TOTAL CONTRIBUTIONS RECEIVED		**$210,837.73**

INTERNATIONAL MATHEMATICAL UNION
DUES ARREARS AS OF DECEMBER 31, 2003

MEMBER	Dues Swiss Francs	YEARS	US$ Dollars
Armenia	1,320.00	2003	$1,015.38
Bulgaria	2,520.00	2002-3	$1,938.46
Chile	7,440.00	2001-03	$5,723.08
Croatia	1,320.00	2003	$1,015.38
Cuba	10,404.33	1993 part; 94-99, 2002-03	$8,003.33
Egypt	2,640.00	2003	$2,030.77
Iceland	1,320.00	2003	$1,015.38
Iran	2,640.00	2003	$2,030.77
Ivory Coast	2,520.00	2002-03	$1,938.46
Kazakhstan	1,320.00	2003	$1,015.38
Nigeria	15,120.00	1990-1997; 1999-2003	$11,630.77
Peru	1,320.00	2003	$1,015.38
Philippines	12,132.00	1991, 94, 96-03; part 95	$9,332.31
Portugal	1,320.00	2003	$1,015.38
Slovakia	2,640.00	2003	$2,030.77
Tunisia	7,320.00	1998-2003	$5,630.77
Turkey	660.00	2003 part	$507.69
Ukraine	7,440.00	2001-03	$5,723.08
Uruguay	2,520.00	2002-03	$1,938.46
Venezuela	1,320.00	2003	$1,015.38
Vietnam	1,320.00	2003	$1,015.38
TOTAL	**86,556.33**		**$66,581.79**

1 US Dollar = 1.30   Swiss Francs at December 31, 2003

The following countries have paid their previous dues in early 2004:

Ivory Coast (2003), Venezuela (2003), Vietnam (2003)

INTERNATIONAL MATHEMATICAL UNION

STATEMENT OF INCOME AND EXPENDITURE
IN SWISS FRANCS – 2003

EXPENDITURE

SCHEDULE A:	BUDGET	ACTUAL
Secretarial help, IMU Office	20,000	24,152
Secretarial help, President	5,000	5,208
Accountant	8,000	8,308
ICMI	15,000	14,867
CDE	7,000	6,948
Office expenses (including postage)	16,000	3,943
Travel expenses of E.C.	30,000	19,096
President's and Secretary's expense	4,000	2,127
Contribution to ICSU	9,500	8,103
IMU Bulletin	5,000	1,336
Audit Fee	7,000	7,695
General Assembly - 2006	4,000	4,000
World Directory of Mathematicians	20,000	0
Contingencies	2,000	0
Subtotal	**152,500**	**105,783**

SCHEDULE B:	BUDGET	ACTUAL
Symposia, Conferences, IMU Lectures	95,000	66,801
ICMI scientific activities	27,000	40,260
CDE scientific activities	40,000	39,706
Program Committee for ICM 06	8,000	22,377
Travel Grants	42,000	42,000
Subvention to ICM 06	28,000	28,000
CEIC scientific activities	25,000	12,662
Subtotal	**265,000**	**251,806**
TOTAL	**417,500**	**357,589**

INCOME		
Membership dues (212 x 1320)	279,840	284,631
ICSU subvention	10,500	13,500
Sales of W.D.M.	14,160	12,583
Special Development Fund	72,000	35,316
Interest on bank accounts	41,000	7,326
TOTAL	**417,500**	**353,356**

INTERNATIONAL MATHEMATICAL UNION

Independent Auditors' Report

Financial Statements (Modified Cash Basis) and Additional Information

Years Ended December 31, 2002

INTERNATIONAL MATHEMATICAL UNION

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&Touche

INDEPENDENT AUDITORS' REPORT

We have audited the statement of assets and liabilities - modified cash basis of International Mathematical Union (the "IMU") as of December 31, 2002, and the related statement of income and expenditures - modified cash basis for the year then ended. These financial statements are the responsibility of the IMU's management. Our responsibility is to express an opinion on these financial statements based on our audits. The prior year summarized comparative information has been derived from the IMU's December 31, 2001 financial statements, and in our report dated February 27, 2002, we expressed an unqualified opinion on those financial statements.

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

As described more fully in Note 1 to the financial statements, these financial statements were prepared in conformity with the accounting practices prescribed or permitted by the International Council of Scientific Unions ("ICSU"), which is a comprehensive basis of accounting other than accounting principles generally accepted in the United States of America.

In our opinion, such financial statements present fairly, in all material respects, the assets and liabilities (modified cash basis) of IMU at December 31,2002, and the income and expenditures (modified cash basis) for the year then ended, on the basis of accounting described in Note 1.

This report is intended solely for the information and use of the board of directors and the members of IMU and for ICSU to whose jurisdiction the IMU is subject and is not intended to be and should not be used by anyone other than these specified parties.

Our audit was conducted for the purposes of forming an opinion on the basic financial statements taken as a whole. The additional information listed in the table of contents is presented for the purposes for additional analysis and is not a required part of the basic financial statements. This additional information is the responsibility of IMU' s management. Such information has been subjected to the auditing procedures applied in our audit of the basic financial statements and, in our opinion, is fairly stated in all material respects when considered in relation to the basic financial statements taken as a whole.

March 5, 2003

INTERNATIONAL MATHEMATICAL UNION
Statement of Income and Expenditure For The Year Ended December 31, 2002

I – INCOME	US DOLLARS
Grant from ICSU Fund and US National Academy of Sciences	
Allocation from UNESCO to ICSU Grants Program	$15,000
UNESCO Contracts	
Contributions from National Members	$124,192
Contributions from Other Members	
Special Contributions	$43,789
Contracts	
Sales of Publications, Royalties	$6,622
Sales of Scientific Materials	
Bank Interest	$9,319
Gain on Exchange	
Other Income	
TOTAL INCOME	**$198,922**

II - EXPENDITURES	
A) SCIENTIFIC ACTIVITIES	
General Assembly or equivalent	$2,398
Scientific Meetings: Symposia/ Colloquia/ Working Groups/ Training Courses, etc.	$94,835
Representation at Scientific Meetings	
Data Gathering/ Processing	
Research Projects	
Grants to Individuals/Organizations	$59,148
Other	
Less covered by UNESCO Contracts	
Routine Meetings	
Bureau/ Executive Committee	$23,334
Other	
Publications	$12,658
B) OTHER ACTIVITIES	
Contribution to ICSU	$6,002
Contribution to other ICSU bodies	$4,027
Activities covered by UNESCO Contracts	
C) ADMINISTRATIVE EXPENSES	
Salaries and Related Expenses	$38,824
General Office Expenses	$7,163
Office Equipment	

Audit Fees	$5,200
Bank Charges	$1,786
Loss on Exchange	
TOTAL EXPENDITURES	$255,375
EXCESS OF INCOME OVER EXPENDITURES	($56,453)
ACCUMULATED BALANCE AT JANUARY 1, 2002	$482,098
ACCUMULATED BALANCE AT DECEMBER 31, 2002	$425,645

See notes to financial statements.

INTERNATIONAL MATHEMATICAL UNION
ASSETS and LIABILITIES in US$ Dollars
DECEMBER 31, 2002 (WITH COMPARATIVE TOTALS FOR 2001)

	2002		**2001**	
ASSETS				
BANK ACCOUNTS and CASH (Note 2)				
Cash				
Current Accounts	$5,541		$3,683	
Deposit Accounts	$488,942	$494,483	$668,076	$671,759
Prepayments				
Receivables		$3,469		$769
TOTAL ASSETS		$497,952		$672,528
LIABILITIES				
Creditors and Accruals		$33,853		$5,000
ACCUMULATED FUNDS (Note 3)				
General Fund				
Beginning of Year Balance	$482,098		$477,858	
Excess Expenditure over Income	($56,453)	$425,645	$4,240	$482,098
Special Development Fund				
Beginning of Year Balance	$71,554		$47,885	
Provision to ICM 02			$23,669	
Expenses	($71,554)	$0	$0	$71,554
General Assembly Fund				
Beginning of Year Balance	$12,703		$10,336	
Provision to General Assembly 0	$0		$2,367	
Expenses	($9,140)	$3,563	$0	$12,703
World Directory of Mathematicians Fund				
Beginning of Year Balance	$51,086		$39,252	
Provision to W.D.M.	$12,658		$11,834	
Expenses	($28,853)	$34,891	$0	$51,086
Fund to ICM 02				
Beginning of Year Balance	$50,087		$33,519	
Provision to ICM 02	$0		$16,568	
Expenses	($50,087)	$0	$0	$50,087
		$497,952		$672,528

See notes to financial statements.

INTERNATIONAL MATHEMATICAL UNION

NOTES TO FINANCIAL STATEMENTS
YEAR ENDED DECEMBER 31, 2002

1. BASIS OF ACCOUNTING
The accompanying financial statements were prepared on the basis of cash receipts and disbursements modified for scheduled and contractual transactions, i.e., sales of publications receivable, audit and publication fees payable, in a manner consistent with prior year financial statements. Further, these financial statements exclude a statement of cash flow.

2. BANK ACCOUNTS and CASH

		2002	**2001**
The amount held with banks is as follows:		US$	US$
PNC Bank	USA		
- Current Account		$5,541	$3,683
- Money Market		$488,942	$668,076
		$494,483	$671,759

INTERNATIONAL MATHEMATICAL UNION

STATEMENT OF INCOME and EXPENDITURE
FINANCIAL YEARS 2002 and 2001 COMPARED, IN US$ DOLLARS

	2002		2001	
INCOME				
Allocation from UNESCO grant to ICS	$15,000		$0	
Contributions from National Members	$124,192		$131,947	
Special Contributions	$43,789		$46,049	
Sale of Publication	$6,622		$8,427	
Bank Interest	$9,319		$20,785	
Gain on Exchange	$0		$0	
Other Income	$0	$198,922	$0	$207,208
EXPENDITURES				
A. MEETINGS				
Executive Committee	$18,483		$17,683	
Other	$0		$0	
Program Committee	$4,851		$8,021	
General Assembly	$2,398	$25,732	$2,367	$28,071
B. PUBLICATIONS		$12,658		$11,834
C. SCIENTIFIC ACTIVITIES				
ICMI	$24,667		$12,360	
CDE	$27,148		$28,122	
Travel Grants	$43,038		$23,669	
Conferences	$51,797		$53,799	
Other	$0	$146,650	$0	$117,950
D. ADMINISTRATIVE EXPENSES				
Contribution to ISCU	$6,002		$5,942	
Grant to CTS	$0		$0	
Grant to ICMI	$7,333		$6,180	
Grant to CDE	$4,027		$0	
Audit Fees	$5,200		$5,200	
Salaries and related charges	$38,824		$19,838	
General office expense	$7,163		$6,635	
Office Equipment	$0		$0	
Bank charges	$1,786		$1,319	

Loss on exchange	$0	$70,335	$0	$45,114
		$255,375		$202,968
EXCESS OF EXPENDITURE OVER INCOME		($56,453)		$4,240
Allocated to General Fund		$56,453		($4,240)

3. ACCUMULATED FUNDS

These funds represent the amounts set aside to cover the following:

Provided in Year Ended	2002 General Fund	2002 General Assembly	2002 World Directory	2002 Special Development	2002 Fund to ICM 02
General Fund					
Balance December 31, 2001	$482,098				
Transfer excess expenditure over income	($56,453)				
Special Development					
Balance December 31, 2001				$71,554	
Provision to ICM 02					
Expenses				($71,554)	
General Assembly Fund					
Balance December 31, 2001		$12,703			
Provision to General Assembly 02					
Expenses		($9,140)			
World Directory of Mathematicians Fund					
Balance December 31, 2001			$51,086		
Provision to W.D.M.			$12,658		
Expenses			($28,853)		
Fund to ICM 02					
Balance December 31, 2001					$50,087
Provision to ICM 02					
Expenses					($50,087)
	$425,645	$3,563	$34,891	$0	$0

INTERNATIONAL MATHEMATICAL UNION

Statement of Contributions received from members in the year ended December 31, 2002, in US$ Dollars

MEMBER	PRE 2002	2002
Argentina	$1,600.00	
Armenia		$818.05
Australia		$2,955.77
Belgium		$3,147.95
Bulgaria	$825.88	
Chinese Math Society, PRC		$3,138.20
Math Society, Taipei		$1,400.15
Czech Republic		$1,356.93
Denmark		$1,660.00
Egypt		$770.37
Estonia		$800.80
Finland		$1,578.74
Germany		$6,956.52
Greece		$791.14
Hong Kong		$725.74
Hungary		$3,091.39
Iceland		$729.33
India		$3,070.87
Ireland		$1,389.07
Israel		$7,280.03
Italy		$7,677.05
Japan		$7,792.21
Kazakhstan		$724.99
Korea, Republic of South		$1,554.10
Latvia		$689.34
Lithuania		$782.37
Mexico	$476.57	$1,429.69
Netherlands		$5,423.20
New Zealand		$719.36
Norway		$1,482.03
Poland		$3,110.62
Portugal		$780.09
Romania		$734.26
Saudi Arabia		$700.84
Singapore		$740.74
Slovak Republic		$1,550.09
Slovenia		$741.66
South Africa		$1,367.05
Spain		$2,841.08
Sweden		$5,570.66

Switzerland		$5,428.81
Turkey	$1,085.00	$413.00
United Kingdom	$7,018.00	$7,272.73
United States		$8,423.42
Venezuela		$718.56
Vietnam	$2,142.87	$714.27
TOTAL	$13,148.32	$111,043.27

TOTAL CONTRIBUTIONS RECEIVED	**$124,191.59**

INTERNATIONAL MATHEMATICAL UNION

DUES ARREARS AS OF DECEMBER 31, 2002

MEMBER	Dues Swiss Francs	YEARS	US$ Dollars
Argentina	2,400.00	2002	$1,610.74
Bulgaria	1,200.00	2002	$805.37
Canada	12,000.00	2002	$8,053.69
Chile	4,800.00	2001-02	$3,221.48
Croatia	1,200.00	2002	$805.37
Cuba	9,084.33	1993 part; 94-99, 2002	$6,096.87
France	12,000.00	2002	$8,053.69
Georgia	23,600.00	1993-2002	$15,838.93
Ivory Coast	2,400.00	2001-02	$1,610.74
Korea, Dem Rep of (North)	14,000.00	1991-2002	$9,395.97
Nigeria	13,800.00	1990-1997; 1999-2002	$9,261.74
Peru	1,200.00	2002	$805.37
Philippines	10,812.00	1991, 94, 96-02; part 95	$7,256.38
Russia	24,000.00	2001-02	$16,107.38
Tunisia	6,000.00	1998-2002	$4,026.85
Turkey	600.00	2002 part	$402.68
Ukraine	4,800.00	2001-02	$3,221.48
Uruguay	2,400.00	2001-02	$1,610.74
Yugoslavia	886.00	2002 part	$594.63
TOTAL	**147,182.33**		**$98,780.09**

* Democratic Republic of Korea changed to observer status as of 01/01/03

1 US Dollar = 1.49   Swiss Francs at December 31, 2002

The following countries have paid their previous dues in early 2003:
Canada (2002), France (2002), Peru (2002), Yugoslavia (2002)

INTERNATIONAL MATHEMATICAL UNION
STATEMENT OF INCOME AND EXPENDITURE
IN SWISS FRANCS - 2002

EXPENDITURE

SCHEDULE A:	Budget	Actual
Secretarial help, IMU Office	17,000	56,030
Secretarial help, President	5,000	5,312
ICMI	11,000	11,587
CDE	6,000	6,362
Office expenses (including postage)	14,400	8,553
Travel expenses of E.C.	30,000	29,203
President's and Secretary's expense	4,000	3,974
Contribution to ICSU	7,000	9,483
IMU Bulletin	3,000	1,612
Audit Fee	4,500	8,216
General Assembly - 2002	4,000	3,789
World Directory of Mathematicians	20,000	20,000
Contingencies	2,000	0
Subtotal	**127,900**	**164,121**

Schedule B:	BUDGET	ACTUAL
Symposia, Conferences, IMU Lectures	86,000	81,839
ICMI scientific activities	22,000	38,973
CDE scientific activities	33,000	42,893
Program Committee for ICM 02	8,000	7,664
Travel Grants	40,000	39,999
Subvention to ICM 02	28,000	28,001
Subtotal	**217,000**	**239,369**
TOTAL	**344,900**	**403,490**

INCOME		
Membership dues (212 x 1200)	254,400	196,223
ICSU subvention	10,500	23,700
Sales of W.D.M.	12,000	10,463
Special Development Fund	45,000	69,187
Interest on bank accounts	23,000	14,724
TOTAL	**344,900**	**314,297**

INTERNATIONAL MATHEMATICAL UNION
SPECIAL DEVELOPMENT FUND

Contributions Received for 2003-in US$ Dollars

Date		Description
11-Feb-03	20,361.50	American Mathematical Society
19-Sep-03	5,114.12	Het Wiskundig Genootschap Netherlands
22-Sep-03	684.97	Unione Matematica Italiana
Total	**26,160.59**	

Contributions Received for 2002-in US$ Dollars

Date		Description
4-Mar-02	23,471.51	American Mathematical Society
12-Apr-02	14,642.57	Mathematical Society of Japan
2-Jul-02	5,000.00	London Mathematical Society
26-Jul-02	675.29	Unione Matematica Italiana
Total	**43,789.37**	

World Directory of Mathematicians
12th Edition
For The Year Ended December 31, 2002

Revenue:

12 Units @	$70.00	$ 840.00
2 Units @	$63.00	126.00
16 Units @	$56.00	896.00
23 Units @	$53.00	1,219.00
23 Units @	$49.00	1,127.00
3 Units @	$42.00	126.00
123 Units @	$00.00	

Total Revenue	$4.334.00
Less: AMS Service Fee 79 Units @ $12.00	948.00
Balance Due IMU	$3,386.00

Total Units Shipped	202
Less: Free Copies	123
Copies Subject to Service Fee	79

World Directory of Mathematicians
11th Edition
For The Year Ended December 31, 2002

Revenue:

1 Unit	@ $50.00	$ 50.00
-1 Unit	@ $40.00	(40.00)
1 Unit	@ $38.00	38.00
1 Unit	@ $33.00	33.00
2 Units	@ $25.00	50.00

Total Revenue   **$131.00**

Less: AMS Service Fee
    4 Units @ $12.00   48.00

Balance Due IMU   **$83.00**

Total Units Shipped	4
Less: Free Copies	0
Copies Subject to Service Fee	4

World Directory of Mathematicians
10th Edition
For The Year Ended December 31, 2003

Revenue:

1 Units @ $45.00	$ 45.00
0 Units @ 10.00	0.00
0 Units @ 0	0.00
Total Revenue	$ 45.00
Less: AMS Service Fee 1 Unit @_$12.00	12.00
Balance Due IMU	$33.00

World Directory of Mathematicians
11th Edition
For The Year Ended December 31,2003

Revenue:

2 Units @ $50.00	$100.00
Total Revenue	$100.00
Less: AMS Service Fee 2 Units @ $12.00	24.00
Balance Due IMU 2003	**$76.00**
Plus: Amount due IMU for sales of Vol #11 in 2002 held on account until payment of invoice #BP-1 005	83.00
Grand Total Due IMU	**$159.00**

Total Units Shipped	2
Less: Free Copies	0
Copies Subject to Service Fee	2

World Directory of Mathematicians
12 Edition
Year Ended December 31, 2003

Revenue:		
25 Units @ $70.00		$1,750.00
1 Units @ $68.00		68.00
29 Units @ $56.00		1,624.00
5 Units @ $53.00		265.00
1 Units @ $46.00		46.00
1 Units @ $42.00		42.00
58 Units @ $35.00 (sold @ 50% off list)		2,030.00
1 Units @ $35.00		35.00
2 Units @ $28.00 (sold @ 50% off list)		56.00
5 Units @ $00.00		-
	Total Revenue	$5,916.00

Less: AMS Service Fee
123 Units @ $15.00   1,845.00

Subtotal   4,071.00

Plus: 60cps sold @ 50% off:
per agreement -- AMS fee waived
60 Units @ $15.00   900.00

Balance Due IMU 2003   4,971.00

Plus: Amount due IMU for sales of   3,386.00
Vol #12 in 2002 held on account until
payment of invoice #BP-1 005

Grand Total Due IMU   8,357.00

Total Units Shipped   128

Less: Free Copies   5

Copies Subject to Service Fee   123