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IMU

BULLETIN of the

INTERNATIONAL MATHEMATICAL UNION

No. 54

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List of Abbreviations

CDE	Commission on Development and Exchange
CEIC	Committee on Electronic Information and Communication
ICHM	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

Dear Members of the International Mathematical Union,

The present bulletin is the 54th in the series of bulletins edited by the International Mathematical Union so far. It has been a many years' tradition to publish one bulletin per year or even two or three bulletins in the year of an International Congress of Mathematicians.

Bulletin No. 54 covers the year 2006 and is referring especially to the 15th General Assembly in Santiago de Compostela, Spain, August 19-20, 2006 and the International Congress of Mathematicians 2006 in Madrid, Spain, August 22-30, 2006.

The Report of the General Assembly gives a statement on IMU's life during the term 2003-2006, reports on the outcome of the elections of the Executive Committee and the other committees and commissions for the term 2007-2010, accounts on IMU's finance and gives an overview of the decisions, recommendations, resolutions, etc. adopted by the General Assembly some of which are of importance in the short term and some need implementation in the longer term. One crucial decision was to hold the International Congress of Mathematicians 2010 in Hyderabad, India. The preparations for this event are already running.

The last Congress was an outstanding event and a great success. The Bulletin reviews the opening and the closing ceremonies, which will give you an impression of the enthusiasm and the superbness of that event. The Web page of ICM 2006 is still active where you can look for the details of the Congress.

The reports of the various IMU commissions and committees are further components of the Bulletin. They will help you to get an idea of the activities of those bodies.

As of January 1, 2007 the Secretariat of the IMU is located at Konrad-Zuse-Zentrum, Berlin, Germany, which is the home institution of Martin Grötschel, the new IMU Secretary. As a result of some special circumstances the publication of the present Bulletin became the responsibility of the Berlin Secretariat which led to the delayed issuance of this report.

Martin Grötschel
IMU Secretary

Contents

1. Executive Committee 2003-2006

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-at-Large:	Martin Grötschel	(Germany)
	Zhi-Ming Ma	(China)
	Ragni Piene	(Norway)
	Madabusi S. Raghunathan	(India)
	Victor Vassiliev	(Russia)
Ex-officio Member (Past President)	Jacob Palis	(Brazil)

Meetings of the Executive Committee in 2006:

– 74th EC Meeting, Berlin, Germany, February 27/28, 2006

– 75th EC Meeting, Santiago de Compostela, Spain, August 18, 2006

2. Members of the Union

The following 67 countries were members of IMU through December 31, 2006:

Group I	Armenia	Bosnia & Herzegovina	Bulgaria
	Cameroon	Croatia	Cuba
	Estonia	Georgia	Greece
	Hong Kong	Iceland	Indonesia
	Ivory Coast	Kazakhstan	Latvia
	Lithuania	New Zealand	Nigeria
	Pakistan	Peru	Philippines
	Romania	Saudi Arabia	Serbia & 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
	Portugal	Slovakia	South Africa
	Ukraine		
Group III	Australia	Belgium	Hungary
	Poland		
Group IV	Brazil	India	Netherlands
	Spain	Sweden	Switzerland
Group V	Canada	China	France
	Germany	Israel	Italy
	Japan	Russia	United Kingdom
	United States		

3. Report of the 15th General Assembly

REPORT OF THE 15th GENERAL ASSEMBLY
of the
INTERNATIONAL MATHEMATICAL UNION

Santiago de Compostela, Spain
August 19-20, 2006

Opening
The International Mathematical Union (IMU) President John Ball opened the meeting at 9:05 a.m. on August 19, 2006.

Address by the President – John Ball
J. Ball welcomed the delegates, the 20 observers and the 10 other participants and introduced the (IMU) Executive Committee (EC) members. J. Ball particularly welcomed the newest IMU member Pakistan and its delegate Asghar Qadir. He acknowledged the attendance of the IMU affiliate members: John Kingman (EMS), José de la Peña (UMALCA) and the President of ICIAM Ian Sloan. J. Ball acknowledged the attendance of observers from IMU member countries and observers from IMU non-member countries: Marco Calahorrano and Juan Carlos de los Reyes (Ecuador), Abubakir Dzhuraev (Kyrgyzstan), Wandera Ogana (Kenya). J. Ball explained that observers do not have a vote in the General Assembly. J. Ball thanked the Spanish Local Organizing Committee for its gracious hospitality and especially Manuel de León, the head of the committee.

Address by the President of the Spanish Committee for ICSU and Secretary of Science and Technology
Francisco Marcellán Español addressed the delegates and the EC members, thanking the IMU for choosing Santiago de Compostela as the General Assembly site and wishing the IMU a successful meeting.

GA Agenda
J. Ball told the delegates that the General Assembly (GA) is the supreme body of the IMU, which sets guidelines for the EC for the next four years. He said that this 15th GA would discuss many issues, some complex, and therefore it was important for the meeting to follow the distributed agenda. He also asked each delegation to refer to Bulletin No. 53, prepared in advance of the GA, which contains circulars letters and other documentation relevant to the GA and reports of the IMU activities and financial reports from 2002-2005.

Committees
The first order of business of the GA was the appointment of its committees. J. Ball explained the duties of each committee and then presented the proposed committees that were prepared by the EC. The following committees were approved by the delegates:

Nominations Committee
John Ball, *Chair* (United Kingdom)
Carlos Andradas Heranz (Spain)
Christian Berg (Denmark)
Jennifer Chayes (United States)

Ali Iranmanesh (Iran)
Roberta Markarian Abrahamian (Uruguay)
Gavin Martin (New Zealand)
Inderasan Naidoo (South Africa)
Weislaw Plesniak (Poland)
Günter Ziegler (Germany)
Ludwig Faddeev, *ex officio* (Russia)
Jacob Palis *ex officio* (Brazil)

Credentials Committe

Peter Michor, *Chair* (Austria)
Michael Cowling (Australia)
Betul Tanbay (Turkey)

Finance and Dues Committee

José de la Peña, *Chair* (Mexico)
Albert Fathi (France)
Phillip Griffiths (United States)
Asghar Qadir (Pakistan)
Mina Teicher (Israel)
Lan Wen (China)

Resolutions Committee

Christiane Rousseau, *Chair* (Canada)
S.G. Dani (India)
A. A. Maltsev (Russia)
Carlo Sbordone (Italy)
John Toland (United Kingdom)
Phillipe Tondeur (United States)
Kenji Ueno (Japan)

Tellers Committee

Helge Holden, *Chair* (Norway)
Rafael Labarca (Chile)
David Natroshvili (Georgia)
Peter Yu-Hin Pang (Singapore)
Jean Schmets (Belgium)

Duties of the General Assembly Committees

Nominations Committee

- Receive and review the nominations proposed by the *ad hoc* EC Nominating Committee.
- Receive nominations from the floor.
- Put forth a slate to be voted on by the General Assembly delegation.

Credentials Committee

- Review the list of delegates that have registered at the General Assembly and verify that each delegation is correctly constituted and present the list to the President of IMU.
- Ensure that voting procedures are understood.

Finance and Dues Committee

- Review the proposed 2007-2010 budget.
- Make recommendations to the General Assembly concerning dues unit increase.

- Make recommendation to the General Assembly concerning action to be taken regarding dues in arrears.

Resolutions Committee

- Accept resolutions put forth by delegations prior to the close of the first day's session of the General Assembly (August 19).
- Review and edit resolutions received from the delegations.
- Formulate resolutions.
- Present the resolutions to the General Assembly with recommendations.

Tellers Committee

- Distribute ballots.
- Collect ballots.
- Verify ballots and discard invalid ballots.
- Count the votes.
- Report the outcome to the President of IMU.

Activities of the Union

i. **Commission on Development and Exchanges (CDE) – C. Herbert Clemens**

- The CDE is a nine-member commission which for the period 2002-06 was allocated a modest budget of US $30,000 per year. It is focused on supporting mathematical activities in the developing world, including many countries that are not members of the IMU. It grants supplementary support to conferences in the developing world and research travel support for mathematicians working in the developing world. In the past a third piece of its work was carried out through the IMU EC in the support of major conferences that take place in the developing world.

  The 2002 General Assembly approved the following resolution, "*The General Assembly recommends the guidelines for receiving Colloquia support from IMU be further developed and available on the IMU website. These scarce funds should go primarily to supporting mathematicians from developing countries and high quality international conferences that take place in developing countries."* A committee was formed that included members of the EC and CDE and other mathematicians from the developing world to evaluate the best means of implementing this resolution and more generally to review IMU's support for mathematics in developing countries. From this committee came the Developing Countries Strategy Group (DCSG) that worked within the CDE framework with the following mandate: to gain outside funding to expand CDE's activities, to gather information on existing programs in support of mathematics in the developing world and to serve as a clearing house for these activities, to offer support to existing selected programs and to establish an institutional basis that would provide continuing administrative presence. During the past four years, the DCSG established an office, centered at the ICTP in Trieste, Italy, that is critical in supporting the DCSG's work and in creating a database of mathematical activities and mathematical programs in the developing world as well as working to gain support from outside organizations. The IMU EC voted to increase the CDE budget by transferring most of the funds that existed in the IMU conference and symposia budget line to CDE for disbursement. The CDE

and DCSG also are grateful for the support that they have received from outside organizations, including major support from the Niels Henrik Abel Memorial Fund and funding from the London Mathematical Society and the American Mathematical Society, and onetime grants from the European Mathematical Society, USNCM and the Spanish Organizing Committee. The following is a partial list of funds granted by CDE: CIMPA Project in Cambodia; AMMSI, ICMI's program of African Mathematics Education, and the Clearinghouse of African Mathematics. The CDE and DCSG websites list all grants received from outside organizations and grants given by CDE in support of developing world mathematics and mathematicians working in the developing world (http://www.ictp.trieste.it/~cde/; http://www.ictp.trieste.it/~dcsg/). The DCSG was also instrumental as a bridge between the ICTP Ramanujan Prize and IMU.

It had been decided by the IMU EC that a restructuring of CDE and DCSG is needed and the EC has recommended the following model: The CDE and the DCSG would merge, be reconstituted, and be named the Commission for Developing Countries (CDC). The General Assembly authorized the EC to establish the CDC in a suitable interim form, prior to a formal proposal for establishing the new commission being made to the 2010 GA.

The CDC will work under the following guidelines:

- Fundraise, including seeking further funding for the IMU Special Developing Fund.
- Maintain a web based clearing house for mathematics and mathematics education programs and projects in the developing world.
- Partnership with groups working in developing countries or working on mathematics or mathematical education in developing countries.
- Leverage the work of existing projects.
- Facilitate cooperation between groups engaged in these projects, and to generate and publicize opportunities for networking, mentoring and short or longer term teaching in developing countries.
- Advise foundations, government and nongovernmental organizations in mathematics and mathematics education.
- Employ a ½ time administrator.

J. Ball thanked the members of CDE and Sharon Laurenti, administrator for CDE and DCSG, for their work over the past four years, especially in establishing the grant online application process.

ii. **International Commission on the History of Mathematics (ICHM) – John Ball**

J. Ball thanked Chair Karen Hunger Parshall and Secretary Elena Ausejo for their good work in heading the (Joint) International Commission on the History of Mathematics and referred the delegates to their report found on page 102 of Bulletin No. 53.

iii. **IMU-Net – Ragni Piene**

R. Piene reported that at its April 2003 meeting, the EC recognized that the IMU needed to improve communication with the international mathematical community and decided to create the IMU-Net, appointing Mireille Chaleyat-Maurel editor.

The bimonthly electronic newsletter was established and its first two issues in 2003 were sent to 2002 and 1998 ICM participants and then subsequent issues were only sent to those who chose to subscribe. Currently IMU-Net has 4346 subscribers and the EC would like to gain further participation. R. Piene encouraged GA participants to visit the IMU booth at the ICM to speak with M. Chaleyat-Maurel regarding ways that IMU can communicate with world mathematicians or to subscribe to IMU-Net. R. Piene thanked M. Chaleyat-Maurel and Wolfgang Dalitz, the IMU Webmaster, for their work on IMU-Net.

iv. **Committee on Electronic Information and Communication (CEIC) – CEIC member Peter Michor and EC representative Martin Grötschel**

The main purpose of CEIC is to keep IMU members and mathematicians informed regarding electronic developments. Thanks to publishers and improvements in technology, huge changes have occurred, allowing electronic access to recent scientific literature. However, the access needs to be extended to include historical literature and more work needs to be done so that the developing world has the same access to mathematical literature as the developed world.

The following are CEIC activities:
Keeping IMU members informed of electronic developments.

- Electronic World Directory of Mathematicians (EWDM).
- Federated World Directory of Mathematicians (FWDM): basic, standard and advanced search options with an option for mathematicians to add themselves to the directory.
- World Digital Math Library (WDML) (http://www.ceic.math.ca/WDML/). The aim of the WDML is to put mathematical literature online, link it to present literature and make it freely available.
- Creating a registry of all projects, updated regularly, currently containing 179 journals from 24 projects that can be downloaded onto one's own machine (This is especially important for mathematicians in developing countries.).

v. **International Commission on Mathematical Instruction (ICMI) – Hyman Bass**

Established in 1908, ICMI is a parallel organization to IMU that serves the mathematical education community and includes a research component of its own. In 1953, ICMI became a commission of IMU as it is today. ICMI is governed by its own EC, which has met six times during the past four years. Member countries include IMU members and 14 other countries that are not members of IMU. ICMI officers attend parts of meetings of IMU that are pertinent to ICMI, and the ICMI Executive Committee has the IMU president and secretary as ex officio members.

The ICMI core activities are:

- Organization of congresses every 4 years, comparable in size to ICMs.
- Conduct ICMI studies, one per year on themes of current interest in mathematics education.
- Solidarity Program for developing countries including interacting with DCSG.
- Awarding established prizes – the Felix Klein Award (2 awards, 2003 & 2005) and the Hans Freudenthal Award (2 awards, 2003 & 2005).
- UNESCO/ICMI Exhibit *Experiencing Mathematics,* launched at ICME-10 in 2004 in Copenhagen and shown in various countries.

- Pipeline Project – The IMU EC asked ICMI to gather and analyze statistics regarding the study of mathematics throughout the world. It was noted that the AMS, EMS, funding foundations and national societies may be interested in the outcome of this study. It was also noted by the Indian delegate that the statistics should include female participation.
- ICMI studies may be purchased at 60% discount. Springer owns the copyright in English. ICMI has the copyright of other languages and will provide for translation into other languages.
- Bulletins – Bulletins produced at the end of each fiscal year report on the activities of the IMU. A special Bulletin was produced in June 2002, reporting on the activities of IMU since the prior General Assembly in 1998. All colloquia supported financially or by imprimatur can be found in Bulletin No. 53.

Finance and Dues – Phillip Griffiths

i. Financial Reports

P. Griffiths reported that the Activities of the Union for the years 2002 – 2005, as well as the complete audited financial reports, are published in Bulletin No. 53, June 2006, beginning on page 110.

ii. Gifts and Grants

P. Griffiths acknowledged the significant support of the contributors to the Special Development Fund for the years 2003-2006, the funds that allow young mathematicians from Developing Countries to attend the Congress through travel and other grants. Griffiths encouraged all countries to contribute to this fund. He reported that the American Mathematical Society is the largest contributor with other contributions from: Het Wiskundig Genootschap, Netherlands, Unione Matematica Italiana, London Mathematical Society, German Mathematical Society and the Mathematical Society of Japan. A full listing of the grants is on page 185 of Bulletin No. 53.

P. Griffiths pointed out that the IMU receives other grants, especially the important yearly $55,000 grant from the Niels Henrik Abel Memorial Fund with $45,000 funds towards developing countries and $10,000 earmarked for the Ramanujan Prize. A complete listing of all grants is found on page 184 of Bulletin No. 53.

iii. Budget

P. Griffiths presented the proposed Budget for 2007-2010, containing a dues unit increase and an increase of 5% each year for the next four years.

iv. Dues Increase

P. Griffiths stated that the IMU cannot continue to fund the good programs that the EC has put in place, especially those related to developing countries. Griffiths cited the following reasons that the IMU EC is requesting that the delegates approve the budget, including the increases:

- Following the mandate put forth by the 14th General Assembly Resolution 9, the EC has significantly enhanced its commitment to the developing world by expanding the work of its Commission on Development and Exchanges (CDE) through the newly formed Developing Countries Strategy Group

(DCSG). The DCSG now receives a greater number of grant applications from developing countries than it has in the past and distributes more grants.

- The CDE/DCSG has established a centralized office with a half-time employee located at ICTP in Trieste, which has succeeded in leveraging dues support significantly by obtaining outside funding for mathematics in developing countries, especially in Africa. This office has also developed an online application system, which has simplified the process for mathematicians seeking funding to attend the ICM.
- The EC has continued to encourage its Committee on Electronic Information and Communication (CEIC) to develop guidelines regarding electronic communication. In June 2005 *Best Practices for Retrodigitization* was adopted, and the CEIC also has drafted the document *Digital Mathematics Library: A Vision for the Future (*www.ceic.math.ca*)*.
- The IMU has improved its website by expanding the information available and by providing links to other mathematical societies.
- The IMU EC has engaged in further activities including adding an additional prize, the Carl Friedrich Gauss Prize for Applications of Mathematics, funded by the surplus from the Berlin ICM, and administered by the IMU.
- It has informally established two Nominating Committees in response to Resolution 8 of the 2002 General Assembly, with corresponding changes to the Procedures for Election that the 2006 General Assembly will be asked to approve.
- To guarantee ICM site selection equity, the EC appointed an ICM Site Advisory Committee that visited the countries that submitted ICM proposals and reported their findings to the EC.
- IMU has also continued to support the work of its International Commission on Mathematical Instruction (ICMI).
- The IMU EC has further worked to improve media coverage related to the International Congress of Mathematicians and to the work of IMU.
- So as to improve communication with mathematicians, IMU now sponsors IMU-Net, a monthly electronic update for the mathematical community.

v. Dues in arrears

P. Griffiths reported on the IMU dues and the countries that are in arrears. As the governing body of the IMU, the EC is governed by the Statutes and has worked to inform all of its members whose dues are in arrears of Statute 26 which states: *Any Adhering Organization which is in arrears with its contributions for two years shall be warned and shall be deprived of its voting rights. Any Adhering Organization which is in arrears for four years shall cease to be an adherent of the Union.* P. Griffiths said that Circular Letter #2/2006 informed all Adhering Organizations that the EC was going to recommend the expulsion of four Adhering Organizations and limiting voting rights for two Adhering Organizations. P. Griffiths was happy to report that every Adhering Organization but one paid their dues or a significant amount of their past dues or has indicated that they will pay very soon.

P. Griffiths said that the Finance and Dues Committee would review the dues in arrears and make recommendations to the General Assembly.

Statutes

J. Ball presented the proposed Statute changes, which were discussed and approved as follows:

i. Effective Date of Changes to the Statutes: Article 35.

35. Changes in the Statutes may be proposed by the Executive Committee or by any of the Adhering Organizations. Notice of changes so proposed shall reach the Secretary of the Union at least four months before the meeting of the General Assembly at which action is to be taken. No change shall be made in the Statutes except at a meeting of the General Assembly and with the approval of the two-thirds majority of the total number of votes assigned to the members. **Statute changes become effective on the day following the close of the General Assembly, unless otherwise stipulated in the proposed Statute change**.

ii. Unit Contribution: Article 19.

19. Each Adhering Organization of a member of the Union shall pay an annual subscription in accordance with the Group to which it adheres, as follows:

Group	I	II	III	IV	V
Number of Unit Contributions	1	2	4	**8**	**12**

Associate Members of the Union pay no dues.

iii. Associate Membership: Articles 7. – 12.

7. To encourage a country to become a Member of IMU, a country may adhere to the Union as an Associate Member through an Adhering Organization as described in article 3.
8. The Adhering Organization of an Associate Member shall form a Committee for Mathematics as described in article 5.
9. When an application is made for Associate Membership of the Union, the Executive Committee shall examine the application and make a recommendation thereon to the members of the Union by correspondence or at a meeting of the General Assembly. The members shall accept or reject the application in the light of this recommendation and of any other considerations before them either by correspondence or at a meeting of the General Assembly.
10. A country that has previously been a member of the Union is not eligible to apply for Associate Membership.
11. Associate Membership is for a period of four years from the date of election, renewable for one further period of four years on request to the Secretary of the Union. Associate Members are normally expected to apply for membership of the Union beginning no later than eight years from the date of election.
12. Extensions of Associate Membership beyond a period of eight years from the date of election may be granted for further periods of four years at a time. A request for such a four-year extension must be made to the Secretary of the Union. The Executive Committee shall examine the request and make a recommendation thereon to the members of the Union by correspondence or at a meeting of the General Assembly. The members shall accept or reject the application in the light of this recommendation and of any other considerations before them either by correspondence or at a meeting of the General Assembly.

iv. Number of Members-at-Large: Article 23.

23. The Executive Committee of the Union consists of ten voting members, namely: the four Officers of the Union as designated in article 22, together with **six Members-at-Large,** elected by the General Assembly for terms of four years each, commencing on the first day of the calendar year following the year of their election. In addition, the retiring President shall be an ex-officio member without vote, for a period of four years. In the case of a vacancy among the Members-at-Large, the procedure shall be the same as designated in article 22.

v. Term Limits for Members-at-Large: Article 22.
22. The Officers of the Union are a President, two Vice-Presidents and a Secretary, all elected by the General Assembly by written ballot. The President and the Vice-Presidents shall hold office for a term of four years, shall assume office on the first day of the calendar year following that in which they have been elected and shall not be eligible for immediate re-election to the same office. The Secretary shall hold office for a term of four years, shall assume office on the first day of the calendar year following that in which he or she has been elected and shall be available for immediate re-election for one additional term. **Members-at-Large shall hold office for a term of four years and shall assume office on the first day of the calendar year following that in which they been elected. No Members-at-Large can serve three or more consecutive terms.** In the event of death, incapacity or resignation of the President, the Executive Committee shall choose one of the Vice-Presidents to carry on the functions of the President until a new President has been elected by the members of the Union for the unexpired term. In the case of any other office being vacated, the Executive Committee shall be empowered to fill the vacancy until the members of the Union shall have elected a successor for the unexpired term. These elections may be made at a meeting of the General Assembly or by Postal Ballot.

vi. Statutes Official Text:
This Statute was removed. However, it was noted that unofficial translations of the Statutes into other languages would be welcome, and could be placed on the IMU website.

IMU Nominating Committee – John Ball
At the 2002 GA, Resolution 8 stated "The General Assembly of IMU expects the Executive Committee to develop a proposed mechanism to involve members from the Committees for Mathematics, not on the Executive Committee, to assist in the selection of slates. This proposal should be put forth to the 2006 General Assembly." In response to this resolution, the IMU EC created two Nominating Committees, the IMU Nominating Committee and the ICMI Nominating Committee with the following structures, which worked as *ad hoc* committees in selecting the 2007-2010 IMU nominees. Ludwig Faddeev chaired the *ad hoc* IMU Nominating Committee and Mogens Niss chaired the *ad hoc* ICMI Nominating Committee. Both L. Faddeev and M. Niss explained that the random selection process worked well and recommended that the GA adopt the Nominating Committee recommendations put forth by the EC. After discussion, the Procedures for Elections were adopted. They can be found on the IMU website: http://www.mathunion.org/Organization/election_procedures.html

Presentation of Slates
The GA Nominating Committee met in the morning of August 18. It adopted the following slates:

IMU Executive Committee
President: L. Lovász (Hungary)
Secretary: M. Grötschel (Germany)
Vice Presidents: Ma Zhi-Ming (China), C. Procesi (Italy)

Members-at-Large (9 candidates for 5 or 6 posts)
The EC will ask the 15th General Assembly delegates to approve a Statute change increasing the number of Members-at-Large on the EC from five to six.
S. Baouendi (USA)
M. de León (Spain)
K. Fukaya (Japan)
N. Ghoussoub (Canada)
A. Lubotzky (Israel)
R. Piene (Norway)
C. Praeger (Australia)
V. Vassiliev (Russia)
M. Viana (Brazil)

CDE
President: S. Dani (India)
Secretary: G. Gonzalez-Sprinberg (France)
Members-at-Large (8 candidates for 6 posts)
G. Boente (Argentina)
P. Cordaro (Brazil)
J-P. Gossez (Belgium)
L. Lilov (Bulgaria)
M. Teuw Niane (Senegal)
M. Sanz-Sole (Spain)
T. Suzuki (Japan)
J. Zhang (China)

ICHM
(4 candidates for 2 posts)
C. Houzel (France)
Wenlin Li (China)
A. Malet (Spain)
P. Neumann (UK)

ICMI
President: M. Artigue (France)
Secretary: B. Hodgson (Canada)
Vice Presidents: J. Adler (South Africa) B. Barton, (New Zealand)

Members at Large (7 candidates for 5 posts)
M. Bartolini Bussi (Italy)
J. Carvalho e Silva (Portugal)
O. Figueras (Mexico)
C. Hoyles (UK)
S. Kumaresan (India)
F. Leung (Hong Kong)
A. Semenov (Russia)

There were no names nominated from the floor; therefore the above slates were put to a vote.

The 15th GA elected the following IMU officers for 2007-2010.

Executive Committee (EC)
President: L. Lovász (Hungary)
Secretary: M. Grötschel (Germany)
Vice Presidents: Ma Zhi-Ming (China), C. Procesi (Italy)

Members-at-Large
S. Baouendi (USA)
M. de León (Spain)
R. Piene (Norway)
C. Praeger (Australia)
V. Vassiliev (Russia)
M. Viana (Brazil)

Commission on Development Exchanges (CDE)
President: S. Dani (India)
Secretary: G. Gonzalez-Sprinberg (France)

Members-at-Large
G. Boente (Argentina)
P. Cordaro (Brazil)
J-P. Gossez (Belgium)
M. Teuw Niane (Senegal)
M. Sanz-Sole (Spain)
J. Zhang (China)

(Joint) International Commission on the History of Mathematics (ICHM)
C. Houzel (France)
P. Neumann (UK)

International Commission on Mathematical Instruction (ICMI)
President: M. Artigue (France)
Secretary: B. Hodgson (Canada)
Vice Presidents: J. Adler (South Africa) B. Barton, (New Zealand)

Members-at-Large
M. Bartolini Bussi (Italy)
J. Carvalho e Silva (Portugal)
C. Hoyles (UK)
S. Kumaresan (India)
A. Semenov (Russia)

Presentation of the Finance and Dues Committee
The Finance and Dues Committee met on the evening of the 19th and drafted the following recommendations that were presented to the GA:
5% dues increase per year for the next four years.

- Enforcing Statute 32 in dealing with countries whose dues are in arrears.

Voting
The GA approved the following for fiscal years 2007-2010:
5% dues increase per year for the next four years.

- IMU budget that was presented by the EC.
- Recommendations on countries with dues in arrears, i.e., Peru to be deprived of its voting rights if dues from 2000 forward is not paid by December 31, 2006, dues prior to 2000 will be forgiven; Nigeria to be deprived of its voting rights if dues from 2000 forward is not paid by December 31, 2006, dues prior to 2000 will be forgiven; Philippines to be deprived of its voting rights if dues from 2000 forward is not paid by December 31, 2006, dues prior to 2000 will be forgiven; Tunisia to be deprived of its voting rights if dues from 2000 forward is not paid by December 31, 2006, dues prior to 2000 will be forgiven; Cuba cease to be an adherent of the Union if dues is not paid from 2000 forward by December 31, 2006, dues prior to 2000 will be forgiven.

It was noted that there is only a small number of African countries that are members of the IMU and that paying dues may not be the reason. The CDC to be established should be encouraged to work on increasing the number of IMU members from Africa and other underrepresented regions.

ICSU Presentation – Sir Roger Elliott
The Treasurer of ICSU, International Council for Science, Sir Roger Elliott discussed the vision and strategic plan of ICSU. ICSU's total annual budget is 3-4 million Euros, mostly coming from subscriptions, 90% of which are paid by national members. ICSU also receives support from the French government. ICSU supports interdisciplinary projects and is a catalyst for large international programs. Further information is available on the ICSU website at http://www.icsu.org.

Guidelines for Future ICMs and Program Committee Guidelines Discussion – Noga Alon, Chair of the 2006 Program Committee
Noga Alon illustrated the work of the Committee since its appointment in April 2003. He presented the following structure of ICM2006:
20 Plenary Lectures; 20 sections with 169 invited section lecturers, with speakers from 24 countries; short communications; poster sessions; presentation of mathematical software and special activities and other activities (e.g., panel discussion, informal seminars.) It was noted that there was one plenary lecturer and 12 invited section lecturers who were women.
N. Alon presented a table of the geographical and gender distribution of plenary and section speakers at the 1998, 2002 and 2006 ICMs.

Future ICMs – Martin Grötschel
The IMU EC gives complete control to each of its Committees; hence there is strong need for guidelines for all its Committees. The IMU EC proposes new Guidelines for the Program Committee (PC) and the Organizing Committee (OC), dated August 18, 2006 describing the responsibilities of the two Committees concerning the scientific program of an ICM. M. Grötschel explained the rationale behind the various aspects of the guidelines. Several suggestions were made from the floor. The EC was asked to consider the proposals and make the guidelines available on the IMU webpage after the modifications have been made. The EC was charged with the task to upgrade the PC/OC Guidelines whenever appropriate.

Presentation of Resolutions Committee
The Resolutions Committee presented resolutions that were discussed and redrafted. The following resolutions were adopted by the 15th General Assembly:

Resolution 1
The General Assembly resolves that the next meeting of the General Assembly be held at a time and place conveniently linked to the International Congress of Mathematicians in Hyderabad, India, in 2010.

Resolution 2
The General Assembly expresses its gratitude to those bodies which contributed to the Special Development Fund in the past four years.

Resolution 3
The General Assembly expresses its deep gratitude to the Organizing Committee of the ICM 2006 chaired by Manuel de León and to the Organizing Committee of the General Assembly chaired by Juan M. Viaño Rey, for a splendid organization and a warm welcome to delegates.

Resolution 4
The General Assembly gives warm thanks to the Executive Committee, to the President John M. Ball and to the Secretary of the IMU Phillip A. Griffiths for their excellent work during the period 2003-2006.

Resolution 5
The General Assembly expresses its gratitude to the country of Spain for supporting a large number of mathematicians from developing countries to come to the International Congress and the General Assembly.

Resolution 6
The General Assembly expresses its gratitude to the Institute for Advanced Study, Princeton, the ICTP in Trieste and the Konrad-Zuse-Zentrum in Berlin for their generous support to the IMU.

Resolution 7
The General Assembly thanks Mireille Chaleyat-Maurel, Linda Geraci, Sharon Laurenti and Sylwia Markwardt for their many contributions to the IMU.

Resolution 8
The General Assembly of the IMU reaffirms the importance of the issues treated by ICMI. It recognizes the importance of continuing and strengthening the relationship of IMU with ICMI and urges the increased involvement of research mathematicians in mathematical education at all levels.

Resolution 9
With the ultimate goal of creating an enduring network of digital mathematical literature, the General Assembly of the IMU endorses the new version of the "Best practices" document of its Committee on Electronic Information and Communication (CEIC), posted June 2005 at http://www.ceic.math.ca, as well as the March 2005 draft of "Digital Mathematical Library: a vision for the Future".

Resolution 10

The General Assembly of the IMU continues to endorse the principle of universality expressed in the International Council for Science (ICSU) ARTICLE 5 of the STATUTES, as adopted by the 1998 General Assembly, and endorses the additional ICSU Statement on the Universality of Science (2004). Notwithstanding heightened tensions, security concerns, etc., the General Assembly urges free exchange of scientific ideas and free circulation of scientists and mathematicians across international borders. The IMU opposes efforts by governments to restrict contacts, interactions, access and travel in the world mathematical community, particularly when such restrictions penalize individual mathematicians for the actions of governments.

Resolution 11

The General Assembly recommends that the incoming Executive Committee of the IMU studies the establishment of stable administrative structure and funding mechanisms, including possible fund-raising, for the support of the expanding IMU activities, and report to the 2010 General Assembly with concrete proposals.

ICM Executive Committee Site Recommendation for ICM2010 – John Ball

J. Ball announced that the Executive Committee recommended Bangalore, India as the site of ICM 2010. He thanked Canada for its excellent proposal and for graciously accepting the EC's decision. The EC had appointed a site subcommittee consisting of John Ball, Zhi-Ming Ma and Ragni Piene, which had visited both countries and requested answers to a list of questions, prior to reporting to the EC. J. Ball underlined the importance of continuing in the future to have a professional, open and equitable site selection process. The GA delegates voted to hold the ICM2010 in Hyderabad, India, with the GA to be held in Bangalore, India, prior to the ICM.

Presentation of the ICM2010 Local Organization Committee – John Ball

The Indian Local Organizing Committee presented the structure for ICM2010, with the ICM being held in Hyderabad and the General Assembly being held in Bangalore. The dates are:
August 16-17, 2010, General Assembly, Bangalore;
August 19-27, 2010, International Congress of Mathematicians 2010, Hyderabad.

Member of the IMU

i. The General Assembly approved the request by the Czech Republic to move from Group II to Group III as of January 1, 2007.
ii. The General Assembly approved the request by Poland to move from Group III to Group IV as of January 1, 2007.

Close of the 15th General Assembly

J. Ball thanked the IMU EC members whose terms expired: Jacob Palis, Phillip Griffiths, Jean-Michel Bismut; and Masaki Kashiwara, with special thanks to Linda Geraci, IMU Administrator, who carried out her tasks with great talent, dedication and good humour. The President thanked the Assembly for its work and declared the 15th General Assembly closed at 4:40 p.m.

4. IMU Officers 2007-2010

Executive Committee (EC)

President:	L. Lovász (Hungary)
Vice Presidents:	Z.-M. Ma (China)
	C. Procesi (Italy)
Secretary:	M. Grötschel (Germany)
Members at Large:	S. Baouendi (USA)
	M. de León (Spain)
	R. Piene (Norway)
	C. Praeger (Australia)
	V. Vassiliev (Russia)
	M. Viana (Brazil)
Ex Officio:	John M. Ball (United Kingdom)

International Commission on Mathematical Instruction (ICMI)

President:	M. Artigue (France)
Vice Presidents:	J. Adler (South Africa)
	B. Barton (New Zealand)
Secretary-General:	B. Hodgson (Canada)
Members at Large:	M. Bartolini Bussi (Italy)
	J. Carvalho e Silva (Portugal)
	C. Hoyles (UK)
	S. Kumaresan (India)
	F. Koon-Shing Leung (Hong Kong)
	A. Semenov (Russia)

Commission on Development and Exchanges (CDE)

President:	S. Dani (India)
Secretary:	G. Gonzalez-Sprinberg (France)
Members at Large:	G. Boente (Argentina)
	P. Cordaro (Brazil)
	J-P. Gossez (Belgium)
	M. T. Niane (Senegal)
	M. Sanz-Solé (Spain)
	J. Zhang (China)

International Commission on the History of Mathematics (ICHM)

C. Houzel (France)
P. M. Neumann (UK)

5. Approved Budget 2007-2010

International Mathematical Union					
Approved Budget for 2007-2010 (Swiss Francs)					
Expenses	**Approved Budged for 2003-2006**	**5% Dues increase**	**5% Dues increase**	**5% Dues increase**	**5% Dues increase**
Schedule A:	**2003-2006**	**2007**	**2008**	**2009**	**2010**
Secretarial help, IMU office	22.000	22.660	22.660	22.660	22.660
Secretarial help, President	5.000	5.150	5.150	5.150	5.150
Accountant	9.000	9.270	9.270	9.270	9.270
ICMI	11.000	11.330	11.330	11.330	11.330
CDE	6.000	6.180	6.180	6.180	6.180
Office expenses (including postage)	16.000	16.480	16.480	16.480	16.480
Travel expenses of the EC	30.000	30.900	30.900	30.900	30.900
President's and Secretary's expenses	4.000	4.120	4.120	4.120	4.120
Contribution to ICSU	9.500	9.785	9.785	9.785	9.785
IMU Bulletin	5.000	1.500	1.500	1.500	1.500
Audit fee	8.500	8.755	8.755	8.755	8.755
General Assembly	4.000	4.120	4.120	4.120	4.120
World Directory of Mathematicians	20.000	0	0	0	0
Contingencies	2.000	2.060	2.060	2.060	2.060
Subtotal of Schedule A	**152.000**	**132.310**	**132.310**	**132.310**	**132.310**
Schedule B:					
IMU non-CDE conference support	90.000	20.000	20.000	20.000	20.000
ICMI scientific activities	29.000	29.870	29.870	29.870	29.870
CDE scientific activities	40.000	115.000	115.000	115.000	115.000
CDE support staff		56.000	56.000	56.000	56.000
CEIC scientific activities	15.000	15.450	15.450	15.450	15.450
Website support		6.253	6.253	6.253	6.253
ICM Site Committee		2.000	2.000	2.000	2.000
Program Committee for ICM	8.000	8.240	8.240	8.240	8.240
Subvention to ICM	28.000	28.840	28.840	28.840	28.840
Prize Committees (subvention)		11.100	11.100	11.100	11.100
Travel grants (young & senior)	40.000	61.000	61.000	61.000	61.000
Media Relations		3.500	3.500	3.500	3.500
Subtotal of Schedule B	**210.000**	**357.253**	**357.253**	**357.253**	**357.253**
Total Expenses (A & B)	**362.000**	**489.563**	**489.563**	**489.563**	**489.563**
Income					
Membership dues	279.840	336.798	353.565	371.304	390.015
ICSU Grant	10.500	0	0	0	0
Special Development Fund	60.000	32.000	32.000	32.000	32.000
Interest on bank accounts	39.000	16.000	16.000	16.000	16.000
Abel Fund		59.220	59.220	59.220	59.220
Draw from Reserves		45.545	28.778	11.039	0
Return to Reserves					-7.672
Total Income	**389.340**	**489.563**	**489.563**	**489.563**	**489.563**
Income less Expenses		**0**	**0**	**0**	**0**

Note: CEIC activities were incorrectly listed as CHF 15,000. Error was noted at the GA, but was not corrected.
PAG agreed CEIC budget for 2007-2010 will be CHF 25,000.

Note: Martin Grötschel told the CEIC chair Jon Borwein that IMU will make 15 000 US Dollars available for CEIC annually.

Note: There was also an inconsistency concerning the ICMI budget. Martin Grötschel assured Bernard Hodgson, the ICMI secretary, that the ICMI budget will be 15,450. CHF in Schedule A, 27,810. in Schedule B, and thus, 43,260. CHF in total.

6. Approved membership dues 2007 – 2010

International Mathematical Union				
Approved membership dues 2007 – 2010 (Swiss Francs)				
Group	**2007**	**2008**	**2009**	**2010**
I	1386	1455	1528	1605
II	2772	2910	3056	3210
III	5544	5820	6112	6420
IV	11088	11640	12224	12840
V	16632	17460	18336	19260

7. International Congress of Mathematicians

INTERNATIONAL CONGRESS OF MATHEMATICIANS

Madrid, Spain
August 22 – 30, 2006

7.1. Opening Ceremony

The opening ceremony of the ICM 2006 was held on Tuesday, August 22, starting at 10:30 in the Auditorium A of the Palacio Municipal de Congresos de Madrid.

7.1.1. Adresses to the assembly

Sir John Ball, President of the International Mathematical Union.

Your Majesty,
Señor Ruiz Gallardón,
Señora Cabrera,
Señora Aguirre,
Professor Manuel de León,
Distinguished guests,
Ladies and gentlemen,

¡Bienvenidos al ICM dos mil seis! Welcome to ICM 2006, the 25th International Congress of Mathematicians, and the first ICM to be held in Spain. We offer our heartfelt thanks to the Spanish nation, so rich in history and culture, for its invitation to Madrid.

We greatly appreciate that His Majesty King Juan Carlos is honouring mathematics by his presence here today.

While celebrating this feast of mathematics, with the many talking-points that it will provide, it is worth reflecting on the ways in which our community functions.

Mathematics is a profession of high standards and integrity. We freely discuss our work with others without fear of it being stolen, and research is communicated openly prior to formal publication. Editorial procedures are fair and proper, and work gains its reputation through merit and not by how it is promoted. These are the norms operated by the vast majority of mathematicians. The exceptions are rare, and they are noticed.

Mathematics has a strong record of service, freely given. We see this in the time and care spent in the refereeing of papers and other forms of peer review. We see it in the running of mathematical societies and journals, in the provision of free mathematical software and

teaching resources, and in the various projects world-wide to improve electronic access to the mathematical literature, old and new. We see it in the nurturing of students beyond the call of duty.

This service is exemplified by the tremendous efforts made over the last four years by Spanish mathematicians to bring this Congress to fruition. I propose that we formally record our appreciation of their splendid work through electing by acclamation the President of the Local Organizing Committee, Manuel de León, as President of this International Congress.

The Scientific Program of the Congress was in the capable hands of an international Program Committee consisting of:

Noga Alon (Israel, Chair), Douglas Arnold (USA), Joaquim Bruna (Spain), Kenji Fukaya (Japan), Nigel Hitchin (UK), Vaughan Jones (USA), Pierre-Louis Lions (France), Gregory Margulis (USA), Richard Taylor (USA), S.R. Srinivasa Varadhan (USA), Claire Voisin (France), Enrique Zuazua (Spain).

The International Mathematical Union is most grateful to the members of this committee, and to the many other mathematicians who served on the sectional panels, for their work in putting together a fine program of lectures.

Mathematicians do not own mathematics. But among the many millions who use mathematics daily they are distinguished by their constant search for deeper understanding based on an appreciation of beauty, simplicity, structure and the power of generalization. Yet the lesson of past centuries is that these vital elements in the development of mathematics require constant invigoration by new questions that come from the world about us.

There is no object, large or small, and almost no aspect of human existence, to which mathematics cannot contribute understanding. In particular, the great questions facing the planet, such as how to model and manage the climate, pose profound mathematical challenges. The need for an understanding of mathematics, of the mathematical way of thinking, and of the role mathematics can play in society, is no longer confined to scientists and engineers, but is increasingly important for those who work in industry, finance, the social sciences, and in many other walks of life, and thus also for all involved in education, for the media, opinion-formers and politicians. As subjects become better understood, they become more mathematical. Thus in the life sciences, for example, we see a rapid increase in the use of mathematical models, a trend that promises to profoundly influence medicine in the future.

In contemplating the importance of mathematics for the world, we see the importance of supporting the development of mathematics throughout the world. Mathematical talent does not respect geographical boundaries, but the opportunities, working conditions and tradition necessary for such talent to flourish depend heavily on geography, economic conditions and politics. Each country and region has its own needs for science and mathematics, its own problems as regards its mathematical development.

It is for these reasons that the IMU has made a special effort over the last four years to increase its support for mathematicians in developing countries. It has established an office for developing countries at the International Centre for Theoretical Physics in Trieste, and has cooperated with ICTP and the Abel Fund in the founding of the Ramanujan Prize for young mathematicians working in developing countries. At the IMU General Assembly held in

Santiago de Compostela last weekend, a new class of Associate Membership was created to encourage more countries to join the Union. The IMU has augmented its developing countries programmes, particularly in Africa, helped by generous support from the following sponsors:

Niels Henrik Abel Memorial Fund (annual grant),
Nuffield Foundation and the Leverhulme Trust (linked grants to support mathematics in sub-Saharan Africa, in conjunction with the London Mathematical Society and the African Mathematics Millennium Science Initiative),
David and Lucile Packard Foundation,
Andrew W. Mellon Foundation,
American Mathematical Society,
London Mathematical Society.

Other sponsors, including those of the ICM itself, have made it possible for some 400 mathematicians from developing and economically disadvantaged countries, particularly younger researchers, to attend this Congress:

ICM sponsors,
American Mathematical Society,
Mathematical Society of Japan,
USA Committee for Mathematics,
London Mathematical Society,
Het Wiskundig Genootschap Netherlands,
Italian Mathematical Union (UMI),
German Mathematical Society (DMV),
European Mathematical Society.

Despite these initiatives, a dramatic increase in both funding and scientific interchange is required to address the global imbalances in mathematical education and research. In sharing mathematical knowledge and experience with those who work around the world, it is the whole mathematical community that benefits, and we make our own contribution to peace and stability through the binding together of peoples by a common language independent of politics, religion and culture.

I wish you all a rewarding and exciting Congress.

Manuel de León, President of the ICM2006 Organizing Committee.

Your Majesty,
President of the Community of Madrid,
Minister of Education and Science,
Mayor of Madrid,
Professors John Ball and Phillip Griffiths,
Dear Colleagues,
Ladies and gentlemen,

On behalf of the Organizing Committee I would like to welcome you all to the ICM2006, and in particular to this opening ceremony.

First of all, I want to express our gratitude to the King Juan Carlos for His continuous support.

¡Muchas gracias, Majestad!

The ICM is a congress of great importance. Every four years, mathematicians from all over the world meet to celebrate mathematics, to inform each other of our latest results, to honour the most outstanding achievements during this period, to debate the present and future state of the discipline, to discuss how best to transfer new knowledge, and to bring mathematics closer to society and to improve public appreciation.

We Spanish mathematicians feel very honoured to have been entrusted by the IMU with the organization of this ICM. The constant support of the IMU Executive Committee and its president, Professor John Ball, has been essential for this task.

Furthermore, an event of this magnitude requires a great financial commitment, which on this occasion in Madrid has amounted to approximately two and a half million euros. Much of this funding has been provided by the Ministry of Education and Science, the Ministry of Foreign Affairs, the Ministry of Culture, the Community and the City of Madrid, and many others that you can see listed below; we are grateful for that support.

In addition to the scientific activities, an interesting series of round-table discussions has been organized, as well as an extensive programme of cultural and parallel activities. The fact that the entire process of registration and communication has been carried out electronically is also worthy of mention. Both this opening ceremony and all the plenary lectures will be transmitted online throughout the world, and the congress records will be available on the website. This is a reflection of the importance of mathematics in today's Information Society.

The logo deserves a special mention because it is an essential part of every ICM, and on this occasion in Madrid it is the basis on which we have built the image of the congress. It depicts a sunflower consisting of optimum growth mathematics and the golden mean representing a Spain of sunlight and optimism.

Our wish and our aim is for this ICM2006 to provide a platform for making the presence of mathematics felt in society, a process in which the media must inevitably play its part. To this end, the ICM2006 set up a Press Office that has worked together with the IMU to issue a weekly bulletin in English and Spanish aimed at both the media and the public at large.

Allow me also to explain how Spain has prepared itself for this day. Ten years ago, Spanish mathematicians set about reorganizing the social structure of our community, and in particular the Committee that liaises with the International Mathematical Union. At the same time, we began working on the organization of the World Mathematical Year in Spain. This collective project has had one important consequence: Spanish mathematicians came to the realization that we are a community, a community which, perhaps more than any other scientific discipline in this country, has subjected its strengths and weaknesses to an ongoing process of examination.

We have learned that mathematical research in Spain has made great progress in recent years. We now need to raise the standard of quality and encourage the interdisciplinary nature of mathematics, and are presently taking steps to achieve these aims.

We all agree on the vital role of mathematics in education, but it still remains to convince everyone of its equally important role as key technology for development. The new schemes for mathematical research currently being set up in Spain will undoubtedly help to increase qualitative and quantitatively the presence of Mathematics in science, technology and innovation. For a country like ours, this is the basis for a prosperous future.

The celebration of the ICM2006 in Madrid constitutes a landmark on this road. It also underlines our sense of belonging to an international community to whose organization and activities we are eager to make a contribution, continuing the process of internationalization that is already under way in Spain.

On behalf of the Organizing Committee, I would like to thank all the participants for coming to Madrid, some of them from very distant places, and I apologize if at any time we have been unable to meet all their demands. We would like you to know that in these coming days we are about to share, we are at your complete disposal.

Welcome to the ICM2006, welcome to Madrid! We wish you a successful conference and a very pleasant stay. Thank you all very much!

Alberto Ruiz Gallardón, Mayor of Madrid.

Your Majesty,

Under the auspices of the Crown, and in keeping with the scientific and cultural progress that this Institution has enabled in Spain, Madrid bears today the honour and the responsibility of being the world capital of mathematical science. This has been made possible by the International Mathematical Union's choice of our city to host its twenty-fifth Congress, responding not only to the efforts made by Madrid City Council during its candidacy for the most prestigious mathematical event of our age, but also to the very nature of the capital of Spain as a crossroads of knowledge.

Over the next few days, the Congress promoters will witness this city's unquestionable capability regarding the organisation of significant events, with international impact, in the fields of science, culture, sports or economics. Madrid's excellent infrastructures for the staging of fairs and exhibitions and the wide range of services it offers are factors which explain the city's increasingly consolidated position at the forefront in terms of the hosting of conferences and congresses. However, the hospitality of the inhabitants of Madrid – on whose behalf I take this opportunity to extend a warm welcome to the participants of the Congress – and their interest in the intellectual progress of this century, are elements that have proved even more decisive in choosing Madrid for a gathering of the brightest minds of our age.

Madrid's long-standing relationship with mathematics can be traced back to at least 1582, when Phillip II founded the Royal Academy of Mathematics. Madrid also provided the stage upon which Agustín de Pedrayes, one of Spain's most celebrated mathematicians, who achieved fame in the International Congress of 1799 in Paris via his crucial contribution to the creation of the decimal metric system, carried out his professional activity between the 18th and 19th centuries. Nevertheless, Madrid's confidence in the success of this Congress is focused more on the future than on the past.

In a world where political systems appear faced with terrible challenges, where technology is hampered by uncompromising materialism, where the humanities seem overwhelmed by the challenge of providing an answer, you, as mathematicians, have the great privilege of speaking a different and eternally youthful language, wherein conjectures can be tested or refuted, whilst the language itself remains untainted by despair and its universality undiminished by disagreement. Laymen have difficulty understanding the terms of the debate centred around Fermat's Last Theorem or those used to describe the essential humility of the mathematical possibilities surrounding Gödel's Theorem. Nevertheless, we believe that certain equations are as beautiful as the Iliad, as stated by the philosopher Edgar Quinet, and therefore we can find motives for consolation and hope. Indeed, beyond the specific applications of mathematical science, this discipline provides proof that the human need for understanding and for creativity remains intact. In these turbulent and yet complacent times, the inherent difficulty of mathematics - where, in the words of Plato, beauty and truth coincide - constitutes an intellectual stimulus, an invitation to better ourselves and a bastion of purity. The thinker George Steiner quoted Kepler to explain this phenomenon: “amidst massacres [and war], the laws of elliptical motion belong to no man and to no principality”.

Therefore, Sire, perhaps it is not only mathematicians who need to come closer to society, by descending to the details of everyday life and explaining the usefulness of their science to the people, but it is all of us who are obliged to make the ethical and aesthetical effort to reach the same level of excellence, rigour and beauty that they inhabit.

In this two-fold hope and trust, it is a great pleasure for me to welcome the world's best mathematicians to Madrid.

Mercedes Cabrera, Minister for Education and Science.

Your Majesty:

When the International Mathematical Union chose the City of Madrid to host the 25th INTERNATIONAL CONGRESS OF MATHEMATICIANS and for the presentation of the prestigious FIELDS MEDALS, the Spanish Government Ministry of Education and Science understood that it had to give its full support to the Organizing Committee of the event. In this way, our support for the Congress became an important part of the Scientific Policy Programme of Complementary Measures.

Given that more than 8,000 Spanish mathematicians are represented at the International Mathematical Union, we feel that at this time and together with them all the citizens of Spain are likewise represented, since we recognize the importance of mathematics in the development of thought, in the shaping and management of reality, and in the progress of Culture.

This Congress will serve to pave the way to new avenues of research, and to the exchange of new advances and opinions among all the different fields of knowledge, whether related directly or indirectly with mathematics. Furthermore, it will assist in advising pubic bodies, the Ministry of Education and Science among them, on the means of support it should adopt in the future.

We therefore celebrate this meeting as a great event of concern to everyone, and with our best wishes for its success we greet the members of the International Mathematical Union; the Organizing Committee of the Congress; the scientists who will be honoured for their achievements, and all the participants, especially all our guests from abroad.

We do not know what some of the pioneers in the history of mathematical research in Spain would have said if they had known about the congress we inaugurate today.

However, we know what we, as scientists, teachers or holders of public office, are obliged to offer both for them and for society in the matter of teaching and research. For them, in recognition and in tribute to their work and their memory; for society at large, because it is the proper task of public bodies, and in particular of the Ministry I represent, to make scientific achievement and discovery available to all in the interests of progress. That is why the Spanish Ministry of Education and Science is currently developing different projects in support of research in the fields of Mathematical Science.

As a basic policy, it is our aim to improve the role of mathematics in Education. To that end, the restructuring of the Spanish educational system as laid out in the new Organic Law of Education will enable us establish specific areas in which the acquisition of logic-mathematical skills and the development of mathematical learning at school level will accorded the status of basic abilities.

It is also our aim to pursue a new teaching methodology, encouraging practical experience in the classroom and furthering ongoing teacher training to meet our educational goals.

With regard to the situation of research in our country, Spain occupies the 9th position in the world in terms of scientific production in mathematics. This constitutes a considerable improvement over the last five years, and we expect the plans that are now being developed to improve this performance even further, by consolidating quality research teams and strengthening relations with researchers working on projects in other fields connected with technological innovation and development.

To achieve these goals, the National Programme for Mathematics has been set up within the framework of the R+D+i National Plan. In addition, the CONSOLIDER MATHEMATICA Programme is being carried out as part of the broader CONSOLIDER INGENIO 2010, which will enable us to fund research work by top level groups in the field of Mathematics. In fact, the CONSOLIDER MATHEMATICA programme has been chosen by the relevant Scientific Committee as a worthy recipient of immediate support.

We trust that these and other complementary measures, aimed at the training and mobility of research personnel and the creation of research institutions, will strengthen Mathematical Science, both at an international level and in the Spanish System of Science, Technology and Business.

But today we are also here to celebrate the presentation of the Fields Medals and the Nevanlinna and Gauss Prizes. The Ministry of Education and Science of the Spanish Government congratulates the award-winners and expresses its gratitude for their generous contribution to society through Science. They are an example to us all, and especially to the many young people who are laying the foundations for their future professional careers.

Finally, I would like to express our gratitude to the members of Executive Committee of the Congress for all their efforts, and to all those involved in the organization of the many accompanying events and activities, as well as the scientists who by their work will enrich discussion and extend common understanding.

Your Majesty, we are aware of Your interest in seeing Spain occupy an important place in the society of knowledge and in the International Scientific Community, and of Your wish that all citizens acquire a solid education and training in preparation for the modern world. The Ministry of Education and Science is currently working on numerous schemes and projects to achieve this aim. If we are successful, we will have fulfilled one of the main purposes of our existence. Support for this International Congress of Mathematicians constitutes a further step along this road.

Many thanks and welcome to you all.

Esperanza Aguirre, President of the Community of Madrid.

Your Majesty,

It is an honour and a source of great satisfaction for Madrid to welcome from today over 4,000 of the best mathematicians from all over the world who have gathered here to share their latest studies and discoveries, to explain the state of their researches, and to reward the most outstanding achievements of their colleagues with the Fields Medals and the Rolf Nevanlinna and Carl Friedrich Gauss Prizes.

In the 19th century, the German mathematician Gustav Jacobi stated that those who devoted themselves to study and research in Mathematics did so above all to “honour the human spirit”. This is how it has always been since the origins of mathematical thought, and the greatest achievements in this Science figure among the finest creations of humanity as a whole.

This is a good opportunity to recall that mathematical thought dates back to classical Greece, and lies at the source of all Western thought and civilization. From these brilliant beginnings, the essence of mathematical thought has consisted in finding an exact formulation for what we see, what we experience and what we perceive. That is why, whether we realize it or not, we are all descendents of Pythagoras.

To these words of greeting and welcome to Madrid I would also like to add my sincere congratulations to all the Congress participants for their efforts, for their researches, and for the knowledge they impart to their students, initiating them into the mysteries of their science. The intrinsic difficulties of their studies sometimes deprive them of recognition by society at large. That is why, with my congratulations, I would like to encourage them to continue with their fine work.

In the mid-19th century, the leading Spanish mathematician of the period, José Echegaray, stated that unfortunately there were few Spaniards of world status in mathematical research at that time. Happily today that is no longer the case, and the presence of the most outstanding mathematicians here in Madrid is the best demonstration of what I mean. I am sure that the celebration of this Congress in Madrid will act as a stimulus to all those young people in

Spain who have discovered the pleasures of studying mathematics, and have begun to appreciate the beauty of its reasoning and its proofs. I likewise trust that the choice of Madrid as host city for this Congress will also be a source of pride and encouragement for all the Faculties of Mathematics at Madrid Universities.

With my very best wishes for the success of the Congress, and for the personal future and professional scientific career of all those concerned, I once again most cordially welcome you all to Madrid.

Many thanks.

7.1.2. Presentation of the new IMU logo

Presentation of the new IMU logo by Phillip Griffiths, Secretary of IMU.

The International Mathematical Union (IMU) has adopted a new logo. It was the winner of an international open competition announced by the IMU in 2004 that attracted over 80 submissions. The final selection was made by the Executive Committee of IMU.

The logo was designed by John Sullivan, Professor of Mathematical Visualization at the Technical University of Berlin (TU Berlin) and at the DFG Research Center MATHEON, and adjunct professor at the University of Illinois, Urbana (UIUC), with help from Prof. Nancy Wrinkle of Northeastern Illinois University.

The logo design is based on the Borromean rings, a famous topological link of three components. The rings have the surprising property that if any one component is removed, the other two can fall apart (while all three together remain linked). This so-called Brunnian property has led the rings to be used over many centuries in many cultures as a symbol of interconnectedness, or of strength in unity.

Although the Borromean rings are most often drawn as if made from three round circles, such a construction is mathematically impossible.

The IMU logo instead uses the tight shape of the Borromean rings, as would be obtained by tying them in rope pulled as tight as possible. Mathematically, this is the length-minimizing configuration of the link subject to the constraint that unit-diameter tubes around the three components stay disjoint. This problem and its solution are described in the paper Criticality for the Gehring Link Problem by J. Cantarella, J. Fu, R.Kusner, J. Sullivan, N.Wrinkle, Geometry andTopology 10 (2006), pp. 2055–2115, also available at arXiv.org/math/0402212.

Although this critical configuration is quite close to one made of convex and concave circular arcs, its actual geometry is surprisingly intricate. Each component is planar and piecewise smooth, with the shapes of many of the 14 pieces described by elliptic integrals. The improvement over the similar piecewise circular configuration leads to a savings of length of less than one tenth of one percent!

(The paper cited above first noticed a similar surprise in the simple clasp: one rope attached to the floor clasped around another attached to the ceiling. There as well, the minimizing shapes for the ropes are quite complicated, leaving a small gap between the thick tubes right at the tip.)

The tight configuration of the Borromean rings has pyritohedral symmetry (3*2 in the Conway/Thurston orbifold notation), and the IMU logo uses a view along a three-fold axis of rotation symmetry. Instead of the thick tubes, which would touch one another all along their lengths, thinner tubes are drawn, allowing a better view of the link.

Sullivan says the new logo "represents the interconnectedness not only of the various fields of mathematics, but also of the mathematical community around the world." Together with Charles Gunn of TU Berlin, he has made a 5-minute computergraphics video The Borromean Rings: a new logo for the IMU that was shown at the ICM opening ceremony.

7.1.3. Presentation of Medals and Prizes

Presentation of the Fields Medals by John Ball, Chairman of the Fields Medal Committee.

The 2006 Fields Medal Committee consisted of:

– Enrico Arbarello (Italy)
– John Ball (UK, Chair)
– Jeff Cheeger (USA)
– Donald Dawson (Canada)
– Gerhard Huisken (Germany)
– Curtis McMullen (USA)
– Alexey Parshin (Russia)
– Tom Spencer (USA)
– Michèle Vergne (France)

The instructions to the Committee are: to choose at least two, with a strong preference for four, Fields Medallists, to have regard in its choice to representing a diversity of mathematical fields, and to respect the age limit that a candidate's 40th birthday must not occur before January 1st of the year of the Congress at which the Fields Medals are awarded.

The Committee was privileged to consider a number of remarkable young mathematicians. Although the choice was a difficult one, the Committee was unanimous in selecting four medallists whose wonderful work demonstrates the breadth and richness of the subject. I will announce the names of the winners in alphabetical order.

A Fields Medal is awarded to Andrei Okounkov, of the Department of Mathematics, Princeton University, for his contributions bridging probability, representation theory and algebraic geometry.

A Fields Medal is awarded to Grigory Perelman, of St Petersburg, for his contributions to geometry and his revolutionary insights into the analytical and geometric structure of the Ricci flow. I regret that Dr. Perelman has declined to accept the medal.

A Fields Medal is awarded to Terence Tao, of the Department of Mathematics, University of California at Los Angeles (UCLA), for his contributions to partial differential equations, combinatorics, harmonic analysis and additive number theory.

A Fields Medal is awarded to Wendelin Werner, of the Laboratoire de Mathématiques, Université Paris-Sud, for his contributions to the development of stochastic Loewner evolution, the geometry of two-dimensional Brownian motion, and conformal field theory.

Presentation of the Nevanlinna Prize by Margaret H. Wright, Chair of the 2006 Nevanlinna Prize Committee.

It is a privilege to announce the winner of the 2006 Rolf Nevanlinna Prize, which is awarded by the International Mathematical Union for outstanding contributions in mathematical aspects of information sciences.

The Nevanlinna Prize was first awarded in 1982. A requirement is that the winner's 40th birthday must occur on or after January 1 of the year in which the award is made.

The members of the 2006 Nevanlinna Prize Committee are:

– Samson Abramsky (United Kingdom)
– Franco Brezzi (Italy)
– Gert-Martin Greuel (Germany)
– Johan Håstad (Sweden)
– Margaret Wright, Chair (United States).

The International Mathematical Union awards the 2006 Nevanlinna Prize to Professor Jon M. Kleinberg of the Computer Science Department, Cornell University, Ithaca, New York, USA. Professor Kleinberg's date of birth is October 1971.

The Nevanlinna Prize citation for Jon Kleinberg is:

For deep, creative and insightful contributions to the mathematical theory of the global information environment, including

– the influential "hubs and authorities" algorithm;
– methods for discovering short chains in large social networks;
– techniques for modeling, identifying and analyzing bursts in data streams;
– theoretical models of community growth in social networks; and
– contributions to the mathematical theory of clustering.

Jon Kleinberg's combination of mathematical ability, superb taste in interesting problems, breadth of interests and sense of strategy is both dazzling and unmatched. His work has had a fundamental impact on the effectiveness of today's most advanced Web search engines, and

his mathematical insights have had applications to Internet routing, data mining, discrete optimization, and the sociology of the World Wide Web.

Presentation of the Gauss Prize by Martin Grötschel, Chair of the Gauss Prize Committee.

Today we celebrate the first award of the Carl Friedrich Gauss Prize for applications of mathematics. Since this is a new IMU distinction, it is appropriate to say a few words about the scope of the prize in the beginning.

The Gauss Prize is awarded jointly by the Deutsche Mathematiker-Vereinigung (DMV, the German Mathematical Society) and the International Mathematical Union (IMU), and is administered by the DMV. The prize consists of a medal and a monetary award (currently EUR 10,000). The source of the prize fund is a small surplus from the International Congress of Mathematicians (ICM'98) held in Berlin eight years ago.

The statutes stipulate that the Gauss Prize is awarded for outstanding mathematical contributions that have found significant practical applications outside of mathematics, or for achievements that made the application of mathematical methods to areas outside of mathematics possible in an innovative way, e.g., via new modelling techniques or the design and implementation of algorithms. In a nutshell, the Carl Friedrich Gauss Prize is given for the impact the work of the prize winner has had in practice.

Since the practical usefulness of mathematical results is often not immediately visible, and as their applicability and importance for practice may only be realized after a long time lag – in contrast to the Fields Medal and the Rolf Nevanlinna Prize – no age limit restricts the choice of a prize winner.

Scientific awards gain reputation through the choice of outstanding winners. The Fields Medal, e.g., is a prime example for this fact. The Gauss Prize jury hopes to mark the beginning of a similar tradition today by presenting an awardee whose research has influenced the world at large and whose contributions are highly respected by the mathematical community.

Why has the prize been given Gauss' name? Carl Friedrich Gauss (1777–1855) was one of the greatest mathematicians of all time. Gauss combined scientific theory and practice like no other before him or since. His *Disquisitiones Arithmeticae*, published in 1801, stand to this day as a true masterpiece of scientific investigation. In the same year, Gauss gained fame in wider circles for his prediction, using very few observations, of when and where the asteroid Ceres would next appear. The method of least squares, developed by Gauss as an aid in his mapping of the state of Hannover, is still an indispensable tool for analyzing data. His sextant is pictured on the last series of the German 10-Mark bills, honoring his considerable contributions to surveying.

On the front side of the bill, one also finds a bell curve, which is the graphical representation of the Gaussian normal distribution in probability. Together with Wilhelm Weber, Gauss invented the first electric telegraph. In recognition of his contributions to the theory of electromagnetism, the international unit of magnetic induction is the gauss. These few examples show that the impact of Gauss' mathematics can be experienced every day

everywhere. With this new prize, IMU and DMV would like the world to recognize the importance of mathematics for our society; and Carl Friedrich Gauss is a prime example for the role mathematicians can play in this respect.

The medal, designed by Jan Arnold, that comes along with the award is displayed below. It shows on the front a familiar Gauss portrait dissolved into a linear pattern, the least squares method as well as the discovery of Ceres' orbit are symbolized on the back.

Following the prize statutes, the IMU Executive Committee appointed a Gauss Prize Committee for the 2006 award. The members were Bob Bixby, Martin Grötschel (chair), Frank den Hollander, Stéphane Mallat, and Ian Sloan. The establishment of the Gauss Prize was announced on April 30, 2002, Gauss' 225th birthday, and at the same time, nominations were invited. About thirty highly deserving mathematicians from all over the world were suggested for this prize by colleagues from pure and applied mathematics.

And now, I would like to announce the winner and read the citation.

The International Mathematical Union and the Deutsche Mathematiker-Vereinigung jointly award the Carl Friedrich Gauss Prize for Applications of Mathematics to Professor Kiyosi Itô for laying the foundations of the theory of stochastic differential equations and stochastic analysis. Itô's work has emerged as one of the major mathematical innovations of the 20th century and has found a wide range of applications outside of mathematics. Itô calculus has become a key tool in areas such as engineering (e.g., filtering, stability, and control in the presence of noise), physics (e.g., turbulence and conformal field theory), and biology (e.g., population dynamics). It is at present of particular importance in economics and finance with option pricing as a prime example.

The document is signed by John Ball, President of IMU, and Günter M. Ziegler, President of DMV.

A side remark, at this moment in time, a new application-oriented research institute called Quantitative Products Laboratory, is being founded in Berlin. It will be sponsored by a big German bank donating at least three million Euros annually. This new institute would not have been founded without the foundations laid by Kiyosi Itô.

The details of Itô's work will be explained tomorrow, August 23, in the Gauss Prize lecture presented by Hans Föllmer.

Kiyosi Itô was born in Japan in 1915. He received his Doctor of Science degree from the Imperial University in Tokyo and is now professor emeritus at Kyoto University. He has honorary doctoral degrees from Université Paris VI, ETH Zürich, and the University of Warwick. Itô is a member of the Académie des Sciences, France, the Japan Academy, and the National Academy of Sciences, USA, to mention just a few of his many honors and distinctions.

For health reasons, Kiyosi Itô is unfortunately unable to be present at today's award ceremony.

The IMU President, John Ball, will personally take the Gauss Medal to Kyoto after this meeting and present it to Professor Itô in a special ceremony1. I am very happy to be able to announce that the Itô family has decided to send a representative to Madrid. Kiyosi Itô's

youngest daughter, Junko Itô, who is professor and chair of linguistics at the University of California in Santa Cruz, is here to accept the Gauss Prize on behalf of her father.

7.1.4. Address by the Chief of State of Spain

His Majesty The King of Spain, Juan Carlos.

I am greatly pleased to preside over the opening of this Twenty-Fifth International Congress of Mathematicians, an outstanding scientific event which, in addition to its tradition of over a century, enjoys unquestionable prestige and significance on a global scale.

I extend my greetings to all the participants, my warm welcome to Spain to those from other countries, and my most heartfelt congratulations to the organizers of this Congress in Madrid.

You will understand that it is a very special pleasure for me that this Congress, which has brought together nearly four thousand scientists from over one hundred countries, is being held for the first time in our country.

Therefore, I wish to convey my greatest recognition and appreciation to the Spanish mathematical community, whose well-deserved prestige, proven effort and cohesion, have made Spain – and more specifically Madrid – the focus of attention of the international mathematical community this year.

This Congress enables us to learn about the main progress made by research in this discipline, and to highlight and promote in our respective societies the enormous importance of Mathematics. Importance because it is a basic instrument to understand the world, because it constitutes an unquestionable pillar of education, and because it is an indispensable tool to ensure progress for the benefit of Humanity.

Galileo told us that the world is written in mathematical language; to understand it, nothing can rival this discipline that has brought us together today in Madrid.

Improved understanding of the world we live in, by using the universality of Mathematics, is, in addition, a task which reinforces cooperation between diverse countries, societies and cultures.

It is equally evident that the high value of Mathematics in education requires our attention and dedication.

Mathematics is rightly considered the key technology. This is stated in the Declaration made public in 2000 by the International Mathematical Union and UNESCO, on the occasion of the World Mathematical Year.

We depend on, and we will increasingly depend on, the indispensable foundation that research, technology and innovation constitute for the future of our economic development and our social well-being.

For this reason, we must promote mathematical development as an essential element for progress that will enable sustainable development for all Humanity.

The business world must also join, with increasing efforts, a discipline which has been essential to our development, as it is, for example, the basic foundation to achieve the Information Society we currently enjoy.

Spain has been making a particular effort, and will continue to do so in the future, to promote its technological development.

Projects such as the Ingenio 2010 Programme are aimed at such a goal. We are pleased to see that Spanish mathematicians have not missed the opportunity to participate in such an ambitious R+D+I programme.

But this Congress also includes other aspects that I would like to highlight. With 120 countries represented, the largest number in its history, it aims to achieve universal representation and participation.

This has been made possible thanks to grant programmes for the participation of mathematicians from economically disadvantaged countries, following a long-standing tradition of the International Mathematical Union to which Spain is especially sensitive.

Furthermore, this Congress has made an enormous effort to bring Mathematics closer to society, striving to make it more wide-spread and well-known in public opinion.

All of this is being done through exhibitions, various cultural events and by reinforcing its presence in the media.

This effort to make Mathematics more well-known is particularly significant, as it is fundamental to encourage new scientific vocations all over the world.

In addition, these Congresses enable the mathematical community to award, every four years, and with well-deserved solemnity, its most highly prized and valued distinctions.

I am referring to the Fields Medal, the Rolf Nevanlinna Prize and the Carl Friedrich Gauss Prize, all of which are indisputably prestigious awards which have just been granted to this year's winners.

The Fields Medal has been awarded for 70 years to mathematicians under the age of 40 for outstanding achievement in the basic aspects of the discipline; the Rolf Nevanlinna Prize has been awarded since 1982 for the best mathematical contributions to the Information Society; and the Carl Friedrich Gauss Prize, awarded for the first time this year in Madrid, aims to honour outstanding achievement in contributing to improve our everyday lives.

I extend my most enthusiastic congratulations to all this year's winners.

Their work, professional career and scientific merits, as well as their contribution to our societies' development and well-being, deserve everyone's recognition and constitute an example and encouragement for the whole of the international mathematical community.

To conclude, I would like to reiterate my most sincere support for the significant work done by the International Mathematical Union. I wish you every success for the next Congress to be held in India, just as I trust this one in Madrid will be successful.

I declare open the 25th International Congress of Mathematicians of 2006.

Thank you very much.

7.2. Closing Ceremony

The closing ceremony of the ICM 2006 was held on Wednesday, August 30, starting at 18:00 in the Auditorium A of the Palacio Municipal de Congresos de Madrid.

7.2.1. Adresses to the assembly

Sir John Ball, President of the International Mathematical Union

Welcome to the Closing Ceremony of ICM 2006!

You just saw a longer version of the video that was shown at the Opening Ceremony, concerning the new IMU logo, designed by John Sullivan.

It has been a marvellous International Congress, and we begin by a retrospective look at some of the highlights.

(Showing of video montage of scenes from the ICM.)

Before saying a few words about this Congress, I want to go back to before King Juan Carlos opened ICM 2006, and present a brief report about the IMU General Assembly held in Santiago de Compostela on 19 and 20 August. This was a very successful meeting, which owed much to the care and consideration of the local organizing committee in Santiago chaired by Joan Viaño.

The General Assembly voted to make various changes to the Statutes and the Procedures for Election of IMU. In particular a new independent Nominating Committee structure for the construction of slates for elections was approved. In future the Executive Committee of the International Commission on Mathematical Instruction, concerned with mathematics education, will be elected by the ICMI General Assembly rather than the IMU General Assembly. The number of members-at-large on the IMU Executive Committee is increased from five to six, and a new category of Associate Membership of IMU, with no dues, no votes and limited duration, was introduced to encourage full membership.

Turning to the elections themselves, the new Executive Committee of IMU to serve for the period 2007-2010 will be:

President: László Lovász (Hungary)
Secretary: Martin Grötschel (Germany)
Vice Presidents: Zhiming Ma (China), Claudio Procesi (Italy)
Members at Large:
Salah Baouendi (USA)
Manuel de León (Spain)
Ragni Piene (Norway)
Cheryl Praeger (Australia)
Victor Vassiliev (Russia)
Marcelo Viana (Brazil)

I would like to pay tribute to the work of this committee, and especially to the retiring members: Phillip Griffiths, who has completed two terms as Secretary of IMU, Jean-Michel Bismut (Vice-President), Masaki Kashiwara (Vice-President), Jacob Palis (Past-President and Past Secretary of IMU), and M.S. Raghunathan. And we also will say farewell to Linda Geraci, who has served admirably as the IMU Administrator.

The membership of the Commission on Development and Exchanges, concerned with developing countries, for 2007-2010 will be:

President: S.G. Dani (India)
Secretary: Gérard Gonzalez-Sprinberg (France)
Members at Large:
Graciela Boente (Argentina)
Paulo Cordaro (Brazil)
Jean-Pierre Gossez (Belgium)
Mary Teuw Niane (Sénégal)
Marta Sanz-Solé (Spain)
Jiping Zhang (China)

CDE will be unified with the recently formed Developing Countries Strategy Group (DCSG) to form a new IMU Commission for Developing Countries which will both consider strategy and administer the IMU grants programmes. I would like to thank the members of CDE and in particular Herb Clemens, the outgoing CDE Secretary and the Chair of DCSG, for their excellent work, in which they have been ably assisted by the Developing Countries Administrator Sharon Laurenti.

The new Executive Committee of ICMI for 2007-2009 will be:
President: Michèle Artigue (France)
Secretary-General: Bernard Hodgson (Canada)
Vice Presidents: Jill Adler (South Africa), Bill Barton (New Zealand)
Members at Large:
Maria Bartolini Bussi (Italy)
Jaime Carvalho e Silva (Portugal)
Celia Hoyles (UK)
S. Kumaresan (India)
Alexei Semenov (Russia)

The fact that this Executive Committee will hold office for three rather than four years is related to the transition process towards the new electoral system for ICMI.

The General Assembly also elected two members to the International Commission for the History of Mathematics, Christian Houzel (France) and Peter Neumann (UK).

Although it is appointed rather than elected, I want to show you the membership of the Committee for Electronic Information and Communication (CEIC) for the next two years:

Chair: Jonathan Borwein (Canada)
Members at Large:
Michael Doob (Canada)
David Eisenbud (USA)
John Ewing (USA)
Ulf Rehmann (Germany)
Alf van der Poorten (Australia)
and one member from the IMU Executive Committee.

This is one of IMU's most important committees. Examples of its fine work are the new Electronic and Federated World Directories of Mathematicians. If you have not used these important resources you can learn about them on the IMU webpages. IMU is very grateful to this committee and in particular to its Chair Jonathan Borwein.

An important discussion in Santiago concerned IMU's finances. As well as a 5% increase in dues for each of the next 4 years, an increase in the number of units paid by the generally wealthier countries in groups IV and V was agreed. These increases, though painful, are essential to pay for IMU's increased activities, especially with respect to developing countries.

A further important discussion concerned a new set of guidelines for the scientific programme of future ICMs. This is a quite lengthy and detailed document, that after revision will be made available on the IMU webpages. The new guidelines begin with a description of the purpose of the ICM:

Every ICM should reflect the current activity of mathematics in the world, present the best work being carried out in all mathematical subfields and different regions of the world, and thus point to the future of mathematics. The invited speakers at an ICM should be mathematicians of the highest quality who are able to present current research to a broad mathematical audience.

I think that this is an important statement which should help future Program Committees in the difficult job of choosing a geographically balanced list of speakers of the highest quality.

The General Assembly passed 11 resolutions. I want to show you the four resolutions over which there was some discussion.
Resolution 8 concerned mathematical education:

The General Assembly of the IMU reaffirms the importance of the issues treated by ICMI (the International Commission on Mathematical Instruction). It recognizes the importance of continuing and strengthening the relationship of IMU with ICMI and urges the increased involvement of research mathematicians in mathematical education at all levels.

Resolution 9 concerns CEIC:

With the ultimate goal of creating an enduring network of digital mathematical literature, the General Assembly of the IMU endorses the new version of the "Best practices" document of its Committee on Electronic Information and Communication (CEIC), posted June 2005 at http://www.ceic.math.ca, as well as the March 2005 draft of "Digital Mathematical Library: a vision for the Future".

The digital mathematical library is a very important project that we need to do as much as we can to further.

Resolution 10 concerns the freedom of movement of scientists and mathematicians:

The General Assembly of the IMU continues to endorse the principle of universality expressed in the International Council for Science (ICSU) ARTICLE 5 of the STATUTES, as adopted by the 1998 General Assembly, and endorses the additional ICSU Statement on the Universality of Science (2004). Notwithstanding heightened tensions, security concerns, etc., the General Assembly urges free exchange of scientific ideas and free circulation of scientists and mathematicians across international borders.

The IMU opposes efforts by governments to restrict contacts, interactions, access and travel in the world mathematical community, particularly when such restrictions penalize individual mathematicians for the actions of governments.

Resolution 7 concerns the finances of IMU:

The General Assembly recommends that the incoming Executive Committee of the IMU studies the establishment of stable administrative structure and funding mechanisms, including possible fund-raising, for the support of the expanding IMU activities, and report to the 2010 General Assembly with concrete proposals.

Finally, the General Assembly decided that the location of ICM2010 will be Hyderabad in India.

If you want to learn more about IMU, you can consult the IMU webpages, where a detailed report of the General Assembly will appear, and read the new electronic newsletter IMU-Net. Mireille Chaleyat-Maurel has done a splendid job in the production of the newsletter – can we express our thanks to her.

The planning and bringing together of the many elements that make up the International Congress is a daunting undertaking. In several respects, such as online internet transmission of the plenary lectures and the management of relations with the media, of which I will have more to say in a moment, ICM 2006 has set standards for the future. In addition, the local organizing committee complemented the scientific programme with a tapestry of interesting events and exhibitions, expressing the richness of mathematics through discourse, history and art.

To all those who have lived the Congress over the last few years, and to those who have helped during the Congress itself, together making it such a great occasion, we say that your hard work has really been worth it, and how very much it is appreciated by all who have spent these days in Madrid.

In his closing address, Manuel de León will give us the opportunity to recognize the many individuals who have contributed to the success of this Congress. But with his permission I want to say a few words about the ICM and the media. This was a cooperative effort between IMU and the ICM Press Office. The Congress turned out to be a remarkable news story, and it was remarkably told. I wish to thank Allyn Jackson and Christof Poeppe, who wrote the initial press releases for the prizes, Marcus du Sautoy, who gave invaluable advice, and through articles and interviews contributed greatly to generating media interest, and Anne-Marie Astad for making available distribution lists developed for the Abel Prize. But no praise is too great for the accomplishments of the ICM Press Office itself, which consisted of Monica Salomone and Ignacio Fernandez Bayo of DIVULGA, supported by the splendid team that you see listed in a section of this volume. The result of their untiring and professional work was unprecedented national and international press coverage of the Congress and of mathematics.

Let me end by saying that it has been a great privilege to serve as President of IMU, and to work with my colleagues on the Executive Committee and with the Local Organizing Committee of the Congress. The IMU is very fortunate to have László Lovász as its next President. I wish him every success for his term of office, and thank you all for your participation in the Congress.

I now invite László Lovász to address the Congress.

László Lovász, Elected President of the International Mathematical Union

Ladies and Gentlemen,

Let me start with joining John Ball in expressing my sincere thanks and most heartfelt congratulations to the Organizers of the Congress. They have done a tremendous job, and we all benefited from this a lot: not only the participants, but also those colleagues and students to whom we go back and to whom we'll communicate what we have learned here.

I would also like to extend these thanks and congratulations to the Program Committee and the Executive Committee, who also worked very hard over the last 4 years. In particular, I express my thanks to John Ball for his devout, selfless, and I must say, very successful job he did as the President of IMU. It will very difficult to measure up to his work; one fact that helps me face this task is that as Past President, he'll be a member of the Executive Committee, and I'll count on his advice and help. I'd also extend these thanks to the retiring members of the Executive Committee: Vice Presidents Jean-Michel Bismut and Masaki Kashiwara, Secretary Phillip Griffiths, Madabusi Raghunathan and Past President Jacob Palis.

To those members of the Executive Committee who stayed on to serve a second term, Vice president Zhi-Ming Ma, Secretary Martin Grötschel, Ragni Piene and Victor Vassiliev, I am thankful for their willingness to do so, and I am looking forward to working with them.

I also want to express my thanks to the speakers. To be invited to the Congress is a great honor but also a great responsibility. Some areas are easier to talk about to a general mathematical audience than others; but I feel that all our speakers made a great afford to convey the main ideas and results to us.

Let me add a few more personal thoughts. When one arrives at a Congress, one cannot feel but overwhelmed by the number of people and by the variety of mathematics that is presented here. One could walk the corridors for minutes without seeing a familiar face, and one could browse the abstracts long before seeing a topic that one, say, did research in. This is so even for a senior person who attended many previous Congresses, and obviously a young person who has not been to previous Congresses must feel this even more.

It is perhaps because of this feeling that people repeatedly bring up the idea of abandoning these International Congresses. I feel this would be a serious mistake. I talked to scientists working in other fields, and they expressed their envy for the fact that we have a meeting where the best mathematicians tell to all of us what are the main problems, trends, or paradigms of their fields; where we honor the recipients of major prizes, and hear and discuss their work; where we have panel discussions and also corridor discussions about important issues facing our science or our community.

I hope that now, 9 days after the opening, all participants, in particular our young colleagues, go home with a feeling that mathematics is a vibrant, live, beautiful and fruitful science, and this will help them in their research, teaching and popularization of mathematics. And I hope that you'll come back to the next congress. See you at ICM 2010!

Manuel de León, President of the ICM2006 Organizing Committee

Dear colleagues,

Ten days ago in this same auditorium, we opened the 25th International Congress of Mathematicians. Since then we have been meeting here in this impressive *Palacio Municipal de Congresos*. We hope that this time together has been fruitful, and that you have met old friends and made new ones.

The best way of knowing if an ICM has been successful is if the participants are sorry to depart. If that is the case, then remember that it is not "Goodbye" but "See you soon!", because the great mathematical family will continue to meet at other congresses all over the World, and in four years time we will all be together again in Hyderabad, India, to enjoy the hospitality of our Indian friends.

No ICM would be possible without the effort of many people, and now is the moment to acknowledge them.

First, those in the different committees:

– Local Program Committee
– Satellite conferences
– Web
– Grants
– Cultural activities
– Social activities
– Infrastructure and logistics
– Publications

The efforts of the Secretariat, under the direction of our General Secretary José Luis González-Llavona, have been fundamental. I hope they will forgive us for any moments of impatience or bad moods during the run-up to the congress.

The work of our congress agency, UNICONGRESS, has also been essential. We have worked together through thick and thin, but the final result has made it all worthwhile. Our thanks to them, to all our suppliers, and to all the staff at the *Palacio Municipal de Congresos*.

I believe that if one thing stands out in this ICM2006, it is the extraordinary coverage provided by the press, and for that we have mainly to thank our friends at DIVULGA, led by Ignacio F. Bayo and Mónica Salomone. Their example is one to be followed, to continue the effort of putting mathematics across to the people.

Another crucial help was provided by our over 350 volunteers. Their patient and enthusiasm have contributed to do this ICM unforgettable for all of us. Thank you very much to all of you!

Finally, we express our thanks to all the participants for taking the trouble to come to Madrid in such difficult times, to set this great example of tolerance and peaceful co-existence. Thanks to all of you. Have a safe journey home, and see you again in India in 2010!

See you all soon!

¡Hasta pronto!

Rajat Tandon, University of Hyderabad, India

Sir John Ball, Prof Lovász, Prof Manuel de León, Ladies and Gentleman,

Let me first take this opportunity to express my appreciation of the innumerable number of people who have worked so tirelessly for this Congress in Madrid. Let me say 'Gracias" to our Spanish hosts and the local organizing committee under the chairmanship of Prof. Manuel de León whose monumental effort has ensured the unqualified success of this ICM. I say 'Gracias' to the hundreds of volunteers who have been so gracious in rendering their assistance to us. And finally I thank the various committees of the IMU who have presented us with such a strong and exciting academic programme. We recognize that we have our work cut out for us if we are to emulate the success of this Congress in Hyderabad.

We in India feel very privileged to have the honour of hosting the next International Congress of Mathematicians. It gives us enormous pleasure to invite the mathematical community from all six continents to Hyderabad for the ICM-2010, to be held from the 19th to the 27th of August.

Hyderabad, like Madrid, is a wonderful composition of the old and new. It is a city over 400 hundred years old with its teeming bazaars, old jewelry and fine craftsman – old forts and mausoleums. Cosmopolitan in its population you find people of all faiths living and learning together here.

Two hundred years ago this city expanded to the twin cities of Hyderabad and Secunderabad with the addition of a cantonment area and today greater Hyderabad is a conglomeration of three cities in one with the modern Cyberabad area which is second only to Bangalore as the information technology heart of India. Here you find not only large research and development centres of the top Indian IT companies like the Tata Consultancy Services or Infosys but also the large multinationals like IBM, Microsoft and Google.

This is the charm of Hyderabad – whilst you will find computer scientists at an international institute of information technology grapple with the intricacies of P=NP you will also find the finest pearl craftsmen in the world- their craft inherited from their forefathers over hundreds of years. Hyderabad is known as the pearl capital of India and perhaps of the world
The organizing committee for the ICM 2010 will be pushing for several satellite conferences in different parts of India –north, south, east and west. So those who wish to visit the Taj Mahal or the Pink city of Jaipur or the temples of Mahabalipuram will always be able to find a satellite conference of their choice near the place they want to visit. We are urging other South Asian countries to hold satellite conferences as well.

It will be our pleasure to host a meeting of the General Assembly of the IMU in Bangalore on the 16th and 17th of August just prior to the ICM.

I urge all delegates here to let it be known to the mathematical community of their countries that an open and democratic India, the home of Ramanujan, with a vibrant community of scholars of its own warmly welcomes them all and urges them to mix mathematics with pleasure and flavour the traditional hospitality of India in the August of 2010. We assure you that it will be a memorable experience.

7.3. ICM 2006 Travel Grants Report

The Travel Grants Committee consisted of Professors Hajer Bahouri (Tunisia), Zhi-Ming Ma (China), Madabusi S. Raghunathan (India), Michael Tsfasman (Russia) and Marcelo Viana (Brazil).

A total of 457 applications from young mathematicians in developing countries and 630 applications from senior mathematicians in developing countries had been received via the online application process which had been specifically developed.

To optimize the distribution of grants, each committee member was allocated a specific geographical region (see below), from which to select the 30 most suitable young and the 15 most suitable senior candidates, and to indicate the order of priority of each candidate within their categories.

Hajer Bahouri	Africa
Zhi-Ming Ma	Oriental Asia and the Pacific
M.S. Raghunathan	Indian Asia, India, Pakistan, the Middle East and Turkey
Michael Tsfasman	Former Soviet Union and Eastern Europe
Marcelo Viana	Latin America and the Caribbean

The selection process was done remotely, using the online database of applications.

On the occasion of an IMU Executive Committee meeting in Berlin, Germany, at the end of February 2006, John Ball, Zhi-Ming Ma and Ragni Piene met on 28 February to make the final selection and shortlist of grant awardees.

80 of the 115 young mathematicians and 65 of the 88 senior mathematicians who were offered grants actually travelled to Madrid. For 133 of these 145 participants the Local Organizing Committee of the International Congress of Mathematicians 2006 covered the registration fee, and for 131 of them provided board and lodging, for which IMU is most grateful.

In addition to the above, IMU also responded to an urgent need for some support in three countries which fell slightly outside the Per Capita Gross National Income hardship guidelines but had large numbers of well-qualified candidates for attendance, namely, the Czech Republic, Hungary and Poland, countries in sufficient geographical proximity so that small individual grants made it possible for 11 young mathematicians to participate in ICM2006. IMU is very grateful to the Local Organizing Committee for providing this extra group with board and lodging.

The lists of young and senior mathematicians referred to in paragraphs 4 and 5 above are appended.

The funds for these grants were given by:

2003

American Mathematical Society, USA	US $ 20,361.50
Het Wiskundig Genootschap, Netherlands	US $ 5,114.12
Unione Matematica Italiana, Italy	US $ 684.97

2004

American Mathematical Society, USA	US $ 18,636.50
London Mathematical Society, UK	US $ 4,972.00
Unione Matematica Italiana, Italy	US $ 763.49

2005

American Mathematical Society, USA	US $ 17,823.75
German Mathematical Society, Germany	US$ 2,936.00
London Mathematical Society, UK	US $ 4,938.55
Unione Matematica Italiana, Italy	US $ 958.16

2006

American Mathematical Society, USA	US $ 15,153.98
European Mathematical Society	US $ 2,092.32
London Mathematical Society, UK	US $ 5,000.00
Mathematical Society of Japan	US $ 16,697.29
Unione Matematica Italiana, Italy	US $ 1,156.70
U.S. National Academies of Science, USA	US$ 26,000.00

Science Initiative Group, USA US $ 3,500.00

On behalf of IMU, the Executive Committee expresses its deep gratitude for these donations.

Finally, IMU is very grateful to the the Local Organizing Committee for providing local expenses for 146 senior mathematicians from Latin America and Mediterranean developing countries and for 32 young mathematicians from Spain, and for providing travel expenses for 43 senior mathematicians from Latin America and Mediterranean developing countries, as well as for one Indian.

Grants to Young Mathematicians				
Surname	**Given Name(s)**	**Section**	**Country**	**US$ Grant**
Adamczak	Radoslaw	Eastern Europe	Poland	315
Alvarez-Samaniego	Borys	America	Ecuador	290
Andrada	Adrián Marcelo	America	Argentina	1200
Antezana	Jorge Abel	America	Argentina	1080
Araujo	Carolina Bhering	America	Brazil	1142
Arbieto Mendoza	Alexander Eduardo	America	Brazil	1321
Asadollahi Dehaghi	Javad	Asia	Iran	878
Bao	Ying	Asia	China	1101
Basilla	Julius Magalona	Asia	Philippines	1321
Bazaykin	Yaroslav	Former Soviet Union	Russian Federation	720
Beltrán Ramírez	Johel Victorino	America	Peru	1216
Bernatska	Julia	Former Soviet Union	Ukraine	427
Bochi	Jairo	America	Brazil	1135
Borges Quintana	Mijail	America	Cuba	857
Bouzahir	Hassane	Africa	Morocco	493
Breuer	Florian	Africa	South Africa	1021
Bursztyn	Henrique	America	Brazil	1194
Cabanillas Zannini	Victor Rafael	America	Peru	1150
Caraus	Iurie	Former Soviet Union	Moldova	806
Cheng	Wei	Asia	China	1104
Chraibi	Lotfi	Africa	Morocco	527
De Nápoli	Pablo Luis	America	Argentina	1200
Deligero	Eveyth Pauya	Asia	Philippines	1321
Demchenko	Oleg	Former Soviet Union	Russian Federation	676
Eddy	Josefina Pariguan M.	America	Venezuela	1200
Elekes	Marton	Eastern Europe	Hungary	329
Felikson	Anna	Former Soviet Union	Russian Federation	720
German	Oleg	Former Soviet Union	Russian Federation	537
Groisman	Pablo José	America	Argentina	1140
Gurevich	Pavel	Former Soviet Union	Russian Federation	166

Guterman	Alexander	Former Soviet Union	Russian Federation	600
Hencl	Stanislav	Eastern Europe	Czech Republic	800
Hessami Pilehrood	Tatiana	Asia	Iran	838
Hryn	Aliaksandr	Former Soviet Union	Belarus	614
Jardim	Marcos Benevenuto	America	Brazil	1101
Jedrzejak	Tomasz	Eastern Europe	Poland	241
Jeronimo	Gabriela Tali	America	Argentina	1121
Joseph Kennedy	Annadeva S.	Asia	India	1100
Kanbay	Filiz	Asia	Turkey	421
Kapshayev	Iskander	Former Soviet Union	Kazakhstan	1039
Khosravi	Behrooz	Asia	Iran	758
Konijeti	Sreenadh	Asia	India	1034
Kovilakath, Udaya	Anandavardhanan	Asia	India	764
Kozlowski	Wojciech	Eastern Europe	Poland	401
Kral	Daniel	Eastern Europe	Czech Republic	800
Li	Chi	Asia	China	1101
Li	Fucai	Asia	China	1170
Li	Miao	Asia	China	1127
Ling	Lin	Asia	China	1101
Lovas	Rezso	Eastern Europe	Hungary	357
Macarini	Leonardo	America	Brazil	1262
Maingi	Damian Muindi	Africa	Kenya	1321
Mainkar	Meera Gangadhar	Asia	India	1278
MALIKI	Youssef	Africa	Algeria	650
Maroti	Miklos	Eastern Europe	Hungary	390
Marquez	Bernardo	Asia	Philippines	1280
Mironov	Andrey	Former Soviet Union	Russian Federation	720
Molati	Motlatsi	Africa	Lesotho	1258
Nezakati Rezazadeh	Ahmad	Asia	Iran	1080
Olajos	Peter	Eastern Europe	Hungary	422
Ombrosi	Sheldy Javier	America	Argentina	1103
Omolofe	Babatope	Africa	Nigeria	1321
Onshuus	Alf	America	Colombia	985
Pereira	Jorge V.B. dos Santos	America	Brazil	1321
Pervova	Ekaterina	Former Soviet Union	Russian Federation	720
Prokopchuk	Alexandr	Former Soviet Union	Belarus	600
Puthenpurakal	Tony	Asia	India	704
Raczynski	Andrzej	Eastern Europe	Poland	346
Rangasamy	Parthasarathi	Asia	India	1089
Renchin-Ochir	Mijiddorj	Asia	Mongolia	944
Rodriguez Hertz	Federico	America	Uruguay	1189
Ruan	Qihua	Asia	China	1101
SAHRAOUI	Fatiha	Africa	Algeria	337
Saikia	Anupam	Asia	India	939
Sarma	Ritumoni	Asia	India	1107

Savin	Anton	Former Soviet Union	Russian Federation	315
Sidi Ammi	Moulay Rchid	Africa	Morocco	214
Silva Santos	Carlos Matheus	America	Brazil	1299
Smania Brandao	Daniel	America	Brazil	1655
Sokolov	Maksim	Former Soviet Union	Uzbekistan	1001
Ta	Thi Hoai An	Asia	Viet Nam	1250
Takenouchi	Yoshifumi	Asia	Philippines	1321
Tchantcho	Bertrand	Africa	Cameroon	1275
Tchuenche	Jean Michel	Africa	Nigeria	1101
Tengely	Szabolc	Eastern Europe	Hungary	353
Teo	Lee-Peng	Asia	Malaysia	1058
Tornaria Lopez	Gonzalo	America	Uruguay	1230
Tumarkin	Pavel	Former Soviet Union	Russian Federation	720
Zelenyuk	Yuliya	Africa	South Africa	952
Zheng	Yong	Asia	China	1104
Zhou	Yong	Asia	China	1321
			TOTAL	**82711**

Grants to Senior Mathematicians				
Surname	**Given Name(s)**	**Section**	**Country**	**US$ Grant**
Abd Al-Kader	Gamal	Africa	Egypt	505
Adepoju	Jerome	Africa	Nigeria	923
Bakuradze	Malkhaz	Former Soviet Union	Georgia	713
Ben Taher	Rajae	Africa	Morocco	500
Bhatta	Chet Raj	Asia	Nepal	2048
Bhattarai	Hom Nath	Asia	Nepal	1321
Bogatyrev	Andrei	Former Soviet Union	Russian Federation	555
Boyallian	Carina	America	Argentina	1001
Brinzanescu	Vasile	Eastern Europe	Romania	433
Cardoso Da Silva	Fernando A. Figueiredo	America	Brazil	1101
Chaisi	Mosa	Africa	Lesotho	1254
Desquith	Etienne	Africa	Ivory Coast	1272
Dzhuraev	Abubakir	Former Soviet Union	Kyrgystan	1101
Eldouma Abd Alla	Mohamed Osman	Africa	Sudan	751
Esslamzadeh	Gholam Hossein	Asia	Iran	801
Gadjiev	Tahir S.	Former Soviet Union	Azberbaijan	832
Gorkavyy	Vasyl	Former Soviet Union	Ukraine	490
Gorodski	Claudio	America	Brazil	1101
Grinevich	Petr	Former Soviet Union	Russian Federation	438
Gusein-Zade	Sabir	Former Soviet	Russian	498

		Union	Federation	
Helemskii	Alexander	Former Soviet Union	Russian Federation	549
Iranmanesh	Ali	Asia	Iran	819
Isselkou Ould Ahmed	Izid Bih	Africa	Mauritania	870
Jong	Jaebu	Asia	North Korea	1101
Kaptanoglu	Hakki Turgay	Asia	Turkey	351
Karimov	Umed	Former Soviet Union	Tajikistan	1101
Khoai	Ha Huy	Asia	Viet Nam	2500
Kientega	Gerard	Africa	Burkina Faso	1920
Kim	Tujin	Asia	North Korea	1101
Li	Dong	Asia	China	1101
Liberati	Jose Ignacio	America	Argentina	1001
Ma	Li	Asia	China	1101
Malamud	Mark	Former Soviet Union	Ukraine	581
Mampassi	Benjamin	Africa	Senegal	997
Mango Magero	John	Africa	Uganda	1418
Manuilov	Vladimir	Former Soviet Union	Russian Federation	596
Maqsood	Tariq	Asia	Pakistan	1121
Marcus	Andrei	Eastern Europe	Romania	411
Markarian	Roberto	America	Uruguay	1101
Matveev	Sergey	Former Soviet Union	Russian Federation	600
Millionshchikov	Dmitry	Former Soviet Union	Russian Federation	650
Natroshvili	David	Former Soviet Union	Georgia	632
Nemenzo	Fidel Brian	Asia	Philippines	1101
Ng	Chi-Keung	Asia	China	1101
Nguyen	Dinh Cong	Asia	Viet Nam	1101
Nkemzi	Boniface Belagoa	Africa	Cameroon	1154
Ogana	Wandera	Africa	Kenya	2489
Panazzolo	Daniel	America	Brazil	1101
Parumasur	Nabendra	Africa	South Africa	1254
Pham	The Long	Asia	Viet Nam	1236
Prajapat	Jyotshana	Asia	India	1101
Rakotondrajao	Fanja	Africa	Madagascar	1101
Rentsen	Enkhbat	Asia	Mongolia	944
Rodriguez Blanco	Guillermo	America	Colombia	864
Sanugi	Bahrom	Asia	Malaysia	1101
Slavova	Angela	Eastern Europe	Bulgaria	361
Todjihounde	Leonard	Africa	Benin	1005
Van Wyk	Leon	Africa	South Africa	1063
Vargas	Edson	America	Brazil	1101
Vera de Serio	Virginia Norma	America	Argentina	1001
Vukovic	Mirjana	Eastern Europe	Bosnia & Herzegovina	481
Wang	Shicheng	Asia	China	1101
Yanchevskii	Vyacheslav	Former Soviet Union	Belarus	600

Zheng	Songmu	Asia	China	1046
Zubelli	Jorge	America	Brazil	372
			TOTAL	**63039**

8. International Commission on Mathematical Instruction (ICMI)

http://www.mathunion.org/Organization/ICMI/index.html

Report on ICMI activities in 2006
prepared by Bernard R. Hodgson, Secretary-General

(See Bulletin No. 53, pp. 87-101 for the Report on ICMI activities in 2002 – 2005)

1. Organisation

The 2003-2006 **Executive Committee (EC)** of the International Commission on Mathematical Instruction (ICMI) had its sixth and final meeting in Cartagena de las Indias, Colombia, on November 18-21, 2006. This meeting was mainly devoted to the preparation of the transition to the next ICMI EC, taking charge as of January 1, 2007. On the occasion of their visit to Colombia, the members of the ICMI EC took part in a Forum on the theme "Mathematical Competencies in Higher Education" organized by the Colombian Ministry of Higher Education on November 22-24 in Bogotá. Besides this final meeting, the work of the EC during 2006 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 2006, and no new Sub-Commission for ICMI has been established. *[Note: A correction is hereby made to the 2005 ICMI Report of activities, to the effect that Portugal has established a Sub-Commission for ICMI in 2005.]* Consequently, at the end of 2006, ICMI had 81 member countries, 67 of which are also members of the International Mathematical Union (IMU). Of the 81 member countries of ICMI, 17 had in 2006 no appointed **Representative to ICMI**: *Armenia*, *Bosnia and Herzegovina*, *Brunei Darussalam*, *Estonia*, *Greece*, *Kazakhstan*, *Kuwait*, *Pakistan*, *Peru*, *Saudi Arabia*, *Senegal*, *Slovenia*, *Tunisia*, *Turkey*, *Ukraine*, *Uruguay, Zambia*. Among the remaining 64 member countries, 7 Representatives could still not be reached by e-mail, a rather negative signal as regards the level of activity of the Representative from that country. Still the efforts launched in 2003 by the ICMI Executive Committee in order to reinforce the links and improve communication between ICMI and its member countries, each EC member being directly responsible for a few countries, have begun to bear fruits. Close to 20 new ICMI Representatives have been appointed in recent years, which is definitely a very positive outcome, especially considering the important role to be played from 2008 onwards by the ICMI General Assembly in the election of the ICMI Executive Committee (see below). The ICMI EC is maintaining its efforts so that the participation of the member countries at the 2008 General Assembly through the Representatives to ICMI may be as sound and robust as possible. During 2006, a total of eleven collective e-mail messages were sent by the Secretary-General to the ICMI Representatives, most of these asking for the collaboration of the Representatives in dissemination of information about ICMI and its activities, and others asking for input from the Representatives.

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

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

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

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

2. ICMEs

The 11th International Congress on Mathematical Education, **ICME-11**, will be held in Monterrey, México, from July 6 to 13, 2008. The International Program Committee and the Local Organising Committee are respectively chaired by Marcela Santillán and Carlos Signoret. The local preparation of ICME-11 benefits from the strong support of the Sociedad Matemática Mexicana. Up to date information about the congress is gradually becoming available on the website
http://icme11.org/

A call for bids to host **ICME-12** in 2012 was made by the Secretary-General of ICMI during the closing session of ICME-10 in July 2004, and published in the *ICMI Bulletin* (No. 55, December 2004). Three official bids have been received by the deadline of November 2006, from China (Shanghai), Korea (Seoul) and South Africa (Durban). Visits to the three sites have been scheduled early in 2007, the ICMI visiting committee being composed of President Michèle Artigue, Vice-President Bill Barton and Secretary-General Bernard R. Hodgson. Following a preliminary assessment of the bids at its first meeting in June 2007, the ICMI Executive Committee aims to reach a decision about the site of ICME-11 before the end of 2007.

As two members of the ICMI EC (Jill Adler and Frederick Leung) are from countries submitting a bid for ICME-12, a decision had to be made about how to avoid any conflict of interest, or appearances of such conflict. The following two principles were agreed upon by the EC: (i) at no point should an EC member from a bidding country participate in any discussion relating to evaluation of the bids, or have access to information about the competing bids; (ii) no EC member may be a member of the committee that formally presents a bid to ICMI (although an EC member could be involved in the reflection leading to the decision by a country to submit or not a bid).

Due to a defect in the content of the CD accompanying the book of Proceedings of **ICME-9**, it was announced in the *ICMI Bulletin* 55 (December 2004) that the Japanese colleagues in charge of the congress had decided to issue a revised and expanded version of the CD, to be sent to all ICME-9 participants. The production of the revised version of the CD has met with some delay with respect to the original plans, but the shipping of the new CD finally took place by the end of June 2006.

Progress on the Proceedings of **ICME-10** has been delayed due to health problems of a key member of the editorial team, so that the publication is now expected to appear in 2007.

3. ICMI Studies

No new ICMI Study was launched in 2006. By the end of 2006 the situation as regards ongoing Studies was as follows.

- **ICMI Study 13**: *Mathematics Education in Different Cultural Traditions: A Comparative Study of East-Asia and the West*
  The ICMI Study volume has appeared early in 2006 in the New ICMI Study Series; eds: Klaus-Dieter Graf, Frederick K.S. Leung and Francis Lopez-Real. (NISS 9)

- **ICMI Study 14**: *Applications and Modelling in Mathematics Education*
  The NISS volume is in preparation under the editorship of Werner Blum, Peter Galbraith, Hans-Wolfgang Hehn and Mogens Niss, with publication early in 2007. (NISS 10)

- **ICMI Study 15**: *The Professional Education and Development of Teachers of Mathematics*
  The NISS volume is currently in preparation under the editorship of the two co-chairs, Deborah Ball and Ruhama Even, and is expected to appear in 2008. (NISS 11)

- **ICMI Study 16**: *Challenging Mathematics in and beyond the Classroom*
  The Study Conference was held at the Norwegian University of Science and Technology, in Trondheim, Norway, on June 27 to July 3, 2006. It was attended by 44 participants from 22 different countries. The NISS volume is in preparation under the editorship of the Study co-chairs Edward J. Barbeau and Peter J. Taylor, with publication expected in 2008. (NISS 12)

- **ICMI Study 17**: *Digital Technologies and Mathematics Teaching and Learning: Rethinking the Terrain*
  The 17th ICMI Study conference, held at Hanoi University of Technology, Viet Nam, on December 3-8, 2006, was attended by 130 participants from 34 different countries, including 36 Vietnamese participants. Moreover it was decided by the local organizers to benefit from this concentration of expertise by organizing a specific workshop associated

with the conference and intended for local and regional teachers. The participants to this workshop were offered to attend all the conference activities (plenary lectures, panels, communications and project presentations), except the working group activities more directly devoted to the preparation of the ICMI Study book by the regular conference participants — these group activities were replaced for the workshop participants by three specific laboratory sessions taking place in parallel. The workshop was attended by 44 teachers from Viet Nam, 3 teachers from Cambodia and 2 teachers from Thailand. The Study conference and the workshop were financially supported by the ICMI Solidarity Fund (2 000 USD), IMU Developing Countries Strategy Group — DCSG (5 000 USD) and UNESCO (3 000 USD), as well as by five private sponsors involved in the workshop (9 000 USD altogether).
The Study co-chairs Celia Hoyles and Jean-Baptiste Lagrange are responsible for the editorial work on the NISS Study volume. (NISS 13)
The Study 17 conference was saddened by a tragic traffic accident to the opening keynote speaker, Seymour Papert, who was severely injured when hit by a motorcycle while crossing a street on his way to Hanoi University of Technology.

- **ICMI Study 18**: *Statistics Education in School Mathematics: Challenges for Teaching and Teacher Education*
  This Study is organised jointly with the International Association for Statistical Education (IASE), and its International Programme Committee is chaired by Carmen Batanero. The Study Conference, which is merged with an IASE Round Table Conference, will take place on June 30-July 4, 2008, at the Instituto Tecnológico y de Estudios Superiores, in Monterrey, México, as a satellite conference to ICME-11. The IPC had a meeting on the occasion of the ICOTS-7 conference in Salvador de Bahia, Brazil, in July 2006 and the Discussion Document for the Study has been posted on the Study website by mid-September 2006.

- **ICMI Study 19**: *The Role of Mathematical Reasoning and Proving in Mathematics Education*
  The International Programme Committee for the 19th ICMI Study is co-chaired by Gila Hanna and Michael de Villiers. The appointment of the other members was still ongoing at the end of 2006.

At its November 2006 meeting, the EC finalised its work on the report prepared by Steve Lerman about the ICMI Study programme and its accomplishments since its inception in the mid 1980s. EC member Peter Galbraith has written on behalf of the Executive Committee a paper summarising the recommendations of the EC on this account for the benefit of co-chairs of future Studies. This document appears in the December 2006 (No. 59) issue of the *ICMI Bulletin*.

4. ICMI Regional Conferences

One ICMI Regional Conference was held in 2006.

- **EMF 2006** (*Espace mathématique francophone 2006*) took place at the University of Sherbrooke, Québec, Canada, on May 27-31, 2006. It is the third in this series, the first two having been held in Grenoble, France (2000) and Tozeur, Tunisia (2003). EMF 2006 gathered 258 participants from 17 different countries, including 8 African and 6 European countries. It was scheduled close to the annual meetings of two teachers' associations from the province of Québec, with one day common to the three conferences that brought

together nearly 800 participants. A report on EMF 2006 appears in the *ICMI Bulletin* 59 (December 2006).

In addition to **AFRICME 2** (Nairobi, Kenya, May 23-27, 2007) and **ICMI-EARCOME-4** (Penang, Malaysia, June 18-22, 2007), already announced, the ICMI EC has granted the status of ICMI Regional Conference to two other conferences:

- **XII CIAEM** (Conferencia interamericana de educación matemática), to take place in Querétaro, México, on July 15-18, 2007, on the theme *Educación matemática: historia y prospectiva*.

- **EMF 2009** (Espace mathématique francophone), to be held in Dakar, Senegal, in 2009.

The ICMI EC is represented on the International Programme Committees of both these conferences by Michèle Artigue and Bernard R. Hodgson.

5. Other Activities

The Commission will celebrate its one hundredth anniversary in 2008 and the preparation of the **centennial symposium**, which will take place early March at the Accademia dei Lincei in Rome, is now well under way. The International Programme Committee for this symposium, chaired by Ferdinando Arzarello, met early in 2006 to set up the programme. The Local Organising Committee is chaired by Marta Menghini. More information can be obtained from the website

http://www.unige.ch/math/EnsMath/Rome2008/

Over the last years, ICMI has been sponsoring, jointly with UNESCO and other bodies, the development of a mathematical exhibition entitled "**Experiencing mathematics**", whose aim is to improve the image of mathematics among the general public. Three copies of the exhibition are now available and are being circulated internationally under UNESCO and ICMI auspices. The 2006 programme of travel included Namibia (15 towns, including Windhoek) — this marked the end of the one-year Austral Africa tour —, Thailand (Bangkok), Laos (Vientiane, Pakse et Luang Prabang), Viet Nam (Danang and Ho Chi Minh City), Spain (Madrid), where it was shown during and after the International Congress of Mathematicians in the Centro cultural Conde Duque (more than 30 000 visitors), and France (Lyon). The current plans for 2007 include Cambodia (5 towns), Singapore, Viet Nam, Lebanon (Beirut and Saida), India, Portugal, Poland (Warsaw and Kraków) and Switzerland (Basel) in connection with the celebration of the 300th anniversary of Euler. Plans are also being made about the development of a "virtual exhibition" connected to the existing one. This additional component, available in four languages, will be ready by October 2007 for a first use in Angola. There will also be a one-year travel in Latino-America beginning in Chile in October 2007 and ending in México in 2008, in connection with ICME-11. By the end of 2006, the exhibition "Experiencing mathematics" had been visited by more than 200 000 people.

ICMI has maintained in 2006 its actions for developing countries, in particular in collaboration with IMU **Developing Countries Strategy Group (DCSG)** which aims at increasing, guiding and coordinating IMU's activities in support of mathematics and mathematics education in the developing world. ICMI is represented in the DCSG by Vice-President Michèle Artigue. It was decided at the IMU General Assembly in August 2006 to merge IMU Commission for Development and Exchanges (CDE) and DCSG so to form as of

January 2007 the new *Commission for Developing Countries* (CDC). The annual budget of CDC will be of the order of 90 000 USD, coming in equal shares from IMU and from the Abel Foundation. Part of this amount will be used to provide grants to facilitate participation to conferences, but part will be devoted to the development of new projects. It was agreed that ICMI will be represented in the CDC. As regards the year 2006, the DCSG provided a grant of 5 000 USD for the teachers' workshop organised in Hanoi on the occasion of ICMI Study 17. With the help of the *Centre international de mathématiques pures et appliquées* (CIMPA), suitable candidates from neighbouring countries have been identified for this workshop. This contributed to initiate some of the networking needed in preparation for the "PCMI-like" seminar planned for Cambodia in 2010 — ICMI has been co-sponsoring since 2001 international workshops organised in Utah, USA, in the context of the annual Park City Mathematics Institute (PCMI) hosted by the Institute for Advanced Study, Princeton, USA (two persons from Vietnam have been selected during the Study 17 conference to participate in the 2007 PCMI International Seminar).

The ICMI EC was contacted by the chief editor of *Educational Studies in Mathematics* (ESM, the leading journal in the field of mathematics education, founded in 1976 by Hans Freudenthal and now published by Springer) about the problems raised by the fact that only one journal in the field, namely the *Journal for Research in Mathematics Education*, is considered in the ISI Social Sciences Citation Index (SSCI). After discussion within the EC, and after considering the journal citations in the proceedings of the recent conferences of PME, an Affiliated Study Group of ICMI, — which clearly confirmed the leading role played by ESM —, it was decided at the EC meeting of November 2006 that the current and future Presidents of ICMI would send a joint letter to ISI pointing out the negative consequences of such a situation and asking for the insertion of at least ESM in the SSCI. The letter was sent in December 2006. It did not have immediate positive result, but ISI recognized our arguments as consistent and also agreed on the necessity of pursuing the discussion on the representation of the field of mathematics education. This discussion is currently ongoing and involves also Mary Sheldon, Springer Senior Publishing Editor in charge of the social sciences and ICMI contact with this publisher for the NISS series.

6. IMU Concerns about Mathematics Students

Reflections have been pursued in 2006 about the so-called "**Pipeline Project**", launched jointly in 2004 by IMU and ICMI in reaction to the decline in the numbers and quality of students who are choosing to pursue mathematics study at the university level, as well as the inadequate supply of mathematically qualified students choosing to become mathematics teachers in the schools. In particular comments have been received that the initial plans about the Pipeline Project were too ambitious as regards the scope of the project and the number of countries first identified as being potentially involved. Suggestions were made about the need to work with a small group of countries, and to clearly identify what kind of data is to be collected and analyzed. The task force already appointed to run this project, chaired by ICMI EC member Frederick Leung, has a meeting in April 2007 so to formulate more exactly the questions to be answered, to develop a finer design of the data that needs to be gathered to answer these questions — to the extent possible from existing sources —, and finally to consider how it can be synthesized meaningfully across different cultural settings. Work has also been done on identifying some major professional organisations that would collaborate to this project.

7. ICMI Affiliated Study Groups

ICMI continues to have five Affiliated Study Groups, namely (in the chronological order of their affiliation to ICMI) **HPM** (The International Study Group on the Relations Between the History and Pedagogy of Mathematics) and **PME** (The International Group for the Psychology of Mathematics Education) — 1976, **IOWME** (The International Organization of Women and Mathematics Education) — 1987, **WFNMC** (The World Federation of National Mathematics Competitions) — 1994 and **ICTMA** (The International Study Group for Mathematical Modelling and Applications) — 2003.

As usual these ASGs will be given specific slots on the programme of ICME-11, to be held in 2008 in Monterrey. Moreover some of them will organise satellite conferences within or nearby México on the occasion of ICME-11.

8. The ICMI Solidarity Program

A grant of 2 000 USD from the ICMI **Solidarity Program in Mathematics Education** was given to the organisers of ICMI Study 17 in order to partially support the participation of 11 Vietnamese teachers to the workshop organised on the occasion of the Study conference held in Hanoi in December 2006.

As regards the recommendations from the **Ad Hoc Committee** chaired by Alan Bishop and appointed in 2003 to review the functioning and the impact of the Solidarity Program, the ICMI EC has concluded that the practical implementation of some of the recommendations need to be further explored. Consequently the setting up of a Solidarity Steering Sub-Committee, as recommended in the report, is the next step in leading to further discussions and actions.

9. The ICMI Awards

The two recipients of the **ICMI Awards in mathematics education research** for the year 2005 were announced in a press release issued on April 3, 2006 (see *ICMI Bulletin* No. 58, June 2006, pp. 6-10). The awardees are Ubiratan D'Ambrosio for the 2005 Felix Klein Medal, and Paul Cobb for the 2005 Hans Freudenthal Medal. These ICMI Awards will be presented at the opening ceremony of ICME-11, together with the two 2007 ICMI Awards (to be announced in the first months of 2008). Lectures by each of the awardees will be on the programme of ICME-11.

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

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

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 generally accessible through the ***ICMI Bulletin*** and the **ICMI website**, both under the editorship of the Secretary-General of ICMI. Two issues of the *Bulletin* are dated 2006: the June 2006 (No. 58) issue of the *Bulletin* was published on time, but the publication of the December 2006 (No. 59) issue has experienced delays and was still outstanding at the time of this report. Progress on the design and implementation of a new website for ICMI has been pursued during the year 2006.

ICMI Financial Report 2006
prepared by Bernard R. Hodgson, Secretary-General

(See Bulletin No. 53, pp. 171-183 for the ICMI Financial Reports 2002-2005)

ICMI Accounts 2006

1 January – 31 December

BALANCE AS OF JANUARY 1:

ICMI	• **Canadian Dollars**	**77 770,10**
	• **US Dollars**	**50 899,62**
Solidarity Fund (US Dollars)		***37 324,43***

Canadian Dollars Account:

Income:	
balance 2005	77 770,10
IMU (Schedule A: Administration — 15 000,00 CHF) [1)]	13 536,43
IMU (Schedule B: Scientific Activities — 27 000,00 CHF) [1)]	24 365,57
interest	706,36
total	116 378,46

Expenditure:	
ICMI Study 17: IPC meeting, Paris (March 2006) [2)]	2 728,34
ICMI Study 17: Study Conference, Hanoi (December 2006) [3)]	3 057,11
ICMI Study 18: IPC meeting, Salvador de Bahia (July 2006)	6 073,04
ICMI EC meeting, Cartagena de las Indias (November 2006) [4)]	9 528,45

ICM06: participation of the President and Secretary-General to IMU General Assembly [5]	1 108,19
ICMI Centennial: IPC meeting, Rome (February 2006)	8 020,56
ICME-11: meeting of subset of IPC, México (November 2006)	234,30
EMF 2006, Sherbrooke, travel and local expenses of Secretary-General and IPC member	2 962,60
AFRICME 2, Nairobi, travel of EC member to IPC meetings	1 442,30
grant to UNESCO/ICMI math exhibition "Experiencing Mathematics" (1 000 EUR) [6]	1 543,10
design work on a new website for ICMI	2 403,28
transfer to USD account (corresponding to 1 000,00 USD)	1 130,00
bank charges (checks and foreign transfers)	87,40
ICMI balance 2006	**76 059,79**
total	116 378,46

US Dollars Account:

Income:	
ICMI balance 2005	50 899,62
ICMI Study 17: grants and sponsorships [3]	17 000,00
transfer from CAD account (corresponding to 1 130,00 CAD)	1 000,00
ICMI interest	2 179,68
Solidarity Fund balance 2005 [7]	*37 324,43*
Solidarity Fund interest	1 564,56
total	109 968,29

Expenditure:	
ICMI Study 15: lunch for editorial team, Prague (July 2006) [8]	75,62
ICMI Study 17: IPC meeting, Paris (March 2006) [2]	1 980,00
ICMI Study 17: Study Conference, Hanoi (December 2006) — ICMI Funds [3]	14 810,00
ICMI Study 17: Study Conference, Hanoi (December 2006) — Solidarity Funds [3]	2 000,00
ICMI Study 18: IPC meeting, Salvador de Bahia (July 2006)	1 500,00
ICMI EC meeting, Cartagena de las Indias (November 2006) [4]	2 150,00
ICMI Centennial: IPC meeting, Rome (February 2006)	1 300,00
grant to AFRICME 2 (ICMI Regional Conference)	1 000,00
bank charges (foreign transfers)	160,97
ICMI balance 2006	**48 102,71**
Solidarity Fund balance 2006	***36 888,99***
total	109 968,29

Average exchange rate, 2006 *1 USD = 1,13 CAD*

Notes:

1. Considering the fact that the value of the US dollar has in recent years substantially diminished with respect to many currencies, the decision made in 2004 to have the annual grant of IMU given to ICMI in Canadian dollars was maintained in 2006, as this is the currency through which a majority of ICMI expenses are paid.

2. Part of the local costs for this meeting was covered by the IREM of Université de Paris 7.

3. On the occasion of the 17th ICMI Study conference, held at Hanoi University of Technology, Viet Nam, a workshop was organised specifically for local and regional teachers. The participation to both the Study conference and the workshop of researchers and teachers from the host country and other less affluent countries was directly supported by grants received from IMU Developing Countries Strategy Group — DCSG (5 000 USD) and UNESCO (3 000 USD), as well as from the ICMI Solidarity Fund (2 000 USD). Additional funds were received from five private sponsors involved in the workshop: Aplusix, Autograph, Cabrilog, Key Curriculum Press and TI (9 000 USD altogether), thus totalising 19 000 USD (including the amount from the ICMI Solidarity Fund) as special support raised around Study 17.

Part of this sum was used to provide grants to close to 30 participants from less affluent countries to the Study conference and the workshop, while part was given to the Local Organising Committee to support the infrastructure of the conference/workshop and as well as the participation of Vietnamese colleagues. Moreover as a humanitarian gesture to alleviate part of the heavy financial impact of the tragic traffic accident suffered by a keynote speaker to the conference, the Commission, within its limited means, contributed an amount 5 000 USD to cover related travel costs.

4. The costs of the 2006 annual meeting of the ICMI Executive Committee were substantially reduced thanks to the local support raised by our host, ICMI EC Member Maria de Losada, in connection with the participation of the ICMI EC members to a Forum on the theme "Mathematical Competencies in Higher Education" organized by the Colombian Ministry of Higher Education.

5. Following the agreement made in 2000 with IMU, the President and Secretary-General of ICMI are *ex officio* invited observers to the General Assembly of IMU.

6. This second grant of ICMI to the mathematical exhibition "Experiencing Mathematics" — a first grant of 10 000 USD had been given in 2004 for the mounting of the exhibition — was used to facilitate the travel of one copy of the exhibition among Asiatic countries.

7. The assets of the **ICMI Solidarity Fund**, established in 1992, are kept, on the ICMI accounts, separately from ICMI's general resources.

8. The editorial board in charge of the preparation of the Study 15 volume (NISS 11) had a working lunch in Prague during PME 30.

9. In addition to the IMU annual grant, three activities of ICMI in 2006 were financially supported by generous donations: the ICMI Study 17 IPC meeting and conference/workshop, and the ICMI EC meeting. However the financial situation of the Commission is such that it could not face its duties without an important support received from various bodies and institutions. In particular the Secretary-General's home institution, Université Laval, has contributed in 2006 a substantial support to ICMI's work of the order of 11 500 USD (e.g. through the printing and distribution costs of the *ICMI Bulletin*, plus a partially reduced teaching load). The same is true of other members of the Executive Committee as well as many of the individuals involved in the programme committees of ICMI activities, their home institutions partially covering the expenses related to their participation in organisational meetings. The ICMI Executive Committee expresses its gratitude for this generous support.

However, as repeatedly stressed in previous ICMI financial reports, this type of "invisible" support has become much fragile over the last decade or so, possibly due to the financial situation of several higher education institutions around the world. This has resulted in severe constraints on ICMI financial health, an issue to which the ICMI EC is trying to find a solution. Any suggestion or comment on that account is most welcome.

9. Commission on Development and Exchanges (CDE)

http://users.ictp.it/~cde/

Report on CDE activities in 2006
prepared by Sharon Laurenti, Administrative Secretary IMU/CDE

(See Bulletin No. 53, pp. 83-86 for the Report on CDE activities in Jan 2003 – Mar 2006)

During the interval 1 January - 31 December 2006, CDE received a total of **83 applications for financial support**, in the three exisiting categories:

(i) conferences in developing[1] countries
(ii) conferences in developed countries[2]
(iii) individual research travel support

After initial routine screening by the Administrative Secretary to ensure that requests fell within IMU programme guidelines, a total of 70 applications were circulated to the Commission for review during the year.

[1] At the time of writing, the IMU/CDE defintion of a developing country is where the Per Capita Gross National Income according to the World Bank's Development Indicators (Atlas methodology) is not in excess of US$ 5,500.

[2] CDE support to this category is intended solely for the participation of mathematicians from developing countries. Furthermore, organizers are required to demonstrate that they will match the funds being requested from / granted by CDE by an equal amount from other sources also dedicated to the participation of mathematicians from developing countries.

During 1 January[3] - 31 December, a total of 43 awards[4] were made, for a total value of US$ 39,000.

Support or partial support was granted in **31 cases** for conferences taking place in the following **developing countries**:

Country	*No. awards*	*Total value of awards (US$)*
Algeria	1	1,000
Cameroon	1	1,000
Chile	1	1,000
China	1	750
Colombia	2	1,750
Egypt	1	1,000
Gaza Strip	1	1,000
India	3	3,000
Iran	1	750
Malaysia	1	1,000
Mongolia	1	1,000
Morocco	3	2,850
Nicaragua	1	1,000
Niger	2	1,850
Pakistan	1	850
Peru	2	2,500
Senegal	1	1,000
South Africa	1	1,000
Tanzania	1	1,000
Tunisia	1	500
Turkey	1	1,000
Ukraine	1	1,000
Vietnam	2	2,000
Total	**31**	**29,800**

Support or partial support was granted in **2** cases of **conferences** taking place in the following **developed countries**:

Country	*No. awards*	*Total value of awards (US$)*
Mexico	1	1,000
Switzerland	1	1,500
Total	**2**	**2,500**

Individual research travel support was granted in **10** cases, to mathematicians from:

Country	*No. awards*	*Total value of awards (US$)*
Bangladesh	1	1,000
China	1	750
Cambodia	1	1,000
Cameroon	1	750

[3] CDE's January awards include awards on applications received during December of the previous year.

[4] At the time of writing, 12 of these awards in the amount of US$ 10,600 remain to be disbursed.

India	2	1,100
Iran	1	250
Nigeria	1	750
Serbia & Montenegro	1	350
Uzbekistan	1	750
Total	**7**	**6,700**

It is remarked that, due to lack of funds, the amounts awarded for conferences, in particular, were necessarily rather small.

Actual Schedule A expenditures during or related to the year 2006 amounted to US$ 1,729.49. In view of the reduced Schedule B budget due to 2006 being a Congress year, Schedule A funds in the amount of US$ 10,000 were transferred to Schedule B to meet the high demand.

Income 1 January - 31 December 2006

Source	*Amount (US$)*
IMU Schedule A	5,788.00
IMU Schedule B	30,000.00
Mathematical Society of Japan	1,272.05
Total	37,060.05

A detailed financial report accompanies this narrative.

The following tables serve to illustrate how CDE's funding has been subject to significant fluctuation:

CDE income since 1998

1998

Source	*Amount (US$)*
IMU Schedule A	Beginning balance 4,217.02 + 4,264.20 income
IMU Schedule B	Beginning balance 62,210.40 +12,537.90 income
Total available	83,229.52

1999

Source	*Amount (US$)*
ICSU (MUSA)	7,000.00
IMU Schedule A	4.744.20
Mathematical Society of Japan	3,886.54
Total income	15,630.74

2000

Source	*Amount (US$)*
ICSU (MUSA)	7,000.00
IMU Schedule B	11,000.00
Total income	18,000.00

2001

Source	*Amount (US$)*
IMU Schedule B	28,121.95
French Mathematical Society	5,131.77
Mathematical Society of Japan	2,419.85
U.S. State Department (MUSA/MSISA)	3,500.00
Total income	39,173.57

2002

Source	*Amount (US$)*
IMU FSU Support	5,000.00
IMU Schedule A	1,174.50
IMU Schedule B	25,000.00
U.S. State Department (MUSA/MSISA)	3,500.00
Total income	34,674.50

2003

Source	*Amount (US$)*
IMU Schedule B	34,559.00
Mathematical Society of Japan	1,274.97
U.S. State Department (MUSA/MSISA)	3,500.00
Total income	39,333.97

2004

Source	*Amount (US$)*
IMU Schedule A	6,100.00
IMU Schedule B	55,000.00
IMU/DCSG	10,000.00
Mathematical Society of Japan	2,767.45
Total income	73,867.45

2005

Source	*Amount (US$)*

IMU Schedule A	5,776.00
IMU Schedule B	73,709.00
Mathematical Society of Japan	1,226.23
Total income	80,711.23

Misc.

A substantial amount of correspondence was entered into during the course of the year, mainly due to applications submitted without all the necessary information in the first instance.

During the year, CDE cooperated fully with the efforts of the Executive Committee of the IMU to expand the reach of IMU support in the developing world.

CDE FINANCIAL REPORT 2006					Balances		Account Balance
Transaction	Date	Type	Schedule A	Schedule B	Schedule A	Schedule B	
		RT=Ind. Res. Trav.	(Admin.)	($ to Ind.)			
		CS=Conf. Support					
Beginning Balance	01.01.2006				$7.434,34	$7.250,38	$14.684,72
IMU Schedule A & B 2006	12.01.2006		($5.788,00)	($30.000,00)	$13.222,34	$37.250,38	$50.472,72
Zhou	17.01.2006	RT China -> Italy (SNS Pisa)		$500,00	$13.222,34	$36.750,38	$49.972,72
Djebali	17.01.2006	CS Algeria		$1.000,00	$13.222,34	$35.750,38	$48.972,72
Trimeche	17.01.2006	CS Tunisia		$1.000,00	$13.222,34	$34.750,38	$47.972,72
Khosrovshahi	07.02.2006	CS Iran		$1.000,00	$13.222,34	$33.750,38	$46.972,72
AMS Dec. 05 fees	08.02.2006		$79,20		$13.143,14	$33.750,38	$46.893,52
Yousif	21.02.2006	CS Egypt		$1.000,00	$13.143,14	$32.750,38	$45.893,52
AMS Jan. 06 fees	01.03.2006		$87,02		$13.056,12	$32.750,38	$45.806,50
Tonga	01.03.2006	CS Cameroon		$1.500,00	$13.056,12	$31.250,38	$44.306,50
Lilly	10.03.2006	CS India		$1.000,00	$13.056,12	$30.250,38	$43.306,50
Salehi	13.03.2006	RT Iran -> Spain		$250,00	$13.056,12	$30.000,38	$43.056,50
Khan	13.03.2006	RT India -> Italy		$500,00	$13.056,12	$29.500,38	$42.556,50
Hislop	30.03.2006	CS Chile		$1.000,00	$13.056,12	$28.500,38	$41.556,50
Sahadevan	31.03.2006	RT India -> Japan		$600,00	$13.056,12	$27.900,38	$40.956,50
Zerouali	03.04.2006	CS Morocco		$850,00	$13.056,12	$27.050,38	$40.106,50
AMS Feb. 06 fees	11.04.2006		$52,20		$13.003,92	$27.050,38	$40.054,30
AMS Mar. 06 fees	26.04.2006		$196,40		$12.807,52	$27.050,38	$39.857,90
Nguyen Quoc Thang	28.04.2006	CS Vietnam		$1.000,00	$12.807,52	$26.050,38	$38.857,90
Bekolle	02.05.2006	CS Cameroon		$1.000,00	$12.807,52	$25.050,38	$37.857,90
Asghar	16.05.2006	CS Pakistan		$850,00	$12.807,52	$24.200,38	$37.007,90
Njoku	18.05.2006	RT Nigeria -> Italy (ICTP)		$750,00	$12.807,52	$23.450,38	$36.257,90
AMS Apr. 06 fees	25.05.2006		$88,40		$12.719,12	$23.450,38	$36.169,50
Le Thi Thanh Nhan	30.05.2006	RT Vietnam -> Italy (CDE/ICTP Agrmnt)		$1.000,00	$12.719,12	$22.450,38	$35.169,50
Okasha	05.06.2006	CS Gaza Strip		$1.000,00	$12.719,12	$21.450,38	$34.169,50
Andruskiewitsch	07.06.2006	CS Argentina		$1.000,00	$12.719,12	$20.450,38	$33.169,50
Iusem	08.06.2006	CS Nicaragua		$1.000,00	$12.719,12	$19.450,38	$32.169,50
Usha	15.06.2006	CS India		$1.000,00	$12.719,12	$18.450,38	$31.169,50
Kholboev	19.06.2006	RT Uzbekistan -> Italy (CDE/ICTP Agrmnt)		$750,00	$12.719,12	$17.700,38	$30.419,50
Boursier	21.06.2006	CS Malaysia		$1.000,00	$12.719,12	$16.700,38	$29.419,50
AMS May 06 fees	27.06.2006		$144,60		$12.574,52	$16.700,38	$29.274,90
Saley	14.07.2006	CS Niger		$850,00	$12.574,52	$15.850,38	$28.424,90

Return of Saley 14/7 wire net of $30 bank fee	17.07.2006			($820,00)	$12.574,52	$16.670,38	$29.244,90
Saley	07.08.2006	CS Niger		$850,00	$12.574,52	$15.820,38	$28.394,90
DCSG 23/8/06 mtg (cost ='d 178.81, of which 164.54 covered by DCSG residue at AMS, so only difference being charged to CDE here)	11.08.2006		$14,27		$12.560,25	$15.820,38	$28.380,63
Clemens X Roath's tkt	15.08.2006	RT Cambodia -> USA		$1.000,00	$12.560,25	$14.820,38	$27.380,63
Return of Saley 7/8 wire net of $45 bank fee	22.08.2006			($805,00)	$12.560,25	$15.625,38	$28.185,63
Mahaman	07.09.2006	CS Niger		$1.000,00	$12.560,25	$14.625,38	$27.185,63
Return of Mahaman 7/9 wire net of $35 bank fee	08.09.2006			($965,00)	$12.560,25	$15.590,38	$28.150,63
Wang Xiantao	12.09.2006	RT China -> India		$750,00	$12.560,25	$14.840,38	$27.400,63
Enkhbat	12.09.2006	CS Mongolia		$1.000,00	$12.560,25	$13.840,38	$26.400,63
Sch. A funds transferred to Sch. B to meet 2006 awards	(Herb's mail 11/09)		$10.000,00	($10.000,00)	$2.560,25	$23.840,38	$26.400,63
AMS June & July bank fees	12.09.2006		$295,40		$2.264,85	$23.840,38	$26.105,23
Ekhaguere	21.09.2006	RT Nigeria -> Italy (ICTP)		$750,00	$2.264,85	$23.090,38	$25.355,23
Zili	21.09.2006	CS Tunisia		$500,00	$2.264,85	$22.590,38	$24.855,23
Saley	22.09.2006	CS Niger		$850,00	$2.264,85	$21.740,38	$24.005,23
AMS August bank fees	22.09.2006		$114,00		$2.150,85	$21.740,38	$23.891,23
Mahaman	27.09.2006	CS Niger		$1.000,00	$2.150,85	$20.740,38	$22.891,23
Return of Mahaman 27/9 wire net of $35 bank fee	28.09.2006			($965,00)	$2.150,85	$21.705,38	$23.856,23
Mahaman	04.10.2006	CS Niger		$1.000,00	$2.150,85	$20.705,38	$22.856,23
Otieno	17.10.2006	CS Tanzania		$1.000,00	$2.150,85	$19.705,38	$21.856,23
AMS September bank fees	20.10.2006		$218,40		$1.932,45	$19.705,38	$21.637,83
Jeltsch	24.10.2006	CS Switzerland		$1.500,00	$1.932,45	$18.205,38	$20.137,83
Camacho	24.10.2006	CS Peru		$1.500,00	$1.932,45	$16.705,38	$18.637,83
Grobler/Ran	10.11.2006	CS South Africa		$1.000,00	$1.932,45	$15.705,38	$17.637,83
Nikitin	10.11.2006	CS Ukraine		$1.000,00	$1.932,45	$14.705,38	$16.637,83
Seade	21.11.2006	CS Mexico		$1.000,00	$1.932,45	$13.705,38	$15.637,83
Talukder	22.11.2006	RT Bangladesh -> ICTP (CDE/ICTP agreement)		$1.000,00	$1.932,45	$12.705,38	$14.637,83
Onshuus	27.11.2006	CS Colombia		$1.000,00	$1.932,45	$11.705,38	$13.637,83
El Hodaibi	27.11.2006	CS Morocco		$1.000,00	$1.932,45	$10.705,38	$12.637,83
Shrivastava	11.12.2006	CS India		$1.000,00	$1.932,45	$9.705,38	$11.637,83
Math. Soc. Japan	14.12.2006			($1.272,05)	$1.932,45	$10.977,43	$12.909,88
AMS October bank fees	18.12.2006		$124,60		$1.807,85	$10.977,43	$12.785,28
Balance at 31 December 2006					**$1.807,85**	**$10.977,43**	**$12.785,28**

Report on Activities of the Developing Countries Strategy Group

April 2006 - April 2007

Activities

1. DCSG succeeded in procuring additional travel grant funds for ICM06, from the U.S. National Academies (USD 26,000) and the Committee for Developing Countries of the European Mathematical Society (Euro 1,635), which enabled the participation of 14 mathematicians from developing and economocally disadvantaged countries in the Congress, which would otherwise not have been possible.

52. DCSG has continued to support CIMPA's project in Cambodia, providing, in June 2006, a grant of Euro 5,000 from our Abel 2005 funds.

3. DCSG has continued to work actively to support the African Mathematics Millennium Science Initiative, which is gaining ground. With the grant awarded by the Nuffield Foundation, to date, three mentoring collaborations have been established between UK mathematicians and mathematics departments in Cameroon, Ethiopia and Ghana. (For details of AMMSI activity in 2006/07, see our report for the Abel Fund Board on the uses of their grant to IMU for 2006.)

4. DCSG continues to support ICMI, awarding them:
(i) in September 2006, a grant of USD 5,000 for their ICMI Study 17 Conference and Workshop (Hanoi, December 2006) to facilitate the participation of teachers from Cambodia and Laos (their report on the event is to be found in our report for the Abel Fund Board on the uses of their grant to IMU for 2006);
(ii) in April 2007, a grant of USD 4,000 for their 2nd African Regional Congress which is taking place in Kenya in May.
A further USD 3,000 is essentially pledged to transport the UNESCO - ICMI “Experiencing Mathematics” Exhibition to Latin America at the end of 2007.

. In April 2007, DCSG approved $3,000 for the International Council for Industrial and Applied Mathematics (ICIAM) towards the travel/living expenses of four mathematicians from developing countries for participation in the Round Table Discussion on "Developing Mathematics in the Developing World" during the 6th International Congress on Industrial and Applied Mathematics, which will take place in Zurich, Switzerland, during the interval 16 - 20 July 2007.

6. Also in April 2007, DCSG approved $2,500 for each of an International Conference on Mathematical Biology and a Graduate Summer School in Biomathematics, which will take place, respectively, in Marrakesh, Morocco, in December 2007 and Kampala, Uganda, in July 2008.

Donations received

- $ 44,970 (Abel Fund grant for year 2006)
- $ 4,979.85 (remainder of Abel Fund grant for year 2004)
- USD 26,000 (U.S. National Academies) (cf. Activities, item 1)

- Euro 1,635 (EMS-CDC) (cf. Activities, item 1)

IMU-supported administrative post at ICTP

Work done by Sharon Laurenti since the previous report has included:

for CDE

- receipt and onward processing of applications for CDE support, checking for eligibility and completeness of information and, if necessary, contacting applicants for missing data;
- compiling and transmitting a monthly mailing to CDE members, retrieving from CDE records and including, where applicable, any information on previous awards;
- informing applicants of the Commission's decisions;
- administering CDE accounting and fund transfers;
- maintaining CDE archives and records;
- data gathering for and drafting of CDE's 2006 annual report to IMU/EC.

for DCSG

- administering DCSG accounting and fund transfers;
- maintaining DCSG webpage;
- transmitting a bi-monthly mailing to DCSG members;
- data-gathering for and drafting of various reports, including the preliminary draft of an article for the Communications of the German Mathematical Society (cf. MDMV 15/2007) *IMU and Developing Countries, An Overview: 1978 - 2006*..

for ICM 2006

- collaborated with the Spanish Organizing Committee, including concerning the participation arrangements for IMU's various categories of grant recipients;
- extensive correspondence with travel grant applicants;
- procured from several sources fare estimates to Madrid from all the countries involved in order to establish cost-effective and realistic ceilings to be offered to travel grant awardees;
- collected the prescribed documentation and disbursed travel grant monies at the Congress;
- maintained updated grant applicant record statuses in the database of applications;
- prepared reports for donors.

Misc.

- In anticipation of the proposed merge of CDE and DCSG, has been working on a consolidated website (see http://www.ictp.it/~cdc, logging in with username *CDC*, and pasword *djstpm*).

Budget for 2007

(i) IMU allotted CHF 115,000 (approx. USD 92,500) in Schedule B funds to CDE/DCSG for our 2007 programmes (roughly half of this being the 2007 grant from the Abel Fund). We have split this allotment equally between CDE and DCSG.

(ii) IMU allotted CHF 56,000 (approx USD 45,000) for the CDE/DCSG Administrative Secretary's salary in 2007.

Remark

DCSG considered its term expired at the end of 2006, but in order that work continue, it requested and received IMU/EC permission to continue in existence until 30 June 2007. All 2006 members were invited and agreed to rejoin the DCSG for the additional period.

DCSG FINANCIAL REPORT 2004 - 2006

DCSG BUDGET							
Transaction			**Date**	**Type**	**Payments**	**Income**	**Account Balance**
				CS=Conf. Support			
2004							
Beginning Balance	$25000 advance from IMU on Abel 2004 grant		07/21/2004			$25.000,00	$25.000,00
Ogana (representing AMMSI at PACOM 2004)			3.8.2004	Travel Kenya->Tunisia	$2.200,00		$22.800,00
Kuku (to PACOM)			08/16/2004	Travel USA->Tunisia	$750,00		$22.050,00
CDE PowerBook, software & scanner (50%)			4.10.2004	(50% of Euro 3,801.25 cost)	$2.431,66		$19.618,34
Artigue	Travel for DCSG mtg	Euro 322.39	10/29/2004	Travel France->Italy	$410,00		$19.208,34
Clemens	Travel for DCSG mtg		10/20/2004	Travel USA->Italy	$662,69		$18.545,65
DCSG Dinner		Euro 444.00	8.11.2004		$596,43		$17.949,22
Jambu	Travel for DCSG mtg	Euro 413.02	11/17/2004	Travel France->Italy	$538,00		$17.411,22
Gossez	Travel for DCSG mtg	Euro 396.95	11/26/2004	Travel Belgium->Italy	$546,68		$16.864,54
Ogana's reimbursement of unspent funds			12/29/2004			$300,00	$17.164,54
Abel Fund 2004 net	$44980(award) - $25000(advance from IMU)		12.28.2004			$19.980,00	$37.144,54
Grant to CDE to offset 2004 deficit (from Abel Fund grant 2004)			12.31.2004		$10.000,00		$27.144,54
Admin Sec salary for 2004			12.31.2004		$9.000,00		$18.144,54
2005							
Beginning balance			1.1.2005				$18.144,54
CIMPA Cambodia Project (from Abel Fund grant 2004)			1.25.2005		$5.000,00		$13.144,54
AMS donation ($15000)			1.31.2005			$15.000,00	$28.144,54
ICMI 1st African Regional Congress (from Abel Fund grant 2004)			3.15.2005		$10.000,00		$18.144,54
ICMI for Maths Expo (from Abel Fund grant 2004)			03/24/2005		$6.000,00		$12.144,54
Advance from IMU on Abel 2005 grant			06/15/2005			$44.980,00	$57.124,54
Grant to CDE (from Abel Fund grant 2005)			06/15/2005		$35.010,00		$22.114,54
Grant to CDE			06/15/2005		$5.690,00		$16.424,54
Admin Sec salary for 2005 (from AMS 15K donation)			12.31.2005		$10.168,56		$6.255,98
Admin Sec salary for 2005 (from Abel Fund grant 2005)			12.31.2005		$9.000,00		-$2.744,02
2006							
Beginning balance			1.1.2006				-$2.744,02
Abel Fund 2005 net	$44980(award) - $44980(advance from IMU)		01/18/2006			$0,00	-$2.744,02
CIMPA Cambodia Project (from Abel Fund grant 2005)		Euro 5000.00	06/15/2006		$6.487,26		-$9.231,28
Ogana for ICM 2006			8/26/2006	Travel Kenya -> Spain	$600,00		-$9.831,28
Clemens	50% of Euro 361.84 for Aug. 06 mtgs w/ LMS		09/18/2006		$229,17		-$10.060,45
Abel Fund grant 2006			10.25.2006			$44.970,00	$34.909,55
ICMI Study 17 Conference & Workshop, Vietnam, Dec. 06	(from Abel Fund grant 2006)		11.7.2006	CS Vietnam	$5.000,00		$29.909,55
Abel 2004 grant's residual $5000			11.8.2006			$4.979,85	$34.889,40
Extra contribn to Ogana for ICM 2006	(transferred together with SIG's $1000)		11.15.2006	Travel Kenya -> Spain	$889,40		$34.000,00
AMMSI (from Abel 2006 grant)	(sent via AMS)		12/15/2006		$25.000,00		$9.000,00
Admin Sec salary for 2006 (from Abel Fund grant 2006)			12.31.2006		$9.000,00		$0,00
Disbursements from DCSG's residual funds ($1,164.54) at AMS							$1.164,54
Sidoravicius/Viana			5.9.2006	CS Brazil	$1.000,00		$164,54
DCSG's 23 Aug. 06 mtg in Madrid (total cost $178.81)					$164,54		$0,00

10. International Commission on the History of Mathematics (ICHM)

http://www.unizar.es/ichm/

Report on ICHM activities in 2006
prepared by Karen Hunger Parshall (Chair) and Elena Ausejo (Secretary)

(See Bulletin No. 53, pp. 102-104 for the Report on ICHM activities in Jan 2002 – Mar 2006)

During the 2006 calendar year, the International Commission for the History of Mathematics (ICHM) has pursued 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 in the following ways:

Meetings of the Executive Committee (EC) of the ICHM:

The EC of the ICHM held four e-meetings to discuss matters of interest to the international history of mathematics community. In particular, it coordinated and organized celebrations internationally of the 300th anniversary of the birth of the famous Swiss mathematician, Leonhard Euler, to be held in 2007

Conferences /Symposia/ Congresses:

In 2006, the ICHM contributed to, organized, or co-sponsored the following events internationally: a Special Session at the annual joint meetings of the American Mathematical Society and Mathematical Association of America (United States) (January 2006); a Special Session on "Ibero-American Mathematics in the 19th and in the 20th Centuries" at the International Congress of Mathematicians in Madrid, Spain (August 2006); and a lecture by Andreas Kleinert at the New York Academy of Sciences entitled "Leonhardi Euleri Opera Omnia: A Centenary Project and Its Value for the History of Science" (December 2006). The papers presented in Madrid have appeared in print in Revista Brasiliera de Historia da Matematica 7 (April 2007).

Projects:

1. The ICHM is maintaining a webpage of its activities and of matters of interest to historians of mathematics internationally. See http://www.unizar.es/ichm/
2. The ICHM continues to compile a database of information on historians of mathematics around the world.

Publications:

1. *Historia Mathematica* is the official journal of the ICHM. It appears four times annually and publishes roughly 525 pages of original research in the history of mathematics from all times and cultures. It is published by Elsevier Science and is available electronically to subscribers of IDEAL.

The members of the EC of the ICHM:

The EC's current (through the end of 2006) members were: Karen Hunger Parshall (United States), Chair; Craig Fraser (Canada), Vice Chair; Elena Ausejo (Spain), Secretary; Menso Folkerts (Germany), Treasurer; Ahmed Djebbar (France); Natalja Ermolaeva (Russia); Alejandro Garçiadiego (Mexico); Niccolò Guicciardini (Italy); Sergio Nobre (Brazil); QU Anjing (China); Luis Saraiva (Portugal); YANO Michion Saito (Japan). Ex officio members are: Kirsti Andersen (Denmark); Joseph W. Dauben (United States); and Christoph Scriba (Germany). The two IMU members through the end of 2006 were: Jeremy Gray (United Kingdom) and LI Wenlin (China). For a list of the current ICHM national members, see the back cover of any recent issue of *Historia Mathematica*.

11. Committee on Electronic Information and Communication (CEIC)

http://www.ceic.math.ca/

Quadrennial Report of the Committee on Electronic Information and Communication (CEIC) of the International Mathematical Union

April, 2006

The CEIC is a standing advisory committee to the Executive Committee of the International Mathematical Union. Its goals include making 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. More specifically, the Committee is to take an active part in any development of a Digital Mathematics Library, and to further address copyright and archiving issues, journal licensing models, and cost models for journal production and acquisition. As one consequence the CEIC has developed and maintains several websites:

- **CEIC** at http://www.ceic.math.ca
- **WDML** at http://www.ceic.math.ca/WDML
- **FWDM** currently at http://www.cs.dal.ca/ddrive/fwdm
- **EWDM** at http://www.mathunion.org/ewdm/

The CEIC has met face-to-face as a committee on four occasions since the Shanghai General Assembly, nine occasions in all since its inception at Dresden; three of its meetings took place in the context of workshops/conferences on issues within the Committee's remit.

Best Practice Statements. The CEIC had prepared detailed Best Practice recommendations, eventually adopted by in Shanghai, 2002. The CEIC prepared a revised and updated version of the recommendations; those revisions were endorsed by the EC at its 72nd meeting in Oxford, 2004; see http://www.ceic.math.ca/Publications.

> Implementing of the recommendations in this document is not only an important way to enhance general mathematical practices. In developing countries, it is also essential as a means to improve communication and access to the resources and activities of the international mathematics community. Because scholarly communication is changing rapidly, there is great urgency to these efforts.

The revised recommendations have been enriched by an addendum on Journal Pricing, see http://www.ceic.math.ca/Publications/Recommendations/Journalprices.shtml; addenda in preparation include comments on Versioning; Citations, Impact Factors, and other Misleading Statistics; Advice to Authors, Referees, Editors, and Publishers; Advice to small Society publishers and to Publishers of individual journals. Several related topics have been identified for future work. As important part of its WDML remit, in 2005 the Committee completed a statement on Best Practices for Retrodigitization, see http://www.ceic.math.ca/Publications/retro bestpractices.pdf.

World Digital Mathematics Library. The CEIC had noted at its fifth meeting in early 2002, that some half dozen centres in various countries had projects to scan parts of 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 had urged the IMU to accept a central role in the co-ordination and facilitation of this retrodigitization project. Consequently the CEIC was charged by the IMU to co-ordinate the IMU's WDML activities, see http://www.ceic.math.ca/WDML/. The Committee assisted in promoting and facilitating the role of the Zentralblatt and Mathematical Reviews in establishing a 'Simple Metadata' standard and provided a new statement 'Best Practices for Retrodigitization'.

A visible outcome is the addition of a quarter of a million links to retrodigitized items, often as part of new entries, in the Zentralblatt and in Mathematical Reviews. A registry of retrodigitized journals, substantially based on the continuing work of Ulf Rehmann, has been created with the help of the AMS.

CEIC members contributed to many related workshops such as: the DML workshop at Göttingen, May, 2003; the 5th EMANI workshop and the 3rd WDML workshop, 'New Developments in Electronic Publishing of Mathematics', Stockholm, June 2004; and the MSRI 'World Digital Mathematics Library' workshop, April, 2005 as well as to presentations at major conferences including ICIAM2003, Sydney and the Mainz, 2005, joint AMS/DMV/ÖMG Meeting.

Federated World Directory of Mathematicians. Federated searching connotes any system that provides a common user interface for searching and retrieving information across heterogeneous datasets over the Internet. In 1998 the CEIC was asked to explore the feasibility of an electronic World Directory of Mathematicians to replace the traditional hard copy. The CEIC concluded that, while desirable, intellectual property and privacy issues in different countries made this impossible for the 2002 edition of the WDM. With the emergence of better Internet search tools, the CEIC subsequently found it realistic to build a federated directory. What this provides is a rapid and simple search over existing online databases with no additional work for the user; for additional comments and the working model see http://projects.cs.dal.ca/ddrive/fwdm/index.shtml. A full version is intended for release at the 2006 ICM.

Electronic World Directory of Mathematicians. Only a limited number of society membership lists are as yet accessed by the FWDM. Mathematicians wishing to make certain that their names and details are nonetheless available to the mathematical community by way of the FWDM have the opportunity to join the EWDM at http://www.mathunion.org/ewdm/. Some care has been taken to make this list difficult for automated programmes to access.

Recommendations to the EC. The Committee's terms of reference requested it to draft a proposal, to be decided upon by the EC in 2006, concerning its future status. The proposal

was to include issues such as CEIC's institutionalization, membership, long term financing, and sustainability of the various current CEIC efforts and activities.

In reporting to the EC, the Committee emphasized that its primary goals are variously to advise the EC on issues the CEIC believes should be of concern to the mathematical community and on matters explicitly put to it by the EC, and to carry out occasional tasks and maintenance so as to bring such advice into effect. The Committee believes its advisory tasks are paramount. It seems feasible at present that funding required to underwrite tasks undertaken by the Committee, and maintenance of most continuing projects, be found from sources accessible to the Committee's members. The Committee believes its funding for the next four years can be reduced to a level sufficient to do little more than to allow support for the travel of its members to occasional face to face meetings and workshops. It follows that the Committee should remain advisory to the EC, that it remain restricted in size, and that it should consist of an appropriate mix of persons with experience and expertise in the matters relevant to the Committee.

Accordingly, the Committee has advised the EC that there should be a near complete rollover of its membership staged at two-year intervals so as to guarantee appropriate continuity. All but three of its members choose to retire from the Committee this August, the remaining three members agree to maintain their contribution for two more years. Three new persons with varied appropriate experience and expertise have been recommended to join the Committee to serve for at least four years from August. In addition, a member of the EC is expected to join the Committee as EC representative. In summary, the Committee recommends that the EC reconstitute the Committee so that it consist of seven persons with the three currently continuing members to be replaced by the EC in two years time. The EC can of course choose to add additional members should the need arise. The value of the IMU for the Committee should be reviewed at no more than four yearly intervals.

Other matters for recommendation are implicit in the revised terms of reference for the Committee and in various other matters incidentally touched on in this report.

MEETINGS OF THE CEIC FOR 2003–2006

Berlin, 05/2003. The sixth meeting of the CEIC was held at the Konrad-Zuse-Zentrum (ZIB), Berlin, May 24–25. Several members of the CEIC had earlier attended a meeting to discuss the Digital Math Library initiative at Göttingen, May 21–22.

The CEIC embraced the call of the participants of the Göttingen meeting to endeavour to facilitate the World Digital Mathematics Library initiative on behalf of the mathematical community and took first steps towards that end. The Committee noted that its statement Best Current Practices: Recommendations on Electronic Information Communication of the CEIC (BCP), is an important and successful activity of the CEIC and resolved to provide related documents giving references, links to related material, and relevant examples.

The CEIC considered Intellectual Property Rights/Copyright issues, it resolved to attempt to deal with its task to initiate an electronic version of the World Directory of Mathematicians by looking into the possibility of federated search of available lists of members of mathematical societies, and endorsed details for the new IMU server http://www.mathunion.org and for the CEIC website http://www.ceic.math.ca/. The Committee established a Technical Advisory Board and resolved to organize a CEIC session at ICIAM 2003.

For a detailed report see http://www.ceic.math.ca/Publications/Minutes/6th Minutes.pdf.

Durham, NC, 03/2004. The seventh meeting of the CEIC took place at Duke University, March 11–13, 2004. For a detailed report see http://www.ceic.math.ca/Publications/Minutes/7th Minutes.pdf.

After hearing and discussing status reports on a variety of ongoing projects of the CEIC and on other matters of interest to the CEIC the Committee held a wide-ranging discussion 'taking stock of the CEIC' in order to identify new tasks and current priorities. Subgroups of the Committee carefully drafted agreed Committee statements. Members of the Committee 'volunteered' to advance the respective tasks.

The Committee agreed that its present activity should emphasize assisting the mathematical community to inform itself on electronic and information issues. The Committee endorsed a request from the Editors of the Zentralblatt and of Mathematical Reviews proposing minimal 'standards for metadata for digitized mathematics'. More generally, the Committee noted its obligation to develop a framework for the WDML dealing with formalization of such matters as aims and principles of the project, formats, functionalities, long-time archiving issues, access, organization, management, copyright, and the like.

The Committee initiated its now regular column 'IMU on the Web' with an article concerning its addendum to Best Current Practice Statement #8 on Journal Prices, http://www.ceic.math.ca/Publications/Recommendations/Journalprices.shtml.

The Committee resolved to ask the IMU Executive Committee to approve and fund the construction, under CEIC aegis, of a Federated World Directory of Mathematicians (FWDM); see http://projects.cs.dal.ca/ddrive/fwdm/.

Grenoble, 03/2005. The eighth meeting of the CEIC, held at Université Joseph Fourier. Grenoble, France, March 11–13, 2005 was preceded by a brief Workshop on Digitization. The CEIC benefited from the participation of IMU president, John Ball, in its deliberations. The Committee determined that Digitization needs a vision statement and that such a statement, to be prepared for the use of the Berkeley meeting on the WDML, must emphasize and explain the benefits of the 'moving wall' for making digitized journal materials readily accessible. The CEIC also noted that it is critical to establish a working registry of digitized materials, and of plans and proposals for digitization projects.

The CEIC agreed on the wisdom of a near complete rollover of its membership, perhaps so staged (say at two-year intervals) as to guarantee appropriate continuity, and accordingly resolved to find persons suitable to recommend to the EC as new members of the CEIC from 2006.

The CEIC noted that for mathematics 'open access' is not the same thing as 'author pays', but is rather a matter of freeing journal content after an appropriate, say five year, period when it plainly has returned the value that can reasonably be expected by its publishers and copyright owners. For details consult http://www.ceic.math.ca/Publications/Minutes/8th Minutes.pdf.

Berlin, 02/2006. The ninth meeting of the CEIC was scheduled to be contiguous to the meeting of the EC and was held at the Konrad-Zuse-Zentrum (ZIB), Berlin, February 24–26; its afternoon session on Sunday was joined by the EC.

The core task of the meeting was to complete preparation of its report to the EC and of the present report to the IMU. Accordingly the Committee reviewed its activities and confirmed appropriate variants of the decisions tentatively taken at its eighth meeting. Other matters included the CEIC agreeing to continue its regular contribution to IMU-Net and in particular to use IMU on the Web as the Committee's method of promulgating incidental Best Practice addenda and comments; a number of useful future IMU on the Web topics were agreed to. The Committee decided to look into a project to digitize and make available the proceedings of all past ICMs.

Detailed minutes of the meeting are available at
http://www.ceic.math.ca/Publications/Minutes/9th Minutes.pdf.

MEMBERSHIP AND PARTICIPATION 2002–2006

Jonathan Borwein (Canada), Chair [4/4];
Pierre Bérard (France) [4/4]
John Ewing (USA) [4/4];
Martin Grötschel (Germany) [4/4];
Alejandro Jofre (Chile) [4/4];
Peter Michor (Austria) [4/4];
David Morrison (USA) [4/4];
Alf van der Poorten (Australia) [4/4];

Rolf Jeltsch (Switzerland) and David Mumford (USA) contributed to the work of the Committee as the DML liaision committee of the IMU.

APPENDIX: THE CEIC'S TERMS OF REFERERENCE

At its 71st session on August 19, 2006, in Santiago de Compostela the IMU Executive Committee has reviewed the activities of its *Committee on Electronic Information and Communication* (CEIC) and has decided to re-establish the CEIC for a third term with the following revised terms of reference.

COMMENT: This is the not yet finally revised version, mildly revised by me.

Terms of Reference:

As an international steward of mathematical science, the IMU has accepted a responsibility to advance the use of new technologies. It has therefore established the CEIC to advise it on how best to accomplish that goal.

(1) The CEIC's duties are to
  (a) Review the development of Electronic Information, Communication, Publication, and Archiving as it impacts the international mathematical community with the aim to make the issues involved generally understood, to define the relevant needs of our discipline clearly.
  (b) Encourage electronic mathematical community building and to contribute to the development of tools for this purpose.
  (c) Review and sponsor activities for mathematical software and data repositories.
  (d) Coordinate and facilitate collaboration among stakeholders in these and related activities for the benefit of mathematics worldwide.

(e) Report regularly to the EC, and to advise and alert the EC to new developments.
(f) Advise the EC on electronic aspects of IMU operations, including financing requirements.
(g) Suggest further actions as necessary.

(2) 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 in even numbered years for staggered four year terms using criteria similar to those for IMU Commissions. The CEIC conducts most of its work electronically, meeting face to face as necessary.

(3) The CEIC is asked to address, in its third 4-year term, the following issues with special emphasis.
(a) The CEIC is asked to facilitate and encourage the development of a Digital Mathematics Library.
(b) The CEIC may suggest international standards ('best practice recommendations') on issues related to publication and electronic communication. Such recommendations will be reviewed by the EC and, if approved, may be published and promoted in the name of the IMU.
The CEIC is expected to continue its previous efforts, such as its once promotion and organization of Math-Net and its current promotion of the Federated World Directory of Mathematicians, that make mathematics-related material electronically available.
The CEIC may organize or sponsor international meetings or forums to bring together representatives of all interested parties.

MINUTES OF THE SECOND 2006 CEIC MEETING
Halifax, December 2-4, 2006

Note. We have decided to experiment with a much more informal minuting process than in the previous two cycles. This is consistent with the current structure and mandate of the committee. JMB and MD

Attending: Ball, Borwein (chair), Doob, Rehman, van der Poorten.
Regrets: Eisenbud and Ewing (who attended on Monday by Skype)
On the morning of December 2nd an Informal Workshop on Electronic Journals was held which engaged about ten individuals from Atlantic Canada who are actively involved in electronic and traditional mathematical publishing. The meeting proper started at noon with a Working Lunch which finalized the Agenda.

14:00-17:00 Session 1 The chair reminded the committee that in the period 2007–2010 we shall function principally as an advisory committee and must raise money from our principal societies/sponsors for any cost intensive activities. We discussed

- The CEIC Budget
- Terms of Reference 2007 – 2010 as finalized in 2006
- Roles of CEIC Members 2007 – 2010. Each of the new members has a distinct core competence.
- Membership 2008 – 2010
  It was agreed on the desirability of adding one or two extra members for better

balance of age, geography and knowledge of IT. The chair agreed to circulate information about potential new members.

- Replacement for CEIC-Plus
  We need to use a group of interested folks as a sounding board but the decision was to rebuild such list from scratch. Each member will be asked for a few suggestions
- Report on the CEIC Presentation at the GA in August (AvdP).
  The report was well received

We then turned to a

Review of Current CEIC Activities

- IMU on the Web (AvdP, JMB). Various topics were discussed some of which are among the 17 extant postings but should be revisited. The initiative seems well worthwhile and will be continued. This is returned to in the Action Items below.
- FWDM and EWDM (JMB) The project has moved into maintenance stage. New lists will be added as appropriate and if the given society's data are in reasonable form.
- Math-Net and Math-Net Services This was a very valuable project which has outgrown its utility in part because of external changes such as the emergence of Google and Yahoo, and the cost of sustaining such activities. It was agreed that a such projects should be explicitly 'closed' and that a pice on IMU on the web should be written regarding such.

The day concluded with a congenial dinner at Sweet Basil.

Session 2 On Sunday December 3 between **9:00-12:00** discussion of extant activities continued.

- WDML and Registry (MD, UR). It was decided to build a stand-alone portal which would include Ulf Rehman's registry, the one produced at Math Reviews, and others (such as Google Scholar?) as appropriate and would indicate their scope and intentions. Harvesting metadata will be further considered by Ulf Rehman and Michael Doob.
- A Content Management system and a long-term home for IMU server were discussed along with the need for archiving of IMU records. Recommendations were formulated later in the day and are appended.

We turned to

- Potential Best Practice Recommendations. Topics in need of a serious discussion include:
  - Obligations of Authors, Referees, Editors and Publishers (AvdP will take the lead at some point)
  - Copyright for video/audio: (JMB will take the lead). The intended audience includes
    - Organizers of events
    - Authors of books or multimedia
- Potential new topics for IMU on the web include
  - Maintaining, archiving and closing web resources. (JMB)
  - A description NIST's DLMF after it is released. (JMB)
  - Aaron Krowne has agreed to write on PlanetMath and its plans
  - The use of metric-based assessment needs an article aimed at, say, the Mathematical Intelligencer, and at that point a column. This was not a task anyone volunteered to take the lead on. We might ask Andrew Odlyzko.
  - We will ask Jim Pitman to write on his MathPeople project

- IP rights and Security issues also merit a column as does Copyright for video/audio

Session 3 14:00-17:00 Discussion turned to emerging and/or perennial and interrelated Issues such as the following

1. Software cataloging
2. Metrics and assessments: how and why?
3. Archiving and maintaining web assets, especially for the
   - ICM, ICMWE and General Assembly web sites.
4. Retro-digitization of ICM and ICME proceedings
5. Mathematical search engines: do we need them? Especially in light of Google, Yahoo and Microsoft projects. The consensus was we do need them and should encourage good projects such as will consolidate current Mathematical content on the Web: e.g., MathPeople, MathWorld, PlanetMath, Wiki's, MAA Gateway, Digital Universe etc
6. Indexing of mathematical web pages, copying of such pages, etc.

We then broke into two groups. Ball, Borwein and Van der Poorten drafted recommendations on archiving for the IMU (attached below) while Doob and Rehman looked in more detail at the issues in building a registry portal**.** The latter two built a quick test page that accessed both the journals on the AMS site and the books contained in Ulf Rehman's collection. This resulted in the first Action Item given below.

The day ended for some with a fine dinner at the Five Fisherman, somewhat truncated by the Chair making a 21.30 Access Grid presentation to an AMS Access Grid Conference at La Trobe University in Melbourne. John Ball and Alf van der Poorten also participated.

Session 4 on Monday December 4 from **9:00-11:00** a summation session was held.
Brief discussion took place about possible activities for committee activities at ICIAM07, CML08, and elsewhere.

- There was no enthusiasm for organizing special sessions but it was viewed as desirable to produce updated material such as: a poster, bookmarks, and a simple flier along with a self-contained lively but light Website for FWDM, WDML, IMU on the Web, and Best practices; aimed at the public.
- The next meeting will be hosted by John Ewing in Providence in October or November 2007

We then turned to review and discussion of Action Items**:**

1. **WDML Public Registry:**
   - Create a better WDML/Registry Splash page
   - Add pointers to
     - Ulf's data (books plus journals)
     - AMS (mostly journals)
     - proprietary (Google, etc)
       - no more CEIC owned-resources
   - Assure OAI-PMH implementation for harvesting metadata
2. Proposed four year project leading to **content management system** for IMU by the time of the next ICM. John Ball will ask the EC to request for a report from the CEIC (to be led by Doob ands Borwein and prepared by July 1, 2007.) It will consider:
   - Estimated costs
   - Finding a location (Helsinki?)

- Adding mirrors
- Data conversion (to pdfs)
- Sensitive documents? Time locks?
- Retrodigitization earlier sensitive materials?
- Curitage of CEIC and other web pages.

3. **Metric-based-Assessments** It was viewed as desirable to analyze different metrics (citation, minimal publication units) and their impact on mathematicians in various settings. This is clearly pressing in the UK and in Australia particularly, but it was seen as tangential to the CEIC's remit. We suggest that the IMU should aim for an article for distribution (perhaps in the Mathematical Intelligencer) and to produce a report within six months, but this would be best produced by a distinct sub-committee formed between CEIC and EC.

4. **Versioning and archiving** It is clearly desirable to
   - Archive old IMU records
   - Archive ICM web sites (at least back to 1998)
   - Archive minutes of General Assembly
   - To plan for maintenance and to include closure planning (not leaving unsupported projects hanging, such as perhaps Math-Net)
   - Retro-archivization requires an archivist.

5. **Mathematical Content on the Web** Should we contribute to some sites (e.g., the Digital Universe/Encyclopedia of Earth)?

6. **Additional Best practices** should include
   - Archiving practice suggestions/ Closure planning (after IMU activity has started)
   - Copyright for video/audio: (JMB,JE) aimed at organizers of events and authors of books or multimedia
   - Advice to a young author regarding obligations and roles of Authors, Referees, Editors and Publishers (AvdP)

7. The chair will send a letter to ICIAM/SIAM urging they initiate a **registry of software depositories.**

8. **Jon** Ball will inform the EC that wish to bring one or two **younger IT-savvy members** onto the CEIC in the next few months.

9. **IMU on the Web articles** in upcoming issues will include:
   - Maintaining, archiving and closing/reducing effort web resources (after MathNet is so treated)
   - NIST DLMF (JMB)
   - Planet Math (Krownne)
   - Metrics and assessments (after article is written)
   - MathPeople (Jim Pitman)
   - IP rights and Security issues

Jonathan Borwein and Michael Doob
December 12, 2006

APPENDIX 1

A proposal for IMU Archiving This document proposes a protocol and mechanisms for archiving IMU material, particularly material existing in electronic form. The IMU has a physical archive located at the University of Helsinki. This comprises paper files covering 1952 to at least 1990 and some earlier material (see Lehto's article www.mathunion.org/Publications/Bulletins/39/past+present.html). A history of the IMU up to 1994 is to be found in O. Lehto, *Mathematics without borders*, Springer 1998.

1. The nature of the material potentially to be archived includes:
    a. Email and paper communication from and to members of the Executive Committee (EC).
    b. Financial records.
    c. Statutory material.
    d. Material arising from the IMU prize committees: Fields, Nevanlinna, Gauss prizes.
    e. Material arising from the ICM Program Committee.
    f. Material arising from the IMU and the ICMI Nomination Committees.
    g. Material arising from other IMU Commissions and Committees (such as CDE/DCSG, ICMI, ICHM and CEIC).
    h. Material arising from the organization of the ICM.
    i. Proceedings and other records (including video, audio) from the ICM and ICME.
    j. Agendas, Minutes, Bulletins, Circular letters, IMU etc.
    k. Membership records.
    l. Other written reports and position papers (e.g., ICMI Studies).
    m. Periodical snapshots of associated Web sites.

2. Requirements **of the archive include**
    a. Preserving and providing source material for future scholars and historians.
    b. Providing data and other information for use by current IMU officers and committees.
    c. Assuring confidentiality or access as appropriate.

3. Recommendations
    a. A full archive catalogue needs to be produced. In particular we need to identify the status of material since 1990.
    b. Location of physical and digital archives need not be the same but each must be appropriately assured; cost, access, longevity, maintenance etc.
        i. Relation to a potential permanent IMU office needs to be determined.
        ii. Mirroring of the electronic archive should be mandatory.
    c. Access and embargo issues. The EC should set up a protocol to decide which material is
        i. openly available;
        ii. accessible to specified persons
        iii. embargoed for a given period; currently prize committee material is embargoed for 50 years. The embargo periods for the Program Committee and other material should be determined by the EC, and made known.

d. We urge the EC to develop procedures for releasing embargoed material quadrennially, say at the beginning of an ICM year. This could provide a valuable opportunity for publicity of mathematics and the ICM.
e. **Retro-**archiving. These recommendations apply first to current material, and second to material from 1994 onwards that may need to be gathered from past officers. The possibility of digitizing the Helsinki Archive should be considered. Specifically, material leaving embargo should be released in digital form.
f. **Technical details**. We recommend that current electronic materials be stored in an open format, possibly ASCII-based. We recommend that attachments and other auxiliary material (e.g. MSWord, spreadsheets) should be archived where possible in an open format, (for example pdf) as well as in their original form. Any necessary conversion should be handled centrally, perhaps in the secretariat. It is incumbent upon individual officers providing material to be archived to provide adequate documentation describing the nature of the material and highlighting points of significance. Properly and promptly prepared (say, within 6 months of leaving office), such documentation will be helpful to incoming officers.
g. **Action items**.
    i. Determination of status of Helsinki archive, including any contractual agreements.
    ii. Contact past-Presidents Mumford and Palis to ensure that their material is archived.
    iii. Determine whether all past prize committees have archived their material, and attempt to fill any gaps.
    iv. Determine which material should be archived and make precise the access and embargo protocols.
    v. Set in place mechanisms for eventual complete digitization of the IMU archives.
    vi. Investigate what material leaves embargo before ICM2010, and decide how best to exploit the opportunities this offers.

JB, JMB and AvdP, Dec 3, 2006

12. Independent auditors' report 2006

International Mathematical Union

Independent Auditors' Report

Financial Statements (Modified Cash Basis) and Additional Information

Years Ended December 31, 2006

INTERNATIONAL MATHEMATICAL UNION

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Gunnip & company LLP
Certified Public Accountants and Consultants

Charles L. Robertson CPA
William B. Brower CPA
Robert D. Mosch, Jr. CPA
Clifford H. Hunter CPA
Terri L. Tipping CPA
John F. Enderle CPA
Michael A. Trolio CPA
Donald J. Bromley CPA

INDEPENDENT AUDITORS' REPORT

To the Board of Directors of
International Mathematical Union

We have audited the accompanying statement of assets and liabilities – modified cash basis of International Mathematical Union (the "IMU") as of December 31, 2006 and 2005, and the related statement of income and expenditures - general fund – modified cash basis for the years 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.

We conducted our audits 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 audits provide a reasonable basis for our opinion.

As described 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, the financial statements referred to above present fairly, in all material respects, the assets and liabilities – modified cash basis of IMU as of December 31, 2006 and 2005, and the income and expenditures – general fund - modified cash basis for the years then ended on the basis of accounting described in Note 1.

Our audits were conducted for the purpose 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 purposes of 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 audits 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. The budget amounts presented in the additional information have not been subjected to the auditing procedures applied in the audits of the basic financial statements and, accordingly, we express no opinion on such amounts.

Gunnip & Company LLP

January 22, 2007

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INTERNATIONAL MATHEMATICAL UNION

Statement of Income and Expenditures For The General Fund-Modified Cash Basis

For The Years Ended December 31, 2006 and 2005

	2006	2005
I - INCOME	**US DOLLARS**	**US DOLLARS**
Grant from ICSU Fund and US National Academy of Sciences		
Allocation from UNESCO to ICSU Grants Program		
UNESCO Contracts		
Contributions from National Members	$225,707	$223,549
Contributions from Other Members		
Special Contributions	$38,008	$26,656
Contracts		
Sales of Publications, Royalties	$786	$4,362
Sales of Scientific Materials		
Bank Interest	$16,320	$12,180
Gain on Exchange		
Other Income	$52,443	$59,980
TOTAL INCOME	**$333,264**	**$326,727**
II - EXPENDITURES AND TRANSFERS		
A) SCIENTIFIC ACTIVITIES		
General Assembly or equivalent	$3,267	$3,252
Scientific Meetings: Symposia/ Colloquia/ Working Groups/ Training Courses, etc.	$108,554	$100,848
Representation at Scientific Meetings		
Data Gathering/ Processing		
Research Projects		
Grants to Individuals/Organizations	$99,016	$127,437
Other		
Less covered by UNESCO Contracts		
Routine Meetings		
Bureau/ Executive Committee	$28,293	$34,934
Other		
Publications	$0	$0
B) OTHER ACTIVITIES		
Contribution to ICSU	$6,002	$6,002
Contribution to other ICSU bodies	$5,330	$5,776
Activities covered by UNESCO Contracts		
C) ADMINISTRATIVE EXPENSES		
Salaries and Related Expenses	$41,632	$27,031
CDE Admin Assistant	$52,231	$53,985
General Office Expenses	$130	$111
Office Equipment		
Audit Fees	$5,000	$5,200
Bank Charges	$2,327	$1,802
Loss on Exchange		
TOTAL EXPENDITURES AND TRANSFERS	$351,782	$366,378
EXCESS EXPENDITURES AND TRANSFERS OVER INCOME	($18,518)	($39,651)
ACCUMULATED BALANCE AT JANUARY 1	$418,917	$458,568
ACCUMULATED BALANCE AT DECEMBER 31	$400,399	$418,917

See notes to financial statements.

INTERNATIONAL MATHEMATICAL UNION
ASSETS and LIABILITIES in US$ Dollars - Modified Cash Basis
DECEMBER 31, 2006 and 2005

		2006		2005
ASSETS				
BANK ACCOUNTS and CASH (Note 2)				
Cash				
Current Accounts	$5,235		$12,500	
Deposit Accounts	$402,326	$407,561	$549,789	$562,289
Prepayments				
Receivables		$38		$45,406
TOTAL ASSETS		$407,599		$607,695
LIABILITIES				
Creditors and Accruals		$5,000		$5,000
ACCUMULATED FUNDS (Note 3)				
General Fund				
Beginning of Year Balance	$418,917		$458,568	
Excess Expenditure over Income	($18,518)	$400,399	($39,651)	$418,917
Special Development Fund				
Beginning of Year Balance	$98,857		$64,711	
Provision to ICM 06	$0		$34,146	
Expenses	($96,657)	$2,200	$0	$98,857
General Assembly Fund				
Beginning of Year Balance	$12,978		$9,726	
Provision to General Assembly 06	$0		$3,252	
Expenses	($12,978)	$0	$0	$12,978
World Directory of Mathematicians Fund				
Beginning of Year Balance	$6,038		$6,038	
Provision to W.D.M.	$0		$0	
Expenses	($6,038)	$0	$0	$6,038
Fund to ICM 06				
Beginning of Year Balance	$65,905		$43,140	
Provision to ICM 06	$0		$22,765	
Expenses	($65,905)	$0	$0	$65,905
		$407,599		$607,695

See notes to financial statements.

INTERNATIONAL MATHEMATICAL UNION

NOTES TO FINANCIAL STATEMENTS
YEAR ENDED DECEMBER 31, 2006

1. BASIS OF ACCOUNTING

The accompanying financial statements were prepared in conformity with the accounting practices prescribed or permitted by the International Council of Scientific Unions, which is a different basis of accounting than generally accepted accounting principles. This basis of accounting is cash receipts and disbursements modified for scheduled and contractual transactions, i.e. sales publications and audit fees payable. Further, these statements exclude a statement of cash flows.

2. BANK ACCOUNTS AND CASH

	2006	2005
The amount held with banks is as follows:	US$	US$
PNC Bank USA		
- Current Account	$5,235	$12,500
- Money Market	$402,326	$549,789
	$407,561	$562,289

The Union's cash is maintained in bank deposit accounts with financial institutions that at times exceeded federally insured limits. The Union has not experienced any losses in such accounts and does not believe it is exposed to any significant risk.

3. ACCUMULATED FUNDS

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

Provided in Year Ended	2006 General Fund	2006 General Assembly	2006 World Directory	2006 Special Development	2006 Fund to ICM 06
General Fund					
Balance December 31, 2005	$418,917				
Transfer excess expenditure over income	($18,518)				
Special Development					
Balance December 31, 2005				$98,857	
Provision to ICM 06 Expenses				($96,657)	
General Assembly Fund					
Balance December 31, 2005		$12,978			
Provision to General Assembly 06 Expenses		($12,978)			
World Directory of Mathematicians Fund					
Balance December 31, 2005			$6,038		
Provision to W.D.M. Expenses			($6,038)		
Fund to ICM 06					
Balance December 31, 2005					$65,905
Provision to ICM 06 Expenses					($65,905)
	$400,399	$0	$0	$2,200	$0

INTERNATIONAL MATHEMATICAL UNION
STATEMENT OF INCOME and EXPENDITURE for the GENERAL FUND
FINANCIAL YEARS 2006 and 2005 COMPARED, IN US$ DOLLARS

	2006		2005	
INCOME				
Allocation from UNESCO grant to ICSU	$0		$0	
Contributions from National Members	$225,707		$223,549	
Special Contributions	$38,008		$26,656	
Sale of Publications	$786		$4,362	
Bank Interest	$16,320		$12,180	
Gain on Exchange	$0		$0	
Other Income	$52,443	$333,264	$59,980	$326,727
EXPENDITURES AND TRANSFERS				
A. MEETINGS				
Executive Committee	$27,197		$29,579	
Other	$0		$0	
Program Committee	$1,096		$5,355	
General Assembly	$3,267	$31,560	$3,252	$38,186
B. PUBLICATIONS		$0		$0
C. SCIENTIFIC ACTIVITIES				
ICMI	$22,570		$21,828	
CDE	$43,435		$73,709	
CEIC	$20,475		$19,776	
Travel Grants	$34,426		$34,146	
Conferences	$74,128		$66,702	
Other	$0	$195,034	$0	$216,161
D. ADMINISTRATIVE EXPENSES				
Contribution to ISCU	$6,002		$6,002	
Grant to CTS	$0		$0	
Grant to ICMI	$12,536		$12,124	
Grant to CDE	$5,330		$5,776	
Audit Fees	$5,000		$5,200	
Salaries and related charges	$41,632		$27,031	
Salary CDE Admin Assistant	$52,231		$53,985	
General office expense	$130		$111	
Office Equipment	$0		$0	
Bank charges	$2,327		$1,802	
Loss on exchange	$0	$125,188	$0	$112,031
		$351,782		$366,378
EXCESS (DEFICIT) OF INCOME OVER EXPENDITURES AND TRANSFERS		($18,518)		($39,651)
Allocated to General Fund		$18,518		$39,651

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INTERNATIONAL MATHEMATICAL UNION

Statement of Contributions received from members in the year ended December 31, 2006, in US$ Dollars

MEMBER	*PRE 2006	2006
Argentina		
Armenia	$1,095.00	$1,095.00
Australia		$4,039.00
Austria		$2,024.85
Belgium	$4,084.16	$4,097.47
Bosnia & Herzegovina	$1,939.47	$969.73
Brazil		$7,253.01
Cameroon		$961.96
Canada		$10,200.43
Chile	$2,139.21	$2,139.21
Math Society, Taipei		$1,925.76
Croatia	$954.33	
Cuba	$3,091.05	$1,030.00
Czech Republic		$2,058.48
Denmark		$2,109.00
Egypt		$2,102.50
Estonia		$1,003.34
Finland		$2,030.59
Germany		$9,851.48
Greece		$1,050.14
Hong Kong		$990.00
Hungary	$2,092.24	$4,021.45
Iceland		$998.05
India		$7,166.27
Indonesia		$1,017.00
Ireland		$2,053.19
Israel		$10,126.70
Italy		$9,713.74
Japan		$10,208.82
Kazakhstan	$2,212.00	$1,106.00
Korea, Republic of South		$2,056.00
Latvia		$1,094.00
Lithuania		$1,079.00
Mexico		$2,036.00
Netherlands		$7,131.84
New Zealand		$984.18
Nigeria	$6,031.28	$1,050.00
Norway		$2,139.92
Peru	$2,137.00	
Phillippines	$6,084.00	$1,003.00
Poland		$3,892.08
Portugal		$2,049.69
Romania		$1,071.00
Russia		$10,321.24
Saudi Arabia		$962.88
Singapore		$964.72
Slovakia		$2,119.00
Slovenia		$1,053.11
South Africa		$2,006.69
Sweden		$7,276.86
Switzerland		$7,436.61
Tunisia	$3,735.16	$945.58
Turkey	$531.00	$1,063.00
Ukraine	$4,408.00	
United Kingdom		$9,829.67
United States		$10,229.00
Uruguay	$1,001.00	
Vietnam		$1,034.00
TOTAL	$41,534.90	$184,172.24

TOTAL CONTRIBUTIONS RECEIVED	$225,707.14

* Represents prior years dues received in 2006.

INTERNATIONAL MATHEMATICAL UNION

DUES ARREARS AS OF DECEMBER 31, 2006

MEMBER	Dues Swiss Francs	YEARS	US$ Dollars
Bulgaria	1,320.00	2006	$1,081.97
Chinese Math Society	5,280.00	2006	$4,327.87
Croatia	2,640.00	2005-06	$2,163.93
Cuba	9,084.33	1993 part; 94-99, 2002	$7,446.17
France	13,200.00	2006	$10,819.67
Georgia	2,640.00	2005-06	$2,163.93
Iran	2,640.00	2006	$2,163.93
Pakistan	1,320.00	2006	$1,081.97
Peru	2,640.00	2005-06	$2,163.93
Serbia & Montenegro	1,320.00	2006	$1,081.97
Slovakia	2,640.00	2004	$2,163.93
Spain	9,240.00	2006	$7,573.77
Tunisia	3,900.00	part 01, 1998-2000	$3,196.72
Ukraine	5,280.00	2005-06	$4,327.87
Uruguay	2,640.00	2005-06	$2,163.93
Venezuela	1,320.00	2006	$1,081.97
TOTAL	**67,104.33**		**$55,003.53**

1 US Dollar = 1.22 Swiss Francs at December 31, 2006

INTERNATIONAL MATHEMATICAL UNION

STATEMENT OF INCOME AND EXPENDITURE
IN SWISS FRANCS - 2006

EXPENDITURE

SCHEDULE A:	Budget	Actual
Secretarial help, IMU Office	20,000	33,390
Secretarial help, President	5,000	0
Accountant	8,000	16,984
CDE Admin Assistant	0	65,811
ICMI	15,000	15,796
CDE	7,000	6,716
Office expenses (including postage)	16,000	3,095
Travel expenses of E.C.	30,000	34,268
President's and Secretary's expense	4,000	2,083
Contribution to ICSU	9,500	7,563
IMU Bulletin	5,000	
Audit Fee	7,000	6,300
General Assembly - 2006	4,000	4,116
World Directory of Mathematicians	20,000	0
Contingencies	2,000	0
Subtotal	**152,500**	**196,122**

Schedule B:	BUDGET	ACTUAL
Symposia, Conferences, IMU Lectures	95,000	64,586
ICMI scientific activities	27,000	28,438
CDE scientific activities	40,000	54,728
Program Committee for ICM 06	8,000	1,381
Travel Grants	42,000	43,377
Subvention to ICM 06	28,000	28,815
CEIC scientific activities	25,000	25,798
Subtotal	**265,000**	**247,123**
TOTAL	**417,500**	**443,245**

INCOME		
Membership dues (212 x 1320)	279,840	284,391
ICSU subvention	10,500	0
Sales of W.D.M.	14,160	0
Sales of Publications	0	990
Other Income	0	66,078
Special Development Fund	72,000	47,890
Interest on bank accounts	41,000	20,563
TOTAL	**417,500**	**419,912**

Actual US dollars Statement of Income and Expenditure converted to Swiss Francs, using the average 2006 rate calculated from the UN Operational Rates of Exchange of 1 US Dollar =1.26 Swiss Francs.

13. The new IMU Secretariat in Berlin

As of January 1, 2007 the **IMU Secretariat** moves from IAS Princeton to Konrad-Zuse-Zentrum (ZIB) **Berlin**, Germany. The official address of the IMU Secretariat is as follows:

International Mathematical Union
Prof. Dr. Martin Groetschel
Secretary
c/o Konrad-Zuse-Zentrum
Takustr. 7
D-14195 Berlin, Germany

Phone: +49 30 84185210
Fax: +49 30 84185269
E-Mail: secretary@mathunion.org

Correspondence can also be sent to the IMU Administrator, the address is as follows:

International Mathematical Union
Sylwia Markwardt
Administrator
c/o Konrad-Zuse-Zentrum
Takustr. 7
D-14195 Berlin, Germany
E-Mail: administrator@mathunion.org

Bank accounts as of January 1, 2007:

International Mathematical Union, Takustr. 7, D-14195 Berlin, Germany
Berliner Bank, Hardenbergstr. 32, D-10623 Berlin, Germany
BIC (SWIFT) code: BEBEDEBB

CHF transfer to account No.:	EUR transfer to account No.:	USD transfer to account No.:
IBAN code:	IBAN code:	IBAN code:
DE56100200000093025115	DE45100200003591211100	DE65100200000093025050