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IMU Bulletin no. 43

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Executive Committee

January 1, 1995 - December 31, 1998

President:	Professor David Mumford
Vice-Presidents:	Professor Vladimir Arnoldi
	Professor Albrecht Dold
Secretary:	Professor Jacob Palis
Members:	Professor James Arthur
	Professor Simon Donaldson
	Professor Björn Engquist
	Professor Shigefumi Mori
	Professor K. R. Parthasarathy
Past President:	Professor Jacques Louis Lions

January 1, 1999 - December 31, 2002

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

IMU Bulletin no. 43, October

REPORT OF THE 13th GENERAL ASSEMBLY OF IMU
Dresden, Germany, August 15-16, 1998

1. **Opening**
   The President opened the Assembly at 10 a.m. on August 15, 1998

2. **Address by the President**
   The President welcomed the participants and briefly presented what the Executive Committee had been doing in the last 4 years, especially moves to increase the representation of applied mathematics and other mathematical sciences at the International Congresses of Mathematicians, an initiative to bring together computer scientists to consider forming an International Union of Computer Science and the formation of a committee on electronic publishing. He also emphasized that every effort had been made to send the delegates all necessary information beforehand. This information is collected in Bulletin No. 42 Special Number for the General Assembly. The Agenda was accepted.

3. **Committees**
   The following committees were appointed:

   Resolutions Committee
   Friedrich Hirzebruch (Germany) Chairperson
   Peter Fillmore (Canada)
   Christer Kiselman (Sweden)
   Sebastiá Xambó-Descamps (Spain)
   Ushadevi N. Bhosle (India)
   Vladimir Arnold, ex-officio, Vice-President

   Committee for Finance and Dues
   Ronald Graham (United States of America), Chairperson
   Roberto Markarian (Uruguay)
   Kun Soo Chang (Korea)
   Andrei A. Gonchar (Russia)
   Batmanathan D. Reddy (South Africa)
   Jacob Palis, ex-officio, Secretary

   Nominating Committee
   David Mumford, ex-officio, Chairperson
   Isabel Dotti (Argentina)
   Alberto Conte (Italy)
   Zbigniew J. Ciesielski (Poland)
   Da-Qian Li (Chinese Math. Society)
   John Ball (United Kingdom)
   Olli Lehto (Finland)
   Kazuo Okamoto (Japan)
   Robert MacPherson (United States of America)
   Ludwig Faddeev, ex-officio, Past President
   Jurgen Moser, ex-officio, Past President

Besides the above, there were the Credentials and Tellers Committees, chaired by Ragni Piene (Norway) and Vera Sós (Hungary), respectivelly.

4. **Members**

4.1. New Members:
Ukraine - has been admitted to the Union in Group II as of January 1, 1999

4.2. Dues arrears:
The Secretary raised the issue that some countries are not up to date in the payments of dues: Bulgaria, Cuba, Georgia, Iran, North Korea, Nigeria and Yugoslavia.

- For Bulgaria, Cuba, Georgia and Iran the Assembly decided to ask the Executive Committee to send messages to call their attention to the necessity of payment of their previous dues.
- As for Yugoslavia, since they paid the dues for the last four consecutive years (1995-1998), the Assembly decided to waive their previous dues.
- North Korea and Nigeria, have not paid any dues since 1990. Moreover, neither North Korea or Nigeria have answered the Union messages concerning their dues arrears. The General Assembly decided to cease/suspend their membership, if they do not answer to the EC renewed efforts after a year.

5. **Activities of the Union - Scientific Reports**

The reports in the Bulletin covered the IMU activities in the period since the last General Assembly, especially symposia and conferences, as well as the activities of its Commissions ICMI, CDE and ICHM, and also the World Directory. They were approved.

The 11th edition of the World Directory of Mathematicians compiled and printed by the American Mathematical Society under the supervision of Professor James Arthur, will be available at the ICM in Berlin.

6. **Finance and dues:**

6.1. Financial reports for the years 1994-1997

The activities of the Union for the years 1994-1997, as well as the complete financial reports, including audited ones, had been reviewed in the Bulletin No. 42, Special Number, 1998.

6.2. The financial report for the years 1994-1997 were approved by the General Assembly.

6.3. Budget for the years 1999-2002 - The budget for the years 1999-2002 was accepted by the General Assembly - Appendix 3

7. **Creation of a Committee on Electronic Information and Communication**

The GA approved an Enabling Resolution to form an IMU Committee on Electronic Information and Communication (CEIC), based on the following proposal of the EC:

1. In the last decade, the internet has been transforming our communication and commerce. In the world of science, the internet is radically changing the modes of information transfer at all levels. Communication on hand-written and printed paper, distribution via postal mail and libraries is a system which has been stable for many centuries. We cannot foresee clearly the new system which is evolving except that it will involve electronic media and it will radically alter the economics of communication. This transformation will certainly be global and will affect mathematical research on all continents.

2. We strongly believe that the IMU can play several important roles during this transition. Among these are:

   (i) it can provide a forum where all parties, i. e., all countries and all interest groups (individual researchers, professional societies, publishers, and libraries) can discuss the issues and it can publish proceedings to increase general understanding of all the issues involved,

   (ii) it can recommend and promote international standards on electronic communication among mathematicians, when needed,

   (iii) it can act as a liaison between regional, national and local groups, coordinating their initiatives and discussions.

3. We therefore propose that the GA establish a

   Committee on Electronic Information and Communication (CEIC)

   to accomplish its objectives whose terms of reference and initial additional membership will be decided by the ad hoc committee consisting of John Ewing, Martin Groetschel, Peter Michor, David Mumford and Jacob Palis and sent by mail ballot to all adhering organizations for approval.

   The Terms of Reference for the Committee were discussed at the General Assembly and an ad hoc Committee formed by John Ewing, Marting Groetschel, Peter Michor, David Mumford and Jacob Palis, was established to complete such Terms and to suggest its initial membership. These Terms of Reference and initial membership will be sent to the Adhering Organizations for approval.

8. **Elections**
   The Nominating Committee met in the afternoon of August 15 from 16:00 to 17:30. It adopted the slates proposed by the Executive Committee. From the floor, three candidates for members at large of the Executive Committee of IMU were presented (M.Groetschel, D. Robinson and V. Milman), as well as a candidate for member at large of CDE (F. Mohamed) and a candidate for member at large of ICMI (C.Julie). According to the procedures for elections, as approved by all Adhering Organizations beforehand and explained by Prof. David Mumford to the Assembly, their names appear in the ballots together with the EC and Nominating Committee slates.

   -The Committees elected for the years 1999-2002, consist of:

IMU Executive Committee

President:	Professor Jacob Palis	(Brazil)
Vice-Presidents:	Professor S. Donaldson	(United Kingdom)
	Professor S. Mori	(Japan)
Secretary:	Professor P. Griffiths	(USA)
Members:	Professor V. Arnold	(Russia)
	Professor J. M. Bismut	(France)
	Professor B. Engquist	(Sweden)
	Professor M. Groetschel	(Germany)
	Professor M.S. Raghunathan	(India)
ex-officio:	Professor D. Mumford	(Past President)

Commission on Development And Exchange - CDE

Chairman:	Professor Rolando Rebolledo	(Chile)
Secretary:	Professor Herb Clemens	(USA)
Members:	Professor A.A. Ashour	(Egypt)
	Professor K. C. Chang	(China)
	Professor P. Cordaro	(Brazil)
	Professor J.-P.Gossez	(Belgium)
	Professor O. Nakoulima	(France)
	Professor T. Sunada	(Japan)
ex-officio:	Professor M.S.Narasimhan	(Past Chairman)
	Professor Jacob Palis	(President of IMU)
	Professor P. Griffiths	(Secretary of IMU)

International Commission on Mathematical Instruction - ICMI

President:	Professor Hyman Bass	(USA)
Vice-Presidents:	Professor M. Artigue	(France)
	Professor N.Aguilera	(Argentina)
Secretary:	Professor B. Hodgson	(Canada)
Members:	Professor G. Leder	(Australia)
	Professor Y. Namikawa	(Japan)
	Professor I. Scharygin	(Russia)
	Professor J.P. Wang	(China)
ex-officio:	Professor Miguel de Guzman	(Past President)
	Professor Jacob Palis	(President of IMU)
	Professor P. Griffiths	(Secretary of IMU)

International Commission on the History of Mathematics - ICHM

Professors Jan P. Hogendijk (Netherlands) and Karen V.H. Parshall (USA) were elected as IMU Members to the Executive Committee of the Joint International Commission on the History of Mathematicians for the years 1999-2002.

- Professor S. Mori was elected to represent IMU at ICSU in the years 1999-2002

9. **Site of ICM - 2002**

   The President announced that the Site Committee for ICM 2002 recommended Beijing, China as the site for the next Congress. Oslo and Norway had presented another bid. The Assembly voted on this issue and approved Beijing as the site of ICM 2002. Prof. K.C. Chang, on behalf of the Chinese Mathematical Society, thanked the General Assembly and promised a good conference to the mathematical community. He reaffirmed that there should be no visa problems and announced the dates of the Congress as August 20-28, 2002.

10. **Change of Statutes**

    The proposed change of statutes was accepted by the General Assembly. It is in Appendix 5

11. **Report of Committee on Finance and Dues**

Professor Ronald Graham (United States of America), Chairperson of Committee for Finance and Dues reported on the work of the Committee. His report is presented as Appendix 2.

The Committee recommended the approval of the financial reports for the years 1994-1997 and the audited accounts. The General Assembly unanimously approved them.

The budget for 1999-2002 had been prepared keeping the same dues as in 1995-1998.

The Committee recommended the acceptance of the budget proposed.

The budget was approved unanimously by the General Assembly. See Appendix 3.

12. **Adoption of resolutions**

The Resolution Committee presented proposals of resolutions for approval of the General Assembly.

After discussion of these and some other proposals presented from the floor, the following ones were approved:

Resolutions of the IMU General Assembly 1998

Resolution 1

The General Assembly resolves that the next meeting of the General Assembly will be held at a time and place conveniently linked to the International Congress of Mathematicians in Beijing, China, in 2002.

Resolution 2

Building on the resolutions adopted at the 1986 and 1990 General Assemblies, the IMU shall continue to endeavor to attract the participation of all mathematicians. Subfields of mathematics, women and mathematicians in smaller countries should not be overlooked in IMU activities.

Resolution 3

The General Assembly expresses its gratitude to those bodies who contributed to the Special Development Fund in the past four years, which allowed 100 young mathematicians from developing countries to attend the ICM-98. The General Assembly hopes that they will continue their efforts and urges other Adhering bodies and Committees for Mathematics to work towards ensuring more contributions to the Special Development Fund. The General Assembly recognizes the additional effort of the Executive Committee and the Organizing Committee of ICM 1998 to invite and finance 40 senior mathematicians from developing countries.

Resolution 4

The General Assembly expresses its gratitude to the Organizing Committee of ICM 98 chaired by Martin Groetschel and the local organizers chaired by Volker Nollau, for the hospitable reception and excellent arrangements at the Dresden meeting.

Resolution 5

The thirteenth General Assembly gives warm thanks to the Executive Committee and to the President of IMU for their work during the period 1995-1998.

Resolution 6

The General Assembly gives especial thanks to Jacob Palis for his excellent work as Secretary to the IMU over the last eight years assisted by Mrs. Suely dos Santos Lima. It also thanks the Instituto de Matemática Pura e Aplicada (IMPA) for its generous support of the IMU secretariat over this period.

Resolution 7

The General Assembly expresses thanks to the Organizing Committee of ICM 1998 for its excellent innovations, including the use of electronic and information technology, the advance publication of volumes of the Proceedings, and the efforts to improve public perception of mathematics.

13. Next meeting of the General Assembly

    The Chinese delegation invited the General Assembly to meet at a place linked to the 2002 International Congress of Mathematicians to be held in Beijing, China.

14. The President thanked the Assembly for its work and declared the 13th General Assembly of IMU closed at 1:30 p.m.

The report of the Credentials Committee is presented in Appendix 1 and the list delegates as Appendix 4

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APPENDIX 3

INTERNATIONAL MATHEMATICAL UNION
Budget for the years 1999 - 2002, in Swiss Francs

Expenditure:	**1991-1994**	**1995-1998**	**1999-2002**
Schedule A:			
Secretarial help, IMU office	19.400	15.000	17.000
Secretarial help, President	2.000	3.000	5.000
ICMI	10.000	11.000	11.000
CDE	5.500	6.000	6.000
Office Expenses (including postage)	7.500	8.400	14.400
Travel Expenses of the E.C.	25.000	27.000	30.000
President's and Secretery's expenses	2.000	2.000	4.000
Contribution to ICSU	5.000	7.000	7.000
IMU Bulletin	2.000	2.000	3.000
Audit fee	2.000	2.000	4.500
General Assembly - 1998	3.500	4.000	4.000
World Directory of Mathematicians	18.000	20.000	20.000
Contigencies	2.000	2.000	2.000
Subtotal	104.500	110.000	127.900
Schedule B:			
Symposia, confer, IMU Lectures	56.000	65.000	86.000
ICMI scientific activities	18.000	22.000	22.000
CDE scientific activities	15.000	40.000	33.000

Program Committee for ICM 1998	5.500	6.000	8.000
Travel grants	15.000	25.000	40.000
Subvention to ICM 1998	24.000	26.000	28.000
Subtotal	133.500	184.000	217.000
Total (Subtotal Schedule A + B)	**238.000**	**294.000**	**344.900**
Income:			
Membership dues (212 x 1200)	187.000	210.000	254.400
ICSU subvention	20.000	26.000	10.500
Sales of W.D.M.	12.500	10.000	12.000
Special Development Fund	15.000	25.000	45.000
Interest on Bank accounts	3.500	23.000	23.000
Total	**238.000**	**294.000**	**344.900**

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APPENDIX 4

13th GENERAL ASSEMBLY OF IMU
Dresden, August 15-16, 1998

List of Delegates/Observers

Code	Country	Group	Name
1 1 2	Argentina	II	Isabel Dotti Maria J. Druetta Roberto Miatello
1	Armenia	I	Norair Yengibarvan
1 1 1	Australia	III	Derek W. Robinson Alan L. Carey Alfred J. Van der Poorten
1 1	Austria	II	Peter Gruber Karl Sigmund
1 1 1	Belgium	III	Jean L. Mawhin Joseph A. Thas Freddy Dumortier
2	Bosnia and Herzegovina		Muharem Avdispahic
1 1 1	Brasil	III	Paulo Cordaro Michael Forger Marcelo Viana
1	Bulgaria	I	Georgi D. Raikov
1	Cameron	I	Henri Hogbe Nlend
1 1 1 1 1 2	Canada	V	Donald A. Dawson Peter A. Fillmore Nassif Ghoussoub Jacques C. Hurtubise Nicole Tomczak-Jaegermann George A. Elliott
1 1 2	Chile	II	Rolando Rebolledo Sergio Plaza Rafael Labarca
1			Chang Kung Ching

1 1 2	China, Chinese Math. Society	III	Lo Yang Da-Qian Li Wenlin Li
1 1 2 2 2	China, Math. Society Located at Taipei	II	Tsang-Hai Kuo Fon-Che Liu Yuh-Jia Lee Ko-Wei Lih Hwai-Chiuan Wang
1	Croatia	I	Ivan Ivansic
1 1	Czech Republic	II	Miroslav Fiedler Jiri Jarnik
1 1	Denmark	II	Hans J. Munkholm Gert K. Pedersen
1	Egypt	I	Attia Ashour
1 1	Finland	II	Olli Lehto Olli Martio
1 1 1 1 1 2 2 2 2	France	V	Pierre Arnoux Jean Michel Bismut Paula Cohen Alain Damlamian Michele Vergne Jean-Pierre Bourguignon Paul-Jean Cahen Mireille Chaleyat-Maurel Doina Cioranescu
1 1	Georgia	II	Vakhtang M. Kokilashvili Roland Duduchava
1 1 1 1 1	Germany	V	Martin Aigner Martin Groetschel Friedlich Hirzebruch Karl-Heinz Hoffmann Reinhard Mennicken
1	Greece	I	Nicolas K. Artemiadis
1	Hong Kong	I	Roderick S.C. Wong
1 1 1	Hungary	III	Gyula O. H. Katona László Márki Vera T. Sós
1	Iceland	I	Robert Magnus
1 1 1	India	III	Ushadevi N. Bhosle Jayanta K. Ghosh Surender .K. Malik
1	Iran	II	A.R. Medghalchi

1 1	Ireland	II	Samuel K. Houston Richard O. Watson
1 1 1 1 1	Israel	V	Ariel Dvoretzky Joram Lindenstrauss Vitali Milman Gideon Schechtman Aner Shalev
1 1 1 1 1	Italy	V	Carlo Cercignani Alberto Conte Carlo Sbordone Terenzio Scapolla Aljosa Volcic
1	Ivory Coast	I	Etienne Desquith
1 1 1 1 1	Japan	V	Kazuo Okamato Yukihiko Namikawa Toshio Sawada Tohsikazu Sunada Kenji Ueno
1	Kazakhstan	I	Umirzak M. Sultangazin
1 1 2	Korea, Republic of	II	Kun Soo Chang Yong-Seung Cho Hyouong J. Ko
1	Latvia	I	Uldis Raitums
1	Lithuania	I	Henrikas Pragarauskas
1 1	Mexico	II	Carlos Renteria Marquez Luis Manuel Tovar-Sanchez
2	Morocco		Ahmed Kerkour
1 1 1	Netherlands	III	Michiel Hazewinkel Robert Mattheij J an C. Willems
1	New Zealand	I	Robert Goldblatt
1	Norway	I	Ragni Piene
1	Philippines	I	Polly W. Sy
1 1 1	Poland	III	Zbigniew J. Ciesielski Michal Karónski Andrzej Skowronski
1 1 1 1 1	Russia	V	Ludwig D. Faddeev A ndrei A. Gonchar Yuri S. Osipov Viktor A. Sadovnichii Alexei B. Zizchenko

1	Saudi Arabia	I	Fawzi A. Al-Thukair
1	Singapore	I	San Ling
1	Slovak Republic	II	Lev Bukovsky
1	Slovenia	I	Peter Legisa
1 1	South Africa	II	Batmanathan D. Reddy Hendra C. Swart
1 1 1	Spain	III	Jose Luis Fernandez Juan Luis Vazquez Sebastiá Xambó-Descamps
1 1 1 1	Sweden	IV	Johan Hastad Christer Kiselman Lars-Erik Persson Peter Sjogren
1 1 1 1	Switzerland	IV	Srishti D. Chatterji Rolf Jeltsch Jurgen Moser Gerhard Wanner
1	Turkey	I	Betul Tanbay
1 1 1 1 1	United Kingdom	V	John M.Ball Terence J. Lyons Angus .J. Macintyre Caroline M. Series Martin J. Taylor
1 1 1 1 1 2	United States of America	V	M. Salah Baouendi Lynne Billard Ronald L. Graham Robert D. MacPherson Margaret H. Wright Phillip A. Griffiths
1 2	Uruguay	I	Roberto Markarian Mario Wschebor
1	Venezuela	I	Euardo Lima de Sá
1	Vietnam	I	Dinh Tri Nguyen
1 1	Yugoslavia	II	Zoran Kadelburg Veselin Peric
1 - Delegate 2 - Observer			

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APPENDIX 5

CHANGE IN STATUTES
of the
INTERNATIONAL MATHEMATICAL UNION

Approved in the 63rd meeting of the Executive Committee, held in Berlin on May 15-16, 1997

III. AFFILIATION

1. For the purpose of facilitating jointly sponsored activities and jointly pursuing the objectives of the IMU, multi-national mathematical societies and professional societies can be affiliated with the Union.
2. The members of the Union shall elect the affiliate members by Postal Ballots or at meetings of the General Assembly upon recommendation of the EC. The affiliation may be terminated by the same procedure.
3. Affiliate members have the right to participate in the General Assembly but shall have no voting rights.
4. Such affiliate members have the right to submit proposals for joint activities to the General Assembly and to the President and Secretary for consideration of the Executive Committee.
5. The Executive Committee, with the support of the Adhering Organizations and National Committees, shall look for ways to keep close relations with the affiliated organizations and to enhance mathematical activities in their regions and fields of interest. They shall receive the Bulletin of the IMU and be kept informed of all activities relevant to them.

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Report of the International Congress of Mathematicians 1998
By Professor Martin Groetschel, President of ICM/98

The International Congress of Mathematicians 1998 was held in Berlin, Germany, on August 18-27.

In 1992 the German Mathematical Society (DMV) invited the International Mathematical Union (IMU) to hold the 1998 International Congress of Mathematicians in Berlin. The invitation was accepted by the 1994 General Assembly of the IMU in Luzern, the decision announced at the 1994 Congress in Zürich.

In January 1995 the Council (Präsidium) of the DMV and the representatives of the mathematical institutions in Berlin appointed the Board of Directors of the ICM'98 Organizing Committee (Martin Grötschel (TU and ZIB Berlin), President; Friedrich Hirzebruch (MPI Bonn), Honorary President; Martin Aigner (FU Berlin), Vice President; Jürgen Sprekels (HU and WIAS Berlin), Treasurer; Jörg Winkler (TU Berlin), Secretary) and also founded the Verein zur Durchführung des International Congress of Mathematicians 1998 in Berlin (VICM) to form a legal umbrella for the organization. In the course of the preparations, the Board of Directors asked many colleagues to join the organizing team.

Initial financial support came from the Bundesministerium für Bildung, Wissenschaft, Forschung und Technologie and from the Senat von Berlin. Without the substantial backing from these two institutions an application would have been impossible. Other public and academic bodies, private corporations and foundations, individuals and mathematical institutes supported the Congress significantly as well. A list of donors can be found in this volume. The registration fee was DM 450 for early and DM 600 for late registration, there was no fee for accompanying persons. The registration fees accounted for about one third of the total budget.

The scientific program of the Congress was in the hands of a Program Committee appointed by the IMU. Its members were Phillip Griffiths (Chairman), Luis Caffarelli, Ingrid Daubechies, Gerd Faltings, Hans Föllmer, Michio Jimbo, John Milnor, Sergei Novikov, and Jacques Tits. The committee divided the program of the Congress into 19 sections and appointed, for each section, a panel to nominate speakers. In early summer of 1997 the Program Committee selected 21 mathematicians to give one-hour plenary addresses and 169 colleagues to present 45-minute invited lectures. Five invited lecturers cancelled their talks at short notice due to personal reasons. Two of them, however, submitted written versions of their lectures to these Proceedings.

The Fields Medal Committee consisted of Yuri Manin (Chairman), John Ball, John Coates, J.J. Duistermaat, Michael Freedman, Jürg Fröhlich, Robert MacPherson, Kyoji Saito, and Steve Smale. The members of the Nevanlinna Prize Committee were David Mumford (Chairman), Bjorn Engquist, Tom Leighton, and Alexander Razborov. Both committees arrived at their decisions in spring 1998.

The Organizing Committee was responsible for all other activities of the Congress. Der-Congress handled accommodation, registration and related arrangements as the official travel agent of the Organizing Committee.

The first day of the Congress, including the opening ceremony, took place at the International Congress

Center (ICC) of Berlin. During the opening ceremony, attended by about 3,000 persons, the Fields Medals and the Nevanlinna Prize were awarded. Moreover, Andrew Wiles received an IMU silver plaque in recognition of his proof of "Fermat's Last Theorem". The opening ceremony was transmitted worldwide in the Internet via Mbone. In the afternoon of August 18, the work of the Fields Medallists and the Nevanlinna Prize winner was presented in five lectures. The manuscripts of these lectures can be found in this volume. Jürgen Moser concluded the first day with a plenary lecture.

All further sessions of the Congress took place on the campus of the Technische Universität Berlin. The plenary lectures were held in morning sessions in the Audimax of the TU Berlin. They were transmitted via closed-circuit television to another large lecture hall. The 45-minute invited lectures were given in six parallel sessions from 2 p.m. to 6 p.m. each afternoon, from August 19 to 26, except for Sunday, August 23, which was kept free for excursions etc. The last day of the Congress, August 27, consisted of four plenary addresses and the closing ceremony.

In addition to the invited and plenary lectures, 1,098 short 15-minute contributions and 236 poster presentations were given. Moreover, 235 ad-hoc talks of 15 minutes length were scheduled during the Congress. Thus, ICM'98 had a total of 1569 contributed presentations.

The organization of the Congress was, to a large extent, based on electronic communication. Already in 1994, a World Wide Web Server on the International Congress was set up at the Konrad-Zuse-Zentrum in Berlin. This server was continuously extended to contain up-to-date material so that every mathematician interested in ICM'98 could look up most recent information. In addition to this, circular letters were e-mailed to all those who registered for the Congress electronically. These circular letters complemented the printed First and Second Announcements that were mailed out in August 1997 and January 1998, respectively, to thousands of mathematicians worldwide.

The Organizing Committee also offered the possibility of electronic registration. Two thirds of the ICM'98 members took advantage of this facility; 95% of the abstracts of the invited and contributed presentations were submitted electronically. Moreover, all but one of the plenary and invited speakers submitted their paper for the proceedings volume electronically. This made it possible to produce Volumes II and III before the Congress, to make them available in the Internet, and to deliver them to the participants in printed form at registration in Berlin.

In all, 3,346 mathematicians from 98 countries participated in the Congress together with an estimated number of 800 accompanying persons; 31 exhibitors were present.

The Organizing Committee made significant efforts, together with the International Mathematical Union, to give financial support for participants from developing countries and Eastern Europe. A fund of more than DM 900,000 made it possible to sponsor the attendance of approximately 450 mathematicians. About 510 colleagues were invited, around 60 were unfortunately unable to attend; 93 young and 37 mature colleagues from developing countries received grants from the IMU and the local organization, 305 persons from the support program of the local Organizing Committee for mathematicians from Eastern Europe. Special grants from mathematical institutions and other support programs complemented these efforts.

The social events included a buffet lunch after the opening ceremony, an opera performance of the Magic Flute in the Deutsche Opera on August 23, and an ICM party on August 26. To convey some of the many facets of Berlin to the ICM'98 participants, and in particular to accompanying persons, many Berlin mathematicians, their friends and spouses offered informal tours, so called footloose tours, to points of special interest in Berlin. About 1,200 ICM'98 members and accompanying persons participated in these tours.

In accordance with the Program Committee and the IMU, the Organizing Committee opened a Section of Special Activities to cover topics of mathematical relevance that would not fit elsewhere in the official scientific program. These special activities included an afternoon session on electronic publishing with three talks and a panel discussion on "The Future of Electronic Communication, Information, and Publishing"; presentations of mathematical software on three afternoons; several

special activities related to women in mathematics including the Emmy Noether Lecture given by Cathleen Synge Morawetz, and a panel discussion "Events and Policies: Effects on Women in Mathematics"; an afternoon on "Berlin as Center of Mathematical Activity" (this workshop was suggested by the International Commission on the History of Mathematics); a roundtable discussion on "International Comparison of Mathematical Studies, University Degrees, and Professional Perspectives".

The exhibition "Terror and Exile" honored the memory of 53 Berlin mathematicians who suffered under the Nazi terror; this topic was also addressed in a special session "Mathematics in the Third Reich and Racial and Political Persecution".

Other events enhanced the scope of the ICM'98 activities. The special evening lecture of Andrew Wiles on "Twenty Years of Number Theory" on August 19 attracted an audience of about 2,300. Olli Lehto's book on the International Mathematical Union was presented and an exhibition of mathematical cartoons was shown at the TU Mathematics Library.

A major attempt to reach out to the non-mathematical public during the Congress were the activities in the Urania, an institution with a long tradition in the popularization of science. These included 11 lectures on mathematics for a general audience, the VideoMath Festival in which the VideoMath Reel, a composition of selected short videos on mathematics, and several other mathematical films were shown. Exhibitions on "Hands-on Mathematics" (addressing high-school students and teachers in particular), "Mathematical Stone Sculptures", "Mathematics and Ceramics", and works by high-school students on "Mathematics and the Art" complemented the Urania activities. An additional exhibition featuring paintings and sculptures related to mathematical objects (Innovation) was shown at the Ludwig-Erhard-Haus. More than 5,000 persons attended the Urania lectures and video performances, about 10,000 visited the exhibitions in the Urania.

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SPEECH BY DAVID MUMFORD, PRESIDENT OF THE INTERNATIONAL MATHEMATICAL UNION

Minister Rüttgers, State Secretaries Staudacher and Hauser, Governing Mayor Diepgen, Professors Hoffmann, Hirzebruch and Grötschel, fellow mathematicians, ladies and gentlemen:

Let me welcome you to the ICM'98, the 23rd International Congress of Mathematicians. It is a great honor and a great pleasure to open this Congress.

First I would like to congratulate the Organizing Committee for the superb job they have done in bringing to life this Congress. I have always been aware that the ICMs were major undertakings but only in the last four years, watching from the sidelines the huge number of decisions, negotiations and problems and the vast array of details that the Organizers have dealt with, did I appreciate all that this means. It has been a truly monumental task to which dozens of Professors and hundreds of assistants have devoted the major part of their lives for the last several years. But they have put together what we call in the U.S. a blockbuster of a Congress. Secondly, I want to say that I also did not appreciate as I should how large and how crucial was the financial assistance from the host country in keeping these Congresses affordable to all researchers in mathematics. So I would like to especially thank our German hosts for their truly remarkable financial support. We will see in a few minutes the extent and the many sources, private and public, of this magnanimous contribution.

Thirdly, I want to say that I am accustomed, as a mathematician, to being in a nearly invisible field of work. Mathematics is neither a hard science whose discoveries are widely broadcast nor an Art, which delights a major part of the public. So I am especially pleased that our Congress here in Berlin has attracted the attention of the Federal Minister of Education and Science, the State Secretaries of the German President and the Ministry of Finance and the Governing Mayor of Berlin. I am further delighted that there is a stronger public awareness here in Berlin of mathematics and of our Congress than I can recall at any previous Congresses. During this Congress we have an opportunity to present mathematics to people engaged in other professions and the organizing committee has put together an exciting program to accomplish this, as you will hear shortly. Let me do my part by saying a few words about how mathematics relates to the broader cultural world.

Mathematics is usually explained and justified to the world at large by giving examples of important inventions that could not have been made without its help. This is embodied in the myth that we mathematicians concern ourselves with eternal truths, which we hand on to physicists, who pass them on to chemists and engineers, etc. who finally pass them on to mankind as a whole. There are definitely important examples of ideas passing along this chain (in fact in both directions!) but I also think it is a rather narrow view to isolate mathematics on such a pedestal. There is a more socially grounded view, which says that mathematics and mathematicians are deeply embedded in human culture and are tied to the Arts in particular where the love of abstraction also flourishes. Let me illustrate this.

At the beginning of this century, the great German mathematician David Hilbert carried out his extremely influential dissection of the axioms of Euclidean geometry into their logical components. Was it a coincidence that at the same time, the French impressionists were dissecting the light and color of painting into their basic components? In the 20's and 30's, the Bauhaus school of architecture was building in Germany human habitations along minimalist lines. And Bourbaki in France was rebuilding mathematics in its most abstract possible setting. It is amusing to work out more parallels between mathematics and the broad trends in human culture, such as the discovery that randomness could be more effective than precise planning, by the artist

Jackson Pollock and the mathematician N. C. Metropolis at roughly the same time. But I will content myself with the assertion that the most widely renowned mathematical achievement of the last four years, the solution of Fermat's 300-year-old problem, is the quintessential post-modern theorem. The basic qualities of what is known as post-modern art and architecture are their conscious combination of idioms from every era in the past. And, indeed, Wiles' proof combines ideas from almost every branch of classical mathematics - number theory proper, algebraic geometry, Lie group theory and analysis; and its roots go back to Kronecker's famous vision, his `Jugendtraum', in the 19th century.

Although the links are sometimes hidden, mathematics is tightly woven with all of art and science. I wish the Congress success as a forum for the exchange of ideas between mathematicians and the citizens of this remarkable city as well as between mathematicians themselves. Welcome to this celebration of the best of mathematics at the close of the 20th century!

I propose that we elect by acclamation, here and now, Professor Martin Grötschel as President of the 1998 International Congress of mathematicians and I call him to the stage.

SPEECH BY MARTIN GRÖTSCHEL, PRESIDENT OF THE ICM'98

Herr Minister, Herr Regierender Bürgermeister, verehrte Staatssekretäre, ladies and gentlemen:

I am very grateful for your vote. It is truly an honor to preside over ICM'98, the 23rd International Congress of Mathematicians.

On behalf of the Local Organizing Committee I would like to welcome you all to ICM'98, in particular, to this opening ceremony at the International Congress Center (ICC) of Berlin.

An international congress such as this is, in the language of marketing, a very ``complex product.'' Many groups, distributed all over the world, take part in the planning and preparation. I would like to reveal a few. The General Assembly of the International Mathematical Union chose Berlin as the site of ICM'98 at its meeting in Luzern in 1994.

One of the first efforts of the Organizing Committee was to find a suitable logo. We were fortunate that a flash of genius of our designer team Ott & Stein produced a beautiful arrangement of the number 1998, the year of our congress, written in Roman numerals. Please watch the short video on my left to see how ICM and ICC, the abbreviation of the name of the building we currently occupy, show up magically.

During the last four years the preparation of ICM'98 proceeded in close contact with the IMU Executive Committee, in particular, with IMU President David Mumford and IMU Secretary Jacob Palis. This was and still is an outstanding cooperation. I would like to thank both, David and Jacob, for their excellent and continuing support.

The IMU appointed the Fields Medal and the Nevanlinna Prize Committee. Their achievements will be unveiled in about 90 minutes.

The committee that is most important for the scientific success of the congress is the Program Committee. It was chaired by Phillip Griffiths, its members are shown on the slide above me.

The Program Committee has chosen 21 plenary speakers and 169 invited speakers in 19 sections. Their selection was based on 19 international panels, that also received support from other scientific societies.

I believe that this choice of leading experts, who are going to report on the mathematical achievements of the last years in their field of interest, is why most of the about 3500 members of this congress have gathered.

Some statistics: The ICM'98 participants come from 98 countries; 1% are from Australia, 2% from Africa, 12% from Asia, 20% from America, and 65% from Europe. About 12% of the members are female, 10% of the participants are students.

Whatever scientific committees do and plan, it is impossible to launch an event such as this one without substantial financial support. The Organizing Committee is greatly indebted to many public and academic bodies, private corporations and foundations, and a large number of individuals for monetary contributions and the donation of goods and services. The slides above me show the major donors. Representatives of most of our benefactors are present at this moment. Thank you very much!

Thanking individuals in speeches like this is always a sensitive matter. Nevertheless, I would like to make an exception here and mention one person specifically. Our sincere thanks go to Hermann Schunck of the Federal Ministry of Education, Science, Research, and Technology, who was a mainstay and backed the organization politically wherever he could. For the group theoretists among you: he is the person after whom Schunck classes are named, an outgrowth of his Ph.D. thesis, written in 1967 in his ``former life."

One outcome of our fund drives and those of IMU makes us very proud. The donation of more than DM 900,000 enabled us to financially support the participation of about 460 mathematicians from developing countries and Eastern Europe. The sponsored colleagues have been selected from 1500 excellent applications and strengthened our scientific program considerably. They particularly contribute to the more than 1200 short communications and poster presentations that will, in addition to the invited lectures, be given at this meeting.

Everything I have reported so far was similar at former congresses. I believe that three features distinguish ICM'98 from previous ICMs.

First, it is the first time that extensive use of electronic communication, information, and organization was made. Almost everybody in this room has received e-mail from me. Many of you have corresponded with my colleagues and me by electronic means. This way we were able to stay in touch with our ``customers." We have taken up various suggestions, avoided some mistakes and were able to repair others quickly. Quite a few ``thank you letters" indicate that many of you felt well informed about the progress of the planning.

Some statistics may highlight the ``electronic revolution": two thirds of the ICM'98 participants registered electronically, 95% mailed their abstracts electronically, and only one of all plenary and invited papers was not submitted electronically. This made it possible to produce the proceedings before the congress and make them available in the Internet, except, of course, for the part that deals with the present Opening Ceremony.

Second, the Local Organizing Committee, in cooperation with IMU, has added an additional section, called the Section of Special Activities, where topics are covered that are of mathematical relevance but do not fit into the traditional scientific program. There will be talks, presentations, and round table discussions on electronic publishing, mathematical software, activities related to women, international comparison of mathematical studies, and a series on Berlin as a center of mathematical activity.

Third, the International Congress was extended to the general non-mathematical public. This was considered a matter of utmost importance by all members of the Organizing Committee. The activities going on these days are too numerous to be mentioned here in detail. We have rented the Urania building to attract the Berliners to listen to mathematical talks. There will be several exhibitions, music performances etc. related to mathematics. We hope that these activities will not only be of interest for the general public but also for the ICM members and their accompanying persons.

To give you an idea of what to expect, let us watch a preview of the VideoMath Festival film that will be shown several times during the congress at the Urania.

I invite you all to this festival and the other activities at the Urania.

At the end of my words of welcome, I would like to thank my colleagues in the Organizing Committee. They are all volunteers and have done the organizational work in addition to their usual duties. They have joined forces enthusiastically and have given their best to make ICM'98 an exceptional event. Let's hope that our dreams come true.

Welcome to ICM'98, welcome to Berlin. We wish you a successful conference and a pleasant stay, thank you very much!

SPEECH BY KARL-HEINZ HOFFMANN, PRESIDENT OF THE GERMAN MATHEMATICAL SOCIETY

Dear Mr. President Mumford, ladies and gentlemen, dear guests:

For the first time in 94 years the International Congress of Mathematicians returns to Germany. In the name of the German Mathematical Society I welcome you to Berlin.

My special greetings go to the State Secretary, Wilhelm Staudacher, who is representing the President of the Federal Republic of Germany today, as well as to the Minister of Education, Science, Research and Technology, Dr. Jürgen Rüttgers. I also extend a warm welcome to the Governing Mayor Eberhard Diepgen, representing the Land of Berlin.

Ladies and Gentlemen! In 1912, that is eight years after the ICM held in Heidelberg, we read in an essay of the Austrian-Bohemian writer Robert Musil:

Mathematics (as a science) is the bravery of pure reason, one of the few we have today. … It can be said that we live entirely on the results. … This whole being that runs … and stands around us not only depends on mathematics for its comprehensibility, but has effectively been created by her, rests in its … existence upon her.

A look at the program of the ICM'98 supports this assessment in an impressive way.

The broad spectrum of talks on pure and applied mathematics is supplemented by sections like Mathematical Software and by events for a non-professional audience as, for example, the VideoMath Festival and various exhibitions.

Mathematics is art and culture, but it is also the foundation of our technology based world. The Enquete Commission of the American Academy of Science has concluded:

High Technology is essentially mathematical technology.

Mathematics has not only given birth to her extremely successful daughter, computer science, but mathematical methods are also used in their own rights and thus have become the backbone of modern technology. Let me mention in this connection computer tomography, robotics, aeronautics and space science, semi-conductor technology, and material sciences.

Contrary to a general belief, well trained mathematicians are not only wanted in the academic field, but also in business, banks, and insurance companies. The Federal Institute for Employment in Nürenberg has recently reported that there are as many vacant positions for mathematicians as there are mathematicians seeking employment. The broad education that mathematicians receive provides them with the flexibility which is a characteristic of modern working environments. In view of all this, the support which mathematics receives in Germany from the German Research Council DFG, the Max Planck Society, private foundations, industry and from the Federal Ministry for Education, Science, Research and Technology is an investment for the future. We are grateful for that. These measures of support have led to the creation of research centers, exemplified in the foundation of institutions, as well as the Research Networks, the SFBs (Sonderforschungsbereiche), Programs of the DFG, and Joint Projects of the BMBF (Ministry of Science and Technology):

- 2 Max Planck Institutes: the MPI for Mathematics in Bonn and the MPI for Mathematics in the Sciences in Leipzig.
- The Institute for Applied Analysis and Stochastics of the Leibniz Society in Berlin.
- The ``Konrad-Zuse-Zentrum für Informationstechnik'' in Berlin.
- 7 SFBs of the DFG in the fields of Algebraic Geometry, Partial Differential Equations, Differential Geometry, Discrete Mathematics, Scientific Computing, and Mathematical Modelling with a total budget of DM 13 Million per year.
- 4 Programs of the DFG in the fields of Dynamical Systems, Optimization, Stochastic Systems, and Conservation Equations with a total budget of DM 11 Million
  .
- A Program of the BMBF for the advancement of joint projects between universities and industry.

Students as well as academics from Germany and abroad will find a rich vein of mathematical research in our universities. Although the media often deplore the lack of international collaboration in science in Germany, this criticism does not apply to mathematics.

We are happy to demonstrate this fact by having the International Congress of Mathematicians in Berlin.

We are especially grateful to Professor Friedrich Hirzebruch, who, by his reputation and his personal integrity, has helped decisively to restore the position of German mathematicians within the international community. As President of the German Mathematical Society I ask you to elect by acclamation Professor Friedrich Hirzebruch as Honorary President of the ICM'98. Let me again welcome you and wish you all an interesting scientific program and exciting days in the reunited Berlin.

SPEECH BY FRIEDRICH HIRZEBRUCH, HONORARY PRESIDENT OF THE ICM'98

Many thanks for the honour just bestowed on me. At the closing session in Zürich, I invited the congress to Berlin on behalf of the German Mathematical Society (DMV). The Organizing Committee in Berlin under Professor Martin Grötschel has worked hard and very efficiently using the most modern developments of electronic communication. As honorary president of this committee I had to do very little, but I had ample chance to admire their work. I wish to thank Professor Grötschel and all members of his committee very much, especially for making the honorary presidency so easy for me. In 1904 the Congress was in Heidelberg, supported by Kaiser Wilhelm and the Grand Duke of Baden. This time our support comes from the Federal Republic of Germany and the Land Berlin. We are grateful for the generous support. I welcome Staatssekretär Wilhelm Staudacher, who will read a message of the President of Germany, who agreed to be the protector of

this Congress. The Federal support comes through the Minister of Education, Science, Research, and Technology. I welcome the Minister Dr. Jürgen Rüttgers. The Land Berlin is represented by its Governing Mayor Eberhard Diepgen. We thank the Technical University and its president Professor Hans-Jürgen Ewers for letting us use the University as venue of the Congress. In 1990 the German Mathematical Society (DMV) celebrated its 100th anniversary. Our application to issue a special postage stamp on this event was turned down. We are all the happier that for this congress a special stamp will be issued and Staatssekretär Hansgeorg Hauser will present it to us.

I mentioned the 100th anniversary of the DMV. Its first president was Georg Cantor, the founder of set theory. He was an ardent fighter for the establishment of the International Mathematical Congress. From the founding years of the DMV up to Nazi times, mathematics in Germany was leading internationally. Among the presidents of the Society in this period were Felix Klein, Alexander Wilhelm von Brill, Max Noether, David Hilbert, Alfred Pringsheim, Friedrich Engel, Kurt Hensel, Edmund Landau, Erich Hecke, Otto Blumenthal, and Hermann Weyl.

Alfred Pringsheim died in Zürich in 1941 at the age of 90 after having escaped from Germany. Edmund Landau lost his chair in Göttingen in 1934. Otto Blumenthal was deported to the concentration camp Theresienstadt, where he died in 1944. Hermann Weyl, president of our society in 1932, emigrated to the United States in 1933. He worked at the Institute for Advanced Study in Princeton together with Albert Einstein, Kurt Gödel, John von Neumann, who were all members of our society.

David Hilbert died in Göttingen in 1943. Hermann Weyl wrote an obituary published in the middle of the war in Great Britain and the United States. I quote: ``Not until many years after the first world war, after Felix Klein had gone and Richard Courant had succeeded him, towards the end of the sadly brief period of the German Republic, did Klein's dream of the Mathematical Institute at Göttingen come true. But soon the Nazi storm broke and those who had laid the plans and who taught there besides Hilbert where scattered over the earth, and the years after 1933 became for Hilbert years of ever deepening tragic loneliness."

To those ``scattered over the earth" belongs Emmy Noether, the famous Göttingen mathematician, daughter of Max Noether, president of the German Mathematical Society in 1899.

It is not possible for me here to analyse the behaviour of the DMV and its members during the Nazi time, or its reaction to the Nazi time after the war. When we began to prepare the present congress, it was clear for us that we "must not forget." My generation should be unable to forget. Many of my age have good friends all over the world where parents or other family members were killed in Auschwitz. We must teach the next generation "not to forget." The German Mathematical Society has announced a special activity during this congress to honour the memory of the victims of the Nazi terror. I read from this announcement and ask you to participate:

In 1998, the ICM returns to Germany after an intermission of 94 years. This long interval covers the darkest period in German history. Therefore, the DMV wants to honour the memory of all those who suffered under the Nazi terror. We shall do this in the form of an exhibition presenting the biographies of 53 mathematicians from Berlin who were victims of the Nazi regime between 1933 and 1945. The fate of this small group illustrates painfully well the personal sufferings and the destruction of scientific and cultural life; it also sheds some light on the instruments of suppression and the mechanism of collaboration.

In addition, there will be a special session entitled ``Mathematics in the Third Reich and Racial and Political Persecution" with two talks given by Joel Lebowitz (Rutgers University), "Victims, Oppressors, Activists, and Bystanders: Scientists' Response to Racial and Political Persecution," and Herbert Mehrtens (Technische Hochschule Braunschweig), "Mathematics and Mathematicians in Nazi Germany. History and Memory."

Of the 53 mathematicians from Berlin honoured in the exhibition, three are here with us as guests of the Senate of Berlin and the German Mathematical Society. I greet them with pleasure and thanks. They are:

Michael Golomb, United States,
Walter Ledermann, Great Britain,
Bernhard Neumann, Australia.

The last student of the famous Berlin mathematician Issai Schur is Feodor Theilheimer who lives in the United States. It is a pleasure to welcome his daughter Rachel Theilheimer. Schur and Theilheimer both belong to the 53 mathematicians honoured in the exhibition.

In addition, I welcome
Franz Alt,
Driven away from Vienna, who emigrated to the United States and is with us today as a guest of the DMV.

In 1961 I became president of the DMV as successor of Ott-Heinrich Keller from Halle in the German Democratic Republic (DDR). The wall had just been built. The Mathematical Society of the DDR was founded. In 1990 I was president again and had to work for the reintegration of the DDR society into the DMV.

We look hopefully into the future and are happy as the reunited DMV to host the congress.

Progress and future of mathematics are represented by the laureates of the Fields medal and the Nevanlinna prize. It will be a great honour and pleasure for me to hand over the Fields medals to the winners.

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PRESENTATION OF THE FIELDS MEDALS AND A SPECIAL TRIBUTE
BY
YURI I. MANIN
CHAIRMAN OF THE FIELDS MEDAL COMMITTEE

I would like to thank our hosts for their hospitality and the efforts they invested in the organization of this Congress.

The international community of mathematicians, amply represented here, never bothered much about self-definitions. If pressed, I would choose as such Georg Cantor's famous motto:

Das Wesen der Mathematik liegt in ihrer Freiheit
The essence of mathematics is its freedom

Fields Medal and Prize

Now we turn to the award of Fields Medals and a special tribute.

The history of the Fields Prize goes back to 1924, when the President of the International Congress of Mathematicians in Toronto, Professor John Charles Fields, suggested to establish two gold medals, to be awarded for outstanding discoveries in mathematics. His proposal was accepted by the Zürich Congress in 1932, and the first medals were given at the Oslo Congress 1936. Starting with the Harvard Congress in 1950, two, and after 1966 two to four medals were awarded at every successive ICM.

When Fields expounded his vision of the prize, he brought up two important issues. He wanted it to be ``of a character as purely international and impersonal as possible." And he wished it to be given ``in recognition of work already done" and also as ``an encouragement for further achievement on the part of recipients and a stimulus to renewed efforts on the part of others."

The designer of the medal did his best in order to express symbolically Professor Fields' first wish. You can see the result of his efforts, complete with Latin inscriptions and their translation. In particular, Fields' name does not appear on the medal.

As for the second point, the words ``encouragement for further achievement" were taken to mean that the recipients must be reasonably young.

The Fields Medal Committee '98 appointed by the Executive Committee of the International Mathematical Union consisted of Professors John Ball, John Coates, J. J. Duistermaat, Michael Freedman, Jürg Fröhlich, Robert MacPherson, Kyoji Saito, Steve Smale, and myself as chairman. Since this was to be the last International Congress of Mathematicians before the year 2000, we felt somewhat like a collective Santa Claus of the swiftly expiring millennium.

As all the Committees before us, we tried to select the most daring, profound, and stimulating research done by young mathematicians.

As all the Committees before us, we agreed, not without hesitations and doubts, to follow the established tradition and to interpret the word ``young" as ``at most forty in the year of the Congress."

Prize Winners

The selection process involved long deliberations and difficult choices. We acknowledge with gratitude the assistance of many colleagues who helped us to reach the unanimous decision to award four Fields Medals to the following mathematicians (in alphabetical order):

- **Richard Borcherds,**
- **William Timothy Gowers,**
- **Maxim Kontsevich,**
- **Curtis McMullen.**

A special tribute of the Executive Committee of the IMU is awarded to

- **Andrew Wiles**

On behalf of the Committee, I offer to all of them our warmest congratulations. The work of the Prize winners which won the international recognition will be described in more detail at the afternoon session.

Before we start the awarding ceremony, I would like to invoke a personal recollection. Many years ago a friend of mine was going abroad to receive his first international prize. He was excited, delighted, and worried about the proper behavior on such occasion. So we decided to consult the great book by the great wise Miss Manners, treating all sorts of good manners in difficult situations.

With initial surprise turning to admiration, we learned that Miss Manners reserved her most enlightening suggestion not for the award winners, but for all of us present at the ceremony, who don't get any prizes this time.

Her advice was: ``Take it easy, have fun and enjoy your life!"

Richard Borcherds
For his contributions to algebra, the theory of authomorphic forms, and mathematical physics, including the introduction of vertex algebras and Borcherds' Lie algebras, the proof of the Conway-Norton moonshine conjecture and the discovery of a new class of automorphic infinite products.

William Timothy Gowers
For his contributions to functional analysis and combinatorics, developing a new vision of infinite-dimensional geometry, including the solution of two of Banach's problems and the discovery of the so called Gowers' dichotomy: every infinite dimensional Banach space contains either a subspace with many symmetries (technically, with an unconditional basis) or a subspace every operator on which is Fredholm of index zero.

Maxim Kontsevich
For his contributions to algebraic geometry, topology, and mathematical physics, including the proof of Witten's conjecture of intersection numbers in moduli spaces of stable curves, construction of the universal Vassiliev invariant of knots, and formal quantization of Poisson manifolds.

Curtis McMullen
For his contributions to the theory of holomorphic dynamics and geometrization of three-manifolds, including proofs of Bers' conjecture on the density of cusp points in the boundary of the Teichmüller space, and Kra's theta-function conjecture.

Andrew Wiles
I am happy to announce that the Executive Committee of the IMU decided to produce a commemorative silver plaque as a special tribute given to Andrew Wiles on the occasion of his sensational achievement.

Everybody knows what Andrew Wiles proved. I will say it in Pierre Fermat's own words:
"[...] nullam in infinitium ultra quadratum potestatem in duas ejusdem nominis fas est dividere."

Unfortunately this plaque is too small to write Wiles' proof down.

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PRESENTATION OF THE ROLF NEVANLINNA PRIZE BY DAVID MUMFORD CHAIRMAN OF THE ROLF NEVANLINNA PRIZE COMMITTEE

The Rolf Nevanlinna Prize was established by the International Mathematical Union with funds donated by the University of Helsinki for the most outstanding work in ``Mathematical Aspects of Information Science'' and has been awarded four times in 1983, 1986, 1990 and 1994. It is given at the ICM's with the belief that Information Science - including here theoretical computer science, analysis of algorithms, scientific computing, optimization and related fields -- are all in essence part of the umbrella of mathematics. A Committee consisting of Bjorn Engquist, F. Thomas Leighton, Alexander Razborov and myself as chairman decided on this year's prize. We solicited a wide variety of opinions and, after much deliberation, are awarding this prize to:

Peter Shor

He found many deep and remarkable results prior to 1994 in the analysis of combinatorial algorithms, many with a geometric flavor such as his discovery with Lagarias of a tiling of 10-dimensional Euclidean space by cubes with no common faces. Since 1994, he has been the principal driving force behind the development of quantum computing. First he put it on the map, so to speak, by factoring numbers fast (thus breaking the RSA encryption scheme) by a quantum computer. And second he has led a major assault on error correction and fault tolerance in this new situation, the main obstacles to the realization of quantum computing. Let me invite Professor Olli Lehto to present the award on behalf of the University of Helsinki.

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CLOSING CEREMONY

The closing ceremony was held on Thursday, August 27, 1998, starting at 15.00 in the main lecture hall of the TU Berlin.

David Mumford, President of the International Mathematical Union, addressed the audience as follows:

We have come to the end now of what I believe was a remarkable and very successful Congress. As President of the IMU, it is my very pleasant duty first to congratulate the local organizing committee for their role in this.

I would like to underline several aspects of the Congress which I felt were especially successful. Firstly, in the entire pre-congress stage, the organizers have used e-mail most effectively, putting on virtually everyone's desk the current plans, events, speakers as soon as announced and the registration form. Moreover, their ability to produce two thirds of the Proceedings before the Congress and one third immediately after (held back only by those like me who didn't write their speeches beforehand) is a remarkable demonstration of the potential to publish a major book at minimal cost with no commercial assistance.

Another great success is the quality of the presentations. I want to congratulate the Program Committee for their selections, the speakers on the clarity of their talks and the Organizing Committee for their instructions and suggestions to the speakers (that I'm sure were listened to from my own conversations with many of the speakers).

Still another area in which the organizers have succeeded beyond all expectations is in public relations. Both with unprecedented press coverage and with a beautiful array of programs at Urania, they have reached major groups of Berliners, of Germans and of the World. (My wife reports reading of the Fields Medals in the Boston Globe).

Finally, I'd like to say that the physical arrangements seem to me to have been near ideal: many large lecture rooms in close proximity, transport passes, etc. Underlying all this, invisible but obviously vital, is probably the largest sum of money ever raised for an ICM. Its use in helping hundreds attend the Congress will be detailed later.

For this great job, I want now to propose a round of applause for the Organizers. But, as in all human activities, an institution cannot rest on its laurels. The Congress is really for you and we want your feedback. Taking our clue from the Organizers, we would like everyone who wishes to send us electronically their comments, suggestions and proposals. You can reach the IMU at ``imu\char64impa.br."

My second duty is to report to you on the General Assembly (G.A.) of the IMU that took place in Dresden over the weekend preceding the Congress. Many of you may be unaware of the institutional infrastructure that supports the stately procession of International Congresses, so let me quickly sketch this. The IMU is an organization whose members are countries - about 60 of them - which are represented by `adhering organizations', National Academies or Mathematical Societies. Each of them sends delegates to the G.A.which precedes each Congress and here the whole chain of committees starts and the control rests. The G.A. elects the President, Secretary and Executive Committee, which in turn appoints the Program Committee (which appoints panels in every subfield), Fields Medal and Nevanlinna Prize Committees and works with the Organizing Committee of the next Congress. The

goal, I should add, is to spread decision making over as large and as representative a group as possible.

At this point, I want to report to you the decisions taken at the Dresden G.A. The first decision is that:

ICM 2002 will be held in Beijing, China

The President of the Chinese Mathematical Society, Professor K.C.Chang, will give further information in a few minutes.

Secondly, the G.A.passed a resolution in support of diversity (please see page 7, resolution 2 of this Bulletin)

Thirdly, the G.A. adopted an "enabling resolution" to form a Committee on Electronic Information and Communication. This resolution reads:

1. In the last decade, the internet has been transforming our communication and commerce. In the world of science, the internet is radically changing the modes of information transfer at all levels. Communication on hand-written and printed paper, distribution via postal mail and libraries is a system which has been stable for many centuries. We cannot foresee clearly the new system which is evolving except that it will involve electronic media and it will radically alter the economics of communication. This transformation will certainly be global and will affect mathematical research on all continents.

2. We strongly believe that the IMU can play several important roles during this transition. Among these are:

   i) it can provide a forum where all parties, i.e., all countries and all interest groups (individual researchers, professional societies, publishers, and libraries) can discuss the issues and it can publish proceedings to increase general understanding of all the issues involved,
   ii) it can recommend and promote international standards on electronic communication among mathematicians, when needed, item[iii)] it can act as a liaison between regional, national and local groups, coordinating their initiatives and discussions.

3. We therefore propose that the GA establish a

Committee on Electronic Information and Communication (CEIC)

to accomplish its objectives whose terms of reference and initial additional membership will be decided by the ad hoc committee consisting of John Ewing, Martin Grötschel, Peter Michor, David Mumford and Jacob Palis and sent by mail ballot to the adhering organizations for approval.

I am happy to report that this Committee is nearly in place and that Peter Michor has agreed to be its chairman for the next four years.

Fourthly, the G.A. elected as the next President of the IMU Professor Jacob Palis and as Secretary Professor Phillip Griffiths and I wish to congratulate them and wish them great success. You can find the full slates in pages 4 and 5 of this Bulletin.

I would now like to call on Jacob Palis to say a few words.

Jacob Palis President of the IMU for 1999-2002, addressed the audience as follows:

It's a great honor for me to become the next President of the International Mathematical Union, a fundamental institution for the development of mathematics in the world. To have good mathematics in all regions, in all countries, is precisely a main goal of the Union: we shall pursue and achieve it

together.

The Executive Committee and the Commissions of the Union will be engaged in this major goal. As part of such an effort, IMU members, through their mathematical societies and research agencies, have been contributing to our Special Development Fund; especially the US, Brazil, UK, Japan and France. Through the Fund and Local Organizing Committee, we were able to finance the participation at the ICM of about 100 young and 40 senior mathematicians from the Developing World. Actually, the Local Organizing Committee did more: it also made possible the presence of more than 300 mathematicians from the former Soviet Union and Eastern Europe. To talk about this, I wish to call to the podium Prof. Anatoly M. Vershik (President of St. Petersburg Mathematical Society, Head of the Laboratory of the Mathematical Institute of the Russian Academy of Sciences).

Anatoly M. Vershik addressed the audience as follows:

Dear Colleagues:

More than three hundred participants of our congress have arrived from Russia and the former Soviet Union (fSU). Almost all of them have obtained the special grants or partial financial support from the Organization Committee or other funds which that Committee was able to use. These are the results of the efforts of the Committee and all of us thank the organizers of the congress and the International Mathematical Union for this support.

This Congress is the second International Congress of Mathematicians (of course except Moscow Congress in '66) with such a wide presence of mathematicians from Russia and the fSU. It was impossible to imagine such a big group from those countries at a congress even 10 years ago. Everybody understands how important it is, especially for young mathematicians, to have the possibility to take part in a meeting of such a high scientific level, to listen to the talks of prominent scientists about recent studies, to present their own achievements, to obtain new information and to look for new problems.

Those over 40 perhaps remember how limited the attendance of Soviet mathematics at the international congresses in the sixties, seventies and eighties was. Even invited speakers could not obtain the permission from ``very high scientific'' organizations for going abroad, e.g., I was an invited speaker at the Congress '74 in Vancouver but approximately 15 other invited speakers from Russia could not visit that congress. It was common at that time to have a gap in the schedule instead of the lectures of Soviet mathematicians or to entrust the reading of the lecture to some of the foreign colleagues. Moreover, even Fields Medallists from Russia (Novikov - Nice '70, Margulis - Helsinki '78) did not visit these congresses and did not receive the medal during the ceremony because they had not obtained permission for that!

The international mathematical community tried to help our mathematics and mathematicians in those days many times but it was impossible and hopeless. Indeed, the reasons for such stupid behaviour of Soviet authority were political or something similar to that. The result of that policy was the separation between the remarkable mathematical schools which had developed in the Soviet Union and in the worldwide mathematical community.

Now fortunately we do not need any permissions of authorities and there are no obstacles for going abroad, for having contact with our colleagues, for collaboration with them and for visiting the conferences and congresses. But we face completely new problems which are more understandable -- for all that we need financial support. For that matter the International Mathematical Community has shown very deep and clear understanding of our problems, in this situation they can help and they do help. There are many examples of such help and two excellent ones are our visit to the Congress in Berlin and the previous Congress in Zürich.

Thank you very much. Needless to say how important this help is for us! Especially nowadays when the sole existence of the mathematics in our countries is in such a danger.

In a rather solemn way I can say that our mathematics must survive and will survive and the international solidarity of mathematicians is a guarantee for that.

Jacob Palis continued his speech as follows:

Also as part of our strategy to achieve the goal of having good mathematics throughout the world, we have proposed, and the General Assembly has approved unanimously, a change in our statutes, to have multinational mathematical societies and unions to be affiliated with IMU in order to facilitate joint actions in their respective region. The same applies to professional associations and in this respect emerges our second main objective: the unity of mathematics in its diversity of themes. We should have good mathematics, beyond being pure or applied and this should reflect in the ICMs, as in the present one and in a broader sense it is important to aim at integrating ever more mathematics with other sciences.

Finally, I wish to ask the mathematicians of the world to participate in our multiple activities of the World Mathematical Year 2000.

Thank you.

Now I'm very pleased to invite K. C. Chang.

Kung Chin Chang, President of the Chinese Mathematical Society, addressed the audience as follows:

Ladies and gentlemen:

It is a great pleasure and honor for me to invite all of you, on behalf of the Chinese Mathematical Society, to the next ICM at Beijing, a city interweaving historical tradition with modern fascination.

All the past congresses were held in developed countries. Now, the next congress, the first in the new century, will be held for the first time in a developing country. This will add a new chapter to Prof. Olli Lehto's book "Mathematics Without Borders."

We are grateful to the Executive Committee and the General Assembly of IMU for the decision on the site of Beijing. To host such an important congress is not only a great chance, but also a big challenge. However, the successful experience of the previous congresses, in particular, of the Berlin congress with such high levels of hospitality and efficiency, will be very useful for us.

In the past two decades, many mathematicians all over the world, and most of the members of the Executive Committee of IMU have visited China. Their suggestions and ideas in organizing the congress are warmly welcome. With the help of IMU and the cooperation of mathematicians throughout the world, the Chinese mathematicians, who are eager to make the congress a success, will do their best to make your attendance fruitful and enjoyable.

I am looking forward to seeing you all in Beijing in the year 2002.

The last speaker was Martin Grötschel, President of the ICM'98:

At the first International Congresses it has been a tradition to commemorate the mathematicians who have deceased in the previous years. We would like to resume this tradition today. Following a German custom, I would like to ask you to stand up for a few moments and remain in silence while I read some words of remembrance.

It is impossible to list here all mathematicians who have died in the last four years, even if we restrict the list to the most prominent ones. I have chosen six colleagues who, I believe, represent all those who we will miss in the future:

Hansgeorg Jeggle. Jeggle has been a professor at TU Berlin since 1971 and has been dean of the Faculty

of Mathematics for many years. He was killed in a car crash on August 22, 1998.

François Jaeger. Jaeger, an expert in combinatorics and combinatorial knot theory, had been selected by the ICM'98 Program Committee as an Invited Speaker in Section 13 "Combinatorics". He died on August 18, 1997 on the day when the ICM'98 invitation was mailed to him.

André Weil, a towering figure of our field, whose name came up in many of the plenary and invited presentations of this Congress. Weil died on August 6, 1998.

Paul Erdös. Erdös was among the most productive mathematicians of all time and probably the most highly connected individual of us all. He died at a conference in Warsaw on September 22, 1996.

Finally, I would like to mention that two Fields medallists have deceased within the last four years.

Lars Ahlfors, the first recipient of a Fields Medal in 1936, died on October 11, 1996.

Kunihiko Kodaira, who received a Fields Medal in 1954, died on July 26, 1997.

Thank you for paying respect to the deceased colleagues.

Please sit down again.

Ladies and Gentlemen, dear Colleagues:

One of the last sentences of my Opening Speech was:

"We would like to make ICM'98 an exceptional event. Let us hope that our dreams come true."

I think our dreams came true.

However, not everything went exactly as planned. For instance, last night's ICM party was going to be staged as an open air party on the greens behind the Math Building. Bad weather made a rescue operation necessary. The available facilities were, unfortunately, not really optimal for good queue management. I apologize for these inconveniences and a few others that came up during the last 10 days. Some participants, in fact, told me that they were happy that misfortunes such as these occured. In their opinion, they made the ICM organization look more human.

I consider this as a compliment and would like to thank again all my colleagues in the Organizing Committee, our students, secretaries, spouses, children, and friends who have helped to run ICM'98 smoothly.

I have received a lot of additional requests. Participants would like to buy videos of the Opening Ceremony, of some of the Plenary Presentations, etc. We will consider all these issues in the near future, and I will write to you another Circular Letter to let you know what we can do and offer. One offer will be made right after the end of this Ceremony. We will show in the lecture hall H 104 the ICM'98 Special produced by channel B1 of Sender Freies Berlin which was broadcast on TV last week.

The ICM'98 Proceedings will be sold and distributed after the Congress by Documenta Mathematica and the American Mathematical Society.

This is the right occasion to thank the many mathematical societies around the world who have generously helped the ICM'98 Organizing Committee distribute information about ICM'98 and advertise the Congress.
This has been a very promising sign of international cooperation. I also consider it very positive that the IMU has decided to integrate the regional mathematical unions, such as the European Mathematical Society or the currently forming Asian Mathematical Union, into its activities. And I believe that electronic information and communication, another topic taken up by the IMU, will considerably foster

joint work of mathematicians from around the world, so that we can also reach those groups and countries that seem somewhat isolated. Additional efforts, however, are necessary on all sides.

It was somewhat difficult for me to attend lectures. But I managed to participate in most of the Plenary Addresses. I am grateful to all speakers that they have made efforts, in some cases really remarkable efforts, to address a broad mathematical audience. These lectures certainly formed the scientific backbone of our Congress. I would also like to thank those who have presented posters or gave short presentations. That's where most of the communication and discussion took place.

Many words of thanks have been said. I believe that only one word of thanks is left. No congress, however well organized, can be successful without enthusiastic participants. That is what you all have been. When officials of this university noticed that on Saturday at 6 p.m. there were still 1500 persons attending lectures they were really convinced that this Congress is an unusual event. I think that the participants of this Congress found the right mixture between leisure, fun, and hard work, and that many of us go home with a lot of new ideas and new friends.

Thank you very much for coming to Berlin and participating in ICM'98.

I declare the 23rd International Congress of Mathematicians closed.

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TRAVEL GRANTS REPORT

The Travel Grants Committee (Professors K. C. Chang (China), A. Ashour (Egypt), K.R. Parthasarathy (India) Jacob Palis (Brazil) and Gerhard Berendt (Germany), met in Rome, on March 30-31. The Committee received more than 200 applications by January/98. The Committee decided to give travel grants to 99 mathematicians, but 5 of them regretted that they had to decline the invitation for personal reasons. So IMU provided travel grants to 94 young researchers from developing countries. The local expenses were covered by the Local Organizing Committee.

TRAVEL GRANTS SUPPORT IN SWISS FRANCS

NAME	COUNTRY
Rebiai, Salah-Eddine	Africa (Algeria)
Ndimubandi, Jean	Africa (Burundi)
Bouetou, Thomas Bouetou	Africa (Cameron)
Ngwa, Gideon Akumah	Africa (Cameroun)
Al-Kader, G. M. Adb	Africa (Egypt)
Sarhan, Ammar	Africa (Egypt)
Ramollo, Motlatsi Pius	Africa (Lesotho)
Alaoui, Larbi	Africa (Morocco)
Bouchiba, Samir	Africa (Morocco)
Fahsi, Abdelhak	Africa (Morocco)
Houssni, Mohamed	Africa (Morocco)
Kinani, El Hassan E.	Africa (Morocco)
Zerouali, El Hassan	Africa (Morocco)
Cherinda, Marcos`	Africa (Mozambique)
Osilike, Micah Okwuchukwu	Africa (Nigeria)
Mampassi, Benjamin	Africa (Senegal)
Ganief, Moegamad Shahiem	Africa (South Africa)
Karoui, Abderrazek	Africa (Tunisia)
Raja, Dziri	Africa (Tunisia)
Riahi, Hasna	Africa (Tunisia)
Makinde, Oluwole Daniel	Africa (Zimbabwe)
Barberis, Maria Laura	America (Argentina)
Boyallian, Carina	America (Argentina)
Cagliero, Leandro Roberto	America (Argentina)
Rossetti, Juan Pablo	America (Argentina)
Grinnell, Raymond Joseph	America (Barbados)
Arancibia Rojas, Jacqueline Fabiola	America (Brazil)
Colli, Eduardo	America (Brazil)

Esteves, Eduardo de Sequeira	America (Brazil)
Faria, Edson de	America (Brazil)
Fernandes, Cristina Gomes	America (Brazil)
Florit, Luis Adrian	America (Brazil)
Gorodski, Claudio	America (Brazil)
Kohayakawa, Yoshiharu	America (Brazil)
Moreira, Carlos Gustavo	America (Brazil)
Moreira, Carlos Henrique Costa	America (Brazil)
Ontaneda, Pedro	America (Brazil)
Panazzolo, Daniel Cantergiani	America (Brazil)
Pujals, Enrique Ramiro	America (Brazil)
Rebelo, Julio Cesar de Souza	America (Brazil)
Rosa, Renata Martins	America (Brazil)
Saldanha, Nicolau Corcao	America (Brazil)
Scardua, Bruno Cesar Azevedo	America (Brazil)
Flores-Bazan, Fabian	America (Chile)
Hidalgo, Ruben Antonio	America (Chile)
Ramirez, Alejandro F.	America (Chile)
San Martin, Bernardo	America (Chile)
Vasilieva, Olga Olegovna	America (Colombia)
Iturriaga, Renato G. Acevedo	America (Mexico)
Metzger, Roger J.	America (Peru)
Sambarino, Martin	America (Uruguay)
Cabana, Alejandra Nigro	America (Venezuela)
Arratia, Argimiro	America (Venezuela)
Chen, Zhiming	Asia (China)
Gan, Shaobo	Asia (China)
He, Xinyu (*)	Asia (China)
Jiang, Song	Asia (China)
Li, Gui-Song	Asia (China)
Li, Jiayu	Asia (China)
Liang, Hua	Asia (China)
Ma, Li	Asia (China)
Tang, Shanjian	Asia (China)
Tijun, Xiao	Asia (China)
Wang, Feng-Yu	Asia (China)
Wang, Ya-Guang	Asia (China)
Ximin, Liu	Asia (China)
Xu, Fei	Asia (China)
Zhang, Pu	Asia (China)
Zizhou, Tang	Asia (China)
Aravinda, C. S.	Asia (India)
Balaji, V.	Asia (India)

Bhat, Rajarama B. V.	Asia (India)
Biswas, Indranil	Asia (India)
Das, Laxminarayan	Asia (India)
Garimella, Venkatalakshmi G.	Asia (India)
Ghate, Eknath Prabhakar	Asia (India)
Ghorpade, Sudhir Ramakant	Asia (India)
Khare, Chandrashekhar	Asia (India)
Kodiyalam, Vijay	Asia (India)
Natarajan, Raja	Asia (India)
P. K., Ratnakumar	Asia (India)
Raghavan, K. N.	Asia (India)
Raghavendra, Nyshadham	Asia (India)
Rangarajan, Govindan	Asia (India)
Rawat, Rama	Asia (India)
Shah, Nimish Arun	Asia (India)
Shah, Riddhi	Asia (India)
Suresh, Venapally	Asia (India)
Trivedi, Vijaylaxmi	Asia (India)
Gunawan, Hendra	Asia (Indonesia)
Chin, Angolan Ian Um	Asia (Malaysia)
Tseveendorj, Ider	Asia (Mongolia)
Asavanant, Jack	Asia (Thailand)
Ho Hai, Phung	Asia (Vietnam)

(*) local expenses only

Besides the support to young research mathematicians from developing countries, I also shared costs with the local organizing committee of the participation at ICM of about 40 mature mathematicians also of the developing world.

The funds for these grants came from: The Royal Society, United Kingdom, Brazil, Japan, Donations from mathematical societies (London, AMS, Swedish, Soc.Math. de France), as follows:

1994

American Mathematical Society	US $ 30.550,06
Mathematical Society of Japan	US $ 18.881,11
Royal Society	US $ 4.477,00
Com. Nat. Frac. Math., France	US $ 3.404,86
CNPq, Brazil	US $ 6.944,44

1995

American Mathematical Society	US $ 33.227,89
CNPq, Brazil	US $ 10.000,00
London Mathematical Society	US $ 3.263,12

1996

American Mathematical Society	US $ 31.807,41
London Mathematical Society	US $ 3.639,60

1997

Societe Mathematique de France and Societe des Math. Appl.et Ind.	US $ 2.341,81
American Mathematical Society	US $ 30.872,76
CNPq, Brazil	US $ 9.708,05
Royal Swedish Academy of Sciences	US $ 265,95
London Mathematical Society	US $ 3.121,05

1998

American Mathematical Society	U$ 29,894.63
Mathematical Society of Japan	U$ 14.084,50

SPECIAL GRANTS

The Organizing Committee made significant efforts, together with the International Mathematical Union, to give financial support for participants from developing countries and Eastern Europe. A fund of more than DM 900,000 made it possible to sponsor the attendance of approximately 450 mathematicians. About 510 colleagues were invited, around 60 were unfortunately unable to attend; 93 young and 37 mature colleagues from developing countries received grants from the IMU and the local organization, 305 persons from the support program of the local Organizing Committee for mathematicians from Eastern Europe. Special grants from mathematical institutions and other support programs complemented these efforts.

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APPENDIX 2

REPORT OF THE FINANCE AND DUES COMMITTEE TO THE 13th GENERAL ASSEMBLY OF IMU, 1998

The Committee consisted of:

Ronald Graham (United States of America), Chairperson
Roberto Markarian (Uruguay)
Kun Soo Chang (Korea)
Andrei A. Gonchar (Russia)
Batmanathan D. Reddy (South Africa)
Jacob Palis, ex-officio, Secretary

The Committee studied the financial report for the years 1994-1997 presented by the Secretary of the IMU, and examined the budget for the period 1998-2002 prepared by the Executive Committee (See Appendix 3).

The Committee recommended to the General Assembly the acceptance of the financial report for the years 1994-1997 and the Executive Committee budget for the 1999-2002 period.

The budget for 1999-2002 had been prepared on the basis of keeping the same dues for the different categories of IMU Members as in the term 1995-1998.

The Committee commended several scientific organizations and agencies that have made generous contributions to the Special Development Fund during the past four years. This allowed IMU to support many more young mathematicians as well as a significant number of senior mathematicians from developing countries to participate in the ICM 98.

Finally, the Committee expresses its thanks to the Executive Committee and in particular to the Secretary, Prof. Jacob Palis, for the preparation of the clearly written financial reports and proposed budget.

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APPENDIX 1

Report on the Credential Committee to the 13th General Assembly of IMU, 1998

The Committee verified that on August 15 and 16, 1998, there were representatives from 54 countries with a total of 132 votes. Absent were 8 countries.