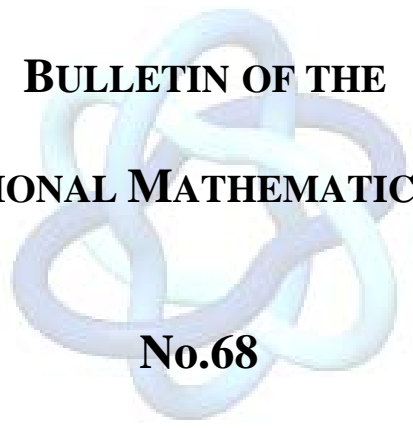


IMU

**BULLETIN OF THE
INTERNATIONAL MATHEMATICAL UNION**



No.68

December 2016

Secretariat:

*International Mathematical Union
Secretariat
Markgrafenstr. 32
D-10117 Berlin, Germany*

<https://www.mathunion.org/>

List of Abbreviations

AO	Adhering Organization
CDC	Commission for Developing Countries
CDE	Commission on Development and Exchange
CEIC	Committee on Electronic Information and Communication
CWM	Committee for Women in Mathematics
DCSG	Developing Countries Strategy Group
EC	Executive Committee
FIMU	Friends of the International Mathematical Union
GA	General Assembly
ICHM	International Commission on the History of Mathematics
ICM	International Congress of Mathematicians
ICM OC	ICM Opening Ceremony
ICMI	International Commission on Mathematical Instruction
ICSU	International Council for Science
IMU	International Mathematical Union
IUHPST	International Union for the History and Philosophy of Science and Technology

Dear Members of the International Mathematical Union

The annual meeting of the Executive Committee (EC) of the IMU took place in Kyoto, Japan, in April. As usual, the meeting was packed with many important decisions. To mention only a few: The EC composed the prize committees for IMU awards – the Nevanlinna Prize, the Gauss Prize, the Chern Medal Award, and the Leelavati Prize; the prize committee for the Fields Medal was set up in 2015. When composing the committees, it is important to obtain scientific excellence and diversity, be it measured in geography, scientific area, gender balance and age. The names of the members of the committees, except for the chair, will according to tradition be kept secret until the opening on August 1, 2018 of the International Congress of Mathematicians (ICM) in Rio de Janeiro, Brazil.

There is an increased focus worldwide on the issue of conflict of interest in all decision-making bodies. The IMU is taking this very seriously, and the EC has updated the Guidelines on Conflicts of Interest, approved by the IMU General Assembly in 2014, and the Guidelines now apply to all IMU activities. Even if the deliberations of the prize committees will have to be confidential, it is important to the community that the IMU is taking every effort to make the selection process fair.

At the IMU General Assembly in 2014, the EC was charged with the task to create an ad-hoc committee to look into (i) the possibility of announcing the prize winners before the opening ceremony of the ICM; (ii) the possibility of shared awards; and (iii) and the possibility of changing or relaxing the currently specified age limits. This committee, chaired by former IMU President John Ball, presented its report at the EC meeting. The EC decided to accept the ad-hoc committee's advice "that there should be no change to the current stated position of IMU on any of the above three questions." The report of the committee as well as the decision was sent to the AOs for comment in Circular Letter 3/2016.

The IMU has always been engaged in activities supporting mathematicians in developing countries, through its Commission for Developing Countries (CDC). In order to make decisions more transparent and predictable both for the CDC and the applicants for support, there has been a need to make a formal definition of what constitutes a developing country. Based on a recommendation from the CDC, the EC adopted the following definition of a developing country, namely a country with an annual GNI not exceeding 11,000 USD per capita. Recognizing that there are considerable differences among developing countries, it was furthermore decided to introduce five priority subgroups among the developing countries. Finally, it was decided that the definitions will be revisited by the new IMU EC in 2019.

In 2016, the IMU and CDC launched a new program, the IMU Breakout Graduate Fellowship Program. This program is generously funded by a donation of 100,000 USD from each winner of the Breakthrough Prize in mathematics. This fellowship program supports a limited number of students from a developing country who are studying in a developing country a PhD degree in the mathematical sciences.

Most of the global challenges that we are faced with, involve many scientific disciplines. In part to respond to these challenges, the International Council for Science (ICSU), where the IMU has been a member since the inception of ICSU, and the International Social Science Council (ISSC) have discussed the possibility of a merger. At an extraordinary ICSU General Assembly in Oslo in October it was decided to initiate the procedure regarding a possible merger of ICSU and ISSC. The IMU voted in favor of commencing this process, and the formal decision of a merger will be taken by the ICSU and ISSC General Assemblies in Taipei in 2017.

At the end of 2016, the deadline for submitting bids to host the ICM 2022 expired. Two bids were received, namely from France, with venue Paris, and from Russia, with venue St. Petersburg. In 2017, the Site Visiting Committee will make site visits, and the Site Selection Committee will issue its recommendation to the IMU General Assembly meeting in São Paulo, July 29–30, 2018.

Membership issues are always an important task for the IMU Secretariat and the IMU Secretary. We are happy to welcome Malaysia and Kenya as new full members of the IMU, and Paraguay as a new Associate member. In addition, Turkey got upgraded to Group II in the IMU. Fortunately, the countries that were at the risk of loss of membership due to lack of paying membership dues, were able to reduce the amount of outstanding dues to the extent that they were not at risk of losing membership. We certainly understand the hardship that many of our members are facing when trying to secure funds for paying the IMU dues. The IMU relies fully on its member paying their dues if the IMU is to be working for the best of mathematics and mathematicians globally.

The preparations for the completely redesigned IMU website have been going on throughout the year, and, for the first time, all IMU Commissions and Committees will follow the same layout, making for a unified appearance on the web.

With best wishes

Helge Holden
Secretary of the IMU

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1. IMU Leadership and Membership Information

1.1. Executive Committee 2015-2018

INTERNATIONAL MATHEMATICAL UNION

Executive Committee

January 1, 2015 – December 31, 2018

President:	Shigefumi Mori	(Japan)
Vice-Presidents:	Alicia Dickenstein Vaughan Jones	(Argentina) (New Zealand/USA)
Secretary:	Helge Holden	(Norway)
Members-at-Large:	Benedict H. Gross Hyungju Park Christiane Rousseau Vasudevan Srinivas John F. Toland Wendelin Werner	(USA) (Korea) (Canada) (India) (United Kingdom) (Switzerland)
Ex-officio Member (Past President)	Ingrid Daubechies	(USA)



Meetings of the Executive Committee in 2016:

87th EC Meeting, Kyoto, Japan, April 1-2, 2016

1.2. IMU Leadership 2015-2018

IMU Executive Committee (EC) 2015 – 2018

Shigefumi Mori	IMU President	Japan
Helge Holden	IMU Secretary	Norway
Alicia Dickenstein	IMU Vice President	Argentina
Vaughan Jones	IMU Vice President	New Zealand/USA
Benedict H. Gross	IMU EC Member-at-Large	USA
Hyungju Park	IMU EC Member-at-Large	Korea
Christiane Rousseau	IMU EC Member-at-Large	Canada
Vasudevan Srinivas	IMU EC Member-at-Large	India
John Francis Toland	IMU EC Member-at-Large	UK
Wendelin Werner	IMU EC Member-at-Large	Switzerland
Ingrid Daubechies	IMU EC Ex-officio Member (Past President)	USA

Commission for Developing Countries (CDC) 2015 – 2018

Wandera Ogana	CDC President	Kenya
Olga Gil Medrano	CDC Secretary Policy	Spain
Srinivasan Kesavan	CDC Secretary Grants	India
Mama Foupouagnigni	CDC, African Member	Cameroon
Polly Sy	CDC, Asian Member	Philippines
Alf Onshuus	CDC, Latin American Member	Colombia
Budi Nurani Ruchjana	CDC Member appointed by IMU EC	Indonesia
Angel Pineda	CDC Member appointed by IMU EC	USA/Honduras
Angel Ruiz	CDC Member appointed by ICMI EC	Costa Rica
Shigefumi Mori	CDC Ex-officio Member (IMU President)	Japan

C. Herbert Clemens (USA), elected CDC Secretary for Policy for the term 2015-2018, retired Oct 2015.

International Commission on the History of Mathematics (ICHM) 2015 – 2018

Ciro Ciliberto	ICHM	Italy
Shrikrishna G. Dani	ICHM	India

International Commission on Mathematical Instruction (ICMI) 2013 – 2016

Ferdinando Arzarello	ICMI President	Italy
Abraham Arcavi	ICMI Secretary-General	Israel
Cheryl E Praeger	ICMI Vice President	Australia
Angel Ruiz	ICMI Vice President	Costa Rica
Catherine P. Vistro-Yu, Ed.D.	ICMI EC Member-at-Large	Philippines
Jean-Luc Dorier	ICMI EC Member-at-Large	Switzerland
Roger Howe	ICMI EC Member-at-Large	USA
Yuriko Yamamoto Baldin	ICMI EC Member-at-Large	Brazil
Zahra Gooya	ICMI EC Member-at-Large	Iran
William (Bill) Barton	ICMI EC Ex-officio Member (Past President)	New Zealand
Shigefumi Mori	ICMI EC Ex-officio Member (IMU President)	Japan
Helge Holden	ICMI EC Ex-officio Member (IMU Secretary)	Norway

Committee on Electronic Information and Communication (CEIC) 2015 – 2016/2018

(CEIC terms of membership are staggered.)

James Davenport	CEIC Chair	2015 – 2018	UK
	CEIC Member	2008 – 2014	
Thierry Bouche	CEIC Member	2011 – 2018	France
Olga Caprotti	CEIC Member	2008 – 2016	Sweden
Tim Cole	CEIC Member	2013 – 2016	USA
Carol Hutchins	CEIC Member	2008 – 2016	USA
Patrick Ion	CEIC Member	2015 – 2018	USA
Victoria Stodden	CEIC Member	2015 – 2018	USA
Masakazu Suzuki	CEIC Member	2015 – 2018	Japan
Ravi Vakil	CEIC Member	2011 – 2018	USA

Committee for Women in Mathematics (CWM) 2015 – 2018

Marie-Françoise Roy	CWM Chair	France
Caroline Series	CWM Vice-Chair	UK
Carolina Araujo	CWM Member-at-Large	Brazil
Bill Barton	CWM Member-at-Large	New Zealand
Ari Laptev	CWM Member-at-Large	UK/Sweden
Kristin Lauter	CWM Member-at-Large	USA
Sunsook Noh	CWM Member-at-Large	Korea
Marie-Françoise Ouedraogo	CWM Member-at-Large	Burkina Faso
Sujatha Ramdorai	CWM Member-at-Large	Canada
Betül Tanbay	CWM Member-at-Large	Turkey

Persons representing IMU in various organizations

Body	Representative/liaison	Term
COSPAR, International Scientific Union Representative	T. Padmanabhan	2014 – 2016
Gruber Foundation, Cosmology Prize, Selection Advisory Board	Frans Pretorius	2015 – 2017
ICSU	Christiane Rousseau	2015 – 2018
ICSU Regional office for Latin America and the Caribbean (ROLAC)	Marcelo Viana	2015 – 2018
ICSU Regional office for Asia and the Pacific (ROAP)	Hyungju Park	2015 – 2018
ICSU Regional office for Africa (ROA)	Olabisi O. Ugbebor	2015 – 2018
UNESCO	Christiane Rousseau	2015 – 2018
Ramanujan Prize	Vasudevan Srinivas	2015 – 2018
ICMI (IMU EC liaison)	Alicia Dickenstein	2015 – 2018
CDC (IMU EC liaison)	Hyungju Park	2015 – 2018
ICHM (IMU EC liaison)	Vasudevan Srinivas	2015 – 2018
CEIC (IMU EC liaison)	Ingrid Daubechies	2015 – 2018
CWM (IMU EC liaison)	John Francis Toland	2015 – 2018
IMU-Net editor	Martin Hubert Raussen	2016 – 2019
IMU-Net EC correspondent	Benedict H. Gross	2015 – 2018
Curator of the IMU archive	Guillermo Curbera	2015 – 2018
<i>Mireille Chaleyat-Maurel was IMU-Net editor in 2015.</i>		

1.3. Members of the Union

The following countries were Members of IMU through December 2016:

Algeria	Hong Kong	Papua New Guinea*
Argentina	Hungary	Paraguay*
Armenia	Iceland	Peru
Australia	India	Philippines
Austria	Indonesia	Poland
Belgium	Iran	Portugal
Bosnia & Herzegovina	Ireland	Romania
Brazil	Israel	Russia
Bulgaria	Italy	Saudi Arabia
Cambodia*	Ivory Coast	Senegal*
Cameroon	Japan	Serbia
Canada	Kazakhstan	Singapore
Chile	Kenya	Slovakia
China	Korea, Republic of	Slovenia
Colombia	Latvia	South Africa
Croatia	Lithuania	Spain
Cuba	Madagascar*	Sweden
Czech Republic	Malaysia	Switzerland
Denmark	Mexico	Thailand*
Ecuador	Moldova*	Tunisia
Egypt	Montenegro	Turkey
Estonia	Nepal*	Ukraine
Finland	Netherlands	United Kingdom
France	New Zealand	United States
Gabon*	Nigeria	Uruguay
Georgia	Norway	Venezuela
Germany	Oman*	Vietnam
Greece	Pakistan	

* Associate Member

The following organizations are Affiliate Members of IMU:

African Mathematical Union (AMU)

European Mathematical Society (EMS)

South East Asian Mathematical Society (SEAMS)

Unión Matemática de América Latina y el Caribe (UMALCA)

2. Financial Information

2.1. Approved IMU Membership Dues

For the Period 2015–2018

At the IMU General Assembly meeting 2014 in Gyeongju, Korea, the delegates decided about the dues structure for the years 2015-2018, see schedule below.

Associate and Affiliate IMU members do not pay dues.

Approved membership dues 2015 – 2018				
All amounts in EUR				
Year	<u>2015</u>	<u>2016</u>	<u>2017</u>	<u>2018</u>
Group I	1,395	1,395	1,395	1,395
Group II	2,790	2,790	2,790	2,790
Group III	5,580	5,580	5,580	5,580
Group IV	11,160	11,160	11,160	11,160
Group V	16,740	16,740	16,740	16,740

2.2. Approved IMU Budget

For the Period 2015–2018

Date: June 30, 2014

International Mathematical Union												
Proposed new Budget for 2015-2018, in Euro (EUR)												
	2015			2016			2017			2018		
	General	Special	Sum	General	Special	Sum	General	Special	Sum	General	Special	Sum
INCOME												
I. General												
Membership Dues	386.415			386.415			386.415			386.415		
Sum General Income	386.415			386.415			386.415			386.415		
II. Special												
Special Development Fund		10.000			10.000			10.000			10.000	
Donations		44.000			44.000			44.000			44.000	
Grants												
Sum Special Income from Third Parties		54.000			54.000			54.000			54.000	
Income from IMU bank accounts		1.000			1.000			1.000			1.000	
Other Income		9.600			9.600			9.600			9.600	
Sum Special Income from Other Sources		10.600			10.600			10.600			10.600	
TOTAL INCOME	386.415	64.600	451.015	386.415	64.600	451.015	386.415	64.600	451.015	386.415	64.600	451.015
EXPENDITURE												
1. Commissions & Committees (C&C)												
1.1 CDC	77.283	44.000	121.283	77.283	44.000	121.283	77.283	44.000	121.283	77.283	44.000	121.283
1.2 CEIC	19.321			19.321			19.321			19.321		
1.3 ICM	57.962			57.962			57.962			57.962		
1.4 Ad hoc committees	19.321			19.321			19.321			19.321		
1.5 Special support	0			0			0			0		
C&C Expenditure	173.887	44.000	217.887	173.887	44.000	217.887	173.887	44.000	217.887	173.887	44.000	217.887
2. ICM												
2.1 Site Committee	3.864			3.864			3.864			3.864		
2.2 Program Committee	7.728			7.728			7.728			7.728		
2.3 Prize Committees	7.728			7.728			7.728			7.728		
2.4 Congress Subvention	19.321			19.321			19.321			19.321		
2.5 Travel Grants (Young & Senior)	27.049	10.000	37.049	27.049	10.000	37.049	27.049	10.000	37.049	27.049	10.000	37.049
2.6 ICM related admin., outreach	19.321			19.321			19.321			19.321		
ICM Expenditure	85.011	10.000	95.011	85.011	10.000	95.011	85.011	10.000	95.011	85.011	10.000	95.011
3. Union Administration												
3.1 General Assembly	3.864			3.864			3.864			3.864		
3.2 President & Secretary	46.370			46.370			46.370			46.370		
3.3 Executive Committee	23.185			23.185			23.185			23.185		
3.4 Other	3.864			3.864			3.864			3.864		
Union Administration Expenditure	77.283	0	77.283	77.283	0	77.283	77.283	0	77.283	77.283	0	77.283
4. Outreach												
4.1 ICSU Union Member Contribution	7.728			7.728			7.728			7.728		
4.2 Awards	3.864	0		3.864	0		3.864	0		3.864	0	
4.3 Website Support, Media Relations	7.728			7.728			7.728			7.728		
4.4 Bulletin	0			0			0			0		
4.5 Other	3.864	5.600	9.464	3.864	5.600	9.464	3.864	5.600	9.464	3.864	5.600	9.464
4.6 Scientific activity support	0			0			0			0		
Outreach Expenditure	23.185	5.600	28.785	23.185	5.600	28.785	23.185	5.600	28.785	23.185	5.600	28.785
5. Overhead												
5.1 Office Expenses	3.864	1.600	5.464	3.864	1.600	5.464	3.864	1.600	5.464	3.864	1.600	5.464
5.2 Bank Charges	3.864	1.000	4.864	3.864	1.000	4.864	3.864	1.000	4.864	3.864	1.000	4.864
5.3 Legal Advice, Audit Fees	7.728	1.600	9.328	7.728	1.600	9.328	7.728	1.600	9.328	7.728	1.600	9.328
5.4 Other	11.592	800	12.392	11.592	800	12.392	11.592	800	12.392	11.592	800	12.392
Overhead Expenditure	27.049	5.000	32.049	27.049	5.000	32.049	27.049	5.000	32.049	27.049	5.000	32.049
TOTAL EXPENDITURE			451.015			451.015			451.015			451.015
INCOME LESS EXPENSES			0			0			0			0

2.3. Independent Auditor's Report

Audit Report

Annual Financial Statements as at 31 December 2016

International Mathematical Union
Berlin

Roever Broenner Susat Mazars GmbH & Co. KG
Wirtschaftsprüfungsgesellschaft
Steuerberatungsgesellschaft
72787/E

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The tables may contain rounding differences that vary from values derived from mathematical calculations.

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- General Engagement Terms

To the International Mathematical Union, Berlin:

A. AUDIT ENGAGEMENT

We were engaged by the Secretary of the

International Mathematical Union
Berlin
(hereinafter “IMU” or “Union”)

to audit and report on the annual financial statements for the reporting year ending 31 December 2016.

In performing the audit engagement awarded to us by the Secretary, we conducted our audit of the annual financial statements as at 31 December 2016 together with the accounting system for the 2016 financial year in accordance with § 317 HGB (German Commercial Code) and the German generally accepted standards for the audit of financial statements.

In addition, we were engaged to provide an economic analysis of the net assets, financial position and results of operations of the Union in this audit report. We have presented this analysis in section D. of this audit report.

In accordance with § 321 (4a) HGB, we confirm our observance of the applicable regulations governing independence during the performance of our audit.

The IMU is an international association. According to German law, the IMU is an “ideal” association (§ 21 German Civil Code (BGB) non-profit association) since it pursues ideal purposes rather than financial purposes. The Union does not have legal capacity in Germany because it is not registered with the German Register of Associations.

The Union is not required by law to have its annual financial statements audited. In accordance with Article 45 of the IMU Statutes, at least once every four years the members of the Union shall obtain an audit of the accounts from the Executive Committee. In continuation of current practice, the audit of the annual financial statements is performed annually. The financial statements consist of a statement of assets and liabilities as well as a statement of income and expenditure. According to the size definitions of § 267 German Commercial Code (HGB), the IMU would be classified as a small entity. Accordingly, the audit was performed in conformity with the accounting regulations applicable to small entities.

This report was prepared under the auditing standard of the *Institut der Wirtschaftsprüfer in Deutschland e. V.* IDW PS 450 “Generally Accepted Standards for the Issuance of Long-form Audit Reports for the Audit of Financial Statements”.

This audit report is addressed to the legal representatives of the Union. To the extent that third parties use this audit report for purposes other than those intended internally, we do not accept any responsibility, liability or obligations toward such third parties. The use of the information in this audit report is your own responsibility. In particular, it is your responsibility to decide whether this information is relevant for the use intended. If necessary, you may need to conduct your own examinations or to provide updates.

The performance of our engagement and our responsibility, also towards any third parties, are governed by the General Engagement Terms for Wirtschaftsprüfer (*German Public Auditors*) and Wirtschaftsprüfungsgesellschaften (*Public Audit Firms*) as amended on 1 January 2017, attached as an appendix. Accordingly, our liability is limited in accordance with No. 9 of the General Engagement Terms for Wirtschaftsprüfer. Towards third parties, No. 1 (2) and No. 6 of the General Engagement Terms apply.

This document is a translation of the German audit report, which is the solely legally binding version.

B. SUBJECT, NATURE AND SCOPE OF THE AUDIT

I. Subject of the audit

The subject of our audit was the annual financial statements (statements of assets and liabilities and income and expenditure) together with the bookkeeping system, prepared in accordance with German accounting principles.

Bookkeeping and the preparation of the annual financial statements are the responsibility of the Union's Treasurer.

Our responsibility is to provide an opinion on the annual financial statements based on our audit.

As of 1 January 2011, the IMU has kept its permanent secretariat in Berlin which is hosted by the *Weierstraß-Institut für Angewandte Analysis und Stochastik (WIAS)*, Berlin. The Federal Republic of Germany and the State of Berlin grant annual financial support for the IMU Secretariat, in particular by assuming personnel and material costs in the amount of approximately k€500 borne directly by the WIAS, which are therefore not recorded in the statement of income and expenditure.

An audit of compliance with other statutory regulations is part of our engagement only to the extent that those regulations typically have an effect on the annual financial statements.

II. Nature and scope of the audit

Our audit was conducted analogous to § 317 HGB as well as in observance of the Principles of performing Audits of Financial Statements of *the Institut der Wirtschaftsprüfer in Deutschland e.V. (IDW)*, in particular observing IDW PS 750 "Audits of Associations".

Those standards require that we plan and perform the audit such that misstatements and violations materially affecting the presentation of the net assets, financial position and results of operations in the annual financial statements in accordance with German principles of proper accounting and in the management report are detected with reasonable assurance.

The audit included assessing the accounting policies, measurement methods and classification principles applied and significant estimates made by management as well as critically evaluating the overall presentation of the annual financial statements.

Our audit commenced with our unqualified independent auditor's report on the prior year's financial statements for the year ended 31 December 2015. The Statutes do not provide for an adoption of the annual financial statements. Instead, on the basis of every fourth annual financial statement (most recently on 31 December 2013), the preparation of a budget for the following four-year-period is anticipated. The budget for the period from 1 January 2015 to 31 December 2018 was approved by the 17th General Assembly in Gyeongju/Republic of Korea on 10 and 11 August 2014.

On the basis of the risk of material misstatements, we prepared a risk profile for disclosures in the accounting. For this purpose we conducted audit procedures for assessing risk and first obtained an understanding of the Union as well as an overview of its economic and legal environment. Based on this understanding, we analysed the objectives and strategies of the Union as well as their implementation in order to determine business risks that could lead to significant errors in accounting.

Based on our professional judgement, we reviewed and assessed the design of the association's internal control system and which measures the Union has taken to particularly ensure the propriety and reliability of the accounting in order to mitigate business risks, however without conducting a detailed system analysis.

We audited the complete and timely recording of business transactions on a test basis and were convinced of the implementation of the four-eye principle as the main instrument of the internal control system.

We refrained from obtaining balance confirmations from debtors since they exclusively involve members of the Union.

We conducted our audit in February and August 2017.

Management provided us with the information and documentation we requested.

In the written letter of representation provided to us, the legal representatives of the Union assured us that the explanations and evidence were complete. Furthermore, they stated that all business transactions had been recorded and disclosed in the annual financial statements.

In a supplemental declaration the legal representatives confirmed in writing that in their opinion, the unadjusted audit differences in the annual financial statements, not only individually but also collectively were not material.

C. FINDINGS ON AND EXPLANATIONS OF THE ACCOUNTING

I. Generally accepted accounting principles

1. Accounting records and other documents audited

Our audit verified that the formal and material propriety of the accounting complied with German generally accepted accounting principles and other legal requirements.

The accounting records of the Union were maintained properly. The records were complete. Based on the findings of our audit, the accounting records and other documents audited complied with legal regulations. The information extracted from other documents audited was properly reflected in the accounting records and in the annual financial statements.

The organization of the accounting, the accounting-related internal control system, data flows and recordkeeping were fundamentally appropriate for ensuring the completeness, the accuracy, the timely and orderly recording and booking of business transactions.

2. Annual financial statements

The annual financial statements we have audited for the financial year from 1 January 2016 to 31 December 2016 have been properly derived from the accounting records and the underlying documents of the Union. The enclosed annual financial statements were prepared in accordance with the regulations of the Third Book of the HGB (§§ 238 *et seq.*) under observance of the supplementary regulations for corporations in the Second Section (§§ 264 *et seq.*).

The opening balances were properly taken over from the prior year annual financial statements. Statutory regulations on recognition, disclosure and measurement were observed.

The Union does not have a legal obligation to prepare notes to the annual financial statements. Accordingly, the IMU has permissibly waived the preparation of notes.

3. Management report

The Union does not have a legal obligation to prepare a management report. Accordingly, the IMU has permissibly waived the preparation of a management report.

The IMU provides its members with an annual accounting of its activities in the Bulletin of the International Mathematical Union. The current Bulletin number is number 67 from December 2015. Printed versions of the Bulletin are provided to members. Electronic versions are available on the homepage of the IMU (<https://www.mathunion.org/membership/imu-bulletins>).

The Bulletin provides, in particular, a description of IMU activities for the promotion of mathematics in the world and the proper use of member contributions and donations.

According to management information and the results of our audit, no events of particular importance occurred after the conclusion of the reporting year.

II. Overall presentation of the annual financial statements

1. Explanations of the overall presentation

The exercise of accounting policy and measurement elective options as well as the use of discretionary judgment correspond to the prior year and do not indicate any tendency with a significant influence on the net assets, financial position and results of operations in the annual financial statements.

Foreign currency receivables and payables are recorded in the bookkeeping in euro at the exchange rate valid on the date of their accrual. Measurement on the balance sheet date is at the lower (for receivables), or higher (for liabilities), exchange rate valid on that date.

2. Findings on the overall presentation of the annual financial statements

On the basis of the audit we performed by executing our professional duties, we are of the opinion that the annual financial statements as a whole give a true and fair view of the net assets, financial position and results of operations of the Union in accordance with generally accepted accounting principles.

D. OTHER CLASSIFICATIONS AND EXPLANATIONS OF THE ANNUAL FINANCIAL STATEMENTS

I. Results of operations

The summarized statements of income and expenditure for the past two financial years show the following structure and changes in the results of operations:

	2016		2015		Change
	k€	%	k€	%	k€
Revenues	495	100.0	608	100.0	-113
Expenditures for scientific promotion and activities	-239	-48.3	-426	-70.1	187
Administrative expenses	-63	-12.7	-61	-10.0	-2
Expenses	-302	-61.0	-487	-80.1	185
Operating result	193	39.0	121	19.9	72
Interest result	0	0.0	1	0.2	-1
Result before taxes on income	193	39.0	122	20.1	71
Taxes on income	0	0.0	0	0.0	0
Annual surplus	193	39.0	122	20.1	71
Withdrawal from/Allocation to reserves (net)	-193	-39.0	-122	-20.1	-71
Unallocated cash balance	0	0.0	0	0.0	0

The IMU had **revenues** of k€ 495 in the reporting year, consisting largely of member contributions. In addition, the IMU received donations which, as a rule, come from scientific organizations.

Revenues are composed of the following:

	k€
Member contributions	393
Third-party contributions	80
Other income	<u>22</u>
	<u>495</u>

The composition of **Member contributions** is shown in Appendix 3 to this report.

Third-party contributions are composed of the following:

	k€
Niels Henrik Abel Board, Norway (thereof approx. k€ 12,4 [kUSD 15] for awarding the Abel Visiting Scholar Program)	37,410.40
Developing Country Fund Friends of the IMU	<u>42,668.87</u>
	<u>80,079.27</u>

Other income (k€22) largely involves payments received for written-down receivables (k€9).

Expenditures of k€302 (prior year: k€487) are shown in detail in the Statement of Income and Expenditures (Appendix 2) as well as in the Budget Comparison (Appendix 4). Because the ICM meets every four years (most recently 2014 in Seoul/Republic of Korea), the expense is considerably less in the following three years.

Interest represents the interest paid on the bank balances by the Deutsche Bank AG.

II. Net assets

In order to evaluate the net assets and changes thereto, the balance sheets of the last two financial years are compared in condensed form:

	31 Dec 2016		31 Dec 2015		Change
	k€	%	k€	%	
ASSETS					
Current assets					
Receivables from member contributions	105	5.7	106	6.7	-1
Other assets (including Prepaid Expenses)	13	0.7	1	0.1	12
Cash and cash equivalents	1,716	93.6	1,481	93.3	235
	1,834	100.0	1,588	100.0	246
LIABILITIES					
Net assets (own funds)	1,651	89.5	1,421	89.5	230
Borrowed capital					
Provisions	9	0.5	13	0.8	-4
Liabilities from restricted donations	174	9.5	145	9.1	29
Other liabilities (incl. Deferred Income)	0	0.0	9	0.6	-9
	183	10.0	167	10.5	16
	1,834	100.0	1,588	100.0	246

Receivables from member contributions are as follows:

Country	Year	WD	Amount
		*	€
Belgium	2016		5,580.00
Bosnia & Herzegovina	2016		1,395.00
Cameroon	2016		1,395.00
Cuba	2016		1,395.00
Denmark	2016		2,790.00
Egypt	2016		2,790.00
France	2016		16,740.00
Greece	2016		1,395.00
Iran	2016	*	11,160.00
Kazakhstan	2016	*	1,395.00
Malaysia	2016		697.50
Montenegro	2016	*	1,395.00
Nigeria	2016		1,395.00
Peru	2016		1,395.00
Philippines	2016	*	1,395.00
Saudi Arabia	2016	*	1,395.00
Tunisia	2016		1,395.00
Ukraine	2016		2,790.00
Venezuela	2016	*	1,395.00
			59,287.50
Bosnia & Herzegovina	2015		1,395.00
Cameroon	2015		1,395.00
Cuba	2015		1,395.00
Iran	2015	*	11,160.00
Latvia	2015	*	1,395.00
Montenegro	2015	*	1,395.00
Nigeria	2015		1,395.00
Peru	2015		1,395.00
Philippines	2015	*	1,395.00
Saudi Arabia	2015	*	1,395.00
Ukraine	2015		2,790.00
Venezuela	2015	*	1,395.00
			27,900.00
Carry forward:			87,187.50

Country	Year	WD	Amount
		*	€
Carry forward:			87,187.50
Iran	2014	*	8,046.93
Kazakhstan	2014	*	1,416.84
Montenegro	2014	*	1,416.84
Philippines	2014	*	1,416.84
Saudi Arabia	2014	*	1,416.84
Venezuela	2014	*	1,416.84
			15,131.13
Greece	2013		1,390.27
Latvia	2013	*	1,410.42
Montenegro	2013	*	1,410.42
Saudi Arabia	2013	*	1,410.42
Slovakia	2013		2,820.84
Venezuela	2013	*	1,410.42
			9,852.79
Kazakhstan	2012	*	1,371.85
Latvia	2012	*	1,371.85
Montenegro	2012	*	1,371.85
Venezuela	2012	*	1,371.85
			5,487.40
Total receivables			117,658.82
Write-downs 20 % (marked with a *)			-12,506.04
			105,152.78

At the end of 2016, the outstanding member contributions were k€ 118, of which k€ 82 were open at the time of our audit. As a result of consistent non-payment of their member contributions, open receivables of the above countries marked with a star “*” were directly written down by 20 % or the write-down was retained. Receivables are measured at the period-end exchange rate.

Cash and cash equivalents, parts of which are in foreign currency, are located in accounts with the Deutsche Bank AG and are composed of the following:

	Foreign currency	€
Account in € (5113915 10)		912,757.43
Account in CHF (5113915 01)	CHF 67,727.45	63,151.50
Account in USD (5113915 00)	USD 137,402.12	130,546.00
Account in USD (5113915 06)	USD 102,195.87	97,096.40
Account in € (5113915 00)		252,949.99
Account in € (5113915 05)		172,248.18
Account in € (5113915 04)		84,455.07
Cash in €		<u>2,557.19</u>
		<u>1,715,761,76</u>

The conversion of foreign currency into euro occurred at the period-end exchange rate.

The cash in the Ito-Fund was transferred to the giro account in 2015 and is available for use in conformity with the Statutes.

Net assets (own funds) at the period-end date are composed of the following:

	k€	k€
Association capital		307
Reserves		
Annual surplus 2007 - 2015	857	
Annual surplus 2016	193	
ICMI and CDC (Commission Fund)	<u>293</u>	<u>1,343</u>
		<u>1,650</u>

The Statutes do not make reference to association capital.

Of the Net assets, €307,465.98 originates from the time before moving the domicile of the IMU to Germany as of 1 January 2007. Revenues earned as of 2007 are allocated to reserves in accordance with the recommendations of the IMU Secretary and of the Treasurer at the end of the reporting year. The General Assembly reaches a resolution every four years on the creation of reserves.

Reserves are allocated as follows:

	k€
Travel support	
– Fields Medal 2018	13
– ICM 2018 in Brazil	101
– Project Simons Fellowships	50
Co-financing of a ICSU project 2016-2019	20
Co-financing joint workshops with other ICSU members 2016-2019	10
ICMI and CDC 2016	293
ICM default reserve	436
Project Breakout Fellowship/FIMU	32
Support CWM 2017	29
IMU Internet site	29
Unrestricted reserves	<u>330</u>
	<u>1.343</u>

Funds that are shown under **ICMI and CDC (Commission Fund)** the IMU has made available to its ICMI and CDC commissions for their work in the coming year. The restricted reserves for ICMI amount to € 105,940.00 and for CDC to € 187,449.17.

Liabilities from restricted donations developed as follows:

	€
Special Development Fund	
Per 1 Jan. 2016	52,403.64
Contribution	
– London Mathematical Society (LMS)	<u>4,452.48</u>
Per 31 Dec. 2016	56,856.12 -----
Simons Foundation Africa	
Per 1 Jan. 2016	0.00
Contribution	<u>47,219.26</u>
Per 31 Dec. 2016	47,219.26 -----
Carry forward	<u>104,075.38</u> -----

	€
Carry forward	104,075.38
Simons Foundation Travel Fellowship	
Per 1 Jan. 2016	22,374.94
Travel Fellowships for 6 mathematicians	<u>-7,008.41</u>
Per 31 Dec. 2016	15,366.53
ICSU – forwarded monies	
Per 1 Jan. 2016	34,000.00
Forwarded to ICSU	<u>-34,000.00</u>
Per 31 Dec. 2016	0.00
IMU Developing Country Fund	
Per 1 Jan. 2016	35,632.57
Contribution	<u>19,163.59</u>
Per 31 Dec. 2016	54,796.16
	<u>174,238.07</u>

The funds shown under **Special Development Fund (SDF)** are for the support of mathematicians from developing countries for travel to International Congresses of Mathematicians (ICM). An international committee decides on the grant applications.

The cash of the SDF collected between 2007 and 2010 for the congress in August 2010 in Hyderabad/India was fully expended. The cash collected for the congress in August 2014 in Seoul/Republic of Korea was not needed to finance the travel costs of ICM participants because the Korean Mathematical Society (KMS) provided travel assistance in the amount of kUSD 2,000 for mathematicians from developing countries. Cash of SDF not required for ICM 2014 is to be used for the ICM 2018 in Brazil.

The cash received from the **Simons Foundation** is designated as a Travel Fellowship for research stays of mathematicians from developing countries. The **Simons Foundation Africa** is especially reserved for mathematicians from Africa.

The cash received from the Friends of IMU (FIMU) during the reporting year included in the **IMU Developing Country Fund** are for the promotion of mathematical research and scholarships in developing countries. Payments from the FIMU were received for 2015 and 2016.

III. Financial position

The IMU was at all times in a position to meet its payment obligations in a full and timely manner. The cash flow from current activities amounts to k€ 235 and corresponds to the change in the amount of cash between 1 January 2016 (k€ 1,481) and 31 December 2016 (k€ 1,716).

E. AUDITOR'S REPORT

We issued the following unqualified auditor's report:

"Independent Auditor's Report

To the International Mathematical Union, Berlin:

We have audited the annual financial statements, consisting of the statement of assets and liabilities and the statement of income and expenditure, together with the bookkeeping system of the International Mathematical Union for the reporting year from 1 January 2016 to 31 December 2016. The maintenance of the books and the preparation of the annual financial statements in accordance with the German Commercial Code (HGB) are the responsibility of the Union's management. Our responsibility is to express an opinion on the annual financial statements, together with the bookkeeping system, based on our audit.

We performed our audit of the annual financial statements in accordance with § 317 HGB and generally accepted standards for the audit of financial statements promulgated by the *Institut der Wirtschaftsprüfer* (IDW). Those standards require that we plan and perform the audit such that misstatements materially affecting the presentation of the net assets, financial position and results of operations in the annual financial statements in accordance with German principles of proper accounting are detected with reasonable assurance. Knowledge of the business activities and the economic and legal environment of the Union as well as expectations of possible misstatements are taken into account in determination of audit procedures. The effectiveness of the internal control system and the evidence supporting the disclosures in the books and records and in the annual financial statements are examined primarily on a test basis. The audit includes assessing the accounting principles used and significant estimates made by management as well as evaluating the overall presentation of the annual financial statements. We believe that our audit provides a reasonable basis for our opinion.

Our audit has not led to any reservations.

In our opinion based on the information gathered during the audit, the annual financial statements correspond to statutory requirements as applicable to small entities and give a true and fair view of the net assets, financial position and results of operations of the Union in accordance with German principles of proper accounting."

F. FINAL REMARKS

Publication or distribution of the annual financial statements of the International Mathematical Union, Berlin, for the financial year from 1 January 2016 to 31 December 2016 in a form different from the certified form also requires our consent if our independent auditor's report is quoted or if reference is made to our audit. We herein refer to § 328 HGB.

Berlin, 14 August 2017

Roever Broenner Susat Mazars GmbH & Co. KG
Wirtschaftsprüfungsgesellschaft
Steuerberatungsgesellschaft

Helmut Schuhmann
Wirtschaftsprüfer
(German Public Auditor)

International Mathematical Union, Berlin

STATEMENT OF ASSETS AND LIABILITIES as at 31 December 2016

ASSETS	per 31 Dec 2016	Prior Year	LIABILITIES	per 31 Dec 2016	Prior Year
	€	€		€	€
A. Current Assets			A. Net Assets		
I. Receivables and other assets			I. Association net assets	307.465,98	307.465,98
1. Receivables from member contributions	105.152,78	105.798,04	II. Reserves	1.343.115,71	1.113.605,06
2. Other assets	8.733,80	0,00		1.650.581,69	1.421.071,04
		105.798,04	B. Provisions	8.800,00	13.176,55
II. Cash-in-hand, bank balances*	1.715.761,76	1.480.983,08	C. Liabilities		
			1. Liabilities from restricted donations	174.238,07	144.411,15
B. Prepaid Expenses	4.102,22	1.080,93	2. Other liabilities	130,80	6.413,31
				174.368,87	150.824,46
			D. Deferred Income	0,00	2.790,00
Total Assets	1.833.750,56	1.587.862,05	Total Liabilities	1.833.750,56	1.587.862,05

* contained therein ICMI € 172,248.18 and CDC € 84,455.07

International Mathematical Union, Berlin

STATEMENT OF INCOME AND EXPENDITURE for 2016

			2016	Prior Year
	€	€	€	€
Revenues			495.724,65	608.512,09
Member contributions	393.738,75			391.995,00
Donations - international	80.079,27			92.958,47
Other income	<u>21.906,63</u>			123.558,62
Expenditures for Scientific Promotion and Activities		-239.258,49		-425.832,91
Promotion of scientific activities	-237.051,24			-403.771,70
Expenditures ICM	<u>-2.207,25</u>			-22.061,21
Administrative Expenses		-62.943,20		-60.953,71
Reimbursement personnel expenses	-23.000,00			-23.000,00
Travel expenses	-9.113,53			-4.593,19
Audit fees	-11.727,40			-8.800,00
Member contributions	-3.602,00			-10.600,00
Postage	-191,40			-89,83
Bank fees	-373,86			-529,24
Other	<u>-14.935,01</u>			-13.341,45
Other Expenditures			-302.201,69	-486.786,62
Interest and Similar Income			75,54	285,85
<u>Interim Result</u>			193.598,50	122.011,32
Other Taxes			-426,69	0,00
<u>Annual Surplus</u>			193.171,81	122.011,32
Withdrawals from Reserves			187.626,79	212.420,22
Allocation to Reserves			-380.798,60	-334.431,54
<u>Unallocated Cash Balance</u>			0,00	0,00

International Mathematical Union, Berlin

Schedule of Member Contributions 2016

Country	Amount EUR
Algeria	1.395,00
Argentina	5.580,00
Armenia	1.395,00
Australia	11.160,00
Austria	2.790,00
Belgium	5.580,00
Bosnia & Herzegovina	1.395,00
Brazil	11.160,00
Bulgaria	1.395,00
Cameroon	1.395,00
Canada	16.740,00
Chile	2.790,00
CMS, Beijing	10.044,00
Colombia	1.395,00
Croatia	1.395,00
Cuba	1.395,00
Czech Republic	5.580,00
Denmark	2.790,00
Ecuador	1.395,00
Egypt	2.790,00
Estonia	1.395,00
Finland	5.580,00
France	16.740,00
Georgia	1.395,00
Germany	16.740,00
Greece	1.395,00
Hong Kong	1.395,00
Hungary	5.580,00
Iceland	1.395,00
India	11.160,00
Indonesia	1.395,00
Iran	11.160,00
Ireland	2.790,00
Israel	16.740,00
Italy	16.740,00
Ivory Coast	1.395,00
Japan	16.740,00
Kazakhstan	1.395,00
Kenya	348,75
Korea, Republic of	11.160,00

International Mathematical Union, Berlin

Schedule of Member Contributions 2016

Country	Amount EUR
Latvia	1.395,00
Lithuania	1.395,00
Malaysia	697,50
Math Society, Taipei	6.696,00
Mexico	5.580,00
Montenegro	1.395,00
Netherlands	11.160,00
New Zealand	1.395,00
Nigeria	1.395,00
Norway	5.580,00
Pakistan	1.395,00
Peru	1.395,00
Philippines	1.395,00
Poland	11.160,00
Portugal	2.790,00
Romania	1.395,00
Russia	16.740,00
Saudi Arabia	1.395,00
Serbia	1.395,00
Singapore	1.395,00
Slovakia	2.790,00
Slovenia	1.395,00
South Africa	2.790,00
Spain	11.160,00
Sweden	11.160,00
Switzerland	11.160,00
Tunisia	1.395,00
Turkey	1.395,00
Turkey	697,50
Ukraine	2.790,00
United Kingdom	16.740,00
Uruguay	1.395,00
USA	16.740,00
Venezuela	1.395,00
Vietnam	1.395,00
Total	393.738,75

INTERNATIONAL MATHEMATICAL UNION

Budget Comparison 2016

	Budget 2016 EUR			Actual 2016 EUR		
	General	Special	Sum	General	Special	Sum
INCOME						
I. General						
I.a Membership Dues	386.415			393.739		
Sum General Income	386.415			393.739		
II. Special						
II.a Special Development Fund		10.000			47.121	
II.b Donations		44.000			37.410	
II.c Grants					59.374	
Sum Special Income from Third Parties		54.000			143.905	
II.d Income from IMU bank accounts		1.000			76	
II.e Other Income		9.600			21.907	
Sum Special Income from Other Sources		10.600			21.983	
TOTAL INCOME	386.415	64.600	451.015	393.739	165.888	559.627
EXPENDITURE						
1. Commissions & Committees (C&C)						
1.1 CDC	77.283	44.000	121.283	58.119	44.000	
1.2 CEIC	19.321			2.706		
1.3 ICM	57.962			54.080		
1.4 Ad hoc committees	19.321			54.211		
1.5 Special support	0			0	0	
C&C Expenditure	173.887	44.000	217.887	169.116	44.000	213.116
2. ICM						
2.1 Site Committee	3.864			0		
2.2 Program Committee	7.728			2.207		
2.3 Prize Committees	7.728			0		
2.4 Congress Subvention	19.321			0		
2.5 Travel Grants (Young & Senior)	27.049	10.000	37.049	0	0	
2.6 ICM related admin., outreach	19.321			0		
ICM Expenditure	85.011	10.000	95.011	2.207	0	2.207
3. Union Administration						
3.1 General Assembly	3.864			0		
3.2 President & Secretary	46.370			23.000		
3.3 Executive Committee	23.185			5.838		
3.4 Other	3.864			3.702		
Union Administration Expenditure	77.283	0	77.283	32.540	0	32.540
4. Outreach						
4.1 ICSU Union Member Contribution	7.728			3.602		
4.2 Awards	3.864	0		0		
4.3 Website Support, Media Relations	7.728			23.935		
4.4 Bulletin	0			0		
4.5 Other	3.864	5.600	9.464	0		
4.6 Scientific activity support	0			0		
Outreach Expenditure	23.184	5.600	28.785	27.537	0	27.537
5. Overhead						
5.1 Office Expenses	3.864	1.600	5.464	695	1.600	
5.2 Bank Charges	3.864	1.000	4.864	0	374	
5.3 Legal Advice, Audit Fees	7.728	1.600	9.328	10.127	1.600	
5.4 Other	11.592	800	12.392	11.405	1.426	
Overhead Expenditure	27.048	5.000	32.049	22.227	5.000	27.227
TOTAL EXPENDITURE			451.015			302.628
Draw from Reserves			0			0
Return to Reserves			0			0
Income less expenses			0			256.999
Transfer to liabilities from donations not yet spent						-63.827
				EUR		193.172

Legal and Tax Position

1. Legal Position

Association, Legal Domicile

International Mathematical Union, Berlin/Germany

The IMU is an international association. According to German law, the IMU is an “ideal” association (§ 21 German Civil Code (BGB)) since it pursues ideal purposes rather than financial purposes. The Association does not have legal capacity in Germany because it is not registered with the German Register of Associations.

The legal domicile of the IMU was located in Princeton/USA, until 31 December 2006. According to article 29 of the IMU Statutes, as amended in 2010, the legal domicile of the Union shall be located at the offices of the Union.

The permanent Secretariat of the Union shall be located in Berlin/Germany as of 1 January 2011.

Place of Management

IMU Secretariat, Markgrafenstraße 32, 10117 Berlin/Germany.

The IMU Secretariat transacts the entire routine operative business of the IMU. This includes the administrative support of the International Commission on Mathematical Instruction (ICMI) and the Commission for Developing Countries (CDC). In addition, the IMU Secretariat is also responsible for bookkeeping and monetary transactions; it prepares the annual financial statements and operates the IMU archives.

Statutes

The Statutes were amended on 16 and 17 August 2010 in Bangalore/India by the 16th General Assembly. The amendments included article 28 (Treasurer) and article 29 (Legal Domicile). A certified German translation is on file.

Objectives of the Association

According to article 1 of the Statutes, the objectives are:

- “(a) to promote international cooperation in mathematics;
- (b) to support and assist the International Congress of Mathematicians and other international scientific meetings or conferences;
- (c) to encourage and support other international mathematical activities considered likely to contribute to the development of mathematical science in any of its aspects, pure, applied, or educational.”

Association Capital, Members

The Statutes make no provision for association capital. Association capital amounted to k€ 307 on 1 January 2007, the time when the legal domicile was transferred from Princeton/USA to Berlin/Germany.

According to article 3, a country adheres to the Association through an adhering organization. This may be the principal academy, a mathematical society, its research council or some other institution or association of institutions, or an appropriate agency of its government. At the end of 2016, the IMU had 73 regular members (voting), 10 associate members (non-voting) and 4 affiliate members (non-contributory and non-voting).

Executive Committee, Representatives

Since 1 January 2015, the Executive Committee consists of the following persons:

Shigefumi Mori, Japan (President)

Helge Holden, Norway (Secretary)

Alicia Dickenstein, Argentina (Vice-President)

Vaughan Jones, New Zealand/USA (Vice-President)

Benedict H. Gross, USA (Member-at-Large)

Hyungju Park, Korea (Member-at-Large)

Christiane Rousseau, Canada (Member-at-Large)

Vasudevan Srinivas, India (Member-at-Large)

John Francis Toland, Great Britain (Member-at-Large)

Wendelin Werner, Switzerland (Member-at-Large)

Ingrid Daubechies, USA (Ex-officio, because she is the former President of the IMU)

Reporting Year

The reporting year corresponds to the calendar year.

Reports to members are made annually by dispatching the Bulletin of the IMU as well as through publication on the IMU homepage www.mathunion.org.

General Assembly

The following was resolved during the last General Assembly in August 2014:

Appointments to various committees and commissions

Budget for the time between 2015 and 2018

No increase in member contributions

The next General Assembly will take place in 2018 in São Paulo/Brazil.

2. Tax Information

The Association is registered with the Finanzamt für Körperschaften I, Berlin, under the tax number 27/640/57572.

At the time of the audit, no tax assessment notifications had been issued for the Association, which has had its legal domicile in Germany since 2007.

The Association is non-profit. After common inquiries on 16 April 2007 at the Finanzamt für Körperschaften I, Berlin, the formal requirements for the recognition as a non-profit organization were fulfilled. The final certification of the non-profit status will be made after actual fulfilment of the requirements.

The Finanzamt für Körperschaften I, Berlin, issued a preliminary certification on 4 May 2007. This was done upon the instruction of the Senatsverwaltung für Finanzen, Berlin, before it issued a notice of exemption for 2007 and 2008 on 9 June 2009.

The Finanzamt für Körperschaften I issued a notice of exemption for 2012 to 2014, in which the current income of the IMU is exempt from corporate and trade tax. In addition, revenue from capital of the IMU is not subject to withholding tax on capital up to 31 December 2019. The IMU is entitled to issue donation confirmations.

[Translator's notes are in square brackets]

General Engagement Terms

for
Wirtschaftsprüfer and Wirtschaftsprüfungsgesellschaften
[German Public Auditors and Public Audit Firms]
as of January 1, 2017

1. Scope of application

(1) These engagement terms apply to contracts between German Public Auditors (*Wirtschaftsprüfer*) or German Public Audit Firms (*Wirtschaftsprüfungsgesellschaften*) – hereinafter collectively referred to as “German Public Auditors” – and their engaging parties for assurance services, tax advisory services, advice on business matters and other engagements except as otherwise agreed in writing or prescribed by a mandatory rule.

(2) Third parties may derive claims from contracts between German Public Auditors and engaging parties only when this is expressly agreed or results from mandatory rules prescribed by law. In relation to such claims, these engagement terms also apply to these third parties.

2. Scope and execution of the engagement

(1) Object of the engagement is the agreed service – not a particular economic result. The engagement will be performed in accordance with the German Principles of Proper Professional Conduct (*Grundsätze ordnungsmäßiger Berufsausübung*). The German Public Auditor does not assume any management functions in connection with his services. The German Public Auditor is not responsible for the use or implementation of the results of his services. The German Public Auditor is entitled to make use of competent persons to conduct the engagement.

(2) Except for assurance engagements (*betriebswirtschaftliche Prüfungen*), the consideration of foreign law requires an express written agreement.

(3) If circumstances or the legal situation change subsequent to the release of the final professional statement, the German Public Auditor is not obligated to refer the engaging party to changes or any consequences resulting therefrom.

3. The obligations of the engaging party to cooperate

(1) The engaging party shall ensure that all documents and further information necessary for the performance of the engagement are provided to the German Public Auditor on a timely basis, and that he is informed of all events and circumstances that may be of significance to the performance of the engagement. This also applies to those documents and further information, events and circumstances that first become known during the German Public Auditor's work. The engaging party will also designate suitable persons to provide information.

(2) Upon the request of the German Public Auditor, the engaging party shall confirm the completeness of the documents and further information provided as well as the explanations and statements, in a written statement drafted by the German Public Auditor.

4. Ensuring independence

(1) The engaging party shall refrain from anything that endangers the independence of the German Public Auditor's staff. This applies throughout the term of the engagement, and in particular to offers of employment or to assume an executive or non-executive role, and to offers to accept engagements on their own behalf.

(2) Were the performance of the engagement to impair the independence of the German Public Auditor, of related firms, firms within his network, or such firms associated with him, to which the independence requirements apply in the same way as to the German Public Auditor in other engagement relationships, the German Public Auditor is entitled to terminate the engagement for good cause.

5. Reporting and oral information

To the extent that the German Public Auditor is required to present results in writing as part of the work in executing the engagement, only that written work is authoritative. Drafts are non-binding. Except as otherwise agreed, oral statements and explanations by the German Public Auditor are binding only when they are confirmed in writing. Statements and information of the German Public Auditor outside of the engagement are always non-binding.

6. Distribution of a German Public Auditor's professional statement

(1) The distribution to a third party of professional statements of the German Public Auditor (results of work or extracts of the results of work whether in draft or in a final version) or information about the German Public Auditor acting for the engaging party requires the German Public Auditor's written consent, unless the engaging party is obligated to distribute or inform due to law or a regulatory requirement.

(2) The use by the engaging party for promotional purposes of the German Public Auditor's professional statements and of information about the German Public Auditor acting for the engaging party is prohibited.

7. Deficiency rectification

(1) In case there are any deficiencies, the engaging party is entitled to specific subsequent performance by the German Public Auditor. The engaging party may reduce the fees or cancel the contract for failure of such subsequent performance, for subsequent non-performance or unjustified refusal to perform subsequently, or for unconscionability or impossibility of subsequent performance. If the engagement was not commissioned by a consumer, the engaging party may only cancel the contract due to a deficiency if the service rendered is not relevant to him due to failure of subsequent performance, to subsequent non-performance, to unconscionability or impossibility of subsequent performance. No. 9 applies to the extent that further claims for damages exist.

(2) The engaging party must assert a claim for the rectification of deficiencies in writing (*Textform*) [Translator's Note: The German term “Textform” means in written form, but without requiring a signature] without delay. Claims pursuant to paragraph 1 not arising from an intentional act expire after one year subsequent to the commencement of the time limit under the statute of limitations.

(3) Apparent deficiencies, such as clerical errors, arithmetical errors and deficiencies associated with technicalities contained in a German Public Auditor's professional statement (long-form reports, expert opinions etc.) may be corrected – also versus third parties – by the German Public Auditor at any time. Misstatements which may call into question the results contained in a German Public Auditor's professional statement entitle the German Public Auditor to withdraw such statement – also versus third parties. In such cases the German Public Auditor should first hear the engaging party, if practicable.

8. Confidentiality towards third parties, and data protection

(1) Pursuant to the law (§ [Article] 323 Abs 1 [paragraph 1] HGB [German Commercial Code: *Handelsgesetzbuch*], § 43 WPO [German Law regulating the Profession of *Wirtschaftsprüfer: Wirtschaftsprüferordnung*], § 203 StGB [German Criminal Code: *Strafgesetzbuch*]) the German Public Auditor is obligated to maintain confidentiality regarding facts and circumstances confided to him or of which he becomes aware in the course of his professional work, unless the engaging party releases him from this confidentiality obligation.

(2) When processing personal data, the German Public Auditor will observe national and European legal provisions on data protection.

9. Liability

(1) For legally required services by German Public Auditors, in particular audits, the respective legal limitations of liability, in particular the limitation of liability pursuant to § 323 Abs. 2 HGB, apply.

(2) Insofar neither a statutory limitation of liability is applicable, nor an individual contractual limitation of liability exists, the liability of the German Public Auditor for claims for damages of any other kind, except for damages resulting from injury to life, body or health as well as for damages that constitute a duty of replacement by a producer pursuant to § 1 ProdHaftG [German Product Liability Act: *Produkthaftungsgesetz*], for an individual case of damages caused by negligence is limited to € 4 million pursuant to § 54 a Abs. 1 Nr. 2 WPO.

(3) The German Public Auditor is entitled to invoke demurs and defenses based on the contractual relationship with the engaging party also towards third parties.

(4) When multiple claimants assert a claim for damages arising from an existing contractual relationship with the German Public Auditor due to the German Public Auditor's negligent breach of duty, the maximum amount stipulated in paragraph 2 applies to the respective claims of all claimants collectively.

(5) An individual case of damages within the meaning of paragraph 2 also exists in relation to a uniform damage arising from a number of breaches of duty. The individual case of damages encompasses all consequences from a breach of duty regardless of whether the damages occurred in one year or in a number of successive years. In this case, multiple acts or omissions based on the same source of error or on a source of error of an equivalent nature are deemed to be a single breach of duty if the matters in question are legally or economically connected to one another. In this event the claim against the German Public Auditor is limited to € 5 million. The limitation to the fivefold of the minimum amount insured does not apply to compulsory audits required by law.

(6) A claim for damages expires if a suit is not filed within six months subsequent to the written refusal of acceptance of the indemnity and the engaging party has been informed of this consequence. This does not apply to claims for damages resulting from scienter, a culpable injury to life, body or health as well as for damages that constitute a liability for replacement by a producer pursuant to § 1 ProdHaftG. The right to invoke a plea of the statute of limitations remains unaffected.

10. Supplementary provisions for audit engagements

(1) If the engaging party subsequently amends the financial statements or management report audited by a German Public Auditor and accompanied by an auditor's report, he may no longer use this auditor's report.

If the German Public Auditor has not issued an auditor's report, a reference to the audit conducted by the German Public Auditor in the management report or any other public reference is permitted only with the German Public Auditor's written consent and with a wording authorized by him.

(2) If the German Public Auditor revokes the auditor's report, it may no longer be used. If the engaging party has already made use of the auditor's report, then upon the request of the German Public Auditor he must give notification of the revocation.

(3) The engaging party has a right to five official copies of the report. Additional official copies will be charged separately.

11. Supplementary provisions for assistance in tax matters

(1) When advising on an individual tax issue as well as when providing ongoing tax advice, the German Public Auditor is entitled to use as a correct and complete basis the facts provided by the engaging party – especially numerical disclosures; this also applies to bookkeeping engagements. Nevertheless, he is obligated to indicate to the engaging party any errors he has identified.

(2) The tax advisory engagement does not encompass procedures required to observe deadlines, unless the German Public Auditor has explicitly accepted a corresponding engagement. In this case the engaging party must provide the German Public Auditor with all documents required to observe deadlines – in particular tax assessments – on such a timely basis that the German Public Auditor has an appropriate lead time.

(3) Except as agreed otherwise in writing, ongoing tax advice encompasses the following work during the contract period:

- a) preparation of annual tax returns for income tax, corporate tax and business tax, as well as wealth tax returns, namely on the basis of the annual financial statements, and on other schedules and evidence documents required for the taxation, to be provided by the engaging party
- b) examination of tax assessments in relation to the taxes referred to in (a)
- c) negotiations with tax authorities in connection with the returns and assessments mentioned in (a) and (b)
- d) support in tax audits and evaluation of the results of tax audits with respect to the taxes referred to in (a)
- e) participation in petition or protest and appeal procedures with respect to the taxes mentioned in (a).

In the aforementioned tasks the German Public Auditor takes into account material published legal decisions and administrative interpretations.

(4) If the German Public Auditor receives a fixed fee for ongoing tax advice, the work mentioned under paragraph 3 (d) and (e) is to be remunerated separately, except as agreed otherwise in writing.

(5) Insofar the German Public Auditor is also a German Tax Advisor and the German Tax Advice Remuneration Regulation (*Steuerberatungsvergütungsverordnung*) is to be applied to calculate the remuneration, a greater or lesser remuneration than the legal default remuneration can be agreed in writing (*Textform*).

(6) Work relating to special individual issues for income tax, corporate tax, business tax, valuation assessments for property units, wealth tax, as well as all issues in relation to sales tax, payroll tax, other taxes and dues requires a separate engagement. This also applies to:

- a) work on non-recurring tax matters, e.g. in the field of estate tax, capital transactions tax, and real estate sales tax;
- b) support and representation in proceedings before tax and administrative courts and in criminal tax matters;
- c) advisory work and work related to expert opinions in connection with changes in legal form and other re-organizations, capital increases and reductions, insolvency related business reorganizations, admission and retirement of owners, sale of a business, liquidations and the like, and
- d) support in complying with disclosure and documentation obligations.

(7) To the extent that the preparation of the annual sales tax return is undertaken as additional work, this includes neither the review of any special accounting prerequisites nor the issue as to whether all potential sales tax allowances have been identified. No guarantee is given for the complete compilation of documents to claim the input tax credit.

12. Electronic communication

Communication between the German Public Auditor and the engaging party may be via e-mail. In the event that the engaging party does not wish to communicate via e-mail or sets special security requirements, such as the encryption of e-mails, the engaging party will inform the German Public Auditor in writing (*Textform*) accordingly.

13. Remuneration

(1) In addition to his claims for fees, the German Public Auditor is entitled to claim reimbursement of his expenses; sales tax will be billed additionally. He may claim appropriate advances on remuneration and reimbursement of expenses and may make the delivery of his services dependent upon the complete satisfaction of his claims. Multiple engaging parties are jointly and severally liable.

(2) If the engaging party is not a consumer, then a set-off against the German Public Auditor's claims for remuneration and reimbursement of expenses is admissible only for undisputed claims or claims determined to be legally binding.

14. Dispute Settlement

The German Public Auditor is not prepared to participate in dispute settlement procedures before a consumer arbitration board (*Verbraucherschlichtungsstelle*) within the meaning of § 2 of the German Act on Consumer Dispute Settlements (*Verbraucherstreitbeilegungsgesetz*).

15. Applicable law

The contract, the performance of the services and all claims resulting therefrom are exclusively governed by German law.

2.4. IMU Special Development Fund

Contributions to the IMU Special Development Fund.

2016

London Mathematical Society, UK	4,452.48 EUR
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2.5. Third-Party Donations (monetary contributions)

2016

Niels Henrik Abel Board, Norway	37,410.40 EUR
Simons Foundation, US	47,219.26 EUR
FIMU, US	48,715.71 EUR
Mathematical Society of Japan, Japan	1,161.89 EUR

2.6. IMU Bank Accounts

International Mathematical Union, Markgrafenstr. 32, D-10117 Berlin, Germany

Deutsche Bank

Otto-Suhr-Allee 6-16, D-10585 Berlin, Germany

BIC (SWIFT) code: DEUTDEDB110

<u>EUR transfer</u> to account No.:	<u>USD transfer</u> to account No.:	<u>CHF transfer</u> to account No.:
IBAN code:	IBAN code:	IBAN code:
DE85100708480511391500	DE85100708480511391500	DE58100708480511391501

3. Commissions and Committees

3.1. International Commission on Mathematical Instruction (ICMI)

<https://www.mathunion.org/icmi>

Activity and Financial Report 2016

Jill Adler, Abraham Arcavi, Lena Koch



March 21, 2017

2016 at a glance

Key activities

Administration and Governance

The ICMI Executive Committee (2013-2016) held its fourth and last meeting from July 22 to July 23 in Berlin, Germany and on July 31, in Hamburg, Germany. The ICMI General Assembly was held on July 24, 2016 the day prior to the opening of the International Congress for Mathematical Education (ICME-13) in Hamburg, Germany from 09:00 until 17:00 in Hamburg, Germany at the premises of the University of Hamburg.

ICMI Members and Representatives

In 2016, ICMI had 93 member countries, 73 are also members of IMU and 8 are associate members of IMU. In 2016, Capo Verde and Paraguay joined ICMI as member countries.

ICME-13

About 3,500 participants from 105 countries participated in the 13th ICME, which took place from July 24 to July 31, in Hamburg (<http://icme13.org/>).

ICME-14

The contract with the organizers of ICME 14 to be held in 2020 in Shanghai, China was signed and the International Program Committee (IPC) was elected.

ICMI Regional Conferences

Since 2016 was an ICME year, no regional conferences were held.

ICMI Studies

The ICMI Study 23 “Primary Mathematics Study on Whole Numbers” is in advanced stages of production. During 2016 the co-chairs and editors Mariolina Bartolini Bussi (Italy) and Sun Xuhua (China) worked together with the authors in order to publish the book during 2017.

The ICMI EC launched towards the end of 2016 the ICMI Study 24: “School Mathematics Curriculum Reforms: Challenges and Changes”. In 2016 the co-chairs and IPC were selected.

ICMI Awards

At the Opening Ceremony of ICME 13, Ferdinando Arzarello presented the 2013, 2015 and 2016 ICMI awards to Michèle Artigue and Alan Bishop (Felix-Klein Award), Jill Adler and Frederick Leung (Hans-Freudenthal Award) and Hugh Burkhardt (Emma Castelnuovo Award) jointly with Malcolm Swan (in absentia).

Outreach to Developing Countries

1. Capacity and Network Project (CANP)

The following activities under the umbrella of the Capacity and Network Project (CANP) were held:

1.1. CANP Andean Region and Paraguay

CANP 5 took place from February 1 to February 12, in Lima, hosted by the Pontificia Universidad Católica with participants from Bolivia, Ecuador, Paraguay and Perú. 52 participants and 53 Peruvian teachers (invited for a special two day program) attended.

1.2. Evaluation of CANP 1-5 and Discussion

Lena Koch conducted a survey of the participants to the five CANPs which took place so far. The presentation of her main findings can be found at:

<https://www.mathunion.org/icmi/activities/developing-countries-support/capacity-networking-project-canp>.

The full survey will be published in May 2017 on the ICMI website. The overarching conclusion from the survey is that CANPs (and their follow-ups) have amply fulfilled the most optimistic expectations of their initiators.

1.3. The Discussion Group “Sharing experiences about the Capacity and Network Projects (CANP) initiated by ICMI” met in July at ICME 13. More than 40 participants discussed many issues regarding CANP, its past and future.

2. ICME Solidarity Grant

Approximately 230 scholars from developing and less affluent countries received partial or full financial support (travel, accommodation and registration fee) through the ICME Solidarity Grant.

Klein Project

The project began in 2008 as an IMU/ICMI joint project, with the aim of producing mathematics resources for secondary teachers on contemporary mathematics. It was inspired by Felix Klein’s book *Elementary Mathematics from an Advanced Standpoint*, first published in 1908. In 2016, the Klein Project blog was very active, many short articles (vignettes) were translated into Chinese, French, German, Italian, Spanish, Arabic and Portuguese. A vignette is a short, readable piece on a topic of contemporary mathematics targeted for school teachers.

Outreach and Dissemination of InformationICMI Newsletter

Three issues of the ICMI Newsletter were published and distributed (March 1, July 1 and November 1, see <https://www.mathunion.org/icmi/publications/icmi-newsletter>).

ICMI Website

IMU started a re-launching process of the IMU website which will also influence the design of the ICMI website.

ICMI Facebook

The ICMI Facebook page was established in 2011 and has more than 5,500 subscribers (fans). The editors are Jaime Carvalho e Silva and Lena Koch <https://www.facebook.com/icmi.math.edu/>

L'Enseignement Mathématique

The regular columns on ICMI News were published in the journal L'Enseignement Mathématique (the official organ of ICMI) and the Newsletter of the European Mathematical Society. See <https://www.mathunion.org/icmi/digital-library/online-access-lenseignement-mathematique>.

ICMI Archive

Activities to document and preserve items from the history of ICMI are ongoing.

ICMI Materials

ICMI materials were distributed at various conferences and events.

ICMI Bulletin

The publication of the Bulletin was discontinued. Papers from hitherto unpublished issues of the ICMI Bulletin were assembled and published on the ICMI website: <https://www.mathunion.org/icmi/publications/icmi-bulletin>.

2016 in detail

Administration and Governance

Organisation

ICMI Members and Representatives

In 2016 ICMI had 93 member countries, 73 are also members of IMU and 8 are associate members of IMU. Each member country is required to elect an ICMI Representative who acts as a liaison person between ICMI and the mathematics education community in the country and represents it at the ICMI General Assembly. Each ICMI representative has the (sole) voting right for electing the ICMI Executive Committee (ICMI EC). The ICMI EC, in particular the Secretary General and the ICMI Administrator support the member countries and IMU adhering organisations to re-elect ICMI representatives after their 8-year tenure (Kobe Rule).

Executive Commission 2013-2016

The members of the EC in the period 2013-2016 were:

- **PRESIDENT:** Ferdinando Arzarello (Italy)
- **SECRETARY-GENERAL:** Abraham Arcavi (Israel)
- **VICE-PRESIDENTS:** Cheryl Praeger (Australia) and Angel Ruiz (Costa Rica)
- **MEMBERS AT LARGE (5):**
- Catherine P. Vistro-Yu (Philippines), Jean-Luc Dorier (**Switzerland**), Roger Howe (USA) Yuriko Baldin (Brazil), Zahra Gooya (**Iran**)
- **EX OFFICIO MEMBERS:**
- Bill Barton (New Zealand) (Past President of ICMI), Shigefumi Mori (President of IMU),
- Helge Holden (Secretary of IMU)

IMU EC member (Liaison to ICMI)

- Alicia Dickenstein (until December 31, 2018).

Meetings of the ICMI EC

The fourth and last meeting of the ICMI EC (2013–2016) took place in Berlin (IMU Secretariat) on July 22 and 23, and in Hamburg (University of Hamburg), July 31.

Present on July 22-23: Ferdinando Arzarello, Shigefumi Mori, Helge Holden, Alicia Dickenstein, Cheryl E. Praeger, Angel Ruiz, Abraham Arcavi, Jean-Luc Dorier, William (Bill) Barton, Roger

Howe, Zahra Gooya, Yuriko Yamamoto Baldin, Catherine P. Vistro-Yu and Lena Koch. No absentees.

The meeting in Berlin was opened by Ferdinando Arzarello. He thanked Prof. Dr. Michael Hintermüller, Director of the Weierstrass Institute for hosting the EC meeting. Prof. Dr. Michael Hintermüller, Director of the Weierstrass Institute and Shigefumi Mori, IMU President gave short welcome notes.

Present on July 31: Ferdinando Arzarello, Cheryl E. Praeger, Angel Ruiz, Abraham Arcavi, Jean-Luc Dorier, William (Bill) Barton, Roger Howe, Zahra Gooya, Yuriko Yamamoto Baldin, Catherine P. Vistro-Yu and Lena Koch. Absent (excused): Shigefumi Mori, Helge Holden, Alicia Dickenstein. All members of the ICMI EC received a copy of the minutes of the meeting.

ICMI General Assembly

The ICMI General Assembly convened on July 24, in Hamburg, Germany. A large number of country representatives, representatives of ICMI Affiliated Organisations and Study Groups, the ICMI EC and other invited guests and observers participated in the GA. A main activity of the General Assembly was to elect the ICMI Executive Committee 2017-2020 and to present reports of the activities of ICMI as well as the Affiliated Organisations and Study Groups during 2012-2015 to the GA participants and observers.

Election of the ICMI EC 2017-2020

The ICMI EC 2017-2020 elected by the ICMI representatives at the GA is the following:

Position	Candidate	Country
President	Prof. Jill Adler	South Africa
Secretary-General	Prof. Abraham Arcavi	Israel
Vice Presidents	Prof. Merrilyn Goos	Australia
	Prof. Luis Radford	Canada
Member-at-large	Prof. Yuriko Baldin	Brazil
	Prof. Jean-Luc Dorier	Switzerland
	Prof. Anita Rampal	India
	Prof. Xu Binyan	China
	Prof. Zahra Gooya	Iran

Details about the General Assembly can be found at <https://www.mathunion.org/icmi/organisation/icmi-organisation>.

The next ICMI General Assembly will take place in Shanghai, China in July 2020.

IMU Secretariat

The IMU Secretariat in Berlin, Germany continues to give full ongoing administrative and logistical support for ICMI activities.

ICMI Affiliate Organizations and Study Groups

ICMI's organisational outreach includes eleven multi-national organisations and international study groups in mathematics education, which have obtained affiliation to ICMI.

Affiliated organisations are independent from ICMI and are self-financed. They collaborate with ICMI on specific activities, such as the ICMI Studies or CANP. The ICMI Affiliate Organisations gave activity reports to the General Assembly of ICMI.

The five multi-national Mathematics Education Societies currently affiliated to ICMI, with year of affiliation are:

- CIAEM: Inter-American Committee on Mathematics Education (2009)

- CIEAEM: International Commission for the Study and Improvement of Mathematics Teaching (2010)
- ERME: European Society for Research in Mathematics Education (2010)
- MERGA: Mathematics Education Research Group of Australasia (2011)
- EMeLP: Espaço Matemático em Língua Portuguesa (2014)

The six Study Groups currently affiliated to ICMI, with their year of affiliation, are:

- HPM: The International Study Group on Relations between the History and Pedagogy of Mathematics (1976)
- ICTMA: The International Study Group for Mathematical Modelling and Applications (2003)
- IOWME: The International Organization of Women and Mathematics Education (1987)
- MCG: The International Group for Mathematical Creativity and Giftedness (2011)
- PME: The International Group for the Psychology of Mathematics Education (1976)
- WFNMC: The World Federation of National Mathematics Competitions (1994)

For further details, see <https://www.mathunion.org/icmi/organisation/affiliated-organisations>.

The International Congress on Mathematical Education (ICME)

ICME 13

About 3,500 participants from 105 countries participated in the 13th ICME, which took place from July 24 to 31 at the University of Hamburg and the Hamburg Congress Centre (<http://icme13.org/>). ICME 13 was hosted by the Society of Didactics of Mathematics (*Gesellschaft für Didaktik der Mathematik - GDM*). At the Opening Ceremony the ICMI Awards were presented. 54 Topic Study Groups devoted to major themes of mathematics education functioned in parallel during the congress and included about 750 presentations and about 1000 short oral communications. 530 posters were presented in two sessions. Furthermore, a big variety of other activities took place such as two plenary panels, four plenary lectures, 42 Discussion Groups and 38 Workshops. Reflecting specific ICMI traditions five ICMI Survey Teams describing the state-of-the-art on their theme and three ICMI studies were presented in addition to six national presentations. A thematic afternoon was carried out devoted to describing the development in the last 40 years under a European and a historical perspective. The presentations centred on European Didactic Traditions and German-speaking Traditions in Mathematics Education Research and the Legacy of Felix Klein.

Each ICME devotes at least 10 per cent of its registration fees to the ICME Solidarity Fund to support participation from developing countries. Approximately 230 scholars received partial or full financial support (travel, accommodation and registration fee) through the ICME Solidarity Grant. In addition 250 teachers attended special teacher activities. An Early Career Researcher Day was offered the day before the opening of ICME, tackling specific themes for this group. 450 early career researchers participated.

ICME 13 was clouded by the political events in Turkey, since out of the 100 registered participants only 17 could come, however about 50 were able to give their presentations via video. At the closing ceremony the congress participants expressed their solidarity with the mathematics educators in Turkey by adopting a solidarity address.

ICME 14

In 2015 the ICMI EC selected Shanghai, China as the location for the ICME 14 in July 2020. The other bids came from Sydney, Australia and Honolulu, Hawaii. In July 2016, an agreement was signed between ICMI and the local organizers to host ICME 14 in Shanghai. The ICME 14 IPC has been selected. Its members are: Jianpan Wang (Chair, China), Jill Adler (ICMI President, ex-officio, South Africa), Abraham Arcavi, (ICMI Secretary General, ex-officio, Israel), Jiansheng Bao, China (ICME 14 LOC Co-chair), Dan Chazan (USA), Faiza Chellougui (Tunisia), Marta Civil (USA), Alicia Dickenstein (IMU Vice-President and Liaison Person, Argentina), Yufeng Guo (China), Anjum Halai (Tanzania), Gabriele Kaiser (ex-officio as ICME 13 IPC Chair, Germany), Caroline Lajoie (Canada), Celi Espasandin Lopes (Brazil), Tom Lowrie (Australia), Maria Alessandra Mariotti (Italy), Luis

Moreno-Armella (Mexico), Takeshi Miyakawa (Japan), Frode Rønning (Norway), Ewa Swoboda (Poland), Luc Trouche (France), Catherine Vistro-Yu (Philippines), Binyan Xu, (ICME 14 LOC Co-chair, China), Ivan Yashchenko (Russia).

ICME 12

Proceedings

The two volumes of the Proceedings of ICME 12 were published in 2015:

Volume 1: “The Proceedings of the 12th International Congress on Mathematical Education.

Intellectual and attitudinal challenges”, Editor: **Cho**, Sung Je (Ed.) see

<http://www.springer.com/gp/book/9783319106854>. This volume has open access. During 2016, the publication was distributed widely among the community.

Volume 2: “Selected Regular Lectures from the 12th International Congress on Mathematical

Education”, Editor: **Cho**, Sung Je (Ed.) <http://www.springer.com/gp/book/9783319171869>.

ICMI Regional Conferences

Launched in the mid-seventies, ICMI Regional Conferences aim to facilitate wider discussion of mathematical education issues in different regions. No regional conference was held in 2016, but conferences to be held in 2017 and 2018 have started their preparations. In 2016, ICMI supported the planning/preparation of the following ICMI regional conferences:

AFRICME (Africa Regional Conference)

The next AFRICME conference is planned to be held in 2018. The location is currently under discussion, and likely to take place in Dar es Salaam, Tanzania.

CIAEM-15 (XV Inter-American Conference on Mathematics Education) will be held in Medellín, Colombia, May 5-9, 2019. See xv.ciaem-iacme.org and www.facebook.com/ciaem.

EARCOME-8 (East Asia Regional Conference on Mathematics Education)

The 8th EARCOME conference will be held in the Taiwan from May 7-11, 2018. See

<http://earcome8.math.ntnu.edu.tw/>.

EMF (Espace Mathématique Francophone) is an ICMI regional conference that is held every three years. It is aimed at an international audience of mathematics educators, mathematicians, researchers, teacher educators and teachers. The conference language is French. The seventh EMF colloquium (EMF2018) will take place in Paris, from October 22 to 26, 2018. The theme of the colloquium is "Mathematics on the stage, bridges between disciplines." See <http://emf.unige.ch/index.php/emf-2018/>

ICMI Studies

A major ICMI programme is the series of ICMI Studies. Each Study addresses an issue or topic of particular significance in contemporary mathematical education, and is conducted by an international team of leading scholars and practitioners. Built around an international conference, it is directed towards the preparation of a published volume to promote discussion and action at the international, regional or institutional level. 23 volumes have been published between 1986 and 2015. The series editors 2013-2016 were ICMI President Ferdinando Arzarello, Secretary-General Abraham Arcavi and Vice President Cheryl Praeger (for further details see

<https://www.mathunion.org/icmi/conferences/icmi-study-conferences>).

The two ongoing ICMI Studies are:

ICMI Study 23 Primary Mathematics Study on Whole Numbers

The Study was launched in 2012. The two co-chairs are Mariolina Bartolini Bussi, University Modena e Reggio Emilia, Italy and Sun Xuhua of the University of Macau, China. The IPC

started working in 2013 and the meeting has been held from January 19 to 24, 2014 at the IMU Secretariat in Berlin, Germany. The Study Conference was held in June 2015 in Macau, China. (See <http://www.umac.mo/fed/ICMI23/> and <http://www.umac.mo/fed/ICMI23/proceedings.html>).

The book will be published in 2017.

ICMI Study 24 "School Mathematics Curriculum Reforms: Challenges and Changes"

The 24th ICMI study was launched by the ICMI EC in 2016. The two appointed co-chairs are Professor Renuka Vithal, University of KwaZulu-Natal, South Africa and Professor Yoshinori Shimizu, University of Tsukuba, Japan. Ferdinando Arzarello is the ICMI EC liaison person for this Study. The IPC was been selected during the ICMI EC meeting in 2016 and started working in February 2017. It aims to publish the Study Volume of ICMI Study 24 in 2020 and to present the publication during ICME-14 in Shanghai.

ICMI Awards

In 2003, ICMI created the Felix Klein Award, for lifelong achievement in mathematics education research and the Hans Freudenthal Award for a major programme of research on mathematics education (see, <https://www.mathunion.org/icmi/awards/icmi-awards>). In 2013, the ICMI EC decided to create a third ICMI award to recognize *outstanding achievements in the practice of mathematics education*. At the ICME 13 Opening Ceremony the 2013, 2015 and 2016 ICMI Awards were presented to Michèle Artigue and Alan Bishop (Felix-Klein Award 2013 and 2015), Jill Adler and Frederick Leung (Hans-Freudenthal Award 2013 and 2015), Hugh Burkhardt (Emma-Castelnuovo Award 2016) jointly with Malcolm Swan (in absentia). The citations for the prizes can be found at <https://www.mathunion.org/icmi/awards/recipients-icmi-awards>.

In 2016, new chairs were appointed: Anna Sfard (Israel) for the Klein and Freudenthal Awards Committee and Konrad Krainer (Austria) for the Emma Castelnuovo Award.

The Klein Project

In 2008, this project began as an IMU/ICMI joint activity, with the aim of producing mathematics resources for secondary teachers on contemporary mathematics. It was inspired by Felix Klein's book *Elementary Mathematics from an Advanced Standpoint*, first published 100 years earlier. A Design Group of 8 people (mathematicians and educators) was established in 2008, and plans formed to create a website, to produce "vignettes", and ultimately, a comprehensive book. A vignette is a short, readable piece on a topic of contemporary mathematics targeted for school teachers. As Vignettes began to be produced and tested amongst teacher readers, the "Klein Vignette Style" evolved, and in 2011 it was decided to establish a Blog (<http://blog.kleinproject.org>) as a means of distribution. It was also decided to make Vignettes available in as many languages as possible.

By December 2016, a total of 24 Vignettes, all available in English, and some translated into Arabic, French, German, Italian, Spanish, Portuguese, and Mandarin, were published on the blog. The Blog also has a "Book of the Month" and "Site of the Month" feature, the former featuring books of general mathematical interest for teachers first published more than ten years ago. There is an active "Klein community" of volunteer translators. In 2016 the Klein Blog received an average of 100-200 hits per day and is growing, with an all-time total of over 118000 hits. While this is small by web standards, it represents at least 50 vignettes being read by teachers somewhere every day, after accounting for accidental and non-teacher hits.

In 2016, the ICMI EC confirmed its commitment to continue supporting the Klein Project Blog through a part-time employment to mount items on the Blog.

The Klein Project has developed a third activity, the Klein Seminars which were held in UK, Spain, Portugal, France, USA, Brazil, and Australia. Such seminars are now replaced by workshops or sessions at conferences. Two countries, Brazil and Sweden, have established regular (annual or bi-annual) Klein Meetings of teachers and mathematicians. In both cases, significant national funding was obtained.

The future of the project was discussed at the ICMI EC meeting in July 2016. It was decided to continue the Klein Project focusing on the further development of the blog and of a new Klein website— after the relaunch of the ICMI (and IMU website).

Outreach to Developing Countries

Capacity and Networking Project (CANP)

CANP aims to enhance mathematics education in developing countries by supporting the educational capacity of those responsible for mathematics teachers, and creating sustained regional networks of teachers, mathematics educators and mathematicians, linking them to international support.

The main CANP activities in 2016 were the following:

CANP 5, Andean Region and Paraguay: The fifth CANP was held in Lima Peru, in February 2016. The Program Manager and Local Coordinating Chair were Yuriko Baldin (Brazil) and Uldarico Malaspina (Peru). More than 60 mathematics teachers and teacher educators from Bolivia, Ecuador, Peru and Paraguay participated in the workshop aimed at advancing mathematics education in the Andean Region and Paraguay and forming a local network. In addition to Andean representatives, speakers from Canada, Costa Rica, France, Italy, participated in the conference. Among the speakers were ICMI Awardee Luis Radford (Canada), Angel Ruiz (Costa Rica, ICMI Vice President), ICMI Awardee Alan Schoenfeld (via video recording) as well as ICMI President and CANP 4 Programme Manager Ferdinando Arzarello.

CANP Books. Ferdinando Arzarello, ICMI President negotiated in 2015 with Springer the publication of the CANP reports. In 2016 two CANP books were published:

- CANP 4: "Mathematics Education in East Africa: Towards Harmonization and Enhancement of Education Quality". Editors: Anjum Halai and Geoff Tennant).
See <http://www.springer.com/gp/book/9783319272573>

CANP 2 : "Teacher preparation in Central America and the Caribbean", Editor Angel Ruiz, was published as an e-book in 2016. The book is a synthesis of the initial and continuing preparation for Mathematics Teaching in Colombia, Costa Rica, Dominican Republic and Venezuela, from which comparative analyses can be made that show similarities and differences, and highlight various perspectives. The product page of the volume can be found at the Springer website <http://www.springer.com/gp/book/9783319441764>

Currently ICMI is trying to involve CANP participants from non - ICMI member countries in ICMI activities. Hopefully their countries can become ICMI members.

Reviewing CANP: Between 2010 and 2016 five CANP projects were launched, reaching more than 250 participants in 25 countries. ICMI and IMU have invested considerable funding and many requests are received for funding CANP follow-ups. In 2015, the ICMI EC accepted a proposal to conduct a thorough and systematic review undertaken by a commission of six members as follows: Michèle Artigue and Bill Barton (as the two originators of the CANP Project), Angel Ruiz (as one of the CANP ICMI Liaisons and in his capacity as CDC member), Ferdinando Arzarello (as ICMI President as well as being a CANP ICMI Liaison Person), and Lena Koch (for her knowledge of all five CANPs, her international development experience, and her CANP 1-5 financial and project management experience) and Abraham Arcavi as ICMI Secretary General. In 2016, Lena Koch conducted a survey of the participants to the five CANPs. For the main findings see: <https://www.mathunion.org/icmi/activities/developing-countries-support/capacity-networking-project-canp>

The full survey will be published in 2017 on the ICMI website. The survey reviewed the participants' opinions on both the content of the meetings as well as the practical details of the organization. Among the participants who replied to the survey there is strong agreement on the value, importance and success of these meetings. The overarching conclusion from the survey is that CANPs (and their follow-ups) have amply fulfilled the most optimistic expectations of their initiators. Future directions for CANP will be discussed at the ICMI EC meeting in June 2017 in Geneva, Switzerland.

ICME Solidarity Grant

Approximately 230 scholars received partial or full financial support (travel, accommodation and registration fee) through the ICME Solidarity Grant.

IMU - Commission for Developing Countries (CDC)

The ICMI EC appoints one member of the IMU Commission for Developing Countries (CDC). The ICMI EC 2013-2016 nominated Angel Ruiz as member of this Commission (2015-2018). He participated in the 2016 CDC activities.

Communication and Outreach

The following channels of communication with professional organizations and the general public cover the archival requirements and fulfil ICMI's statutory obligations.

Newsletters

- The ICMI News (Newsletter) is published three times a year (July 1, November 1, March 1) and includes a short editorial by an ICMI EC member, relevant news, announcements of ICMI activities and reports. The ICMI Newsletter editors in 2016 were Abraham Arcavi, Cheryl Praeger and Lena Koch. See <https://www.mathunion.org/icmi/publications/icmi-newsletter>.
- ICMI has a column in the newsletter of the European Mathematical Society, EMS (four publication per year) and in L'Enseignement Mathématique. Jean Luc Dorier, ICMI member at large is the ICMI contact person for both since 2013.

Website and Social Media

- ICMI is actively maintaining its website www.mathunion.org/icmi. The editors are Lena Koch and Jaime Carvalho e Silva, former Secretary General of ICMI. The ICMI website is hosted on the IMU server in Berlin.
- The ICMI Facebook page was established in 2011 and has more than 5,500 subscribers (fans). The editors are Jaime Carvalho e Silva and Lena Koch <https://www.facebook.com/icmi.math.edu/>

Reports

Each spring ICMI submits an activity and financial report to IMU EC on the previous calendar year.

Bulletin

In 2015, the EC unanimously decided to discontinue the production of the ICMI Bulletin, whose functions are to be covered by the four channels described above. Papers from hitherto unpublished issues of the ICMI Bulletin were assembled and published in <https://www.mathunion.org/icmi/publications/icmi-bulletin>.

Further Activities and Outreach

ICMI Digitization Program

The ICMI Digital Library Project aims at providing open access to all ICMI publications and thematic Studies. Currently proceedings of the symposium organized in the year 2000 on the occasion of the centennial of L'Enseignement Mathématique, the official organ of ICMI, the first five ICMI Studies, ICMI Bulletins, and proceedings of various meetings and conferences are available for free download from <https://www.mathunion.org/icmi/digital-library/icmi-digital-library-project>

Database Project

The Database Project, launched in 2011 has as its ultimate goal to build up a free access database of the mathematics curricula (ranging from pre-primary, primary, elementary, middle, secondary to vocational and undergraduate university level) from all over the world. Useful web links can be sent to the ICMI Secretary General. Information from 28 countries is currently available on the ICMI website. The database is already in use by researchers and curriculum-developers. For details see <https://www.mathunion.org/icmi/activities/icmi-database-project>.

Further International Cooperation and Outreach

In 2016 ICMI continued its cooperation with UNESCO, in particular with the Division of Science Policy and Capacity Building (SC/PCB) of the International Basic Sciences Programme (IBSP) based

in Paris. The ICMI EC members and the ICMI representatives kept their national organisations and adhering organisations informed about ICMI developments.

ICMI Archival Activities

Bernard Hodgson, former ICMI Secretary General (1999-2009) is the ICMI Archive Curator. He continues his work towards digitalising historical ICMI materials. Bernard (together with Guillermo Curbera, IMU Archive Curator, and Birgit Seeliger, IMU Archivist) presented their work in a Workshop at ICME13. Further details can be found in the Appendix of this report.

It is planned to archive as many past ICME websites on the IMU Secretariat server as possible. The website of ICME 11 has already been archived on the IMU Secretariat server and efforts are being made to move the others. See <https://www.mathunion.org/icmi/conferences/icme/past-icmes>.

Financial Summary

ICMI's principal source of income is an annual grant from the International Mathematical Union (IMU) that receives its financial support from IMU member countries. Another source of financial support source for ICMI activities comes from academic institutions all over the world that support their faculty members to attend ICMI meetings.

The ICMI EC and in particular the ICMI Secretary- General approves the ICMI budget and all its related spending.

The ICMI EC would like to thank IMU, the IMU Secretariat and its host institution WIAS in Berlin and all institutions who financially and/ or administratively supported ICMI activities in 2016.

The ICMI EC would also like to highlight the work of all individuals who are actively involved in ICMI activities and without whom ICMI activities and outreach would not be possible.

Jill Adler, ICMI President
Abraham Arcavi, ICMI Secretary- General
Lena Koch, ICMI Administration and IMU Secretariat

Financial Report ICMI 2016

ICMI Balances 2016	In EUR
REVENUE by Source	
<i>Savings</i> ICMI bank account from previous year	179,611
General Income	
Annual IMU Grant	57,962
Special Income/ returned funds	
Savings CANP Peru	912
Springer Royalties ICMI Studies	346
Total Revenue	238,831
EXPENDITURE	
1. ICMI Administrative Costs	
1.1. General Administrative Costs	1,956
1.2. EC Meetings	5,705
1.3. Travel EC members and ICMI Administrator	2,975

Total Expenditure Administration:	10,636
2. Research/ Studies/ Publication	
2.1. Klein Project	450
Total Expenditure Research/ Studies/ Publication	450
3. ICME and General Assembly (GA)	
ICME-13 Hamburg (2016) and GA	
Total Expenditure ICME and ICMI GA:	54,614
4. Developing Countries Activities and Support	
CANP 5 (Peru) workshop	883
Total Expenditure Developing Countries:	883
Total Expenditure ICMI	66,583 EUR
Balance for 2016	172,248 EUR

Appendix: Report on the ICMI Archive

Bernard R. Hodgson, ICMI Archive Curator. July 6, 2016

The present report mainly addresses developments that took place since the report on the ICMI Archive submitted to the ICMI EC on May 29, 2015. An important component of this last year is that the project of workshop about the IMU/ICMI Archive, submitted to the ICME-13 organisers last year, has been accepted. This workshop, entitled “Oldies but goodies”: providing background to ICMI mission and activities from an archival perspective, will take place on Tuesday July 26, 2016, at 16:30. The presenters are the IMU Archive Curator, Guillermo Curbera, the IMU Archivist, Birgit Seeliger, and the ICMI Archive Curator. The global aim of this workshop is to promote the (existence of the) ICMI Archive among the ICMI community. It also aims at stressing the importance and usefulness of archiving for a body such as ICMI, and also at reflecting on the new challenges of building, maintaining and accessing an archive today, especially in the context of digital technology. In preparation for this workshop, besides various Skype meetings and email contacts, the ICMI Archive Curator visited the IMU Archive in Berlin in February 2016. (The programme of the ICME-13 workshop is to be found in the Appendix to this report.) Also on the occasion of ICME-13, a special “ICMI Archive afternoon” will be held at the ICMI/IMU booth on Wednesday July 27.

The actions launched by the IMU Archivist since her arrival in the IMU secretariat in 2011 have as an aim to transform the IMU/ICMI Archive into a more “professional” environment. These include for instance the implementation of professional archive tools, the digitisation of paper documents (mostly from the “old” archive in Helsinki), the data management of the archival units, the setting-up of search tools, the readability of metadata and the long-term preservation of storage. Of course, many of these actions are still on-going, as this is clearly to be seen within a long-term perspective. The IMU Archivist and both the IMU and ICMI Archive Curators are in regular contacts about these and other matters pertaining to the development of the archive.

It may be reminded that over the last four years, a substantial collection of documents have been added to the ICMI Archive: more than 80 books (proceedings of ICME-related conferences, programmes, bids for ICME congresses, etc.) plus many artifacts (congress bags, cups, pins, etc.). But more efforts are still needed along these lines.

Actions that turned out to be less fruitful are connected to the collection of paper documents (especially letters) from “not-too-distant” former Executive Committees (see the ICMI Archive Curator report dated May 22, 2013). But some further actions are still being taken in that direction. I wish to conclude this report with a few recommendations to the ICMI EC:

- The EC should make sure that all documents pertaining to the “administrative life” of the Commission during their term are being archived before it is completed. I have in mind here documents such as annual report of activities, annual financial reports, reports to the IMU GA, reports to the ICMI GA, etc. (Such documents used to be published in the ICMI Bulletin.) I would suggest these get systematically archived, both electronically and as paper documents.
- The EC should make an appreciation of the automatic archival system of emails that has been implemented during its term and make accordingly recommendations to the incoming EC and to the IMU Archivist. Archival of emails remains a challenge for all bodies and a close monitoring of this process is necessary.
- More generally, the EC should encourage the incoming EC to appreciate the importance of the ICMI Archive for the “good health”, so to say, of the Commission, and also to be aware of the IMU Archiving Guidelines.

Respectfully submitted,
Bernard R. Hodgson

“Programme of ICME-13 “Archive Workshop”

“OLDIES BUT GOODIES”: PROVIDING BACKGROUND TO ICMI MISSION AND
ACTIVITIES FROM AN ARCHIVAL PERSPECTIVE

Guillermo P. Curbera, Universidad de Sevilla, Spain
Bernard R. Hodgson, Université Laval, Québec, Canada
Birgit Seeliger, IMU Secretariat, Berlin, Germany

The aim of this workshop is to draw attention to, and reflect on, the importance and usefulness of archiving among the mathematics and mathematics education communities, presenting some of today’s modern technical tools and focusing on the particular case of the ICMI Archive—a subset of the Archive of the International Mathematical Union (IMU). This Archive contains a wealth of documents helping to understand how a scientific community operates at the international level. Through a selection of documents, we intend to illustrate the usefulness of archiving in order to keep an accurate image of the activity of mathematicians and mathematics educators, and their role in society. Questions to be examined include: By whom and for whom archiving? Why archiving? What archiving?

Discussion of the accessibility and long-term preservation of documents (analogue as well as digital) will include the issue of archiving emails. We will present the Media Archive, which corresponds to a new way of archiving images: the community archives its own history through this open media platform. We will present an overview of the ICMI Archive content, of how this material was typically collected, and about the categories of documents to be found therein. We will survey examples of recent research with a historical flavour using information found in the Archive. A selection of “gold nuggets” discovered among the Archive documents will be presented.

Planned timeline	Topic	Material / Working format / presenter
10 minutes	<p>1-) <i>Introduction</i></p> <p>An outline of the workshop:</p> <ul style="list-style-type: none"> • Archiving from an ICMI perspective • The ICMI Archive as a subset of the IMU Archive • Professional archiving today 	PDF presentation on screen, Guillermo Curbera, Bernard Hodgson, Birgit Seeliger
15 minutes	<p>2-) <i>The IMU Archive: past and present</i></p> <p>Challenges of archiving: The tasks of the IMU / ICMI Archive curators. <i>Why</i> archiving? <i>What</i> archiving? <i>By whom</i> and <i>for whom</i> archiving? History of the IMU Archive. Official guidelines for its use. Experience in using the Archive: books by Olli Lehto and Guillermo Curbera about the IMU and the ICM.</p>	PDF and video presentation on screen, Guillermo Curbera
5 minutes	Question and discussion period	Guillermo Curbera, Bernard Hodgson, Birgit Seeliger
25 minutes	<p>3-) <i>Technical aspects of archiving today</i></p> <p><i>How</i> to archive? <i>Where</i> to archive? Structure and search tools of the IMU / ICMI Archive. Archiving as a</p>	PDF presentation on screen, Birgit Seeliger
	<p>process in a worldwide discussion. Solutions and workflow for email archiving. Archiving for and with the community—presentation of the Media Archive platform.</p>	
5 minutes	Question and discussion period	Guillermo Curbera, Bernard Hodgson, Birgit Seeliger
15 minutes	<p>4-) <i>The content of the ICMI Archive</i></p> <p>Collecting material for the ICMI Archive. Main categories of documents. Looking back: recent historical research based on Archive documents. A few “gold nuggets” found in the ICMI Archive.</p>	PDF presentation on screen, Bernard Hodgson
5 minutes	Question and discussion period	Guillermo Curbera, Bernard Hodgson, Birgit Seeliger
10 minutes	<p>5-) <i>Conclusion</i></p> <p>Debate and conclusions</p>	Guillermo Curbera, Bernard Hodgson, Birgit Seeliger

3.2. Commission for Developing Countries (CDC)

<https://www.mathunion.org/cdc>

Report on the Activities of the IMU Commission for Developing Countries January 1 – December 31, 2016

by Olga Gil Medrano, Wandera Ogana and Lena Koch



The Commission for Developing Countries (CDC) is a nine-member commission. Its members are elected or appointed for a four-year term by the IMU General Assembly.

The CDC members 2015-2018 are:

- Wandera Ogana (Kenya) - CDC President
- Olga Gil Medrano (Spain) - CDC Secretary for Policy (since 1.1.2016)
- Srinivasan Kesavan (India) - CDC Secretary for Grant Selection
- Alf Onshuus (Colombia) - Latin American Member
- Angel Pineda (USA/Honduras) - CDC member appointed by the IMU Executive Committee
- Angel Ruiz (Costa Rica) - CDC member appointed by the ICMI Executive Committee
- Budi Nurani Ruchjana (Indonesia) - CDC member appointed by the IMU Executive Committee
- Mama Foupouagnigni (Cameroon) - African Member
- Polly Sy (Philippines) - Asian Member
- Shigefumi Mori (Japan) - IMU President (2015-2018) and Ex-officio CDC Member

The applications to the various CDC grant programs are evaluated and selected by CDC and additional committees:

CDC-Grants Selection Committee (CDC- GSC) (2015-2018)

The grants for conferences and the IMU-Simons Travel Fellowship and IMU-Simons African Travel Fellowship Program grants are allocated by the Grants Selection Committee (GSC). The GSC is a seven-member committee, chosen and supervised by the Commission for Developing Countries (CDC) and chaired by the CDC Secretary for Grants Selection.

Abel Visiting Scholar Program Selection Committee

The committee consists of three members: one member chosen by the Abel board (since July 2016 chosen by IMU EC), one member chosen by CDC and one member chosen by the IMU EC.

African Diaspora Mathematicians Program Selection Committee (2017-2019)

The ADMP Selection committee consists of four members from four countries.

IMU Breakout Selection Committee (2016-2018)

The committee consists of five members and one ex-officio, non-voting member.

CDC Volunteer Lecturer Program Selection Committee (2015-2018)

This CDC sub-committee supports and evaluates applications to the CDC Volunteer Lecturer Program. The committee consists of five members. All members are CDC members.

Applications and requests to all other CDC programs and projects are evaluated and selected by CDC.

The CDC and all CDC related activities are supported by staff members from the IMU Secretariat in Berlin, Germany who manage most of the administration of the CDC in addition to the many volunteers who support CDC activities worldwide. Two new programs are mainly administrated outside the IMU Secretariat, but receive support by staff members of the IMU Secretariat.

During 2016 the Commission for Developing Countries (CDC) has launched three (3) new programs (IMU-Simons African Fellowship Program, IMU Breakout Graduate Fellowship Program and African Diaspora Mathematicians Program and has continued to use the funds it receives from the International Mathematical Union (IMU) and other donors to support mathematics research and advanced mathematical teaching in developing and less affluent countries. CDCs work is guided by the basic principles incorporated into its original charge:

- I. Work with and support local mathematical leadership in developing countries.
- II. Leverage resources through partnering and networking with other organizations with goals compatible with the CDC mandate.
- III. Set clear norms of quality, transparency and accountability.

Guided by these principles, the CDC allocated its funds in 2016 for the following new and continuing activities:

A) Project Support Program

Under the Project Support Program the CDC supports capacity building projects and programs in mathematics and mathematics education, be they international, regional or local initiatives in developing countries. The CDC members evaluate and select the grant recipients.

B) Volunteer Lecturer Program

The goal of the Volunteer Lecturer Program is to offer universities in the developing world lecturers for intensive 2-4 week courses in mathematics at the advanced undergraduate or master's level.

C) Grants for Conferences

The Conference Support Program gives partial support to conferences organized in developing and economically disadvantaged countries. The Program also supports major international conferences occurring in developed countries to enable them to invite mathematicians from developing countries. The funds are for academic use only (travel or living expenses of invited speakers or participants coming from developing countries). The CDC Grant Selection Committee (GSC) selects the grant recipients.

D) IMU-Simons Travel Fellowship for Individuals

The IMU-Simons Travel Fellowship supports travel costs for research visits (minimum stay is four weeks) by mathematicians based in developing and economically disadvantaged countries to an international centre of excellence. The Simons Foundation, based in New York, funds the program. The Foundation has been annually giving the amount of 25,000 USD during the period 10/2014-09/

2016. In 2016 the program was extended until May 31, 2017. It replaces the Individual Research Travel Grant Program during this time. The CDC Grant Selection Committee (GSC) selects the grant recipients.

E) IMU-Simons African Fellowship Program

In 2016 a new grant program, the “IMU – Simons African Fellowship Program” was launched and will run for 5 years until September 2021. The program supports research sabbaticals for mathematicians from African developing countries employed in Africa to travel to an internationally known mathematical centre of excellence (worldwide) for collaborative research. The program will run for five years until September 2021 and receive 50,000 USD per year from the Simons Foundation, NY, USA. All travel and living expenses of the grantees will be covered by the fellowship up to 5,000 USD.

F) Abel Visiting Scholar Program (AVSP)

In 2013 the Niels Henrik Abel Board (Norway) and the CDC launched the Abel Visiting Scholar Program. The Niels Henrik Abel Board gives an annual grant of 350,000 NOK which includes 15,000 USD for the Abel Visiting Scholar Program to support mathematicians professionally based in developing countries to visit an international research collaborator for a period of one month. The period is extendable for up to three months in the case of matching support from the host institution. The AVSP is designed for postdoctoral mathematicians in the early stages of their professional careers. It is designed to offer the opportunity for a ‘research sabbatical,’ a necessary complement to teaching and other academic duties for mathematicians desiring to also sustain a viable research program. The Abel Visiting Scholar Program Selection Committee selects the grant recipients. The remaining amount of the annual Niels Henrik Abel Board grant is used for various CDC activities.

G) IMU Breakout Graduate Fellowship Program

Thanks to a generous donation by the winners of the Breakthrough Prizes in Mathematics – Ian Agol, Simon Donaldson, Maxim Kontsevich, Jacob Lurie, Terence Tao and Richard Taylor– the International Mathematical Union, with the assistance of FIMU and TWAS launched in 2016 a fellowship program to support postgraduate studies, in a developing country, leading to a PhD degree in the mathematical sciences. The IMU Breakout Graduate Fellowships offer a limited number of grants for excellent students from developing countries. The program is mainly administered by TWAS, supported by the IMU Secretariat.

H) Library Assistance Scheme

The IMU-CDC Library Assistance Scheme matches donors of mathematical materials with libraries in universities/research institutions in developing countries where there is a need for mathematical research literature. The CDC offers limited financial support for shipment costs for individual scientists or institutions wishing to donate books in the mathematical sciences to libraries in developing countries.

I) African Diaspora Mathematicians Program (ADMP)

In 2016 CDC initiated the African Diaspora Mathematicians Program. The objective of the program is to utilise the expertise of African Diaspora mathematicians, whilst at the same time encouraging collaboration in research by mathematicians in Africa and those in the African Diaspora. The programs aims to establish three partnerships in Africa between 1) Mathematicians with a PhD who were born and raised in Africa and are now full-time employed outside of Africa as professors in mathematics and 2) Mathematics academic units at any university in Africa who want to build long

term connections with African Diaspora Mathematicians and the home institution of the Diaspora Mathematician. The program is administered in Kenya (Nairobi University), supported by the IMU Secretariat.

J) Meetings

Since 2011 the CDC has met every two years at the IMU Secretariat in Berlin. In 2016 the CDC Secretary for Policy and the CDC President met with the IMU Secretary in Berlin. No CDC meeting was held in 2016. The CDC also supports the travel costs of its members to selected meetings or workshops.

K) Policy Issues

During its meetings or using e-mail, skype and a blog the CDC members discuss policy issues related to CDC activities.

L) Administration

Administrative costs are kept to no more than 10% of the CDC operating budget. The IMU Secretariat staff salaries and many other administrative expenses are covered by the IMU Secretariat budget, which receives its funds from the German Ministry of Education and Research (BMBF) and the Federal State of Berlin. The IMU Secretariat is hosted by the *Weierstrass Institute for Applied Analysis and Stochastics* (WIAS) in Berlin, Germany. The ICMI-CDC Administrator and the Project Assistant of the IMU Secretariat take care of all administrative tasks related to the above named CDC programs and activities except for the ADMP and IMU Breakout Graduate Fellowship Program Programs, which are administrated by other institutions, supported by the IMU Secretariat.

M) CDC Website

All updates, programs and information about all CDC programs can be found on the CDC website: <https://www.mathunion.org/cdc>.

The CDC website is edited by the ICMI-CDC Administrator and IMU Secretariat Project Assistant. The costs of the website and all technical costs are mainly covered by the IMU Secretariat funds (WIAS).

CDC Activities in 2016 in Detail

A) Project Support Program

Under the Project Support Program the CDC supports capacity building projects and programs in mathematics and mathematics education, be they international, regional or local initiatives in developing countries. The CDC members evaluate and select the grant recipients.

In 2016 four projects and activities were supported from CDC project funds:

1. Nepal Algebra Project (NAP)

The NAP supports Nepalese Mathematicians and has a duration of six years (2016-2021). Every year one course in Algebra (with 50 contact hours) is offered at the Master of Science (M.Sc.) and the Master of Philosophy (M.Phil) at Tribhuvan University in Kirtipur, Kathmandu, Nepal and is taught by several international lecturers. Each course lasts 10 weeks (each week five hours are given) starting the second week of May, ending by the end of July. Each course is divided into five modules, each of two weeks and every module is taught by different lecturers. In 2016 CDC supported the cost for Michel Waldschmidt and Francesco Pappalardi who taught the module on *Fields and Galois Theory* with 5,000 EUR. Detailed information about the supported course is available on the website of NAP hosted by RNTA: http://www.rnta.eu/nap/nap-2017/module_1.php.

2. Mentoring African Research in Mathematics (MARM)

In 2016 the MARM program received 11,330 EUR to support, together with the London Mathematical Society the continuation of the Mentoring African Research in Mathematics program (MARM). The

program links African academics with their UK and European counterparts via professional mentoring partnerships. In doing so, MARM provides the means and opportunities for African mathematicians to develop international working relationships while also improving the quality of academic provision within their home institution. Each partnership has collaboratively defined its own objectives and priorities specific to the needs of the African institution, as well as its own targeted methods of accomplishing these. Activities undertaken in 2016 have included: Exchange visits, lectures, seminars and workshop series at African institution, joint PhD supervision, mentoring and support for African postgraduate students with respect to wider academic and life skills, mentoring African early careers staff in research and other skills and developing of research contacts and networking. More information can be found on the program website www.lms.ac.uk/grants/mentoring-african-research-mathematics.

3. IBNI Prize 2016 for African Mathematicians

The Prize "Ibni Oumar Mahamat Saleh" had been created in memory of our colleague and to continue its commitment to Mathematics in Africa. In 2016 CDC supported the IBNI Prize 2016 with 1,500 EUR.

4. African Mathematics Millennium Science Initiative (AMMSI)

In 2016 the two students from Ivory Coast and two students from Congo received support from CDC to continue their university education with a partial grant from CDC. The total support from CDC in 2016 was 4,000 EUR.

B) Volunteer Lecturer Program

The goal of this program is to offer universities in the developing world lecturers for intensive 2-4 week courses in mathematics at the advanced undergraduate or master's level. In 2016 the CDC supported and reimbursed 11 lecturers who gave courses in developing countries under the CDC Volunteer Lecturer Program:

1. Prof. Chris Thron (USA) visited the University of Ilorin, **Nigeria** and taught a course in "Mathematical software (Octave/Matlab)" from April 11-23, 2016.
2. Prof. Chris Thron (USA) also visited the University of Ngaoundere, **Cameroon** and taught courses in "Analyse Numerique et Statistique" from March 14-April 1, 2016. His total costs (for the visit in Nigeria and Cameroon) were supported by CDC with 2,611 EUR.
3. Prof. Dirk Becherer (Germany) gave a course on Stochastics Calculus for Continuous Time Finance at AIMS, **Cameroon** from April 3-26, 2016. His travel and living cost were supported with 2,157 EUR.
4. Prof. Marco A. Garuti (Italy) gave a course "Introduction to Algebraic Geometry" at AIMS, **Cameroon** from Feb 22 to March 4, 2016. His travel and living cost were partially supported from the grant with 1,538 EUR.
5. Prof. David Li-Bland (USA) gave a course in "Differential Geometry", in Oct 2016 at University of Dar ES Salaam in Dar es Salaam, **Tanzania**. His travel and living cost were supported with 2,174 EUR.
6. Prof. Mark Gockenbach (USA) gave a course on "Optimization" from May 30 to June 24, 2016 in **Cambodia**. His travel and living cost were 3,992 EUR.
7. Prof. Michel Jambu (France) gave a course of Applied Geometry from Nov 20, 2015 to Jan 12, 2016 at the Royal University of Phnom Penh (R.U.P.P.), department of Master of Mathematics, **Cambodia**. He also supported the launch of the new Excellence Program and met the authorities of RUPP. His travel and living cost were 3,664 EUR.

8. Prof. Michel Jambu (France) gave a course at the University of Mandalay, **Myanmar** from Nov 1-17, 2016. His travel and living cost were supported with 1,855 EUR.

9. Prof. Crow (USA) gave a course in Abstract Algebra/Algebraic Structures at the Universitas Bung Hatta, Padang, **Indonesia** from Nov 8-28, 2015. Her travel and living cost were supported with 1,743 EUR.

10. Prof. Ruggeri (Italy) gave a lecture in Numerical Analysis at the Universidad de **Honduras** in Feb 2017. His flight costs to Honduras were 1,214 EUR.

11. Prof. Dalawat (India) gave a course at the School of Mathematics, IPM, Tehran, **Iran** in Numerical Analysis from Sep 7 to Oct 3, 2015. His travel and living cost were supported with 2,739 EUR.

C) Grants for Conferences

During Jan 1 – Dec 31, 2016, the Grant Selection Committee supported conferences, in the two existing categories:

Conferences in developing countries¹

Conferences in developed countries²

Conferences in developing countries

During 2016, **31 conferences** taking place in the following developing countries received a conference grant award:

Country	Number of Awards	Total value of awards (EUR)
Burkina Faso	2	2,500
Cameroon	2	3,000
Côte d'Ivoire	1	1,500
India	3	4,000
Indonesia	3	4,000
Iraq	1	1,000
Jamaica	1	2,000
Laos	1	2,000
Lebanon	1	2,000
Madagascar	1	1,500
Mongolia	1	1,000
Morocco	4	5,500
Nigeria	1	1,500
Nepal	2	2,000
Senegal	1	1,000
Serbia	1	1,000
Tunisia	1	1,500
Turkey	1	1,000
Ukraine	1	1,000

¹ Since December 2015 IMU classifies Developing Countries as those with **Gross National Income (GNI) per capita in USD**, not exceeding 11,000 USD, in accordance with the [United Nations data](#) (December 2015).

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

Vietnam	2	3,000
Total	31	42,000

Conferences in Developed Countries

Support was granted in 2 cases for conference participation of developing country mathematicians to conferences taking place in the following **developed countries**:

Country	Number of Awards	Total value of awards (EUR)
Argentina	1	1,500
Brazil	1	1,000
Total	2	2,500

Total Spending for Conference Grants /Year		Total value of awards (EUR)
2016	33	44,500*

* Not all grants were transferred in 2016, but will be transferred in 2017.

CDC Research Travel Fellowship Programs:

D) IMU-Simons Travel Fellowship for Individuals

During Jan1 – Dec 31, 2016, six mathematicians received support to travel abroad for individual research periods.

Home country and visiting country	Number of Awards	Total value of transferred grants (EUR)
Benin>Brazil	1	2,507
Uzbekistan> Spain/Spain/Slovakia	3	2,702
Iran>Germany/France	2	1,800
Total	6	7,009

The IMU Simons Funds are not budgeted to the general CDC budget, but kept in a separate budget line.

E) IMU-Simons African Fellowship Program

The program was launched Sep 1, 2016. During the interval Sep 1 to Dec 31, 2016, 5 mathematicians were selected. All fellowship awards were transferred in 2017.

Home country and visiting country	Number of Awards	Total value of awards (EUR)*
Malawi>India	1	1,900
Nigeria>Italy	1	4,000
South Africa>USA/Kenya/Canada	3	10,450
Total	5	16,350

**The funds were transferred in 2017. The IMU-Simons African Fellowship Program funds are not budgeted to the general CDC budget, but kept in a separate budget line.*

F) Abel Visiting Scholar Program

In 2016, the following three scholars received an Abel Visiting Fellowship Award.

Home country and visiting country	Number of Awards	Total value of awards (EUR)*
Philippines>Canada	1	4,563

Uzbekistan>Spain	1	2,500
Vietnam>Australia	1	4,340
Total	3	11,403

**The funds for the Abel Visiting Scholar Program (15,000 USD) are not budgeted to the general CDC budget, but kept in a separate budget line.*

G) IMU Breakout Graduate Fellowship Program

The selection process of the recipients of the first awardees of the IMU Breakout Graduate Fellowship concluded in November 2016 with the award of three full PhD grants to three students from developing countries engaged in a PhD degree in the mathematical sciences in a developing country. Two of the three graduate students live and study in Vietnam and Colombia; they are following the first year of the master and will receive funding for five years. One of the students from Ethiopia is in a more advanced stage of his Ph.D. formation in Botswana and will only need funding for two years. IMU Secretariat set up the online application form, created the website and gave basic support regarding first questions. The selection process was administered by TWAS. Also regular communication with the three grantees (including annual reporting to IMU) and payment of the fellowship is managed by TWAS. More information can be found here: <https://www.mathunion.org/cdc/scholarships-and-capacity-building/graduate-scholarships/imu-breakout-graduate-fellowship>.

H) Library Assistant Scheme

Prof. Claude Mitschi from Strasbourg, France donated and shipped in March 2016 mathematical books to the African Institute for Mathematical Sciences (AIMS) in Senegal. The shipment costs were 197 EUR.

I) African Diaspora Mathematicians Program (ADMP)

In 2016 the CDC decided to launch the African Diaspora Mathematician Program. CDC President Wandera Ogana (Kenya) is the chair of pilot program and supervises the administration of the program in Kenya. Initially, the program will be run as a pilot program in Africa for two years (May 2017 - June 2019). The African pilot program offers three partnerships to be established between a mathematician originally from Africa and now living and working outside of Africa and a mathematics department based in Africa. The pilot program is funded for two years with each partnership granted 7,000 EUR per year (in 2017 and 2018) to cover the cost of the African Diaspora Mathematician (who is volunteering and will not receive a salary). Besides the travel and living cost for the volunteers to spend 3 to 6 weeks in Africa, the amount of 1,000 EUR per year can be spent by the Diaspora Mathematician to cover the cost of educational material such as books, software, journals and other learning material. The African Diaspora mathematician shall visit the selected partner university in Africa once per year for 3 – 6 weeks in order to undertake the following activities, among others: Postgraduate (starting from Master level) teaching and examination, Postgraduate supervision, Curriculum design or improvement, Research collaboration, Mentorship of young staff members and postgraduate students, Advice on acquisition of software, literature and other educational materials, Exploring the possibility of establishing a formal link between the host university and the African Diaspora's home university or other universities, Deliver public talks to general public on the potential of mathematics and STEM for development. At the end of the two years, the partnerships will be evaluated by CDC. Depending on the success of ADMP, the CDC will decide whether to expand the program in Africa and extend it to other regions of the Developing World. In 2016 the program was launched and the online application form was set up. The call for applications was distributed widely. The deadline for applications was Jan 31, 2017.

J) Meetings and participation in CDC-related events

In January 2016 the new CDC Secretary for Policy Olga Gil Medrano (Spain), CDC President Wandera Ogana (Kenya) and IMU Secretary Helge Holden met in Berlin to discuss various CDC issues. Wandera Ogana participated in the Next Einstein Forum in Senegal in March 2016. Olga Gil

Medrano and Wandera Ogana also participated at ICME 13 in July 2016 and met with Helge Holden during ICME 13 in Hamburg, Germany. The CDC met in April 2017 at the University of Sussex, UK.

K) Policy Issues

CDC/ IMU Definition Developing Countries

In 2015 CDC decided to raise the limit of the gross national income (GNI) of a country to 11,000 USD (from previously 7,500 USD) in order to define Developing Countries. It was also agreed that this limit should be redefined every 4 years within the cycles of the ICMs, since some ICM decisions hinge on definition of Developing countries. Consequently, the 2015-2018 Definition for Developing Countries reads: „*IMU classifies Developing Countries as those with Gross National Income (GNI) per capita in USD, not exceeding 11,000 USD, in accordance with the United Nations data (December 2015).*“

In 2016 CDC decided on the following 5 Categories:

Priority 1 GNI per capita below 2.200 US\$

Priority 2 GNI per capita in the interval from 2,200 USD to 4,400 USD

Priority 3 GNI per capita in the interval from 4,400 USD to 6,600 USD

Priority 4 GNI per capita in the interval from 6,600 USD to 8,800 USD

Priority 5 GNI per capita in the interval from 8,800 USD to 11,000 USD

L) Administration

Administrative costs are kept to no more than 10% of the CDC operating budget. The CDC Administration is, unless mentioned differently, supported by staff members of the IMU Secretariat (based at the WIAS Berlin). The IMU Secretariat staff salaries and many other administrative expenses are covered by the IMU Secretariat funds, which receives an annual grant from the German Ministry of Education and Research (BMBF) and the Federal State of Berlin, Germany for administrative purposes.

M) CDC website

The website is edited by Lena Koch and Ramona Fischer and hosted at WIAS Berlin. Gerhard Telschow, the IMU Secretariat IT Support helped with many issues related to the CDC website, mailing lists, email accounts and most important the online application forms for the grant programs. Further information about CDC and its activities can be found on the website:

<https://www.mathunion.org/cdc>.

CDC Income

The CDC's regular income is an annual grant from the International Mathematical Union (IMU). The IMU in turn receives its financial support from IMU member countries.

Additionally the CDC received for its activities in 2016 support from the Niels Henrik Abel Board (Norway), the Simons Foundation in NY (USA), the Mathematical Society of Japan, and the American Mathematical Society (AMS).

FINANCIAL STATEMENT CDC 2016

Note: The Simons Funds, the Abel Visiting Scholar Program and the IMU Breakout Graduate fellowships are not budgeted to the general CDC budget, but kept separate.

CDC Finances 2016		
Revenue by Source		Income (CDC Account)
Savings CDC bank account		63,604 EUR
Annual Grant IMU		77,283 EUR
Grant Niel Henrik Abel Board		24,464 EUR
Donation Mathematical Society Japan		1,162 EUR
Donation AMS, Grant for VLP		9,201 EUR
Return of funds (un-used grant CANP Peru)		9,000 EUR
Total Funds Available in 2016		184,714 EUR
EXPENDITURE by Category		
Category	Details	Finalized Payments in 2016
Administration		246 EUR
Bank Transfer Costs		2,680 EUR
CDC members participating in meetings (including costs for the CDC Meeting 2017)		8,491 EUR
Grants for Conferences granted in 2015, paid in 2016		12,000 EUR
Grants for Conferences 2016		31,000 EUR
IMU Breakout Graduate Fellowship	Administrative Costs	128 EUR
Library Assistance Scheme		197 EUR
Project Support Program	African Mathematics Millennium Science Initiative (AMMSI) grant approved 2015, transferred in 2016	4,000 EUR
	Mentoring African Research in Mathematics (MARM) 2013-2016	11,330 EUR
	IBNI Prize 2016 for African Mathematicians	1,500 EUR
	Nepal Algebra Project (NAP)	5,000 EUR
Volunteer Lecturer Program		23,687 EUR
Total spending in 2016		100,259 EUR
Remaining Savings as of DEC 31, 2016		84,455 EUR
Bank account statement as of Dec 31, 2016		84,455 EUR

IMU/CDC most gratefully acknowledges the continuing generous support from:

- IMU member countries

- WIAS Berlin (host of the IMU Secretariat)
- German Federal Ministry of Education and Research
- City of Berlin (Germany)
- Simons Foundation NY (USA)
- Niels Henrik Abel Board (Norway)
- Mathematical Society of Japan
- American Mathematical Society (AMS)
- NAS USNC/M (USA)
- All volunteers who support CDC activities

to help to promote and sustain mathematics in the developing world.

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

<https://www.mathunion.org/ichm>

Report IMU 2016

by Craig Fraser

1. Commission organization

a. List officers and members of governing body and governance procedures.

The Executive Committee of the ICHM consists of the following members:

Chair

Craig Fraser (Institute for the History and Philosophy of Science and Technology, University of Toronto, Toronto, Canada) craig.fraser@utoronto.ca

Vice-chair

June Barrow-Green (Faculty of Mathematics, Open University, Milton Keynes, UK) June.Barrow-Green@open.ac.uk

Secretary

Elena Ausejo (Facultad de Ciencias Matemáticas, University of Zaragoza, Zaragoza, Spain) ichs@unizar.es

Treasurer

Henrik Kragh Sørensen (University of Copenhagen, Denmark) henrik.kragh@ind.ku.dk

Members-at-Large

Abdelmalek Bouzari (Algeria) Bouzari@ens-kouba.dz

Natalja Ermolaeva (Russia) naterm@NE2301.spb.edu

Clara H. Sánchez (Colombia) chsanchezb@unal.edu.co

Niccolò Guicciardini (Italy) niccolo.guicciardini@fastwebnet.it

Luis Saraiva (Portugal) imsaraiva@fc.ul.pt

Sergio Nobre (Brazil) sernobre@rc.unesp.br

GUO Shirong (China) guoshirong1959@163.com, gsr@imnu.edu.cn

IMU Representatives

Ciro Ciliberto (Dipartimento di Matematica, Università degli Studi di Roma Tor Vergata, Rome, Italy)
cilibert@mat.uniroma2.it

Shrikrishna G. Dani (Department of Mathematics, Indian Institute of Technology - Bombay, Powai, Mumbai, India) sdani@math.iitb.ac.in, shrigodani@gmail.com

Ex-Officio

Thomas Archibald (Canada) tarchi@sfu.ca

Reinhard Siegmund-Schultze (Norway) reinhard.siegmund-schultze@uia.no

Karen Parshall (USA) khp3k@virginia.edu

Joseph W. Dauben (USA) jdauben@att.net

The Executive Council of the ICHM had four electronic meetings (E-meetings) in 2016.

b. Sub-committees and their functions, with brief details of activities.

A subcommittee has been struck to receive nominations and make a recommendation for the Kenneth O. May Prize, to be awarded at the Rio ICHST Congress in 2017.

The Kenneth O. May Medal and Prize is given for outstanding contributions to the history of mathematics on the occasion of the International Congress of History of Science.

A subcommittee has been struck to make a recommendation for the Montucla Prize, to be awarded at the Rio ICHST Congress in 2017.

The Montucla Prize is awarded by the Executive Committee of the International Commission for the History of Mathematics every four years to the author of the best article by a junior scholar published in *Historia Mathematica* in the four years preceding the International Congress of History of Science and Technology.

c. Details of membership numbers of the Commission.

There are 46 National Members of the ICHM: Algeria, Australia, Austria, Belgium, Belorussia, Brazil, Canada, China, Costa Rica, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Guatemala, Iceland, Iran, Israel, Italy, Japan, Kazakhstan, Korea, Luxemburg, Mexico, Netherlands, New Zealand, Norway, Poland, Portugal, Russia, Saudi Arabia, Singapore, Slovak Republic, Spain, Sweden, Switzerland, Syria, Taiwan, Tunisia, Turkey, Ukraine, United Kingdom, USA. Individuals are listed at <https://www.mathunion.org/ichm/about-us/members>.

d. URL of Commission website.

<https://www.mathunion.org/ichm>. It is updated at least four times yearly.

2. Activities

a. Activities undertaken or sponsored by the Commission in the last year.

The Grattan-Guinness Archival Research Travel Grant

ICHM Co-Sponsored 27th Novembertagung on the History of Mathematics (Aarhus University, Sandbjerg Gods, Denmark, November 24-26, 2016)

ICHM Co-Sponsored Conference Mathematical Biography: A Mactutor Celebration (St. Andrews University, Scotland, September, 16-17, 2016)

ICHM Co-Sponsored 13th Austrian Symposium on the History of Mathematics (Miesenbach, Lower Austria, May 1-7, 2016)

Report on the ICHM Co-Sponsored Conference *Mathematics Emerging: a tribute to Jackie Stedall and her influence on the history of mathematics* (The Queen's College, Oxford, UK, April 9-10, 2016)
Report on the ICHM Co-Sponsored AMS-MAA Special Sessions on History of Mathematics (Seattle, Washington, USA, January 6-8, 2016)

b. Publications arising from the work of the Commission in the last year.

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. The journal is currently edited by Thomas Archibald (Simon Fraser University, Canada) and Reinhard Siegmund-Schultze (University of Adger, Norway). It is published by Elsevier Science and is available electronically to subscribers of [ScienceDirect](#).

c. Other activities supported in the last year.

The ICHM maintains an international e-mail list. This list serves to send out information from the ICHM to historians of mathematics internationally. Any historian of mathematics may become part of this e-list simply by contacting the Secretary of the ICHM.

3. Future plans

a. Activities planned for the next year.

ICHM Co-Sponsored AMS-MAA Special Sessions on History of Mathematics (Atlanta, Georgia, USA, January 4-5, 2017) (No financial aid is being requested).

ICHM Co-Sponsored Symposia on the History of Mathematics at the 25th International Congress of History of Science and Technology (ICHST, Rio de Janeiro, Brazil, July 23-29, 2017)

S-79. Mathematical Methods at Work in Ancient China—Local Applications with Global Connections

S-26. State of the art in the history of mathematics in Iberoamerica

S-27. The resurgence of applied mathematics 1850-1950: national and international, academic, industrial and military contexts

S-82. Global Mathematics

Kenneth O. May Medal and Prize, to be awarded at the Rio ICHST Congress in 2017

The Kenneth O. May Medal and Prize is given for outstanding contributions to the history of mathematics on the occasion of the International Congress of History of Science.

Montucla Prize 2017, to be awarded at the Rio ICHST Congress in 2017

The Montucla Prize is awarded by the Executive Committee of the International Commission for the History of Mathematics every four years to the author of the best article by a junior scholar published in *Historia Mathematica* in the four years preceding the International Congress of History of Science and Technology.

b. Plans for development of the Commission's website.

There are plans to remodel the ICHM website with the assistance of website specialists from the International Mathematical Union. It is expected that this will take place in 2017.

c. Planned changes to the governance or organization structure of the Commission.

The current ICHM rules of governance are being reformulated as "terms of reference" for inter-union member commissions of the DHST and the IMU.

4. Financial report

Expenditures for the past year are website (169 USD), administration (115 USD) and conferences (1,116 USD). Conference organizers submit reports on their conferences that are published on the ICHM website. The financial assistance is offered to the conference organizer in the form of a grant. Although a summary of how the funds are used is required, the ICHM does not currently employ detailed accounting procedures involving scans of receipts.

We are budgeting for 180 USD (website costs), 130 USD (administrative costs) and 1,500 USD (conference support). The conference funds will support participation in the four ICHM co-sponsored symposia at the ICHST in Rio next summer.

The financial position of the ICHM is currently very good. We receive funds each year from Elsevier for our oversight of the journal *Historia Mathematica*, the official journal of the ICHM. However, we are expecting very considerable expenditures in 2017 in connection with the ICHST. The ICHM provides honoraria and covers travel expenses for the May and Montucla prize winners – there are typically two May Prize winners. Travel costs to Rio are expected to be much larger than the corresponding costs were for the congresses in Budapest and Manchester. The ICHM has agreed to provide 12,000 USD in support for travel for participants in financial need for the four ICHM co-sponsored symposia. In addition to this, there will be other conferences in 2017 that the ICHM will consider for co-sponsorship.

3.4. Committee on Electronic Information and Communication (CEIC)

<https://www.mathunion.org/ceic>

CEIC Activity Report 2016

James H. Davenport

1 Global Digital Mathematics Library

Background. On August 17, 2014, in conjunction with the International Congress of Mathematicians in Seoul, South Korea, the IMU and CEIC hosted a meeting of a select group of 21 experts plus at least eight remote participants to plan the next practical steps towards the construction of the Global Digital Mathematical Library (GDML). As a result, a smaller eight person working group (WG) under the sponsorship of the IMU, was created. The WG members are Patrick Ion chair (USA, CEIC), Thierry Bouche (France, CEIC), Bruno Buchberger (Austria), Michael Kohlhase (Germany), Jim Pitman (USA), Olaf Teschke (Germany), Stephen Watt (Canada), and Eric Weisstein (USA). The WG is charged with the tasks of designing a road map for the practical next steps towards the GDML, determining its organizational structure, prioritizing the different requirements for its implementation, estimating an incremental budget, both start-up and sustaining funds, and fostering the writing of proposals to funding organizations.

2016 events. The WG held 30 minuted telecons in 2016. The WG organized a session at the January 2016 Joint Mathematics Meeting in Seattle, and an Alfred P. Sloan/Wolfram/Fields workshop on Semantic Capture Language, in February 2016 in Toronto: see <http://www.wolframfoundation.org/programs/SemanticWorkshopWhitePaper.pdf>. In addition, information sessions were organized at ICMS 2016 (<http://staff.bath.ac.uk/masjhd/Meetings/JHDonICMS2016.pdf>, sections 2.1 and 4.5), 7th ECM 2016 and CICM 2016. Further outreach sessions are planned for 2017.

The main activity of the WG was in organizing funding to establish IMKT. This will be a charity located in Canada (but with the opportunity to have subsidiaries elsewhere to benefit from different jurisdictions charitable foundation arrangements). An application, with numerous letters of support, was submitted to the Alfred P. Sloan Foundation. At the very end of 2016 the WG heard that it had been accepted, and plans are now well under way for the formal establishment of IMKT.

2 Other Business

CEIC considered various other issues.

DOIs. We received the report of a working group set up to investigate IMU's need for DOIs. DOIs are persistent identifiers, and the need to manage this should be fed into website design.

IMU-Net. CEIC's column in IMU-Net is now called "CEIC Notes and Comments". Carol Hutchins maintained our liaison here: James Davenport has taken over for 2017.

Copyright. The 2001 "Best Practice" document was looking dated. It needs updating to cover items such as Green/Gold Open Access, Creative Commons licences (which version?), copyright in items such as TeX macros, interaction between arXiv and publishers' policies. We had established a working party to look at this, but no progress has been made. In 2017 we will restart this process.

ICSU (International Council for Science). CEIC is an Associate Member of the ICSU World Data System. Olga Caprotti maintained our liaison here: James Davenport has taken over for 2017.

Website. IMU has commissioned a new website. CEIC has fed in several requirements, including the need for analytics, and the need to be sensitive to low-bandwidth connections. We look forward to continued involvement in this process.

3 Membership

At the end of this year Olga Caprotti and Carol Hutchins reached the end of their terms of office. Both made great contributions to CEIC and IMU, and will be missed. We welcome Alf Onshuus (Universidad de los Andes, Columbia).

4 Expenditure

Expenditure in 2016 related to CEIC activities was EUR 2,706.26.

3.5. Committee for Women in Mathematics (CWM)

<https://www.mathunion.org/cwm>

Report of the IMU Committee for Women in Mathematics in 2016

Marie-Françoise Roy and Caroline Series

Committee Members

Marie-Françoise Roy, France (Chair); Caroline Series, UK, (Vice Chair); Carolina Araujo, Brazil; Bill Barton, New Zealand; Ari Laptev, UK and Sweden; Kristin Lauter, USA; Sunsook Noh, S. Korea; Marie-Françoise Ouedraogo, Burkina Faso; Sujatha Ramdorai, Canada; Betül Tanbay, Turkey. Non-voting IMU EC Liaison: John Toland, UK.

Activities funded by our 2016 call

We received 48 applications and approved 7 networks each to be funded by €3000, in Colombia, India, Indonesia, Kazakhstan, Mexico, Senegal and Tunisia. All the activities took place successfully. In particular the project to create a Network in Latin America is shaping up and the Network in Africa (AWMA) is more and more active.

See <https://www.mathunion.org/cwm/events/cwm-sponsored-events> and for a detailed account see Annex D.

Second CWM meeting in Berlin on 19th July 2016

Five CWM members attended, SR was replaced by Shreemayee Bora and KL by Karen Vogtmann. AL, CA and BT (due to the crisis in Turkey) were not able to come.

The main topic of discussion during the meeting was to identify future activities. JT reported that the IMU EC was impressed by the way resources have been allocated by CWM thus far, and that it had offered to consider a higher level of funding if worthwhile activities were identified (up to €10K per year up to 2018). It was decided that the main call would be for three types of activity: for networks of women in mathematics as in 2016; for a Summer/Winter school with all women speakers and advertised mainly for women participants (although participants of both genders are welcome to attend); for any other project for researching and/or addressing issues encountered by women in mathematics. Maximum contribution €3000 for each project.

We also decided to make separately a different type of call: to support women already funded to go to a conference or meeting, but who need extra funds to make it possible (for example, for child care, separate accommodation, or more appropriate travel). Maximum grant €500, total of €5000 available. We also decided to pay for the design and printing of a CWM flyer and poster.

For a detailed report of the Berlin CWM Meeting see Annex A.

Gender Gap

We decided in the CWM Berlin meeting to join forces with the International Union of Pure and Applied Physics (IUPAP) and the International Union of Pure and Applied Chemistry (IUPAC) to submit a project to ICSU entitled "*A Global Approach to the Gender Gap in Mathematical and Natural Sciences: How to Measure It, How to Reduce It?*" MFR and BB were nominated to work on this. In the end IMU and IUPAC became the lead applicants with IUPAP being a supporting applicant only. Several other supporting applicants joined: the International Astronomical Union (IAU), International Union of Biological Sciences (IUBS), International Council for Industrial and Applied Mathematics (ICIAM), United Nations Educational, Scientific and Cultural Organization (UNESCO), Gender in Science, Innovation, Technology and Engineering (GenderInSite).

Barriers to achievement by women in mathematical and natural sciences persist, especially in developing countries. The aim of the project is to produce sound data to support the choices of interventions that ICSU and member unions can feasibly undertake. It will provide evidence for informed decisions, including trends – since the situation for women continues to change around the world, with some negative developments – and will provide easy access to materials proven to be useful in encouraging girls and young women to study and work in these fields. It will do this through a *Joint Global Survey* planned to reach 45,000 respondents in more than 130 countries using at least 10 languages, together with a *Joint Study on Publication Patterns* which will analyze relative to gender and location comprehensive metadata sources corresponding to publications of more than 500,000 scientists since 1970. Regional information about careers, jobs and salaries will be provided.

The contrasts and common ground across regions and cultures, less developed and highly developed countries, men and women, mathematical and natural sciences, will be highlighted.

The project has been approved by ICSU on 7 February 2017 (budget from ICSU €100 000 per year in 2017, 2018 and 2019).

For more information on the project see Annex E.

CWM ambassadors

Based on SN's list of contacts from ICWM Seoul and various other sources, we compiled and contacted a list of about 100 so-called *CWM Ambassadors*, each of whom has the job of disseminating information such as CWM funding calls in her geographical or mathematical neighborhood, and equally of keeping CWM informed about relevant activities or initiatives. The list is posted on the CWM website. We feel this will be a more effective and efficient way of disseminating information than attempting to compile a huge list of all possible female mathematicians.

For the current list of CWM Ambassadors, see Annex F.

CWM website and publicity

The website is updated on a regular basis by CS, with input from CWM members. In particular we post details of relevant events. We note the increasing number of countries which now have some form of organization for female mathematicians, see www.mathunion.org/organizations/by-country/. We are the only organization gathering such information internationally. The entire IMU website is being redesigned and CS is on a small IMU committee dealing with this.

See <https://www.mathunion.org/cwm>

CWM flyer and poster

Through BT we commissioned the design of a CWM flyer and poster. These are ready and in print in Berlin. We intend to distribute them through volunteer CWM Ambassadors and organizers of CWM funded events.

News from (WM)² and CWM at ICM Rio

CWM's proposed meeting *World Meeting for Women in Mathematics (WM)²* has been accepted as a satellite event for ICM 2018. It will be held in Rio on Sunday July 31st, 2018. CA is the main organizer as well as a local organizing member for ICM 2018. A scientific committee for (WM)² has been formed by CWM with Georgia Benkart of University of Wisconsin-Madison as chair.

In addition to (WM)², CWM is organizing a session with presentations (including the Gender Gap project), discussions and a party including posters of CWM funded activities inside ICM Rio. Formally, this session is totally independent of (WM)², but of course activities will be coordinated.

Promoting good practice

MFR and AL organized a discussion at the annual European Research Center on Mathematics 2017 meeting in St Petersburg on "*What can be the role of ERCOM centers in promoting practices that ensure equal opportunities for women?*". There were interesting reports by CIRM, INI and MFO. It was decided to ask each ERCOM center for a report on these issues in 2017.

Budget and activities supported in 2017

The 2016 call for Networks and Schools received 38 applications. CWM has decided to support 12 of them for a total of €4250. These are for networks, schools and other projects and will take place in Brazil, Canada (round table "*Women in Mathematics in the Americas*" during the Mathematical Congress of the Americas 2017), Morocco, Chile, India, Nepal, Tunisia, South Africa, Iran, Vietnam,

Mexico and Japan. CWM's support ranges from €3000 to €750. We are supporting Gabriel Araujo Pardo (UNAM, Mexico) to attend the AWM Symposium in Los Angeles (April 2017) where she will give a presentation of CWM. The call for Supplementary Grants will be closed at the end of February 2017.

Activities of CWM members

Attendance at CWM sponsored events: MFR attended the Kazakhstan meeting; SN the Indonesia meeting; MFO and MFR the Tunisia meeting and BT an IWM (Indian) event. MFR met with Jana Rodriguez Hertz who is a mathematician and Vice Chair of the Organization for Women in Science for the Developing World in Latin America.

CWM operation mode and Liaison with EC

Apart from the Berlin meeting, most of CWM's work has been done by email. Skype and phone calls have also been used. The liaison with EC through JT has been active and regular. MF and CS met in London in February 2016 to discuss ongoing issues. We would like to thank the IMU office staff who have consistently been very helpful.

Future meetings

A CWM meeting directly funded by IMU will take place in Berlin on 29-30 May 2017. All CWM members expect to attend except KL who will be replaced by Ami Radunskaya, AWM president from Feb. 2017. Neela Nataraj, who attended our initial meeting in 2015 and who has given a lot of help in coordinating and preparing reports from the CWM sponsored events, will also attend. MFR and CS will have a preliminary meeting in London at the beginning of May.

The initial workshop of the Gender Gap project will take place in Paris from 1 to 3 June.

Annexes

- A Report from the meeting in Berlin
- B CWM call
- C CWM call for supplementary grants
- D Synthetic report of 2016 activities
- E Gender gap ICSU project
- F List of CWM ambassadors

CWM Expenditure 2016

Income

Remainder from 2015	5,367.11 EUR
IMU CWM 2016	19,320.00 EUR
FIMU	5,958.66 EUR
TOTAL	30,645.77 EUR

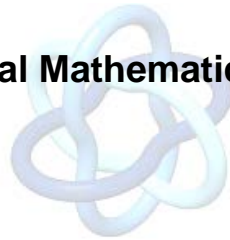
Expenses

activities	22,777.00 EUR	79.92 %
Flyers and logos	1,500.00 EUR	5.26 %
Berlin meeting	2,019.37 EUR	7.09 %
Other meetings of CWM members	1,568.61 EUR	5.50 %
Bank charges	633.38 EUR	2.22 %
TOTAL	28,498.36 EUR	

4. Circular Letters of the IMU Secretary to the Adhering Organizations

IMU AO Circular Letter 1/2016

International Mathematical Union



April 8, 2016

IMU AO Circular Letter 1/2016

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary

Nomination of invited plenary and sectional speakers for ICM 2018

Dear colleagues,

The Program Committee (PC) for the International Congress of Mathematicians 2018 in Rio de Janeiro, Brazil, August 1-9, 2018 has been set up. At this moment in time the Adhering Organizations of IMU and the mathematical societies worldwide are invited to nominate plenary and sectional speakers.

Attached to this circular letter please find the list of the ICM 2018 sections, as decided by the Program Committee. When you make nominations for speakers please specify whether you suggest them as plenary speakers or section speakers. In case of proposals of section speakers please indicate to which sections you would like the persons to be invited. Shared lectures between sections are also possible.

All communication concerning the scientific program of ICM 2018 is handled by the Chair of the Program Committee, Prof. János Kollár. Please direct all your proposals for invited plenary and sectional speakers to Prof. János Kollár using the email address chair@pc18.mathunion.org.

Nominations should be received by the PC Chair no later than November 1, 2016.

Sincerely

Helge Holden
Secretary of the International Mathematical Union

IMU AO Circular Letter 2/2016

International Mathematical Union



April 21, 2016

IMU AO Circular Letter 2/2016

To: The Adhering Organizations of the International Mathematical Union (IMU)
(Adhering Organizations of Associate Members receive this letter for information)

From: Helge Holden, IMU Secretary

- **Postal Ballot 01/16 Application for full Membership of Malaysia**
- **Postal Ballot 02/16 Application for Change of Group of Adherence of Turkey**

Dear colleagues,

- Malaysia that has been an Associate Member since 2012, has applied for full membership of the IMU. The Executive Committee of the IMU unanimously recommends the application. The enclosed document which was submitted by the Malaysian Academy of Mathematical Scientists (AISMM) reports on the mathematical activities in Malaysia as well as on the activities organized by the AISMM.
- Turkey has requested a change from Group I to Group II. The Executive Committee of the IMU unanimously recommends this change. Enclosed is an overview of the developments of Mathematics in Turkey during the last 10 years (2005–2015) preceded by a historical account, which was submitted by the Turkish Mathematical Society.

Postal ballot sheets will be sent to the Adhering Organizations by regular mail.

Please vote on the applications of Malaysia and Turkey using the postal ballots, and return the ballots by mail, email or fax

by June 30, 2016

to the address indicated on the ballot form.

[Ballots are sent by regular mail only, as ballots sent out by email (with possibly multiple recipients) could lead to conflicting votes of one member country.]

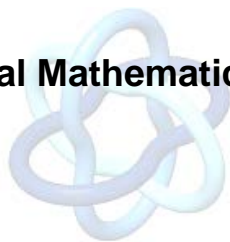
Sincerely

Helge Holden
Secretary of the International Mathematical Union

Encl.

IMU AO Circular Letter 3/2016

International Mathematical Union



April 21, 2016

IMU AO Circular Letter 3/2016

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary

Possible adjustments of the rules for IMU awards

Dear colleagues,

At the previous General Assembly (GA) in 2014, various issues regarding IMU awards, and in particular, the Fields Medal, were discussed. Specifically, the following resolution (Resolution 11, complete text attached) was passed, asking for an ad-hoc committee to formulate recommendations about

- 1) announcing the prize winners before the opening ceremony of the ICM,
- 2) the possibility of single awards being shared by several collaborators, and
- 3) changing or relaxing the currently specified age limits.

The Executive Committee (EC) of the IMU established an ad-hoc committee, chaired by John Ball (previous President of IMU) to consider these issues and formulate recommendations. The ad-hoc committee's report (attached) was presented by John Ball at the IMU EC meeting that took place on April 2–3, 2016, in Kyoto.

The recommendation of the ad-hoc committee is to impose no changes in the rules governing the IMU awards. The IMU EC decided unanimously to follow the recommendation of the ad-hoc committee.

The ad-hoc committee report is sent to you for consideration. Possible changes would have to be decided at the GA in 2018. If you want to make a proposal regarding this issue, please send it to secretary@mathunion.org no later than

January 1, 2018.

Sincerely

Helge Holden
Secretary of the International Mathematical Union

IMU AO Circular Letter 4/2016

International Mathematical Union



April 22, 2016

IMU AO Circular Letter 4/2016

To: The Adhering Organizations of the International Mathematical Union (IMU)
(Adhering Organizations of Associate Members receive this letter for information)

From: Helge Holden, IMU Secretary

The IMU Breakout Graduate Fellowship Program

Dear colleagues,

The IMU is today launching the novel IMU Breakout Graduate Fellowship Program.

Thanks to a generous donation by the winners of the Breakthrough Prizes in Mathematics – Ian Agol, Simon Donaldson, Maxim Kontsevich, Jacob Lurie, Terence Tao and Richard Taylor – IMU with the assistance of FIMU and TWAS is today launching a fellowship program to support postgraduate studies in a developing country, leading to a PhD degree in the mathematical sciences. The IMU Breakout Graduate Fellowships will offer a limited number of grants for excellent students from developing countries.

The deadline for nominations is 09:00 am CET on 22 June 2016. Further information can be found in the attachments.

Please help us in making this initiative widely known.

Sincerely

Helge Holden
Secretary of the International Mathematical Union

IMU AO Circular Letter 5/2016

International Mathematical Union



April 22, 2016

IMU AO Circular Letter 5/2016

To: The Adhering Organizations of the International Mathematical Union (IMU)
(Adhering Organizations of Associate Members receive this letter for information)

From: Helge Holden, IMU Secretary

Call for nominations to the Nominating Committee of IMU

Dear colleagues,

This email marks the beginning of the preparations of the next meeting of the IMU General Assembly (GA) to be held in São Paulo, Brazil on July 29-30, 2018.

The IMU Executive Committee has started forming the Nominating Committee (NC), whose task it is to present slates of nominations to the Adhering Organizations (AOs) prior to the GA meeting in São Paulo. Every AO is requested to nominate one person for this Nominating Committee.

The NC is one of the most important IMU committees since it has a strong influence on the composition of the IMU leadership for the term 2019–2022.

The role of the Nominating Committee is described in detail at:

http://www.mathunion.org/fileadmin/IMU/EC/Procedures_for_Election_2016-04-22.pdf

A brief review of the duties of the NC can be found below.

The composition of the NC is as follows:

- (a) The President of IMU.
- (b) The Chair (chosen by the IMU President).
- (c) Three other persons (chosen at random from AO nominations).
- (d) Two persons with experience of IMU (chosen jointly by the NC Chair and the IMU President).

This call for nominations concerns the three persons mentioned under item (c).

The IMU Executive Committee asks for the nomination of persons

- who are not current members of the IMU Executive Committee,
- who are willing to serve, and
- who do not work in the same country as the NC Chair or the IMU President.

The IMU President Shigefumi Mori has chosen Martin Grötschel (IMU Secretary 2007–2014) as the Chair of the NC. In particular, this implies that no person working in Japan or in Germany can be nominated.

One person is to be chosen from nominations submitted by Groups I and II, one person chosen from nominations submitted by Groups III and IV and one person chosen from nominations submitted by Group V. Each Adhering Organization may submit one name of a person who is willing to serve. If there are no nominations in one of these three categories, then a person will be chosen at random from the other two categories.

All submissions are to be sent via email, post, or fax to IMU at the address: International Mathematical Union, Markgrafenstr. 32, 10117 Berlin, Germany (Fax: +49 30 20372-439). All email submissions must be sent from the official email address of the Adhering Organization to the IMU Secretary at secretary@mathunion.org.

Additional requirements:

- Every nomination of a candidate has to be accompanied by a statement of the candidate that he or she is willing to serve.
- No member of the Nominating Committee will be eligible to hold an office for 2019–2022 on the IMU EC, CDC or ICHM.

The deadline for receipt of nominations from which a random selection will be made, is

August 1, 2016.

The Nominating Committee is scheduled to be complete by October 1, 2016, and according to the tradition, the AOs will be informed about its composition at that time.

Sincerely,

Helge Holden
Secretary of the International Mathematical Union

Duties of the IMU Nominating Committee

- (a) Nomination slates will be formed for the IMU Executive Committee (EC), IMU Commission for Developing Countries (CDC), and the International Commission on the History of Mathematics (ICHM).
- (b) The slates for the commissions will be formed taking advice from the current officers of these commissions, but this advice is not binding on the IMU Nominating Committee.
- (c) The IMU Nominating Committee will nominate one name for the position of President of IMU, Secretary of IMU, President of CDC, and Secretaries of CDC and one name for each of the two Vice Presidents of IMU.

The IMU Nominating Committee will nominate at least two more names than the number of Members-at-Large of IMU and CDC, and for the ICHM representatives.

IMU AO Circular Letter 6/2016

International Mathematical Union



July 14, 2016

IMU AO Circular Letter 6/2016

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary

Result of applications from Malaysia and Turkey

Dear colleagues,

I am happy to report about the outcome of the postal ballots on the applications from Malaysia and Turkey, see IMU AO Circular Letter 2/2016 (http://www.mathunion.org/fileadmin/IMU/Publications/CircularLetters/2015-2016/IMU_AO_CL_2_2016.pdf).

The vote on Malaysia's application for full IMU Membership (from Associate Membership) yielded a positive result.
As of July 2016, Malaysia is a Member in group I of the IMU.

The vote on Turkey's request to change from group I to group II yielded a positive result.
As of July 2016, Turkey adheres to group II of the IMU.

Thank you for your contributions.

Sincerely,

Helge Holden
Secretary of the International Mathematical Union

IMU AO Circular Letter 7/2016

International Mathematical Union



August 1, 2016
IMU AO Circular Letter 7/2016

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary

Call for nominations for IMU prizes

Dear colleagues,

As Secretary of the IMU I invite you to submit nominations for the IMU distinctions listed below, thus assisting the corresponding committees in their task of selecting the awardees who will receive their distinctions at ICM 2018 in Rio de Janeiro.

Here is the list of awards for which we presently seek nominations, each listed with the email address to which nominations can be sent, and with its short description:

– Fields Medals – Chair: IMU President Shigefumi Mori. Email: chair@fm18.mathunion.org

The Fields Medals are awarded every 4 years on the occasion of the International Congress of Mathematicians to recognize outstanding mathematical achievement for existing work and for the promise of future achievement, see award details at <http://www.mathunion.org/general/prizes/fields/details/>.

– Rolf Nevanlinna Prize – Chair: Tony F. Chan. Email: chair@nevanlinna18.mathunion.org

The Nevanlinna Prize is awarded once every 4 years at the International Congress of Mathematicians, for outstanding contributions in mathematical aspects of information sciences, see award details at <http://www.mathunion.org/general/prizes/nevanlinna/details/>.

– Carl Friedrich Gauss Prize – Chair: Björn Engquist. Email: chair@gauss18.mathunion.org

The Gauss Prize is awarded once every 4 years to honor a scientist whose mathematical research has had an impact outside mathematics – either in technology, in business, or simply in people's everyday lives, see award details at <http://www.mathunion.org/general/prizes/gauss/details/>.

– Chern Medal Award – Chair: Caroline Series. Email: chair@chern18.mathunion.org

The Chern Medal is awarded every 4 years on the occasion of the International Congress of Mathematicians to an individual whose accomplishments warrant the highest level of recognition for outstanding achievements in the field of mathematics, see award details at <http://www.mathunion.org/general/prizes/chern/details/>.

– Leelavati Prize, sponsored by Infosys – Chair: Gert-Martin Greuel. Email: chair@leelavati18.mathunion.org

The Leelavati Prize, sponsored by Infosys, is intended to accord high recognition and great appreciation of the IMU and Infosys of outstanding contributions for increasing public awareness of mathematics as an intellectual discipline and the crucial role it plays in diverse human endeavors, see award details at <http://www.mathunion.org/general/prizes/leelavati/details/>.

IMU also requests nominations for the

– ICM Emmy Noether Lecture – Chair: Irene Fonseca. Email: chair@noether18.mathunion.org

The ICM Emmy Noether Lecture is a special lecture at an ICM which honors women who have made fundamental and sustained contributions to the mathematical sciences, see more details at <http://www.mathunion.org/activities/icm/emmy-noether-lecture/>.

More information about each of these awards and the Noether lecture, as well as lists of past laureates, can be found on the IMU Web site at URL: www.mathunion.org/general/prizes.

To allow the committees sufficient time for this decision process, the IMU has set

December 31, 2016

as the deadline for nominations. Nominations received after this date will only be considered at the discretion of the committee.

Thus, we would like to urge you to submit before the deadline any compelling nominations of which you are already aware now.

The full compositions of all committees remain confidential and will be announced at the Opening Ceremony of ICM 2018 only.

The guidelines for nominations are specified at the Web page: <http://www.mathunion.org/general/prizes/nomination-guidelines/>.

For some awards (e.g., the Leelavati Prize) additional hints concerning the nomination can be found on the respective Web pages.

IMU prefers electronic submission of nominations, please send your submission, if possible, electronically.

By sending your nomination to the special email address of the committee chair, you will ensure that it automatically reaches the corresponding committee. A copy of your nomination materials will be archived in the IMU Secretariat in Berlin with an embargo of 70 years for anyone outside the committee.

We look forward to receiving your nominations!

Sincerely,

Helge Holden
Secretary of the International Mathematical Union

IMU AO Circular Letter 8/2016

International Mathematical Union



August 31, 2016
IMU AO Circular Letter 8/2016

To: The Adhering Organizations of the International Mathematical Union (IMU)
(Adhering Organizations of Associate Members receive this letter for information)

From: Helge Holden, IMU Secretary

- **Postal Ballot 03/16 Application for full Membership of Kenya**
- **Postal Ballot 04/16 Application for Associate Membership of Paraguay**

Dear colleagues,

- Kenya that has been an Associate Member since 2008, has applied for full membership of the IMU. The Executive Committee of the IMU unanimously recommends the application. The enclosed document which was submitted by the Mathematical Association of Kenya (MAK) reports on the mathematical activities in Kenya.

- Paraguay has requested to be admitted as an Associate Member of the IMU. The Executive Committee of the IMU unanimously recommends the application. The enclosed document which was submitted by the Sociedad Matemática Paraguaya (SMP) reports on the current situation of education in Paraguay and mathematical education and research in Paraguay.

Postal ballot sheets will be sent to the Adhering Organizations by regular mail.

Please vote on the applications of Kenya and Paraguay using the postal ballots, and return the ballots by mail, email or fax

by October 31, 2016

to the address indicated on the ballot form.

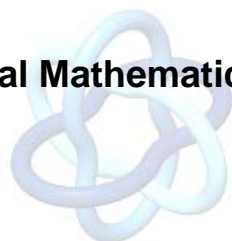
[Ballots are sent by regular mail only, as ballots sent out by email (with possibly multiple recipients) could lead to conflicting votes of one member country.]

Sincerely

Helge Holden
Secretary of the International Mathematical Union

IMU AO Circular Letter 9/2016

International Mathematical Union



September 9, 2016

IMU AO Circular Letter 9/2016

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary

IMU-Simons African Fellowship Program – Call for Applications

Dear colleagues,

Thanks to a generous donation by the Simons Foundation, the Commission for Developing Countries of the International Mathematical Union is launching the IMU-Simons African Fellowship Program to support research visits of mathematicians living and working in developing countries in Africa.

The grant covers travel, accommodation, visa, travel insurance and living costs up to USD 5,000 per mathematician. The duration of the visit should be of a reasonable length of time to allow fruitful interaction. In particular, the minimal length of a visit is one month.

Interested mathematicians must hold a valid doctoral degree and must be employed as a faculty member of a university or equivalent institution in a developing country in Africa.

For a list of applicable countries, further requirements and the online application form please go here:

<http://www.mathunion.org/cdc/grants/imu-simons-african-fellowship-program/>

Deadlines:

- November 1, 2016 (Decisions will be made by December 15, 2016) for visits starting between in January 2017 and January 2018
- January 15, 2017 (Decisions will be made by February 28, 2017) for visits starting between April 2017 and April 2018

In case of questions please contact the IMU Secretariat (cdc.grants@mathunion.org).

Sincerely,

Helge Holden
Secretary of the International Mathematical Union

IMU AO Circular Letter 10/2016

International Mathematical Union



September 9, 2016
IMU AO Circular Letter 10/2016

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary

IMU Nominating Committee – result of random selection

Dear colleagues,

This email is just for your information regarding the random selection of members of the IMU Nominating Committee (NC).

I refer to Circular Letter 5/2016, see

http://www.mathunion.org/fileadmin/IMU/Publications/CircularLetters/2015-2016/IMU_AO_CL_5_2016.pdf.

We thank you for the nominations.

Yesterday, at the IMU Secretariat in Berlin, the random selection of members of the NC took place.

See http://www.mathunion.org/fileadmin/IMU/Publications/CircularLetters/2015-2016/Nominating_committee_IMU.mp4.

The result was

Martin Kalina (Slovakia)
Niky Kamran (Canada)
Ursula Molter (Argentina)

The chair of the NC, Martin Grötschel, and the IMU President, Shigefumi Mori, will appoint two more members to the NC, which then comprises 7 members.

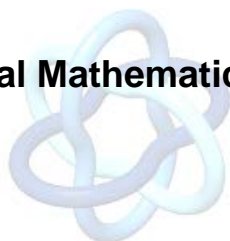
Once the NC is complete, the AOs will be informed about its composition, and a call will be made for nominations for IMU President and Secretary.

Sincerely,

Helge Holden
Secretary of the International Mathematical Union

IMU AO Circular Letter 11/2016

International Mathematical Union



September 29, 2016
IMU AO Circular Letter 11/2016

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary

Call for nominations as President and Secretary of the IMU

Dear colleagues,

This is to inform you that the selection of the Nominating Committee (NC) of the IMU has been completed. The NC composition is as follows.

Martin Grötschel (Germany, Chair)
Martin Kalina (Slovakia)
Niky Kamran (Canada)
Ursula Molter (Argentina)
Shigefumi Mori (Japan, IMU President)
Cheryl Praeger (Australia)
Daya Reddy (South Africa)

The NC is required to present slates of nominations to the Adhering Organizations in preparation for the elections of the IMU Executive Committee, the Commission for

Developing Countries, and the IMU representatives on the International Commission on the History of Mathematics at the General Assembly 2018 in São Paulo, Brazil.

The call for nominations will take place in two steps:

1. We now ask for nominations for the offices of President and Secretary of IMU.
2. The call for nominations for all other positions will be made by 1 September 2017.

The Adhering Organizations and Committees for Mathematics are now invited to submit names for the offices of

the IMU President and
the IMU Secretary

for the next term 2019–2022.

Submissions must include a candidate's statement of willingness to serve if elected and a CV. CVs exceeding two pages in length will not be considered. Only electronic submissions are accepted.

Please send your nominations **by 15 January 2017** to

Martin Grötschel <chair@nc18.mathunion.org>

using the official email address of your Adhering Organization or Committee for Mathematics.

Sincerely yours

Helge Holden
Secretary of the International Mathematical Union

IMU AO Circular Letter 12/2016

International Mathematical Union



November 3, 2016
IMU AO Circular Letter 12/2016

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary

Result of applications from Kenya and Paraguay

Dear colleagues,

I am happy to report about the outcome of the postal ballots on the applications from Kenya and Paraguay, see IMU AO Circular Letter 8/2016 (http://www.mathunion.org/fileadmin/IMU/Publications/CircularLetters/2015-2016/IMU_AO_CL_8_2016.pdf).

The vote on Kenya's application for full IMU Membership (from Associate Membership) yielded a positive result.

As of October 2016, Kenya is a Member in group I of the IMU.

The vote on Paraguay's application for Associate Membership yielded a positive result.

As of November 2016, Paraguay is an Associate Member of the IMU.

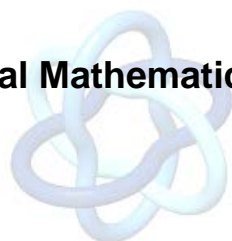
Thank you for your contributions.

Sincerely

Helge Holden
Secretary of the International Mathematical Union

IMU AO Circular Letter 13/2016

International Mathematical Union



November 16, 2016
IMU AO Circular Letter 13/2016

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary

Call for Nominations for the Ramanujan Prize 2017

Dear colleagues,

The Ramanujan Prize for young mathematicians from developing countries has been awarded annually since 2005. The Prize is funded by the Department of Science and Technology of the Government of India (DST). It is administered jointly by the Abdus Salam International Centre for Theoretical Physics (ICTP), the International Mathematical Union (IMU), and the DST.

The Ramanujan Prize is usually awarded to one person, but may be shared equally among recipients who have contributed to the same body of work. The Prize is awarded annually to a researcher from a developing country who is less than 45 years of age on 31 December of the year of the award, and who has conducted outstanding research in a developing country.

The deadline for nominations is **1 February 2017**.

Nominations can only be made by using the online system. See <https://www.ictp.it/about-ictp/prizes-awards/the-ramanujan-prize/call-for-nominations.aspx>

Please advertise this call for nominations for the Ramanujan Prize in your mathematical community.

Sincerely

Helge Holden
Secretary of the International Mathematical Union

IMU AO Circular Letter 14/2016

International Mathematical Union



December 1, 2016
IMU AO Circular Letter 14/2016

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary

Bids for the ICM 2022

Dear colleagues,

Yesterday the deadline expired to present a bid to host the ICM 2022. The IMU received two bids. In alphabetical order:

France, venue Paris
Russia, venue St. Petersburg

The procedure now is as follows: The Executive Committee of the IMU will make site visits, and based on this and the bids, it will make a recommendation to the General Assembly which will decide on the venue of ICM 2022 at its meeting in São Paulo 29-30 July, 2018. All documents will be made available to the delegates in time for the General Assembly.

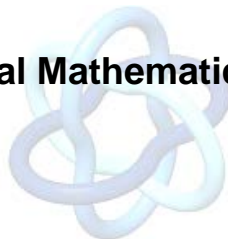
We appreciate all the efforts that our French and Russian colleagues have done in preparing their bids.

Regards

Helge Holden
Secretary of the International Mathematical Union

IMU AO Circular Letter 15/2016

International Mathematical Union



December 23, 2016
IMU AO Circular Letter 15/2016

To: The Adhering Organizations of the International Mathematical Union (IMU)

From: Helge Holden, IMU Secretary

IMU Bulletin No. 67, December 2015

Dear colleagues,

The IMU Bulletin No. 67, reporting about the IMU activities in 2015, is available on the IMU Web server at

<http://www.mathunion.org/Publications/bulletins/archive/>

A printed version will be mailed to the Adhering Organizations.

I apologize for the delayed publication.

Regards

Helge Holden
Secretary of the International Mathematical Union

5. The IMU Secretariat

Since January 2011, the Secretariat of the International Mathematical Union has been permanently based in Berlin, Germany, at the Weierstrass Institute. (<https://www.wias-berlin.de/index.jsp?lang=1>).

Under the supervision of the IMU Executive Committee, the Secretariat runs IMU's day-to-day business and provides support for many IMU operations, including administrative assistance for the International Commission on Mathematical Instruction (ICMI) and the Commission for Developing Countries (CDC) as well as mainly technical assistance for the Committee on Electronic Information and Communication (CEIC) and the Committee for Women in Mathematics (CWM).

The IMU Secretariat also hosts the IMU archive.

The IMU Secretariat is supported by a grant from the German Federal Ministry of Education and Research (BMBF) and the Berlin Senate.

A Memorandum of Understanding and a Cooperation Agreement provide the legal basis of the relationship of IMU and WIAS.



IMU Secretariat staff:

Alexander Mielke: Head of the Secretariat and IMU Treasurer (✉ treasurer@mathunion.org)

Sylwia Markwardt: Manager of the Secretariat (✉ manager@mathunion.org)

Lena Koch: ICMI/CDC Administrator (✉ icmi.cdc.administrator@mathunion.org)

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