

**Report of the 19th General Assembly*
of the International Mathematical Union (IMU)**

**Helsinki, Finland
July 3, 2022. (09:00 – 18:15 hrs)
July 4, 2022. (09:30 – 17:00 hrs)**

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1. Opening of the 19th General Assembly

1.1. Welcome

IMU President Carlos E. Kenig opened the 19th General Assembly (GA) of the IMU and cordially welcomed the participants of the meeting, including its remote attendees.

1.2. Opening address from the IMU President

IMU President Carlos E. Kenig delivered his opening address to the GA.

Two catastrophic events – with tragic consequences for the world – had shaped the current term. The first was the scourge of the COVID-19 pandemic, sadly resulting in millions of deaths and huge economic losses. The mathematical community had been deeply affected by this. Besides great individual suffering, international cooperation in mathematics, one of the main purposes of the IMU, had been greatly impaired by lockdowns and travel restrictions. This resulted in the cancellation or postponement of many core activities. However, thanks to technology, many IMU activities could continue in some form, albeit via virtual means. The waning of the pandemic had allowed the IMU to hold an in-person event in September 2021, in Strasbourg, France to commemorate – after a one-year delay – the 100th anniversary of the founding of the Union.

The second concerned more recent events, which had deeply affected the IMU's core organization and the GA meeting itself. Due to the brutal and unprovoked Russian invasion of Ukraine, the Executive Committee (EC) of the IMU decided, at its scheduled virtual meeting in February 2022, that it would be impossible to host the 2022 GA and International Congress of Mathematicians (ICM) as planned in Russia. The EC expressed its deepest sympathy to the Ukrainian people and Ukrainian colleagues in these grave circumstances. The EC decided, at the same meeting, that it would still be extremely important to hold the GA as a traditional in-person event outside of Russia. The EC subsequently received several offers from IMU members to host the GA, for which the IMU was very grateful. Ultimately, the EC accepted the extremely generous offer from Finland and the Council of Finnish Academies to host the GA meeting in Helsinki.

Regarding ICM 2022, at the same EC meeting in February 2022, various options for how to proceed with the ICM were considered (e.g., postponement, cancellation, relocation etc.). However, given that modern technology and the experience from the pandemic had made a fully virtual ICM realizable, the decision was taken to pursue this option, with the organization taken over by the EC. The enormity of this task and the work involved – which had been carried out under very difficult and constrained financial circumstances – had put a severe strain on IMU personnel, since the financial and organizational assistance that Russia had been providing was entirely cut off by the EC. As such, immense gratitude was owed to the Heidelberg Laureate Forum Foundation and others for their generous financial support in this undertaking.

The situation allowed for a unique event. On 5 July, a live award ceremony had been organized in Helsinki, with the support of Finnish colleagues, at which all the IMU prizes would be handed out. On 6 July, the opening day of the virtual ICM 2022, the Fields Medalists and the Abacus Medalist would give their ICM plenary talks in Helsinki, in front of a live audience, as well as being simultaneously streamed via the virtual ICM platform.

The IMU President closed by clarifying and emphasizing the formal procedures for the meeting to follow. It was noted that any person authorized to be in the room was allowed to speak, once recognized by the chair. Interrupting speakers or speaking out of turn would not be tolerated. The same process applied to those wishing to introduce a motion. The voting procedures – which would be largely electronic – would be explained in due course.

With formalities concluded, the IMU President invited the GA to begin the work of the Union.

1.3. Approval of agenda and guide through the GA documents

IMU Secretary General Helge Holden addressed the GA regarding the agenda, GA documents and various practicalities.

The meeting would be recorded for the purpose of writing the minutes, after which all recordings would be destroyed. Some oral statements would be summarized or edited for the purposes of clarity. In addition to the delegates of members, the GA was informed of additional guests in attendance as approved by the EC.

In terms of the agenda, the IMU Secretary General explained that the Adhering Organizations (AOs) of members had been invited to suggest agenda items by 2 March 2022. No proposals had been received. The agenda had then been approved by the EC and circulated to all AOs on 30 March 2022. The GA was informed of subsequent amendments to the agenda, due largely to the introduction of electronic voting and some last-minute changes.

The amended GA agenda was approved without any changes or modifications.

The IMU Secretary General proceeded to clarify voting procedures. Occasioned in part by the hybrid nature of the meeting – but also the need to modernize the process – electronic voting would be introduced. Where suitable, votes would be held by a simple show of hands. Where this method was deemed insufficient or the outcome was unclear, electronic voting would be used. The IMU Secretary General introduced the GA to the electronic voting system POLYAS, which had been tested by himself and the IMU Secretariat, and the configuration of the live vote format. A mock vote was held to guide delegates through the process step by step and help familiarize them with the system. The mock vote worked as planned.

The General Assembly approved the agenda without any changes or modifications.

VOTE (by show of hands): IN FAVOR = Unanimous

1.4. Countries in arrears: Decision on voting rights

IMU Secretary General Helge Holden reported on the current state of countries in arrears on their dues payments, quoting the applicable article of the Statutes:

“32. Any Adhering Organization which is in arrears with its contributions for two years shall be warned and shall be deprived of its voting rights. Any Adhering Organization which is in arrears for four years shall cease to be an adherent of the Union. In any case, before taking action, the Executive Committee shall submit the question to the Members of the Union by postal ballot or at a meeting of the General Assembly who under special circumstances may waive these provisions by a two-thirds majority of the total number of votes assigned to the Members.”

Contact had been maintained with the relevant countries, who were informed about the status of the arrears on their membership dues and the ramifications of this fact. As of 1 June 2022, six countries – namely Algeria, Cameroon, Iran, Kyrgyzstan, Peru, and Senegal – had arrears on their contributions (up to and including year 2021), of two or more years.

There were no countries (0) with four or more years of arrears.

The following motion regarding the loss of voting rights was put to the GA:

With reference to Article 32 in the IMU Statutes, Algeria, Cameroon, Iran, Kyrgyzstan, Peru, Senegal are deprived of their voting rights at the 19th General Assembly of the IMU.

The General Assembly decided, with reference to Article 32 in the IMU Statutes, that Algeria, Cameroon, Iran, Kyrgyzstan, Peru, and Senegal were deprived of their voting rights at the 19th General Assembly of the IMU (Algeria, Iran, Kyrgyzstan were represented at this GA).

VOTE (by show of hands): IN FAVOR = Majority

2. Appointment of the following Subcommittees

2.1. Credentials Committee

IMU Vice President Loyiso Nongxa presented the proposed Credentials Committee, which would be responsible for the following duties:

- *Review the list of delegates that have registered at the General Assembly and verify each delegation is correctly constituted and present the list to the President of IMU*

The General Assembly approved the Credentials Committee for the GA 2022 as follows:

Frank Neumann	(UK, chair)
Miriam da Silva Pereira	(Brazil)
Bashir Ali	(Nigeria)

VOTE (by show of hands): IN FAVOR = Unanimous

2.2. Finance and Dues Committee

R.T. Ramadas, IMU EC Member, presented the proposed Finance and Dues Committee, which would be responsible for the following duties:

- *Review the proposed 2023-2026 budget*
- *Make recommendations to the GA concerning dues*
- *Make recommendation to the GA concerning action to be taken regarding dues in arrears*

In addition, the IMU Secretary General, IMU Treasurer and IMU Manager would be ex officio members.

The General Assembly approved the Finance and Dues Committee for the GA 2022 as follows:

Maria José Pacifico	(Brazil, chair)
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Ali Baklouti	(Tunisia)
Henri Darmon	(Canada)
Yukari Ito	(Japan)
Péter Pál Pálffy	(Hungary)
Rita Pardini	(Italy)

VOTE (by show of hands): IN FAVOR = Unanimous

2.3. Election Committee

IMU Secretary General Helge Holden explained the duties of the Election Committee and presented the committee. The Election Committee consisted of all members of the 2022 Nominating Committee and all past IMU Presidents present at the GA. The minimum number on the Election Committee was five. This requirement was met by the members of the Nominating Committee and past IMU Presidents in attendance. A vote on the membership of the committee was not required, since this was set out in the procedures, which were being followed. The Election Committee would thus be as follows:

Wendelin Werner (Switzerland, chair)
Nam-Gyu Kang (Korea/Republic of)
Carlos E. Kenig (US, IMU President)
Vasudevan Srinivas (India)
László Lovász (past President)
Shigefumi Mori (past President)

The duties of the Election Committee would be to handle the election process and decide on all issues related to it. In particular, the Election Committee would need to address any changes in the election slate or nominations from the floor ahead of the voting taking place on 4 July.

2.4. Resolutions Committee

Günter M. Ziegler, IMU EC Member, presented the proposed Resolutions Committee, which would be responsible for the following duties:

- *Review the resolutions received from the delegations prior to the GA meeting; if necessary, edit and formulate these resolutions; present these resolutions to the GA with recommendations.*
- *Review the resolutions put forward by delegates during the GA meeting; if necessary, edit them and present the formulation of these resolutions to the GA.*

The General Assembly approved the Resolutions Committee for the GA 2022 as follows:

László Lovász	(Hungary, chair)
Susan Friedlander	(US)
Fatma Zohra Nouri	(Algeria)
Sandra di Rocco	(Sweden)
Ole Warnaar	(Australia)
Tamar Ziegler	(Israel)

VOTE (by show of hands): IN FAVOR = Unanimous

2.5. Tellers Committee

IMU Secretary General Helge Holden explained that the Tellers Committee would not be formed as its work was not required at this GA meeting due to the electronic voting format. Since electronic voting required a level of trust from voters, it was proposed that Luigi Ambrosio, current IMU EC Member, should observe the work of the IMU Manager while he operated the live voting system to ensure appropriate scrutiny. Luigi Ambrosio had been identified as an appropriate observer since he would not be seeking re-election. The GA approved of this plan.

VOTE (by show of hands): IN FAVOR = Unanimous

The IMU Secretary General explained that the total number of votes assigned to ALL members of the IMU was 182. As per Article 32, six members of the IMU were deprived of a total of nine (9) votes. Thus, the total number of eligible votes for all members of the IMU was 173. The total number of votes represented at the GA meeting was 152, meaning:

A simple majority required 77 or more votes

A 2/3 majority required 102 or more votes

The IMU Statutes did not describe any procedure for breaking a tie on a regular vote. Special procedures governing the election of officers did allow the IMU President to break a tie.

3. Review of the activities of the Union

3.1. Overview on Union activities (report of the IMU EC)

Presented by Helge Holden, IMU Secretary General

Membership of the IMU

Membership of the IMU had developed positively since the last report in 2018. A number of countries had applied and been accepted as new members, while some existing members had upgraded their membership status:

- Mongolia had been accepted as a new Associate Member.
- Cyprus, Belarus, and Kyrgyzstan were admitted as a group I member.
- Uzbekistan progressed from Associate Member to a (regular) member in group I.
- Indonesia progressed from group I to II.
- Chile, Denmark, and Portugal progressed from group II to group III.
- Republic of Korea progressed from group IV to group V.

Fortunately, no regular member of the IMU had its membership terminated during the period.

The associate membership of Cambodia, Madagascar, Moldova, and Nepal came to an end during the period following the maximum period of two terms. The next stage would be an application for regular membership, which it was hoped would be forthcoming in due course.

The IMU Secretariat in Berlin, Germany

The IMU Secretariat had been located in Berlin, Germany since January 2011. The operation of the Secretariat was hosted by the Weierstrass Institute for Applied Analysis and Stochastics

(WIAS). The location of the Secretariat was still Hausvogteiplatz 11A in Berlin Mitte, and the lease for the premises had now been renewed for a period of 10 years, starting in spring 2022.

A stable office was essential in the modern day, allowing for – among other things – a secure and stable financial set up. The GA was reminded that the IMU was only able to maintain a considerably higher level of activity than could be sustained by the IMU membership dues alone thanks to the generous support offered by Germany, which exceeded the total membership dues.

EC meetings

Meetings of the IMU EC during the period 2019–2022:

91st EC meeting, Berlin, 28 February – 3 March 2019

92nd EC meeting, Cape Town, 21–24 February 2020

93rd EC meeting, [virtual], 19–21 March 2021

94th EC meeting, [virtual], 24–27 February 2022

95th EC meeting, Helsinki, 2 July 2022

The IMU expressed its gratitude to the African Institute for Mathematical Sciences (AIMS) South Africa in Cape Town, for its hospitality and support in hosting the first ever EC meeting in Africa in 2020.

Phishing attempts

Delegates were urged to be aware of phishing attempts, since there had been repeated instances over the last period. The GA was reminded that the IMU never asked individual members for any payment or money transfer other than for membership dues.

The emails appeared to be sent in the name of the IMU President or other IMU representatives. The perpetrators revealed some knowledge of the IMU and their emails could appear somewhat authentic, but closer scrutiny of the email revealed that the IMU was not the sender. Examples of recent phishing emails were shown to the GA for information.

To address this issue, special signatures had been introduced on emails sent from official IMU email addresses, and all email addresses were in the process of being verified, so recipients could check the sender's status in future.

Commissions and Committees (C&C)

The GA was reminded that the IMU had five C&Cs:

International Commission on Mathematical Instruction (ICMI)

Commission for Developing Countries (CDC)

International Commission on the History of Mathematics (ICHM)

Committee on Electronic Information and Communication (CEIC)

Committee for Women in Mathematics (CWM)

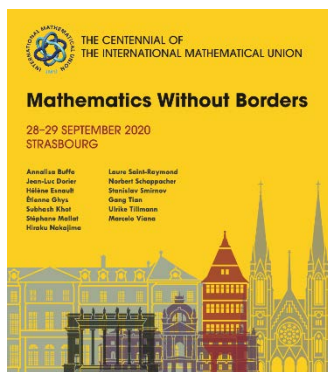
For each C&C, the IMU EC appointed a liaison person to maintain close contact between the IMU EC and the C&Cs, allowing for information to flow in both directions. In addition to the C&Cs, there was also Friends of the IMU (FIMU). Full reports by the C&Cs would be given during the meeting under the relevant agenda items. The IMU Secretary General underscored the vital contribution of the C&Cs to the activities and visibility of the Union, and thanked all those who dedicated themselves to this work.

The International Day of Mathematics (IDM)

The IDM was a new initiative that had been greatly successful. On 26 November 2019 UNESCO declared March 14 (« π day») as the official IDM. The EC had then set up a Governing Board of the IDM (IDMGB), chaired by Christiane Rousseau. A call had been made by the EC for a suitable logo design and website host. The proposal from IMAGINARY, based in Germany, was ultimately selected by the EC. The IDMGB had had great success in coordinating activities worldwide, and the IDM allowed the IMU to reach out to new groups outside research mathematicians, connecting with local initiatives involving diverse demographics.



The IMU Centennial



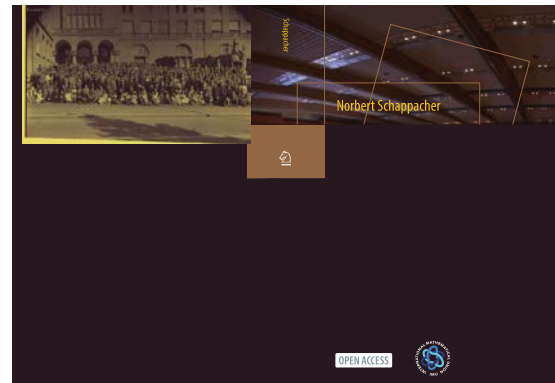
imucentennial2020.math.unistra.fr



poster design: C. Angwin

Due to the pandemic, the event unfortunately had to be postponed to 2021, when an in-person conference was again possible, with only a small number of video lectures.

In addition to the conference, the IMU had also solicited the writing of a book on the history of the IMU to help mark the occasion. Following a call to AOs, mathematician and historian Norbert Schappacher was chosen to write the book, which has just been released on [SpringerLink](#) with open access under the title “Framing Global Mathematics”. Schappacher’s book provided an external perspective on the history of the Union. The project was generously funded by the Klaus Tschira Foundation.



Book cover: Springer, Cham, 2022

Other Business

The EC had introduced a new ad hoc Committee on Diversity (CoD), with Robert Bryant (Duke University, US) as Chair. Diversity was immensely important to the IMU. However, when reflecting on the hundred years of the Union’s existence, it was clear that there had been failings and the need to improve remained vital. CoD was thus charged to provide advice on how the IMU as a global, inclusive organization, could improve.

The previous IMU newsletter had been rebranded under its new editor, Yoshiharu Kohayakawa (São Paulo, Brazil), as IMU News and was now distributed via an online publishing platform, with a fresh and modern lay-out. Delegates were urged to subscribe to IMU News and submissions were welcome.



IYBSSD2022
International Year
of Basic Sciences
for Sustainable Development



SCIENCE IN EXILE

Declaration of the International Science Council (ISC). The IMU Secretary General urged delegates' countries and organizations to do the same.

The IMU had joined the UN's initiative, the International Year of Basic Sciences for Sustainable Development 2022 (IYBSSD 2022), as both a founding and funding member.

The official launch was planned for 8 July 2022.

The IMU had also recently signed up to the Declaration on Research Assessment (DORA) and the Science in Exile



DORA

IMU YouTube Channel

The IMU Award Ceremony on 5 July would be streamed live via the IMU's [YouTube channel](#). The videos of the 2022 laureates, produced by the Simons Foundation, would be posted on the channel after the recipients had been announced. The channel also hosted videos of the 2018 laureates and additional content on the activities of the IMU. Delegates were encouraged to subscribe to the channel and help promote it.

The full report of the IMU EC was available to delegates among the GA papers.

3.1.1. Report on actions from resolutions from GA 2018

Presented by Helge Holden, IMU Secretary General (actions on main resolutions).

Resolution 6 [renaming Secretary to Secretary General] had been implemented in the IMU Statutes.

Resolution 7 [continuation of the Nevanlinna Prize] had been carried out: At the IMU EC meeting in Berlin in 2019, it was decided to rename the prize to the IMU Abacus Medal and to adopt the statutes of the Nevanlinna Prize with only minimal changes as necessary. A call went out to the AOs for the funding of the prize and for an approval of the statutes (CL 9/2019). The statutes were approved without any changes, and the IMU EC accepted the generous bid from the University of Helsinki and the Simons Foundation (CL 5/2020). The award was on a par with the Fields Medal. The first award would be given at ICM 2022.

Resolution 8 [restrictions for IMU awards and lectures] had been carried out and the relevant statutes had been changed accordingly.

Resolution 9 [agreement with WIAS and Office Committee] had been carried out. The agreement was signed, and the report of the IMU Office Committee would be discussed under Item 6 at this GA.

Resolutions 10–11. No actions had been required.

Resolution 12 [increase in unit contribution] had been implemented. AOs had received invoices based on the new unit contribution for the 2019–2022 term.

Resolution 13 [budget] had been carried out, more details would be provided under item 11.

Resolution 14 [Structure Committee] had been carried out, more details would be provided under item 7.1.

Resolution 15 [termination of membership] had been carried out. No regular member had lost its membership. The resolution had been helpful to the EC in dealing with arrears, since it gave the EC the ability to allow members additional time to pay their arrears when the circumstances warranted it.

Resolution 16 [bid for ICM 2022]. The circumstances and changes concerning this resolution had already been addressed under item 1.2.

While not a resolution, the GA in 2018 was in favor of inviting a female observer to each IMU EC meeting. The following observers attended the EC meetings in the 2019-2022 term:

2019 Ulrike Tillmann
2020 Kerstin Jordaan
2021 Elisabetta Strickland
2022 Valeria Simoncini

3.1.2. Financial ramifications of the virtual ICM and the GA

IMU Secretary General Helge Holden outlined the financial ramifications resulting from the decision to cancel the 2022 ICM and GA in Saint Petersburg. The original Russian bid had a budget of 7.5 million EUR, and a large number of volunteers and paid staff. The IMU did not receive any financial or staff support from Russia after this decision. The IMU had limited time, money, and staff.

For the GA, as explained by the IMU President (item 1), the generous offer from Finland to host the meeting was accepted. The IMU had promised to offer travel support for 1 delegate from each member country and full accommodation support for all delegates. The IMU stood by this offer.

For the ICM, bids were solicited from a couple of companies, with the offer from the K.I.T. Group, a subsidiary of Messe Berlin GmbH, being accepted.

Budget for virtual ICM and GA:

<i>Expenses:</i>	<i>EUR</i>
Travel support/hotel accommodation/GA venue/prize ceremony	350k
Open Access ICM Proceedings	60k
Virtual ICM platform	214k
<i>Grand total</i>	<i>624k</i>

<i>Income:</i>	<i>EUR</i>
CDC/ICMI/FIMU	60k
Council of Finnish Academies	80k
Mathematical Society of Japan	15k
London Mathematical Society	18k

Norwegian University of Science and Technology	5k
Heidelberg Laureate Forum Foundation	150k
<i>Grand total</i>	<i>328k</i>

The difference, 296k EUR, would be covered by the IMU reserves. The IMU Secretary General emphasized the deep gratitude owed to the organizations who had contributed to covering the costs of the virtual ICM and GA.

3.2. Portfolio of guidelines

Helge Holden, IMU Secretary General, presented the portfolio of guidelines which had been provided among the GA papers.

The IMU had developed several guidelines for different areas of its activities. The guidelines were intended to codify the activities of the IMU, make actions and procedures more transparent and predictable, provide to-do-lists and reminders for everyone involved in diverse IMU activities, and serve as institutional memory.

As agreed at the 18th GA, the EC made minor amendments and improvements as required over the term. The portfolio thus provided delegates with the latest versions. Guidelines include:

ICM Bidding Guidelines

IMU–LOC Agreement

Program Committee–Organizing Committee Guidelines

Structure Committee Guidelines

IMU GA Guidelines

GA Ad-hoc Committee Guidelines

Procedures for Election

IMU EC Duties

IMU Joint Commission Guidelines

IMU Office Committee Terms of Reference

Guidelines Regarding Conflicts of Interest

Unconscious Bias Guidelines

IMU Membership Application Guidelines

IMU Archiving Guidelines

Included among the guidelines for the first time was the *IMU–LOC Agreement*, the new agreement of understanding to be signed between the IMU and the Local Organizing Committee (LOC) of the ICM, and *IMU EC duties*, a handbook for EC members.

4. Changes in the IMU Statutes

4.1. Resolution A: Change ICSU to ISC

IMU President Carlos E. Kenig presented the proposed change (Resolution A) in the IMU Statutes.

In 2018 the International Council for Science (ICSU) had merged with the International Social Science Council (ISSC), becoming the ISC. The IMU was a member of the ICSU prior to this merger and had subsequently been a member of the ISC since 2018. The IMU Statutes currently state that the IMU adheres to the ICSU and are thus outdated.

Proposed change:

*Article 2 (a) should be changed to
To adhere to the International Science Council;*

The General Assembly approved the change in the IMU Statutes as proposed.

VOTE (by show of hands): IN FAVOR = Unanimous

4.2. Resolution B: Introduce a new Article 3

IMU President Carlos E. Kenig presented the proposed change (Resolution B) in the IMU Statutes.

The IMU subscribed to the ISC's mission to «Defend the free and responsible practice of science». In Article 7 of the ISC Statutes, the ISC clearly outlined its aim to support the principle of freedom and responsibility in science. Other unions had adopted a similar text, see, e.g., the International Union of Psychological Science, from whose statutes the proposed text was taken.

Proposed change:

A new Article 3 with the following text shall be incorporated into the IMU Statutes:

The Union adheres to the International Science Council's principle of embodying the free and responsible practice of science, freedom of movement, association, expression and communication for scientists, as well as equitable opportunities for access to science, its production and benefits, access to data, information and research material; and actively upholds this principle, by opposing any discrimination on the basis of such factors as ethnic origin, religion, citizenship, language, political or other opinion, gender, gender identity and sexual orientation, disability or age.

The number of each subsequent article would thereby be increased by one.

The General Assembly approved the change in the IMU Statutes as proposed.

VOTE (by show of hands): IN FAVOR = Unanimous

5. Report by the Committee on Diversity (CoD)

Presented virtually by Robert Bryant, Chair of CoD.

In August 2020, the EC created a CoD as an ad hoc committee to advise the EC on matters related to diversity, equity, and inclusion (DEI). CoD's purpose was threefold:

1. Assess how the IMU had performed to date

2. Offer advice on how the IMU could improve its performance
3. Offer advice on how IMU members (AOs) could improve their performance nationally

Current Members:

Robert Bryant	(US, chair), reachable by email at chair@cod.mathunion.org
Edy Tri Baskoro	(Indonesia)
Sophie Dabo-Niang	(France/Senegal)
Edray Goins	(US)
Anjum Halai	(Pakistan)
Gugu Moreira	(Brazil)
Philibert Nang	(Gabon)
Ngô Bảo Châu	(US/Vietnam)
Tatiana Toro	(US/Colombia)
Elena Vázquez-Abal	(Spain)

CoD's original plan was to prepare a report to the EC, but first the categories to be addressed needed to be decided. CoD began by introducing themselves to each other and listing areas of concern, which were mainly in the broad categories:

- Financial obstacles to equitable participation in ICMs
- Questions of diversity in selection of speakers at ICMs
- Ensuring an open and DEI-supportive environment at ICMs
- Increased attention to education and outreach issues at ICMs

Some specific concerns at ICMs were:

- Equity of access for those who were differently abled (mobility, hearing, etc.)
- Supporting participation of those who were financially disadvantaged
- Ensuring a safe environment free from discrimination (women, ethnic or religious minorities, sexual and gender minorities, etc.)
- Removing language barriers

More broad concerns were:

- How could the IMU help disseminate best practices for increasing diversity in the mathematics community
- How could the IMU become more involved in advocating equality of access to mathematics education and outreach

CoD decided that it needed to collect data about the above issues before meaningful recommendations could be made. Unfortunately, very little relevant data had been collected for past ICMs, and doing retrospective surveys was not feasible. Thus, CoD decided to

- Find out what data and/or surveys had been collected in previous ICMs
- Design a survey for the 2022 ICM participants on issues such as financial support, mobility, language barriers, perception of “welcoming environment” and safety, etc.
- Survey AOs for their policy statements on such matters

A preliminary report on CoD's initial progress and discussions was made to the EC in February 2022, after which CoD began discussing the survey design, but the situation in Ukraine and the cancellation of the in-person ICM upended its plans. CoD had however submitted to the EC a list of questions concerning diversity, equity, and inclusion issues for a survey of the virtual ICM 2022 participants. CoD had also recently joined forces with CWM to prerecord a joint panel discussion that would be aired during the virtual ICM.

5.1. Questions from the GA delegates

There were no questions from delegates. Delegates were encouraged to contact Robert Bryant after the GA and ICM with any questions or suggestions regarding the work of CoD.

6. Office Committee report, EC recommendations

Paolo Piccione, IMU EC Member, presented the IMU Office Committee (IMU OC) report to the EC.

The IMU OC's remit was to monitor the performance of the IMU Secretariat on behalf of the EC, making biennial visits. The current IMU OC consisted of

Ulrike Tillmann (chair)
Luigi Ambrosio
Dipendra Prasad

The IMU OC made a site visit to the IMU Secretariat in September 2021 (postponed from 2020 due to the pandemic) and issued a report that was discussed at the EC meeting in February 2022. The full report was available among the GA papers (see Appendix 6). The report was very positive; the main conclusions were that the IMU Secretariat was “well run” and the members of staff were “positive, engaged, and purposeful”. Specific recommendations were that:

1. Commissions and Committees should be asked to provide feedback regularly to the IMU Secretariat on how services might be improved as well as to help determine what kind of support could be expected from the IMU Secretariat.
2. The Project Assistant position – currently a temporary, half-time position – should be made permanent.

Following these recommendations, the IMU Secretariat had now implemented an annual feedback survey, and the feedback for 2021 was currently under review. An agreement had also since been reached with WIAS regarding making the Project Assistant permanent.

The next visit would occur in 2024.

6.1. Questions from the GA delegates

Adam Skalski, Delegate of Poland, asked how stable the grant from the German government – which funds the IMU Secretariat's operations – was. The agreement governing this was signed as an “eternal” agreement, i.e., unlimited and therefore extremely stable.

Günter M. Ziegler, IMU EC Member, added that the amount of the grant was a fixed sum with only minor annual increases, potentially below the rate of inflation, which should be borne in mind for the future.

7. ICM 2022

7.1. Report from the ICM Structure Committee

Presented by Terence Tao, Chair of the ICM Structure Committee (SC).

The members of the Structure Committee for ICM 2022 were as follows: Terence Tao (US, chair), Carlos E. Kenig (IMU President, ex officio, US), Nalini Anantharaman (France), Alexei Borodin (US), Annalisa Buffa (Switzerland/Italy), H el ene Esnault (France/Germany), Irene Fonseca (US), Terry Lyons (UK), Stephane Mallat (France), Hiraku Nakajima (Japan),  Eva Tardos (US), Peter Teichner (Germany), Akshay Venkatesh (Australia/US), Anna Wienhard (Germany).

The primary responsibility of the SC was to determine the size and definition of the scientific program (i.e. the plenary and sectional lectures). Its secondary responsibility was to propose other activities, such as discussion panels, non-mathematical talks, and talks aimed at the general public. The SC had submitted a preliminary report in 2019, making the following recommendations:

Special lectures. *A certain fraction of plenary and sectional lectures would be set aside for “special” lectures to highlight emerging connections or developments in mathematics. Section panels would submit bids to the PC for these slots in addition to their allocation for “traditional” sectional lectures.*

Helpers. *Each plenary lecturer would be assigned one or two “helpers” from their field to review their lecture and suggest improvements to the exposition.*

Reorganized sections. *Section 9 (Probability and Statistics) and Section 17 (Mathematics in Science and Technology) were reorganized as Section 9 (Probability), Section 17 (Statistics and Data Analysis), and Section 18 (Stochastic and Differential Modelling).*

Exit survey. *An exit survey would be conducted on ICM participants to guide subsequent SCs in their work.*

Numerous smaller changes to the section sizes and definitions.

These recommendations had all been approved by the EC.

Planned activities

In response to a request from the EC regarding how to allocate slots for sections in future, the SC had devised and was implementing the following activities:

- ask all section panels to write a brief report (signed by the entire panel) on the operation of the panel and their recommendations (if any) for future changes to either the selection process or to the size and description of the section;
- work closely with the PC chair to implement previous recommendations and to obtain feedback on them, as well as other Program Committee (PC) business;
- an exit survey for ICM participants;
- collect feedback from all sources, including the exit survey, response to the preliminary report from the GA, and contributions from the mathematical community;
- develop formal proposals, either for major structural changes to the program of the Congress, or for specific adjustments in the size and scope of one or more of the sections (or other aspects of the congress).

Guidelines for evaluating proposals

In the year following the Congress, the proposals would be evaluated, compared, modified, and voted on by the SC. The evaluation of these proposals would adhere to the following guidelines whenever possible:

- among all feedback received, particular weight would be given to the PC and section panel reports.
- statistics (e.g., from the arXiv or Mathscinet) compared over different time periods could be used as a rough indication of whether the research activity in a given section was growing, shrinking, or staying steady over time;
- metrics would not be relied on wholesale, but used mostly as secondary evidence to support arguments based on other sources;
- a gradual evolution of the historical subdivisions of the Congress of mathematics into subfields in order to reflect current or anticipated developments in the subject was the goal;
- weight would be given to fields that exhibited vibrant activity and growth at the time of the Congress, for instance by developing broad connections with other areas of mathematics and the sciences, or by submitting a large number of high-quality nominations for special lectures.

Other SC activities

January 2021: the SC wrote to the EC recommending that contingency plans be made to move part or all of the congress online in case a fully in-person congress was no longer viable. This ultimately transpired in February 2022.

July 2021: in response to an EC request, the SC compiled (and would continue to update) a document of advice from previous plenary speakers, as a resource to guide current and future speakers.

Feb 2022+: several SC members became informally involved in creating new satellite events to support the now-virtual ICM.

Recent feedback received by the SC

A proposal had been received from the European Mathematical Society (EMS), prior to February 2022, to reduce the size of the ICM, and host it at one or more universities rather than at a large convention center, possibly separating the events by section. Something resembling this proposal had in fact emerged organically in 2022, with the virtual ICM being supported by in-person sectional satellite events.

If a recommendation along these lines were to follow, it would most likely be for ICM 2030, since the very unique circumstances that occasioned a virtual ICM in 2022 did not allow for a true comparison of virtual vs. in-person formats.

Significant issues had been reported with the new Section 17 (Statistics and Data Analysis), particularly with regard to cooperation between the statistics and data analysis communities. The SC was not currently ready to make recommendations on this but planned to investigate the issue thoroughly.

A lack of synergy had been reported in Section 19 (Mathematical Education and Popularization of Mathematics), with the section panel recommending that this section be split into two small sections, one for mathematical education and the other for popularization of mathematics. Again, the SC would investigate before making a final recommendation.

There was concern about the possible conflict of interest between some panel members and the speakers nominated by those members in some sections, as reported by the PC. Clearer guidance was needed on what constituted a conflict of interest for panel members and the PC, as well as what exactly the disclosure obligations were.

Due to the ongoing war in Ukraine and the changes to the ICM 2022 format, many aspects of the SC's work that year had been affected and postponed, making some of the reported activities more preliminary in nature. The SC hoped to resume activities in earnest after the virtual ICM 2022.

Questions from delegates

Terence Tao then answered the questions asked by delegates in the audience.

Krishnamurthi Ramasubramanian, ICHM EC Member candidate, asked how dynamic the structure of the ICM was. The intention was to use feedback from an ICM to help improve and shape the scientific program of the next ICM, making the process very dynamic. Given the disruptions due to the cancelled in-person ICM, the majority of feedback would be taken from the work of the PC, which had been less affected.

Betül Tanbay, Delegate of Turkey, noted that the EMS proposal sought to redress the problem faced by many young mathematicians at a largescale congress, such as the recent ICMs, which did not allow for direct interaction with experts in the field. If registration data for the virtual ICM 2022 were to be available and showed greater, more global engagement, the argument could be made that the IMU should revise the format and consider numerous satellite events, which allowed for closer interaction. The SC would consult the exit poll and registration data to help inform discussion on this proposal. The importance of the social interaction at congresses had also been a topic considered by the SC and satellite events could certainly foster this. The IMU Secretary General confirmed that 7,000 participants had registered for the virtual ICM and data was available on participants by country. Other data on engagement at a collective level would also be collated.

Zurab Janelidze, Delegate of South Africa, asked whether there had been attempts to widen participation and reach mathematical communities that were not currently actively involved in ICMs. It was noted that surveying participants who regularly attend ICMs would not help reach these communities, and so outreach methods should be considered. Feedback would be collected from various sources after the ICM, not just from the exit poll, but also from blogs, by contacting mathematical societies, and via the new discussion channel that the ICM Satellite Coordination Group had set up on the Discord platform. The SC also welcomed suggestions for outreach from delegates.

Günter M. Ziegler, IMU EC Member, proposed that the satellite events and online communications be viewed in future as a further strand of the ICM to help facilitate outreach and participation. Liaison with the organizers of these events was recommended. Secondly, it was asked how the concerns regarding conflict of interests should be addressed. The suggestion of collecting input from satellite event organizers could provide a valuable source of additional feedback, which was welcome. On the question of conflict of interest, the SC would look to the IMU EC to make an appropriate recommendation here. The existing guidelines of the IMU could also be adopted, perhaps with minor adjustments.

7.2. Report of the ICM 2022 Program Committee

Presented by Martin Hairer, Chair of the ICM 2022 Program Committee (PC).

The ICM 2022 PC was constituted in spring 2019 and was composed as follows: Martin Hairer (UK, chair), Sanjeev Arora (US), Anna-Karin Tornberg (Sweden), Shafi Goldwasser (US), Ursula Hamenstaedt (Germany), Sergei Ivanov (Russia), Mikhail Kapranov (Japan), Yiming

Long (China), Felix Otto (Germany), Jonathan Pila (UK), T.N. Venkataramana (India), Geordie Williamson (Australia).

The composition of the PC covered broad areas both geographically and in terms of mathematical field. Its task was to decide the list of invited plenary and sectional speakers of the ICM, including the list of special lectures and the Section 19 panel discussants, but excluded public lectures.

The PC's first meeting was in November 2019 in London, with the main task being the selection of sectional panel chairs and core panel members. The PC decided to ask each panel to select between 50% and 100% more speakers than the maximal number of slots assigned to the panel by the SC, with an implicit (but not explicit) guarantee that the PC would usually restrict itself to that list for the sectional lectures. The importance of diversity was also made clear several times to the panel chairs.

Subsequent meetings were held online due to the pandemic, which posed some issues due to time difference. The selection of sectional lectures online had however worked well, especially since the pure vs. applied split among PC members roughly matched geographical locations.

A public call (deadline November 2020) resulted in many nominations for plenary lectures, but virtually no serious nominations for special lectures. A call had been posted on MathOverflow for nominations, which was viewed about 9k times and resulted in several reasonable suggestions. The most popular one (proof assistants) was retained, resulting in Kevin Buzzard's plenary lecture. The sectional panels were also encouraged to submit at least two proposals for special sectional lectures per panel.

The regular plenary lectures had been selected and finalized at the PC's meeting in February 2021. The sectional speakers were selected and finalized at two meetings in March 2021, split along two lines, pure and applied. Invitations were sent out in April 2021.

Outcomes

General: Three special plenary lectures, 18 regular plenary lectures, 19 special sectional lectures, 169 regular sectional lectures, three discussion panels. There was wide topical coverage, including data science and machine learning.

Proportion of women among sectional speakers: 48/188 (26%). Previously: 2018 28/180 (16%), 2014 24/179 (13%), 2010 23.5/145 (16%), 2006 12/165 (7%), 2002 12/151 (8%)

Geographical spread: 28 countries were represented. US and Europe were heavily represented, but, for example, there were 21 speakers from South East Asia. Many US-based speakers had also been educated in other countries. The statistics roughly matched previous years, but excluded discussion panels.

Comments

It had been very difficult to engage the machine learning/computer science community. Many panel members declined to serve and some speakers failed to even respond. There were also less cross-sectional lectures in Sections 14-17.

There had been some ambiguity regarding public lectures. These fell within the LOC's remit, however the lectures proposed by Sections 19 and 20 would typically fit such a format. This had been solved by ad hoc communication between the PC and LOC.

The current online format was not very conducive to publicizing the new format of “special lectures”. The qualities that made the special lectures “special” were somewhat effaced by the online format.

Finally, while geographic data based on current affiliation had been simple to collect and unambiguous, it did not fully reflect the diversity of speakers’ backgrounds.

Recommendations

The PC made the recommendation to:

- implement a mechanism to better synchronize the timeline between the EC and the PC;
- partially waive the anonymity of PC members (e.g., to panel chairs) and of panel chairs (e.g., to previous panel chairs);
- improve IMU institutional memory regarding speaker statistics (in particular gender and geographical data), as well as feedback from panels.

Questions from delegates

Martin Hairer then answered the questions asked by delegates in the audience.

Ulrike Tillmann, Delegate of the United Kingdom, asked how often the PC felt the need to override or enhance the recommendations of the sectional panels. There had been instances where the slate proposed by a panel was felt to not fully match the section description, for example for section 17, where special emphasis was put on machine learning and data science. This required the PC to make relatively substantial changes. For all other panels, the speakers were chosen from the proposed slate. Panel chairs had also been encouraged to provide as much detail as possible on their proposed candidates to help the selection process.

Carlos E. Kenig, IMU President, clarified that the IMU sends a form on conflict of interest and unconscious bias to all IMU committees to read and sign, and asked what had happened in the conflict of interest issue raised by the PC. The PC had received the form and this had been distributed to panel chairs. There had been two incidents of concern. The first had been when the PC Chair had solicited nominations from PC members and one member had included the names of two former students on their list. The PC member had been informed by the Chair that this was not permitted and the two names were thus not considered. The second instance involved a plenary speaker selected by the PC. It was realised that the speaker was a former PhD advisor of one of the PC members from 20 years ago. Both had since changed research direction and were not working in the same area, but this caused discomfort among some PC members. Following consultation with the IMU President, the PC reflected on whether the speaker would have been chosen even if the PC member in question had completely withdrawn from the discussion. The PC was confident that this would have been the case. The speaker had also initially been nominated by another PC member, who chiefly pushed their case for a plenary lecture. The IMU President clarified that in such circumstances, the expectation was of course that the PC member should have withdrawn from the discussion, not that the speaker should be eliminated from consideration.

Zurab Janelidze, Delegate of South Africa, asked whether there was any representation from the African continent on the PC. There had not been a representative from the African continent on the PC.

Günter M. Ziegler, IMU EC Member, asked for clarification on the geographical division as commented on in the Chair’s report and how it perhaps related to interests in pure vs. applied

mathematics across the globe. In the higher-number sections – in particular machine learning and computer science – the US and Israel were strongly represented, with less coming from continental Europe and east Asia. While some structural factors influenced this, it was largely coincidental. Again, the fact that there were no pure mathematicians on the PC from North America was simply coincidental.

R.T. Ramadas, IMU EC Member, asked whether the relationship between computer science and mathematics – which had been somewhat distant – was now also reflected in the relationship with data science. There had been difficulties in involving computer scientists in the work of the IMU and this appeared to be happening also with data scientists. The biggest challenge was raising the recognition of the ICM among machine learning communities. This would take time. It was however already increasing among computer scientists. Sanjeev Arora, a computer scientist on the PC, had also reported that the secrecy around PC members had compounded this issue, since he could not help secure speakers by using his influence as a renowned computer scientist.

Jacqui Ramagge, Delegate of Australia, asked whether the reticence from the computer science and computational machine learning communities, perhaps came from the regard given to the conference proceedings, which were the main form of publication in both disciplines, but had a different status when it came to ICMs. Could the profile of the ICM proceedings be raised? It was felt that this could certainly be a factor, and there were strong differences in the culture of computer science and mathematics as a discipline. This should be kept in mind of course and attempts should be made to engage with colleagues and thereby increase the ICM's profile over time.

Ravshan Ashurov, Delegate of Uzbekistan, proposed involving underrepresented countries in the PC in future and ensuring there were speakers selected from these countries to help increase their profile, just as had been done successfully in terms of the proportion of women. This would involve structural change that fell outside the remit of the current PC. It would be a matter more for the SC or IMU EC to determine and for the PC to then implement.

Susan Friedlander, Delegate of the US, queried the logic of still keeping the PC members secret, since it was recognized that this made recruiting speakers harder and suggested that this be discontinued. The PC was sympathetic to the suggestion, at least for partial removal of the secrecy, as per its own recommendations.

8. ICM 2026

IMU Secretary General, Helge Holden, confirmed that one bid had been received for the ICM in 2026 from the United States of America, and invited Jalal Shatah from the US delegation to present the bid.

8.1. Presentations of bids

Presentation of the bid from the US by Jalal Shatah, Executive Organizing Committee (EOC), US ICM 2026 Bid. See Appendix 7.1

The proposed venues were Philadelphia (Pennsylvania Convention Center) for ICM 2026 over 22-29 July 2026, and New York City (Marriott Marquis Times Square) for the 20th GA, on 19-20 July 2026.

8.2. Summary of bids received, procedure

Nalini Joshi, IMU EC Member, outlined the procedure for handling bids, the review undertaken by the EC, and the site visit/selection process.

8.3. Report of the Site Selection Committee, IMU EC recommendation

The Site Selection Committee (SSC) was formed by the IMU EC.

The SSC appointed a Site Visiting Committee (SVC) consisting of Helge Holden (IMU Secretary General), Nalini Joshi (IMU Vice President), Carlos E. Kenig (IMU President), and Paolo Piccione. The SVC was accompanied on the site visit in April 2022 by the IMU Manager.

Following feedback from the site visit, the US submitted an amended bid. The SVC summarized its findings as follows:

Elements in favor of the bid

- Philadelphia – with its historic and cultural heritage and modern facilities, excellent major transport hub – offered an ideal location for the ICM in 2026.
- The site of the ICM, the Pennsylvania Convention Center, was a centrally located, large and modern convention center.
- There was a wide range of hotel accommodation options within walking distance of the convention center. Dormitory accommodation at local universities was also provided at a very economical rate.
- Free Wi-Fi connection was available everywhere throughout the Convention Center.
- The proposed budget of 9 million USD was considered more than adequate and included support for 1500 participants.
- The variety of plans to support outreach, including summer camps and competitions for school students was excellent.
- The plan to hold summer schools and short courses before the ICM, particularly for attendees from developing countries, was generous.

Issues of concern

- A concern would be the high cost of hotel rooms in NYC. The budget did however include a partial subsidy for the cost of accommodation at the GA venue.
- The US maintained a “travel ban” list of countries, which was updated from time to time.
- The bid included few details on the proceedings from the ICM except that the American Mathematical Society (AMS) would distribute them.
- There was a discrepancy between the financial support secured so far and the total estimated costs in the budget.

Recommendation

The EC’s recommendation was as follows:

The bid from the USA, which has a long and distinguished tradition of producing and educating mathematicians of the highest caliber, many of whom come from all over the world, is excellent.

Serious commitment is evident in the bid and it covers almost all the requirements of the ICM Bidding Guidelines.

For these reasons, the IMU EC strongly recommends the bid to the General Assembly.

8.4. Questions from the GA Delegates

Jalal Shatah answered the questions asked by delegates in the audience.

Chris Parker, Delegate of the United Kingdom, asked whether the graduate scheme on offer would be open worldwide or just within the US. The intention had been to select graduate students from the US but the committee was open to including students from around the world. Since numbers were limited, the best candidates would be selected, regardless of location.

Vasudevan Srinivas, Delegate of India, asked for further elaboration on the support available to developing countries. While giving an exact figure was not possible at this stage, the amount of support would be generous in comparison with previous congresses. Also, affordable accommodation (@ 75 USD per night) had been secured from universities in Philadelphia. Further support to supplement accommodation costs would be available. 3 million USD was earmarked for this purpose.

Luz de Teresa, Delegate of Mexico, raised concerns about the expense of the GA in NYC. The US intended to cover the local expenses, e.g., hotel costs, for the GA in NYC due to the high expense because of the location.

Betül Tanbay, Delegate of Turkey, raised concerns about the visa process for the US, since present experience showed this was a long, difficult process. The current delays in processing visa applications and the long waiting times had been caused largely by the pandemic. It was expected that this would ease in the coming period.

Karsten Urban, Delegate of Germany, commented that a hybrid format could be expected also in 2026 and asked for confirmation that any platform would be hosted by public servers and not the sponsors mentioned in the bid. It was assumed that the organization of any hybrid component would have to be decided by and hosted through the IMU rather than the sponsors referred to in the bid.

Alf Onshuus, Delegate of Colombia, raised the issue of graduate students again and urged that the approach be as broad, global, and inclusive as possible. It was confirmed that the plan was to provide 50% support for students, with the home institution also covering 50%. The issue would be raised within the EOC and a broad, inclusive approach adopted.

Samuel Bengmark, Delegate of Sweden, asked why the GA was not scheduled to take place also in Philadelphia. The original plan was to hold the GA at NYU but this was deemed insufficient at the site visit. Still the EOC had invested a lot of effort in making NYC the GA location and would like to continue with this plan, since NYC had a lot to offer as a location.

Zurab Janelidze, Delegate of South Africa, asked whether the EMS's proposal for the sections of the ICM would impact on the proposed bid at all. The format of the next ICM was the remit of the IMU, not the organizers. The bid was structured on current guidelines. The proposed changes – if adopted – would presumably only come into force for ICM 2030.

Marie-Françoise Roy, CWM Chair, noted that the World Meeting for Women in Mathematics (WM)², organized by CWM, would again take place the day before the ICM. Would the separate locations for the GA and ICM mean that colleagues would have to choose between attending the GA and (WM)²? The fast and regular transport service between NYC and Philadelphia was emphasized. This would allow GA delegates to travel easily on to Philadelphia after the GA, even in the late evening.

Amnon Neeman, Delegate of Australia, asked whether it would not be better to host the GA in Philadelphia as well, since it would be cheaper than in NYC, meaning the savings could be used to support participants from the developing world instead. The money for the GA in NYC was coming from a different budget source to that of support for ICM participants. Reducing the former would not mean that the latter would be increased.

Wicharn Lewkeeratiyutkul, Delegate of Thailand, commented that it had often been the case before that the GA and ICM were in different locations, such as in South Korea in 2014. The location of NYC and the generosity of the EOC to cover the costs was welcome.

Ali Baklouti, Delegate of Tunisia, asked whether it would be possible to agree an online visa application for participants to simplify the process. While a request could be made, it was however outside realistic expectations to expect the EOC or anyone at the GA to be able to influence the US government in its visa policy. Assistance to those encountering difficulties could however be promised and would be readily available via the National Academy.

Piermarco Cannarsa, Delegate of Italy, asked whether there was any contingency plan in case the remainder of the planned budget could not be secured. The majority of philanthropic organizations in the US were yet to be approached and it was not anticipated that there would be difficulties in raising the remainder.

8.5. Location of ICM 2026 balloting

Nalini Joshi confirmed that the ballot would take place by a show of hands. If the outcome was not clear after this, then an electronic ballot would be held. The ballot would be for the combined proposal for ICM 2026 and the 20th GA.

8.6. Result of balloting, venue of ICM 2026

8.7. Venue of the 20th IMU General Assembly meeting in 2026

The GA was asked to vote on the bid from the AO of the United States of America to host ICM 2026 in Philadelphia and the 20th GA of the IMU in NYC.

The General Assembly voted to accept the bid from the Adhering Organization of the United States of America to hold ICM 2026 in Philadelphia, with the 20th General Assembly to be held in New York City prior to the ICM.

VOTE (by show of hands): IN FAVOR = 149, OPPOSED = 0, ABSTENTIONS = 3

9. Nominating Committee

9.1. Introduction of the Nominating Committee, explanation of the nominating process

Presentation by Wendelin Werner, Chair of the Nominating Committee (NC)

The NC was constituted as follows:

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

The members of the 2022 NC were:

- Wendelin Werner (Switzerland, chair) [b]
- Astrid an Huef (New Zealand) [c]
- Nam-Gyu Kang (Korea/Republic of) [c]
- Carlos E. Kenig (US, IMU President) [a]
- Dusa McDuff (US) [d]
- Caroline Series (UK) [c]
- Vasudevan Srinivas (India) [d]

The working methodology of the NC and the process of composing the slates were explained. As a result of feedback solicited from former NCs and other sources, particular attention was paid to ensuring sufficient turnover to instigate change and bring in new perspectives. The NC thus implemented the rule of a two-term maximum period of service among officeholders and members of C&Cs. The NC also took diversity of mathematical fields and demographics into account.

Regarding the 2019–2022 EC, it had – with the exception of the IMU Secretary General – been entirely composed of new members serving a first term. This was unusual and posed many challenges in terms of continuity. While all members of the current EC could thus have been proposed again for a second term, it was felt that this would not be ideal, since in 2030 there would again have to be a completely new EC without continuity. The NC thus tried to find a balance between continuity and renewal in selecting its slate for the EC.

In addition to nominations received from members, the NC had also been empowered to select its own candidates where necessary or desirable.

9.2. Presentation of slates proposed by the Nominating Committee

9.2.1. IMU President

9.2.2. IMU Secretary General

9.2.3. IMU Vice Presidents and IMU EC Members-at-Large

IMU Executive Committee (EC) slate

Persons nominated and selected by the Nominating Committee (NC)

Person nominated	Position	Country	Nominator(s)
	<i>Persons selected by the Nominating Committee (NC)</i>		
Hiraku NAKAJIMA	IMU President	Japan	NC
Christoph SORGER	IMU Secretary General	France	NC supported by AO France
Ulrike TILLMANN	IMU Vice President	UK	NC
Tatiana TORO	IMU Vice President	US / Colombia	AO, Colombia
Mouhamed Moustapha FALL	EC Member-at-Large	Senegal	NC
Nalini JOSHI	EC Member-at-Large	Australia	Incumbent Vice President, AO, Australia, Germany, Slovenia

JongHae KEUM	EC Member-at-Large	Korea/Republic of	AO, Korea/Republic of
Paolo PICCIONE	EC Member-at-Large	Brazil	Incumbent, AO Brazil, Mexico, UMALCA
R.T. RAMADAS	EC Member-at-Large	India	Incumbent, AO India
Gang TIAN	EC Member-at-Large	China	Incumbent, AO China
Günter M. ZIEGLER	EC Member-at-Large	Germany	Incumbent, AO Germany, Slovenia
Tamar ZIEGLER	EC Member-at-Large	Israel	NC
6 Members-at-Large to be elected			

9.2.4. President, Secretaries and Members-at-Large of CDC

Commission for Developing Countries (CDC) slate

Persons nominated and selected by the Nominating Committee (NC)

Person nominated	Position	Country	Nominator(s)
<i>Persons selected by the Nominating Committee (NC)</i>			
Andrea SOLOTAR	CDC President	Argentina	AO, Argentina, Colombia, Mexico, UMALCA
Ludovic RIFFORD	CDC Secr. Policy	France	NC
Jose Maria P. BALMACEDA	CDC Secr. Grants	Philippines	AO, Philippines
Norbert HOUNKONNOU	CDC, African Member	Benin	NC
Philibert NANG	CDC, African Member	Gabon	NC
Le Tuan HOA	CDC, Asian Member	Vietnam	NC
K.N. RAGHAVAN	CDC, Asian Member	India	AO, India
Mariel SAEZ	CDC, Latin Am. Member	Chile	AO, Sweden
Luz DE TERESA	CDC, Latin Am. Member	Mexico	AO, Mexico, UMALCA
1 Asian, 1 African and 1 Latin American Member to be elected			

9.2.5. IMU Representatives to ICHM

International Commission on the History of Mathematics (ICHM) slate

Persons nominated and selected by the Nominating Committee (NC)

Person nominated	Position	Country	Nominator(s)
<i>Persons selected by the Nominating Committee (NC)</i>			
Guillermo CURBERA	ICHM	Spain	NC
Isobel FALCONER	ICHM	UK	Incumbent
Krishnamurthi RAMASUBRAMANIAN	ICHM	India	AO, India
2 ICHM Representatives to be elected			

Current ICHM representative Catherine Goldstein had initially been included on the ICHM slate but subsequently withdrew her candidacy in May 2022.

Persons nominated but not selected

Person nominated	Position	Country	Nominator(s)
Martin BRIDSON	IMU President	UK	AO, UK
Marcelo VIANA	IMU Secretary General	Brazil	AO, Brazil
Ari LAPTEV	IMU Vice President & EC Member-at-Large	Sweden	AO Sweden
Andrei OKOUNKOV	IMU Vice President & EC Member-at-Large	Russia	AO, Germany, Slovenia
Olga GIL MEDRANO	EC Member-at-Large	Spain	AO, Spain
Klavdija KUTNAR	EC Member-at-Large	Slovenia	AO, Austria, Bosnia, Croatia, Germany, Hungary, Macedonia, Slovenia
Sujatha RAMDORAI	EC Member-at-Large	Canada	AO, Canada
Thorbjorn LUNDH	EC Member-at-Large	Sweden	AO, Sweden
Alf ONSHUUS	CDC President	Colombia	AO, Colombia
Paul VADELIND	CDC Secretary for Grants & Secretary for Policy	Sweden	AO, Sweden

Neela NATARAJ
Tom ARCHIBALD

CDC Member
ICHM

India
Canada

AO, India
AO, Canada

9.2.6. Very brief presentations of the nominated persons present at the GA

The following candidates participating in the meeting – either in person or remotely – briefly introduced themselves to the GA.

IMU Executive Committee

Hiraku NAKAJIMA
Christoph SORGER
Ulrike TILLMANN
Tatiana TORO
Mouhamed Moustapha FALL
Nalini JOSHI
JongHae KEUM
Paolo PICCIONE
Ramakrishnan Trivandrum RAMADAS
Gang TIAN
Günter M. ZIEGLER
Tamar ZIEGLER

CDC

Andrea SOLOTAR
Ludovic RIFFORD
Jose Maria P. BALMACEDA
Norbert HOUNKONNOU
Le Tuan HOA
K.N. RAGHAVAN
Mariel SAEZ
Luz DE TERESA

ICHM

Guillermo CURBERA
Isobel FALCONER
Krishnamurthi RAMASUBRAMANIAN

9.3. Nominations from the floor

Wendelin Werner explained the procedure for nominations from the floor.

There were no nominations from the floor.

10. Presentation of the Election Committee's proposals and Elections

The Chair of the Election Committee Wendelin Werner presented the Election Committee's final proposals for election as follows.

10.1. Executive Committee (EC) of IMU

IMU Executive Committee (EC) slate

IMU President	Hiraku NAKAJIMA	Japan
IMU Secretary General	Christoph SORGER	France
IMU Vice President	Ulrike TILLMANN	UK
IMU Vice President	Tatiana TORO	US / Colombia
EC Member-at-Large	Mouhamed Moustapha FALL	Senegal
EC Member-at-Large	Nalini JOSHI	Australia
EC Member-at-Large	JongHae KEUM	Korea/Republic of
EC Member-at-Large	Paolo PICCIONE	Brazil
EC Member-at-Large	R. T. RAMADAS	India
EC Member-at-Large	Gang TIAN	China
EC Member-at-Large	Günter M. ZIEGLER	Germany
EC Member-at-Large	Tamar ZIEGLER	Israel

6 Members-at-Large to be elected

10.2. Commission for Developing Countries (CDC)

Commission for Developing Countries (CDC) slate

CDC President	Andrea SOLOTAR	Argentina
CDC Secr. Policy	Ludovic RIFFORD	France
CDC Secr. Grants	Jose Maria P. BALMACEDA	Philippines
CDC, African Member	Norbert HOUNKONNOU	Benin
CDC, African Member	Philibert NANG	Gabon
CDC, Asian Member	Le Tuan HOA	Vietnam
CDC, Asian Member	K.N. RAGHAVAN	India
CDC, Latin Am. Member	Mariel SAEZ	Chile
CDC, Latin Am. Member	Luz DE TERESA	Mexico

1 Asian, 1 African and 1 Latin American Member to be elected

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

International Commission on the History of Mathematics (ICHM) slate

ICHM	Guillermo CURBERA	Spain
ICHM	Isobel FALCONER	UK
ICHM	Krishnamurthi RAMASUBRAMANIAN	India

2 ICHM Representatives to be elected

10.4. Election of the 2023–2026 EC, CDC, and ICHM officers

The Chair of the Election Committee, Wendelin Werner, explained the voting procedure to be conducted electronically via the live voting system, as well as the structure of the various ballots.

10.5. Balloting for item 10.4

The individual ballots for the various functions and offices were introduced by Wendelin Werner and voted on in turn. The numerical results of each ballot were displayed to delegates at the GA.¹

The IMU EC, the CDC, and the ICHM representatives were elected as follows:

IMU Executive Committee (EC) 2023-2026

<i>IMU President</i>	Hiraku NAKAJIMA	Japan
<i>IMU Secretary General</i>	Christoph SORGER	France
<i>IMU Vice President</i>	Ulrike TILLMANN	UK
<i>IMU Vice President</i>	Tatiana TORO	US / Colombia
<i>EC Member-at-Large</i>	Mouhamed Moustapha FALL	Senegal
<i>EC Member-at-Large</i>	Nalini JOSHI	Australia
<i>EC Member-at-Large</i>	JongHae KEUM	Korea/Republic of
<i>EC Member-at-Large</i>	Paolo PICCIONE	Brazil
<i>EC Member-at-Large</i>	Günter M. ZIEGLER	Germany
<i>EC Member-at-Large</i>	Tamar ZIEGLER	Israel

Commission for Developing Countries (CDC) 2023-2026

<i>CDC President</i>	Andrea SOLOTAR	Argentina
<i>CDC Secr. Policy</i>	Ludovic RIFFORD	France
<i>CDC Secr. Grants</i>	Jose Maria P. BALMACEDA	Philippines
<i>CDC, African Member</i>	Norbert HOUNKONNOU	Benin
<i>CDC, Asian Member</i>	Le Tuan HOA	Vietnam
<i>CDC, Latin Am. Member</i>	Mariel SAEZ	Chile

International Commission on the History of Mathematics (ICHM) 2023-2026

<i>ICHM</i>	Guillermo CURBERA	Spain
<i>ICHM</i>	Isobel FALCONER	UK

The balloting was concluded and the elected representatives congratulated. The successful implementation of electronic voting – which delivered clear ballots and fast results – was acknowledged.

11. IMU finances, budget and dues

11.1. Presentation of finances 2018–2021

Presentation by Dietmar Hömberg, IMU Treasurer.

IMU finances

The following GA papers had been made available to delegates in advance:

- 11. IMU finances, budget and dues
- 11.0.a Approved budget 2019–2022

¹ The numerical votes are confidential and thus not included in the minutes.

- 11.0.b Approved membership dues 2019–2022
- 11.0.c Audit report 2021
- 11.0.d Income and Expenditure 2018–2021
- 11.0.e Development of Finances
- 11.1 Presentation of finances 2018–2021
- 11.2 Resolution on finances & grant of discharge to IMU EC and IMU Treasurer
- 11.3 Balloting for item 11.2
- 11.4.a Planned dues for 2023–2026
- 11.4.b Budget plan 2023–2026

IMU budget rules

General income = all membership fees (approx. 400,000 EUR/year)

Special income = grants, donations, interest rates, etc.

Budget rules distribute general income according to percentages per year but are spent unequally over the four-year cycle.

All figures are in 1000 €

	<i>averaged yearly spendings</i>	2018-2021	budget plan	spending gen. income	spending spec. income
1.	Commissions & Committees	45%	188	152	81
2.	ICM	22%	92	48	69
3.	Administration & GA	20%	84	66	0
4.	Outreach	6%	25	12	5
5.	Overhead	7%	29	39	3
	sum	100%	418	317	158

11.0.e General development of IMU finances

* 150 kEUR HLFF + 38 kEUR FIMU + 15 kEUR MSJ for GA and ICM 2022

Referring back to the financial ramifications for the virtual ICM 2022 outlined under item 3.1.2., the IMU Treasurer noted that – when compared with the expenses for ICM 2018 four years previously – the overall expenditure was comparable, thanks largely to the generous support of third-party donations. There had also been a considerable underspend in the planned

All figures are in 1000 €

year	2016	2017	ICM 2018	2019	2020	2021	ICM 2022
Balance start/yr	1.483	1.739	1.741	1.503	1.886	2.183	2.449
Total income	496	499	693	559	502	576	623
general+special	394+102	397+102	409+284	426+133	428+74	432+144	420+203*
Expenditure	-302	-457	-1.031	-322	-228	-310	-950
Gains/losses	193	42	-338	238	274	266	-327
Balance end/yr	1.716	1.881	1.403	1.740	2.160	2.449	2.172
Dues in arrears	118	78	68	84	92	112	80
Total balance	1.833	1.959	1.471	1.824	2.252	2.561	2.252
Reserves (included in the above figures)						2022 = estimated	
bound (ICM, CDC, grants)	1.013	1.171	887	1.033	1.242	1.463	1.186
free	330	214	161	252	317	362	312

budget for 2018–2021, due largely to the impact of the pandemic on IMU activities.

Detailed yearly averages

All figures are in 1000 €

11.0.d actual 2018 - 2021		2018 - 2021			2023 - 2026
11.1.b plan 2022-2025		percentage	plan	actual	percentage
1.	Comm + Comm	45%	188	153	45%
1.1	CDC	20%	84	57	20%
1.2	ICMI	15%	63	55	15%
1.3	CWM	5%	21	13	5%
1.4	CEIC	4%	17	5	4%
1.5	Ad hoc committees	1%	4	8	1%
1.6	Special support	0%	0	15	0%
2.	ICM	22%	92	47	22%
2.1	Site Committee	1%	4	0	1%
2.2	Program Committee	2%	8	5	2%
2.3	Prize Committees	2%	8	4	2%
2.4	Congress Subvention	5%	21	19	5%
2.5	Travel Grants	7%	29	8	7%
2.6	ICM admin&outreach	5%	21	11	5%
3.	Administration	20%	84	66	20%
3.1	General Assembly	1%	4	4	1%
3.2	President & Secretary	12%	50	23	9%
3.3	Executive Committee	6%	25	7	6%
3.4	Office	0%	0	0	3%
3.5	Other	1%	4	32	1%
4.	Outreach	6%	25	12	6%
4.1	ISC	2%	8	5	2%
4.2	Awards	1%	4	0	1%
4.3	Web, Media	2%	8	5	2%
4.4	Other	1%	4	2	1%
4.5	Scientific Act. Support	0%		0	0%
5.	Overhead	7%	29	39	7%
5.1	Office	1%	4	8	1%
5.2	Bank Charges	1%	4	2	1%
5.3	Leg.adv. & Audits	2%	8	9	2%
5.4	Other	3%	13	20	3%
total general income		100%	418	317	100%

The primary change in the detailed yearly averages for the next term was under point 3. Administration, which proposed a marginal reduction in the funds to administratively support the IMU Secretary General and IMU President (3.2), in order to free up funds for office administration (3.4). The reason for this was due to the increase in rent for the IMU Secretariat premises as part of the new ten-year lease. The rent for the IMU Secretariat was paid out of the grant received from the German government. Since the rental increase reduced the amount of funds available to the IMU Secretariat for other expenses, it was proposed to the EC in February 2022 that a small contribution to office costs be implemented in the IMU budget. The EC had supported this proposal.

11.2. Resolution on finances and grant of discharge to IMU EC and IMU Treasurer

Dietmar Hömberg, IMU Treasurer, presented the proposed resolutions as follows:

Resolution on Finances

The IMU General Assembly approves the Annual Financial Reports for the years 2018 to 2021. Moreover, it approves the building up of financial reserves from any annual surplus as reported in the income and expenditure statements.

Explanation:

- The Berlin Tax Office needed an explicit statement that the GA (as the governing body of the IMU) approved the handling of the finances by the IMU EC, the IMU Secretariat, and the IMU Treasurer.
- The annual audits of the finances of the IMU were done by the independent company Mazars GmbH&Co. KG, Berlin, which checked the compatibility with German laws. This resolution was needed to prove the compatibility with the wishes of the Members of the IMU.

Grant of Discharge for IMU EC and Treasurer

The IMU General Assembly grants discharge to the IMU Executive Committee and to the IMU Treasurer for their activities during the period from 2018 to 2021.

Explanation:

- If the governing body of a German association (here the GA of the IMU) installed a committee to perform some activities, it should regularly approve the committee's actions of the previous year(s).
- Granting a discharge meant to “formally approve the previous actions” and, thus, to “relieve the individual actors from their responsibilities” and to move all liabilities back to the association as a whole.
- Granting discharge did not apply in case of deception or concealment.

11.3. Balloting for item 11.2

The balloting on the proposed resolutions under item 11.2 was conducted by a show of hands. The GA approved both resolutions.

The IMU General Assembly approved the Annual Financial Reports for the years 2018 to 2021. Moreover, it approved the building up of financial reserves from any annual surplus as reported in the income and expenditure statements.

VOTE (by show of hands): IN FAVOR = Unanimous

The IMU General Assembly approved to grant discharge to the IMU Executive Committee and to the IMU Treasurer for their activities during the period 2018 to 2021.

VOTE (by show of hands): IN FAVOR = Unanimous

11.4. Presentation of the proposal on dues and planned budget 2023–2026

Presented by Dietmar Hömberg, IMU Treasurer.

Development of unit contributions in EUR

year	2011	2012	2013	2014	2015–2018	2019–2022
EUR	1284	1390	1389	1424	1395	1430

The new suggested unit contribution for 2023–2026 was 1460 EUR. The modest increase of 2.1% was designed as an inflationary adjustment.

Resulting changes according to membership groups

(number of members as of June 2022)

Group	I	II	III	IV	V	Assoc.	sum
# of members	44	8	10	8	12	6	88
# of unit contr.	1	2	4	8	12	-	
annual dues	1460	2 920	5 840	11 680	17 520	-	
# of unit contr.	44	16	40	64	144	0	308

The expected General Income per year was $308 \times 1460^* = 449\,680$ €(from 2023).

** on the assumption that the unit contribution would rise by 3% from 1 430 to 1 460 for the years 2023 to 2026*

Summary of IMU annual budgets for 2023–2026

- General income (from membership dues) 449,680 EUR
- Special income (estimated) 160,100 EUR
- IMU Secretariat (special grant via WIAS) 550,000 EUR

12. Finance and Dues Committee

Presentation by Maria Jose Pacifico, Chair of the Finance and Dues Committee.

Finance and Dues Committee

Maria José Pacifico (Brazil, chair)
 Ali Baklouti (Tunisia)
 Henri Darmon (Canada)
 Yukari Ito (Japan)
 Péter Pál Pálffy (Hungary)
 Rita Pardini (Italy)

Ex officio: IMU Treasurer, IMU Secretary General, and IMU Manager.

Responsibilities:

- Make recommendations to the General Assembly concerning dues unit increase.
- Review the proposed 2023–2026 budget.
- Make recommendation to the GA concerning action to be taken regarding dues in arrears.

Recommendations:

- *We endorse the proposed increase in the unit contribution from EUR 1,430 to EUR 1,460.*

- *We recommend the 2023–2026 budget as proposed by the IMU Treasurer to the General Assembly.*
- *Propose that the General Assembly adopts a resolution similar to the one passed in 2018 regarding countries with more than 4 years in arrears.*

Based on these recommendations, there were three proposed resolutions:

1. Resolution on IMU membership dues

The General Assembly of the IMU approves that the unit contribution for the years 2023–2026 be increased from EUR 1,430 to EUR 1,460.00.

2. Resolution on the proposed IMU budget 2023–2026

The General Assembly approves the 2023–2026 budget as proposed by the IMU Treasurer to the General Assembly.

3. Resolution on membership of countries in arrears

An IMU member will lose its membership by the end of 2023 if at the end of 2022 it is four or more years in arrears, and if the Executive Committee, after having analyzed thoroughly the case of each particular Adhering Organization, finds it appropriate.

The delegates were invited to ask questions about the proposed resolutions.

Alf Onshuus, Delegate of Colombia, raised concerns about the proposed Resolution 3. regarding the possible termination of membership without the direct involvement or knowledge of the GA. IMU Secretary General, Helge Holden, noted that the equivalent resolution in 2018 had given the EC additional authority and leverage in negotiating with members in arrears. The EC had also interpreted the resolution in a liberal manner, allowing for additional time where helpful. This had undoubtedly helped rescue the membership of several countries. The proposed resolution sought to equip the 2023–2026 EC with the same means of remedying similar situations. The GA was being asked to give the EC this authority again.

Yuriy Drozd, Delegate of Ukraine, thanked the international mathematical community for the recent support shown to Ukraine. However, due to the ongoing war, the financial situation remained difficult and the GA was asked to waive the 2022 and 2023 Group II membership dues for Ukraine. IMU President, Carlos E. Kenig, acknowledged the importance and seriousness of the request, which the IMU had not encountered before and was not covered by the Statutes. As a new item, not previously on the agenda, discussion of the request would first need be approved by the GA. The GA voted by a show of hands.

The IMU General Assembly agreed to discuss the request from Ukraine regarding the waiving of its membership dues.

VOTE (by show of hands): IN FAVOR = Unanimous

The matter was opened up for discussion by the GA.

Susan Friedlander, Delegate of U.S.A., voiced her support for the request from Ukraine and additionally advocated for a statement from the GA, expressing its support for Ukraine and Ukrainian mathematics in the terrible circumstances caused by the Russian invasion.

Boris Kashin, Delegate of Russia, voiced his support for the request from Ukraine, but opposed the proposition by S. Friedlander of issuing such a statement, since this constituted the introduction of politics into mathematics. B. Kashin further questioned the use of the term “unprovoked invasion” and argued that any discussions in this direction would need to be broader, also addressing the role of NATO and other conflicts such as those in Syria and Iraq.

The request from Ukraine and the proposal regarding a statement was further discussed among the delegates. Delegates were extremely sympathetic towards accommodating the request. There was also strong support for a statement to be issued by the GA, formally voicing its support for Ukraine and Ukrainian mathematicians. There was further support for the IMU to adopt a broader approach in helping members in critical situations, potentially via a suitable support fund.

In response to the latter, Germany offered to pay 9 kEUR to the IMU – i.e., three times Group II membership dues – to support members such as Ukraine in extremely adverse circumstances. Envisioned as an emergency fund, the allocation of support from this fund to members could be determined by the EC. The 9 kEUR would come from funds that the German Mathematical Society had initially received from the Klaus Tschira Foundation for travel grants for the ICM in Saint Petersburg. France subsequently also pledged 10 kEUR towards an emergency fund.

In addition, the IMU Secretary General confirmed that Georgia had offered to pay the membership dues of Ukraine for one year. The United Kingdom also subsequently offered to pay the membership dues for Ukraine for one year and highlighted a joint initiative between its AO – the London Mathematical Society (LMS) – and the Isaac Newton Institute, which pledged 700 kEUR as part of a solidarity program to support refugees of war. Applications were welcome from all over the world.

Following these discussions, it was agreed that the Resolutions Committee should draw up suitable proposals to be presented under item 15.

12.1. Balloting for item 12

Following the presentation of the Finance and Dues Committee under item 12, it was agreed that Resolution 1 and 2 be voted on by a show of hands. The vote on Resolution 3 was postponed. The GA approved both Resolution 1 and 2 of the Finance and Dues Committee.

The General Assembly of the IMU approved that the unit contribution for the years 2023–2026 be increased from EUR 1,430 to EUR 1,460.00.

VOTE (by show of hands): IN FAVOR = 151, OPPOSED = 0, ABSTENTIONS = 1

The General Assembly approved the 2023–2026 budget as proposed by the IMU Treasurer to the General Assembly.

VOTE (by show of hands): IN FAVOR = Unanimous

13. Balloting on Items 10, 11, and 12

Agenda item not required as the votes had already been conducted under the relevant agenda items above.

14. Reports by:

14.1. ISC

Presentation was due to be given remotely by Peter Gluckman, ISC President, but presenter did not connect to the meeting.

IMU affiliate members

14.2. AMU

Presented by El Hassan Zerouali, Delegate of Morocco, on behalf of Nouhza El Yacoubi, President African Mathematical Union.

African Mathematical Union (AMU)

<https://www.africamathunion.org/index.php>

- AMU had been created during the first Pan African Congress of Mathematicians (PACOM) held in Rabat, Morocco, in July 1976, with the mission to coordinate and promote the quality of teaching, research, and outreach activities in all areas of mathematical sciences, throughout Africa. Advancing mathematical research and education included efforts and contributions towards the economic, social, and cultural development of the continent.
- Till now, nine editions of PACOM had been organized in Morocco (three editions), Nigeria (two editions), Kenya, South Africa, Tunisia, and Côte d'Ivoire. The 10th PACOM would be hosted by the Republic of Congo, in Brazzaville, for the first time in Central Africa, from 1–6 August 2022, organized by the AMU in collaboration with the Ministry of Higher Education, Scientific Research and Technological Innovations of Congo with the support of CDC, LMS and the Centre International de Mathématiques Pures et Appliquées (CIMPA).
- AMU's responsibility for the period 2017–2022 was to define a new vision, focused on redesigned goals with an improved and better adapted strategy to strengthen and develop mathematics in Africa, in order to meet the requirements and expectations of the new millennium. AMU's vision of its own role was to be:
 - **Federator** of all African associations, Societies, NGOs etc., with full commitment and collegial exchanges.
 - **Collaborative**, by organizing scientific events with other international organizations concerned with the same goals.
 - **Innovative**, by developing mathematics that can impact critical sectors of the economy, such as agriculture, energy, environment, health, mining, security, water, etc., and by collaborating with the business and industry world.
- Indeed Mathematics played a major role in meeting industrial and societal challenges, 44% of the key identified technologies were strongly affected by advances in mathematics, and many industries required increased mobilization of some major mathematical specialties such as signal and image analysis, data mining, modeling-simulation-optimization (MSO), high-performance computing of security systems, cryptography etc. AMU was deeply aware of its responsibility, and some actions had already been undertaken since 2018, even if hampered since 2019 by the pandemic. In 2018, AMU launched a new series of workshops: «STIMATH», with the first edition held in Botswana. AMU had also organized three editions of Pan African Mathematics Olympiads (PAMO): in 2019 in South Africa; in 2020 PAMO was postponed to 2021, and was organized virtually by Tunisia; finally, PAMO 2022 was hosted by Morocco at the Mohammed VI University in Bengherir, close to Marrakech from 19–28 June 2022. Also, AMU had organized the 3rd Pan African Space on Maths Education (PAMES 2019) in Luanda in December 2019.

- AMU had also been involved in virtual meetings, participating virtually in ICME–14, as well as all virtual meetings of the IYBSSD 2022 as a partner, and various other conferences held in Africa. AMU President Nouhza El Yacoubi had also attended the IMU centenary celebration in Strasbourg in September 2021.
- At every PACOM, the AMU – in collaboration with the host country – awarded prizes to African mathematicians, living and working in Africa, in two categories: category A (for outstanding research contributions to mathematics and its applications and mentorship), and category B (for outstanding contribution to African mathematical sciences development). In 2021, a new category C was added for the African diaspora (for outstanding research contributions to mathematics and its applications and mentorship). The winners would be decorated at the opening ceremony of PACOM 2022 in Brazzaville on 1 August 2022.
- The AMU expressed its sincere thanks to the international organizations that joined AMU as associate corporative members, their support would contribute to the growth of the AMU as a mathematical union at the continental level. African national or regional mathematical associations, societies, foundations and more broadly international, continental mathematical unions and societies, were invited to join AMU and help achieve shared goals.

14.3. EMS

Presented virtually by Volker Mehrmann, President European Mathematical Society

The European Mathematical Society (EMS)

<https://euromathsoc.org/>

30 years of EMS

- EMS celebrated its 30th anniversary – with a delay of two years – on 31 March 2022 with a one-day meeting in Edinburgh. An illustrated brochure about the past and future of the EMS was available on the website.

The future of publishing

- EMS emphasized that scientific knowledge should be open to everyone.
- Unfortunately, the unlimited greed of commercial publishers threatened to destroy scientific journals.
- Predatory journals and highly expensive open access publishing (paid for by governments with huge prices per page) were trying to take over scientific publishing.
- Bibliometric measures were beginning to replace the value and content of publications (cf. the EMS webpage on [predatory journals](#)).

The answers of the EMS

- Reform of EMS Press and relocation of EMS Publishing House.
- Cooperation with libraries and their organizations.
- Transfer of EMS journals to a radically new publishing concept: S2O Subscribe to Open.
- Classical subscription paid by libraries that become open access when enough subscriptions were paid.
- EMS joined FIZ Karlsruhe and Heidelberg Academy as publisher of zbMath open.
- EMS joined the European Open Science Cloud.

The dynamic EMS: Adapting to changes

- Mathematics was a large, dynamic and diverse field and the basis for all areas of science, engineering, medicine, and even many humanities.

- EMS encompassed all areas of mathematics: abstract and purely theoretical, educational, applied and industrial mathematics, mathematics of finance as well as statistics.
- New areas were emerging and EMS aimed to be the home for them, such as the mathematics of imaging, data science or AI.
- EMS was to be envisioned as the home of the whole of mathematics.

Forming an EMS young academy (EMYA)?

- The community needed to strengthen the role of the young generation of mathematicians in Europe, ensuring they get supported more in their mathematical development and their career perspectives.
- Young mathematicians should participate in the development of EMS and decision making and give impulses for the future.
- EMS thus formed the EMS Young Academy (EMYA).
- The EMYA would nominate two representatives for the EMS Executive Committee, with one representative then elected by the council for a term of two years.

EMS topical activity groups (EMS -TAGs)

- The European mathematical community was diverse and still not very well connected.
- It was not possible to broadly integrate scientific cooperation over all of Europe and all mathematical fields, an ECM every four years was not enough.
- EMS proposed forming topical activity groups (EMS-TAG) to organize meetings, research cooperation, and meetings in specific areas.

Uniting the mathematical Europe

- Despite critique of Russian politics and the treatment of dissidents, EMS supported the planned ICM 2022 in Saint Petersburg, evaluating travel grants for young mathematicians to attend the ICM, which were to be funded by the Klaus Tschira Foundation.
- When Russia invaded Ukraine, the EMS was among the first to urge the IMU to stop the ICM in Saint Petersburg, and it had suspended cooperation with Russian government organizations and businesses. To preserve the unity of mathematics in Europe, the EMS was continuing cooperation with non-government organizations and individual members.

14.4. MCofA

Presented by Andrea Solotar, Member of Executive Committee of MCofA.

Mathematical Council of the Americas (MCofA)

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

Nature and purpose

MCofA was a young organization that was still developing. MCofA was a network for professional mathematical societies and research institutes based in the Americas, dedicated to promoting the development of mathematics, in all its aspects, throughout the continent. As a continental collaborative effort, special attention was given to cooperating with UMALCA – Mathematical Union for Latin America and the Caribbean.

MCofA aimed to highlight the excellence of mathematical achievements in the Americas within the context of the international arena and to foster the scientific integration of all mathematical communities in the continent.

Main activities

MCofA organized a quadrennial Mathematical Congress of the Americas, in rotating countries in the continent.

MCofA promoted and collaborated with other initiatives aiming to advance the development of mathematics and the cooperation among mathematicians in the continent.

Governing bodies and members

Governing bodies:

- Council
- Executive committee

Members:

- Large societies: AMS, Canada CMS/SMC, MAA - Mathematical Association of America, SBM, SIAM.
- Small societies: SBMAC - Sociedade Brasileira de Matemática Aplicada e Computacional, SoMaChi - Sociedad Matemática de Chile, SCM – Sociedad Colombiana de Matemáticas, SMM - Sociedad Matemática Mexicana, UMA - Unión Matemática Argentina.
- Institutional members: 13 research institutes of Argentina, Brazil, Canada, Chile, Mexico, US.
- Associate members: Mathematical Societies of Bolivia, Cuba, Ecuador, Paraguay, Peru, Venezuela.

Mathematical Congress of the Americas

Previous conferences: Guanajuato (2013), Montreal (2017), Buenos Aires (2021).

The last one had been held completely online with 1644 participants (1000 from Latin America, 400 from the US and Canada). The online format had worked well. Funding, which was originally intended to finance the in-person event, was reallocated to procure the online platform, licenses, and recruit four mathematicians with recent experience of online programs. The whole event was otherwise organized by volunteers. There were six plenary conferences, 21 invited conferences, 37 thematic special sessions, and a prize ceremony. The prize ceremony had been broadcast live on YouTube, with more than 1400 views. The next MCA would take place in Miami in 2025.

14.5. SEAMS

SEAMS was not represented at the GA but had provided slides for their report. The slides were presented by IMU Secretary General Helge Holden.

Southeast Asian Mathematical Society (SEAMS)

<https://www.seams-math.org/>

Members (9 countries):

Cambodian Math. Soc, Hongkong Math. Soc, Indonesian Math. Soc, Malaysian Math. Sci. Soc, Math. Soc. Myanmar, Math. Soc. Philippines, Singapore Math. Soc., Math. Ass. Thailand, Vietnam Math. Soc.

Council: two representatives from each country.

Main activities

- **Asian Mathematical Conferences:** 1990 Hongkong, 1995 Thailand, 2000 Philippines, 2005 Singapore, 2009 Malaysia, 2013 South Korea, 2016 Indonesia.
- **SEAMS schools:** 3-5 per year, supported by CIMPA.

- **Southeast Asian Bulletin of Mathematics:** bimonthly journal

14.6. UMALCA

UMALCA was not represented at the GA but Liliana Forzani, President of UMALCA, and Roberto Imbuzeiro Oliveira, Secretary of UMALCA, provided a written report after the GA for inclusion here.

Unión Matemática de América Latina y el Caribe (UMALCA)

<https://www.umalca.org>

UMALCA congregated national mathematical societies from the region with the goals of promoting the development of mathematical research and fostering intraregional collaboration and exchanges. In 2021, UMALCA became a non-profit society incorporated in Santa Fe, Argentina. Current [members](#) were:

Sociedade Brasileira de Matemática
Sociedad Boliviana de Matemática
Sociedad Colombiana de Matemáticas
Sociedad Cubana de Matemática y Computación
Sociedad Ecuatoriana de Matemática
Sociedad Matemática de Chile
Asociación Matemática Hondureña
Sociedad Matemática Mexicana A.C.
Sociedad Matemática Paraguaya
Sociedad Matemática Venezolana
Unión Matemática Argentina

The [Board of Directors of UMALCA](#) for 2021–2024 consisted of the following members:

- President: Liliana Forzani (UMA – Argentina)
- Secretary: Roberto Imbuzeiro Oliveira (SBM – Brazil)
- Treasurer: Alejandro Jofré (SOMACHI – Chile)
- Regular member: Renato Iturriaga (SMM – México)
- Regular member: Christian Schaerer (SPM – Paraguay)
- Account revisor: Alf Onshuus Niño (SCM - Colombia)

Summary of UMALCA’s main activities since 2018

[Gender and Diversity Committee](#)

UMALCA had had a specific protocol against gender-and-sex-related discrimination in its events since 2017. More recently, in 2020, the Union decided to establish a Gender and Diversity Committee (CGD). Its goals were to educate the community on these issues, and to work towards avoiding any form of violence or discrimination based on sex, gender identity, or national/ethnic origin.

[Outreach and Popularization Committee](#)

UMALCA established its “Comité de Divulgación y Popularidad” in 2021. Its goals were to give visibility to ongoing activities in this area in the region; to promote and coordinate new initiatives in this direction; and to provide a forum for exchanging experiences of local mathematicians in outreach and popularization.

EMALCAS

The “Escuelas de Matemáticas de América Latina y Caribe” (Mathematical Schools of Latin America and the Caribbean) brought mathematical research to students all over the region. Important support for the EMALCA program was received from CIMPA, ICTP and IMU.

Due to the circumstances of the COVID–19 pandemic, planned editions for 2020 were either canceled or postponed. On the other hand, the first online EMALCA was held at the end of that year. The complete list of EMALCA editions since 2019 were:

2019

- EMALCA Argentina: Comodoro Rivadavia, October 14 - 25, 2019
- EMALCA Bolivia: Potosí, September 9 - 20, 2019
- EMALCA Colombia: Popayán, July 15 - 26, 2019
- EMALCA Costa Rica: Turrialba, July 22 - August 3, 2019
- EMALCA México: San Luis de Potosí/Zacatecas, June 10 - 21, 2019

2020

- EMALCA Mexico (online): December 7 - 11, 2020

2021

- Emalca México (online): December 6 - 10, 2021
- Emalca Perú (online): November 8 - 12, 2021

2022

- Emalca Chile (online): January 10 - 21, 2022
- Emalca Amazonas: Itacoatiara, October 4 - 14 2022
- Emalca Ecuador: Manabí, July 25 - August 5, 2022
- Emalca México: Guanajuato, July 11 - 15, 2022
- Emalca República Dominicana: Santo Domingo, May 30 - June 10, 2022

CLAM & UMALCA Prize

The “Congreso Latino Americano de Matemática” (Latin-American Mathematical Congress) was a series of events modeled on the ICM, which was organized by UMALCA. The 2020 edition was scheduled to take place in Montevideo, Uruguay. Due to the COVID–19 pandemic, it took place as an online event in 2021.

An important part of CLAM was the award of the UMALCA Prize for young mathematicians from the region. The 2020 awardees were Iván Angiono (Argentina), Luna Lomonaco (Brazil), Luis Núñez-Betancourt (Mexico), and Rafael Potrie (Uruguay).

Orbita Mathematicae Journal

In 2022, UMALCA established a new research journal: *Orbita Mathematicae*, which accepted submission of new articles via <https://ef.msp.org/submit/om>.

Submissions would be handled via Editorial Flow, which the creators at the nonprofit publisher Mathematical Science Publishers (MSP) generously let UMALCA use, while negotiating the publication of its journal with them.

The journal *Orbita Mathematicae* sought to attract original research articles of the highest level, both from the region and from the rest of the world, and would aim to position itself among the most prestigious journals internationally. Thus, the mathematical research of the highest level in Latin America and the Caribbean would have a publishing option originating in the region and with high global impact.

The journal had a team of committed editors from a wide variety of areas. It was run by a managing committee nominated by UMALCA's board of directors and appointed by its GA.

Commissions and Committees of the IMU

14.7. ICMI

Presented by Frederick Leung, President of ICMI

International Commission on Mathematical Instruction (ICMI)

The period 2018–2021 had been shaped – as it had for many organizations – by the impact of the COVID–19 pandemic, with 2020 and 2021 being particularly challenging years for ICMI.

Organization

Member Countries: In 2021, ICMI had 88 member countries.

EC Meetings 2018–21

EC (2017–2020 term): annual meetings were held 11–13 May 2018 (Taipei), 1–3 May 2019 (Montevideo), and 9–11 September 2020 (three consecutive days, online, five hours each).

EC (2021–2024 term): six 2-hour online meetings were held in 2021 – 4 January, 16 February, 15 April, 31 May, 13 September, and 17 November 2021.

The ICMI General Assembly (GA)

Due to the pandemic, the ICMI GA was held online on 13 July 2020, for one hour, with the time mainly devoted to the election of the new EC. Attendees: 55 Country Representatives (CRs), ICMI EC, ICMI Nominating Committee, ICMI EC nominees, Affiliated Organizations, Study Groups, and members of the IMU Secretariat. Electronic voting for the election of the new ICMI EC took place over the subsequent two days. An online meeting with CRs (two sessions) was also held on 13 July 2021 after ICME–14.

Conferences and Affiliate Organizations

ICME

- ICME–14 was held in a hybrid mode at East China Normal University in Shanghai over 11–18 July 2021
- Congress activities were arranged between 2–11 pm local time, so as to provide participants in different time zones with the best possible participation opportunity.
- There were 3156 participants (1663 online; 1493 on-site, including 662 registered participants and 831 special participants (mainly school mathematics teachers in Shanghai)).
- ICMI supported participants from developing countries, paying their online registration fees. Participants from developing countries were also supported through the Solidarity Fund.
- **ICME–15** to be held in Sydney in July 2024; the International Program Committee (IPC) met several times online between September 2021 and March 2022; the first in-person IPC meeting was held 1–5 May 2022 in Sydney

- **ICME–16** to be held in 2028; call for intentions to bid for hosting ICME–16 issued in November 2020, full bids would be due by the end of 2022; two expressions of intention had been received so far.

ICMI Affiliate Organizations and Regional Conferences

- Renamed and reallocated into two newly named groups: Thematic Affiliated Organizations (TAO) and Regional Affiliated Organizations (RAO). TAOs focus on a specific field of interest and study in mathematics education. There were eight TAOs:
 - CIEAEM: International Commission for the Study and Improvement of Mathematics Teaching
 - HPM: The International Study Group on the Relations between the History and Pedagogy of Mathematics
 - ICTMA: The International Study Group for Mathematical Modelling and Applications
 - ISDDE: International Society for Design and Development in Education
 - IOWME: The International Organization of Women and Mathematics Education
 - MCG: The International Group for Mathematical Creativity and Giftedness
 - PME: The International Group for the Psychology of Mathematics Education
 - WFNMC: The World Federation of National Mathematics Competitions
- RAOs were multi-national organizations active in mathematics education. There were eight RAOs:
 - ADiMA – Association des Didacticiens des Mathématiques Africains de l’Ouest et du Nord / Association of Western and North African Didacticians of Mathematics
 - AFRICME – African Regional Congress on Mathematical Education
 - CIAEM/ IACME – Conferencia interamericana de educación matemática / Inter-American Conference on Mathematical Education
 - CIBEM – Congresso Iberoamericano de Educação Matemática / Iberoamerican Congress of Mathematics Education
 - EARCOME – East Asia Regional Conferences in Mathematics Education
 - EMF – Espace Mathématique Francophone / French-speaking Mathematics Space
 - ERME: European Society for Research in Mathematics Education
 - MERGA: Mathematics Education Research Group of Australasia

ICMI Studies

- **Review of Past ICMI Studies** was completed in April 2021. The results would inform future ICMI Studies.
- It was decided to publish all (or as many as possible) past ICMI Study Volumes as open access. Three past Studies (**19, 21 and 22**) had been published as open access.
- **Study 23 (“Primary Mathematics Study on Whole Numbers”)**, Study Volume published in 2018 as open access. Chinese translation expected to be published in 2022.
- **Study 24 (“Mathematics Curriculum Reform Around the World”)**, Study Volume expected to be published in 2022 as open access.
- **Study 25 (“Mathematics Teachers Working and Learning in Collaborative groups”)**, Study Volume expected to be published in 2022 as open access.
- **Study 26:** The ICMI EC 2021–2014 decided to launch a new study on Geometry (working title: “Geometry Learning and Teaching”). Co-chairs had been appointed, and the IPC was being formed.
- **Study 27: Socio–ecological perspectives on mathematics education**, under discussion, and the discussion would continue in 2022.

Projects and Outreach to Developing Countries

AMOR (Awardees Multimedia Online Resources Project)

- MOOCs organized around ICMI Awardees for mathematics education graduate students and young career researchers.
- Units on: Guy Brousseau, Michèle Artigue, Celia Hoyles, Anna Sfard, Yves Chevallard.

Capacity and Networking Project (CANP)

- Goal: to enhance mathematics education in developing countries by supporting the educational capacity of mathematics teacher trainers, and creating sustained regional networks of teachers, mathematics educators, and mathematicians, linking them to international support.
- Five CANPs: Sub-Saharan Africa, Central America and the Caribbean, South East Asia, East Africa and Andean Region and Paraguay.
- Thorough evaluation conducted, encouraging results and lessons learned.
- Two-day workshop with two representatives of each CANP conducted in Taipei in May 2018.
- The CANP5 book, "Mathematics Teacher Education in the Andean region and Paraguay, A Comparative Analysis of Issues and Challenges" was published in 2018.

The Klein Project

- A workshop was held during ICME–14, and project activities continued under the leadership of Hans-Georg Weigand (Germany).

Others

ICMI Awards

- The Emma Castelnuovo Award for Excellence in the Practice of Mathematics Education: National Council of Teachers of Mathematics (NCTM)
- Felix Klein Award for Lifetime Achievements: Tommy Dreyfus (Tel Aviv University)
- Hans Freudenthal Award for Outstanding Contributions of an Individual's Theoretically Well-Conceived and Highly Coherent Research Programme: Gert Schubring (University of Bielefeld).

Dissemination and Archiving of Information

- ICMI Newsletter
- ICMI Website
- ICMI Facebook
- *L'Enseignement Mathématique*
- Newsletter of the EMS
- ICMI Archive
- ICMI Digitization Program: The ICMI Digital Library Project aimed at providing open access to all ICMI publications and thematic studies

Finance

- ICMI was in a healthy financial position, with an annual grant from the IMU. ICMI was grateful to the IMU not only for the financial budget allocation but also for its support generally.

14.8. CDC

Presented by Dipendra Prasad, President of CDC

Commission for Developing Countries (CDC)

CDC Members 2018–2021

- Dipendra Prasad (India) – CDC President
- Olga Gil Medrano (Spain) – CDC Secretary for Policy

- Alf Onshuus (Colombia) – CDC Secretary for Grant Selection
- Mama Foupouagnigni (Cameroon) – African Member
- Jose Maria P. Balmaceda (Philippines) – Asian Member
- Andrea Solotar (Argentina) – Latin American Member
- Galina Rusu (Moldova) – CDC member appointed by the IMU EC
- Michel Waldschmidt (France) – CDC member appointed by the IMU EC
- Jean-Luc Dorier (Switzerland) – CDC member appointed by the ICMI EC (1/1/19–31/12/2020)
- Anjum Halai (Pakistan) – CDC member appointed by the ICMI EC (since 1/1/2020)
- Carlos E. Kenig (USA) – IMU President (2019-2022) and *ex-officio* CDC member

In addition, Luigi Ambrosio (Italy) was the IMU EC liaison for CDC.

Conference Support 2018–2021

- Partial support for conferences (travel and accommodation)
- 105 supported conferences
- Total grant amount: EUR 204,000

Project Support 2018–2021

- Support for capacity building projects and activities in mathematics and mathematics education, be they international, regional, or local initiatives
- 12 supported projects received a total amount of EUR 69,324 for the following kinds of projects:
 - Support programs for graduate students
 - Lecturing and mentoring projects
 - Teacher training and mathematics education
 - Workshop support
 - Support for IT and resources

Individual Research Visits

Programs supporting research visits which were designed for postdoctoral mathematicians.

a) Abel Visiting Scholar Program (since 2013)

The Niels Henrik Abel Board gave an annual grant of approximately USD 15,000 to support mathematicians professionally based in developing countries to visit an international research collaborator for a period of one month. **12 fellowships** were granted.

b) IMU-Simons African Fellowship Program (2016–2023)

The program supported research sabbaticals for mathematicians from African developing countries employed in Africa to travel to an internationally known mathematical center of excellence (worldwide) for collaborative research. The program received a total of USD 250,000 from the Simons Foundation, NY (US). **29 fellowships** were granted.

c) Individual Travel Fellowship

The program supported travel costs for research visits (minimum stay of four weeks) by mathematicians based in developing and economically disadvantaged countries to an international center of excellence. **15 fellowships** were granted.

Lecturing and Mentoring

During 2018–2021, CDC offered two lecturing and mentoring programs:

a) Volunteer Lecturer Program (VLP)

24 courses in 14 countries were supported.

b) Pilot program African Diaspora Mathematicians Program (ADMP)

The Program ran as a pilot program in Africa for two years (May 2017–June 2019) and involved three partnerships (Ethiopia, Cameroon, Zimbabwe).

Library Assistance Scheme

Provided financial support for shipment costs for individual scientists or institutions wishing to donate books in the mathematical sciences to libraries in developing countries.

Special Activity during ICM 2018

CDC Panel and Poster Session 2018 – A panel discussion and poster session on *Strengthening Mathematics in the Developing World* was held on 7 August 2018 in Rio. A similar activity had been planned for ICM 2022. This had now been adapted accordingly to the virtual format and would be streamed on 12 July.

Graduate Support Programs

The CDC offered two scholarship schemes to support graduate studies, in a developing country, leading to a Master or PhD degree in the mathematical sciences.

a) IMU Breakout Graduate Fellowship Program (since 2016)
funded by generous donations from the winners of the Breakthrough Prize in Mathematics – which supported postgraduate students. **13 students had been awarded support** during the period.

b) Graduate Research Assistantships in Developing Countries Program (GRAID)
(since 2017)
Research assistantships for graduate – PhD and Master – students of emerging research groups working in a developing country listed in Priority 1 or 2 of the IMU CDC Definition of Developing Countries. The GRAID Program was funded by voluntary donations from mathematicians or mathematical institutions worldwide.

The number of teams that had received an award during the period was **11**. Each of them received support for up to three students per year.

CDC's principal source of 'core' income was its annual grant from the IMU. Additionally, between 2018–2021, CDC received financial support from:

- AMS
- Breakthrough Winners in Mathematics
- CIMPA
- FIMU
- Individual mathematicians
- Italian Mathematical Society
- Japanese Mathematical Society
- Leicester University Fundraiser
- Niels Henrik Abel Board
- Simons Foundation NY
- Swiss Mathematical Society
- USNC/Math

CDC thanked:

- institutions and individuals who supported CDC and its activities
- CDC volunteers
- members of evaluation committees

- Volunteer Lecturers
- donors of mathematical materials
- organizers of CDC activities

14.9. ICHM

Presented by June Barrow-Green, Chair of the ICHM EC

International Commission on the History of Mathematics (ICHM)

ICHM was established in 1971 to promote the international cooperation in the study of the history of mathematics. ICHM's specific aims were to encourage the study of the history of mathematics, and to promote a high level of historically and mathematically sophisticated scholarship in the field.

In particular, ICHM sought to support early-career scholars in the field.

ICHM was an inter-union commission, joining the IMU and the Division of History of Science and Technology of the International Union of History and Philosophy of Science and Technology (IUHPS/DHST). ICHM received funding from the DHST, but only on application, there was no standing grant.

ICHM thanked the IMU and IMU Secretariat for their ongoing support, in particular for hosting the ICHM website and the incorporation of ICHM finances into the accounts of the IMU.

EXECUTIVE COMMITTEE

Chair June Barrow-Green (UK)

Vice-chair Clemency Montelle (New Zealand)

Secretary Sloan Despeaux (US)

Treasurer Martina Schneider (Germany)

Members-at-Large

Michela Malpangotto (France)

S. Mohammad Mozaffari (Iran)

Volker Remmert (Germany)

Adrian Rice (US)

Clara H. Sánchez (Colombia)

Galina Sinkevich (Russia)

GUO Shirong (China)

IMU Representatives

Isobel Falconer (UK)

Catherine Goldstein (France) (to May 2022)

Ex-Officio

Craig Fraser (Canada) (immediate past chair)

Antoni Malet (Spain) (editor *Historia Mathematica*)

Nathan Sidoli (Japan) (editor *Historia Mathematica*)

MEMBERS

Algeria

Finland

Luxembourg

Spain

Austria	France	Mexico	Sweden
Belgium	Germany	Netherlands	Switzerland
Brazil	Greece	New Zealand	Syria
Canada	Guatamala	Norway	Tapei, China
China	Iceland	Poland	Tunisia
Costa Rica	Israel	Portugal	Turkey
Croatia	Italy	Russia	United Kingdom
Czech Republic	Japan	Saudi Arabia	USA
Denmark	Kazakhstan	Singapore	
Estonia	Korea	Slovak Republic	

EXAMPLES OF CO-SPONSORSHIP AND GRANTS

- **Novembertagung** (2018, 2019, 2021)
The Novembertagung on the History of Mathematics is an annual international conference aimed at PhD and postdoctoral students in the history of mathematics and neighboring fields.
- **Mathematical Communities in the Reconstruction after the Great War** (1914–1918) (2018)
- **Mathematical Book Trade in the Early Modern Period** (2019)
- **Symposia at the ICHST** (2021)
 - Evolution of Mathematics in China
 - Constructing interfaces between mathematical and physical conceptions and methods
 - Collaborations and Rivalries in the History of Mathematics
- **Austrian Symposium on History of Mathematics** (2022)
- **History of Mathematics Beyond Case Studies** (2022)
- **Individual grants to Early Career Scholars**

PRIZES

ICHM awarded two prizes, once every four years at the ICHST.

May Medals awarded every four years in recognition of distinguished contributions to history of mathematics



The Kenneth O. May Medal

2021 Prizewinners

Sonja Brentjes (Germany)

Christine Proust (France)

Montucla Prize awarded every four years to the author of the best article published by an early career scholar in *Historia Mathematica* in the four years preceding the International Congress of History of Science and Technology

2021 Joint Prizewinners

François Lê (France)

Brigitte Stenhouse (UK)

ICHM would also normally arrange an activity at the ICM. In 2022, ICHM had organized lectures by the four prize winners, which would now be delivered online as part of the virtual ICM on 11 and 13 July.

14.10. CEIC

Presented as a video recording by Henry Cohn, Chair of CEIC

Committee on Electronic Information and Communication (CEIC)

A detailed outline of CEIC's activities had been provided in the written report among the GA papers (see Appendix 14.10). In brief:

- mission: review state of the art in the area of electronic communication, publishing, etc., and advise the IMU on this area.
- Change in CEIC members:
 - Kevin Buzzard, Ingrid Rewitzky replaced Tim Cole, Alf Onshuus in 2021
 - Jean-Paul Bourguignon joined CEIC in 2021, and
 - Mila Runnwerth resigned in 2022 due to moving to a new job.
- Following a recommendation from CEIC, the IMU EC signed DORA (Declaration on Research Assessment 2012 San Francisco) in 2022.
- Best Practice Documents:
 - Best current practices for journals: *revised*.
 - CEIC's advice on copyright considered out of date; reclassified as *historical document*.
- Global Digital Mathematics Library – first endorsed by the IMU GA in 2006 – was envisioned as a universal method of accessing the entirety of mathematical literature. The International Mathematical Knowledge Trust had been an early forerunner in this area but progress had been slow, since no one had stepped up to provide the significant funding and effort required. Recent developments of interest in this area included:
 - *zbMath Open* as GDML₀ – Zentralblatt MATH – a database of mathematical papers and reviews – introduced open access in 2022. This could be seen as a first step towards a GDML, providing a strong foundation for other services, information, search functions etc., to be layered over the top.
 - The Sophize Project.
 - Other digital libraries: OpenAlex (September 2022), EuDML, RNBM.

One of the key obstacles in setting up an open and freely accessible database of this type concerned the availability of history articles and back issues of journals. Questions regarding appropriate funding models such as subscription vs. open access, the extent of open access availability, etc. were still unsettled. It was hoped that a consensus could be reached to at least make back issues available and indeed a number of publishers had begun to make back issues freely available, such as AMS and Elsevier.

To work on this further, the IMU EC established an ad hoc Committee on Permissions (CoP) on the recommendation of CEIC. CoP had begun discussions with publishers to understand what the relevant constraints were in this area and the priorities of publishers. A recommendation would be made by the CoP to the IMU regarding a plan for access to back issues. Given the breadth of mathematical publishers, it would not be possible to secure access of all issues but any progress in this regard would be valuable to the mathematical community at large.

14.11. CWM

Presented by Marie-Françoise Roy, Chair of CWM

Committee for Women in Mathematics (CWM)

CWM – as the IMU committee concerned with issues related to women in mathematics worldwide – was not a committee of but rather for women in mathematics.

2018–2022 CWM Members

Marie-Françoise Roy (France), *Chair*
Carolina Araujo (Brazil), *Vice Chair*
Alejandro Adem (Canada)
Petra Bonfert-Taylor (US)
Tony Ezome (Gabon)
Josephine Wairimu (Kenya)
Neela Nataraj (India)
Motoko Kotani (Japan)
Ekin Ozman (Turkey)
Cheryl Praeger (Australia)

CWM was a gender-balanced committee with 10 members. The EC liaison person for the current term had been IMU President Carlos E. Kenig. CWM was grateful to the IMU EC for its support and also to the IMU Secretariat, in particular for the maintenance of the CWM website.

CWM was first formed by the IMU EC in 2015 with specified terms of reference. In short CWM's remit was:

- to promote international contacts between national and regional organizations for women in mathematics;
- to develop the CWM website, a subsite of the IMU website;
- to facilitate communication among the community of women mathematicians internationally;
- to suggest working practices that ensure equal opportunities for women mathematicians in universities and research institutions;
- to propose actions that would lead to an increase in the representation of women in mathematics at all levels.

World Meeting for Women in Mathematics

- The first (WM)² in Rio de Janeiro in 2018 – which took place between the GA and ICM with around 400 attendees from 50+ countries – had been a success.
- At the (WM)² in Rio de Janeiro, the Women's Committee of the Iranian Mathematical Society proposed that Maryam Mirzakhani's birthday – May 12th – become an annual celebration to celebrate women in mathematics. This was approved by (WM)² and had since been celebrated annually in many countries across the world.
- A further iteration of the event had been planned for ICM 2022. This had been switched to a virtual format following the cancellation of the event in Saint Petersburg and the v(WM)² had just taken place as a satellite meeting of the virtual ICM 2022.
- The v(WM)² had been a success with over 1000 registered participants from more than 100 countries. The program included four invited lectures and a panel on 1 July 2022. The panel was titled "Girls and Mathematics: reflections and initiatives" and dedicated to the memory



of Yulia Zdanovska, a young Ukrainian mathematician who had been killed in the war in Ukraine.

- The inauguration of the Olga Alexandrovna Ladyzhenskaya Prize had also taken place at a joint session with the Probability and Mathematical Physics 2022 conference, held in Helsinki, on 2 July. The prize was awarded to Svetlana Jitomirskaya, who was warmly congratulated.
- A third iteration of (WM)² was planned for 2026.

CWM annual call

- CWM invited proposals for funding of up to EUR 3000 each year for suitable activities or initiatives taking place. Priority was given to initiatives in developing countries from Africa, Asia, and Latin America.
- Meetings were either regional, involving several countries, or national but with a regional flavor. The following activities had been funded in the current term:
 - 2019: six meetings, one school
 - 2020: six meetings, one exhibition project, one website (most activities were conducted virtually or postponed, one was ultimately canceled)
 - 2021: five meetings, one film, one exhibition project, one website (most activities were virtual, one was ultimately canceled)
 - 2022: two websites, eight meetings

CWM Ambassadors

CWM had established over 150 special correspondents worldwide, each of whom had the job of disseminating information in their geographical or mathematical neighborhood, and also of keeping CWM informed about activities or initiatives to be announced on the CWM website.

A mailing list was created in 2016 when the initiative had launched, with 85 names from 55 countries, but this had since grown to 175 CWM Ambassadors from 101 countries. Plans for a physical gathering had been difficult due to budget constraints, and became impracticable because of the pandemic, so virtual meetings had taken place, with meetings of CWM Ambassadors by continent taking place in 2021, followed by a global online gathering in February 2022.

Building an interdisciplinary network

CWM had been very active in interdisciplinary activities, leading the project "[A Global Approach to the Gender Gap in Mathematical and Natural Sciences: How to Measure It, How to Reduce It ?](#)", funded by the ISC, in cooperation with International Union of Pure and Applied Chemistry (IUPAC), and nine other international organizations. Following the conclusion of the project in 2019 and subsequent book publication, CWM and its partners decided to form a more longstanding alliance and in 2020 launched the Standing Committee for Gender Equality in Science (SCGES), of which the IMU was a founding partner. The SCGES organized monthly seminars on the topic.



14.12. International Day of Mathematics

Presented virtually by Christiane Rousseau, Chair of the IDM Governing Board

International Day of Mathematics (IDM)

<https://www.idm314.org/>



Four years previously, the project had just been in its initial stages. A lot had been accomplished in the intervening period. The initial challenge had been to identify countries to take the project forward at UNESCO. Ultimately, Ivory Coast and Ghana had led the initiative. Finally, in November 2019, the

General Conference of UNESCO formally proclaimed March 14 as the International Day of Mathematics (IDM). The project was organized by the IMU with a dedicated website, www.idm314.org.

The pandemic had disrupted much of the planning for the launch of the IDM in 2020, but it had also presented an opportunity to develop a suitable template for future IDMs, with a global online presence serving the community internationally.

A different theme was selected each year following a call to the mathematical community for suggestions. To date there had been the following themes:

- 2020: Mathematics is Everywhere
- 2021: Mathematics for a Better World
- 2022: Mathematics Unites
- 2023: Mathematics for Everyone

An online event map was provided each year, to which organizers could post their events and activities. In 2022, people and organizations all over the world had announced over 1961 events via the online map.



The events of the IDM in fact spread over 48 hours – starting in Oceania and concluding in the western Pacific area – and a Global Live Celebration was held over this time period, with live talks and updates posted throughout. Activities also included a different challenge each year, which to date had been as follows:

- 2020: *Mathematics is Everywhere* Video Challenge (with 15 sec. video clips)
- 2021: *Mathematics for a Better World* Poster Challenge (2100 submissions)
- 2022: *Mathematics Unites* Photo Challenge (3200 submissions)

Virtual celebrations were also held in several languages, notably in English, French, and Spanish in 2021, and in Arabic, English, French, Portuguese, and Spanish in 2022.

The IDM aimed to increase participation in classrooms, hoping that as many as possible would join the celebrations. One way that schools could participate was by taking part in the relevant challenge. The IDM also offered a proposal each year to help schools participate in the IDM. For the 2022 theme *Mathematics Unites*, the IDM proposed the motto *We share one universal language*, which encouraged schools to use “proofs without words” of varying levels that could be discussed in the classroom.

Expanding the IDM

The IDMGB planned to expand the IDM via the following activities:

Global–South IDM Program supported by the Simons Foundation

- Celebrations in the Global South
- Online teacher training
- Networking: new Arabic network led by Djamel Eddine Cheriet

Expanding the *IDM celebrations in schools*

The IDM needed the help of the international mathematical community to:

- pass the invitation to schools in the relevant country
- recruit IDM Ambassadors in the relevant country

Connecting to international events

- Next Einstein Forum in 2020
- UNESCO launch of tool kit [Mathematics for Action: Supporting Science-Based Decision Making](#) in 2022
- IYBSSD 2022 (official launch scheduled for 8 July 2022)
- Booths at ICMs, etc.

14.13. Friends of the IMU (FIMU)

Presented virtually by Don McClure, Treasurer of FIMU

Friends of the International Mathematical Union (FIMU)

<https://friends-imu.org/>

FIMU – a US-based charitable organization – was incorporated in 2008 in cooperation with the IMU with support from AMS. FIMU’s mission was to:

- raise funds to support IMU programs that foster mathematics research and scholarship in developing countries;
- provide administrative support and stewardship of funds for the Chern Medal.

FIMU had provided the IMU with USD 680,000 for various IMU programs in the 2018–2021 period. Comprehensive details were provided in the written report (see Appendix 14.13).

Fundraising

- There had been over 600 individual donors in 2021.
- USD 113,500 had been donated to FIMU in 2021, which was typical for a non–ICM year.
- USD 128,400 was made in grants to the IMU in 2021.
- USD 176,000 in grants was budgeted for 2022, plus the Chern Medal Award funds.
- Grants supported the CDC Developing Country Fund, graduate fellowships, the Volunteer Lecturer Program, CWM, and CEIC (in particular for the development of the GDML).

Operations

FIMU was run as a lean operation, managed by the Board of Directors and Officers, with five members consisting of the IMU President, IMU Secretary General, and three members appointed by the IMU, currently Robert Bryant, Olga Gil-Medrano, and Mark L. Green.

FIMU's officers included the IMU President and Secretary General (*ex officio*) and the FIMU Treasurer, who was elected by the Board.

FIMU had no permanent staff. Administrative services were provided by the AMS, which were supplemented further by outside professionals, e.g., law firm, accounting firm, website design and maintenance.

Opportunities & Acknowledgements

As a charitable organization based in the US, FIMU offered tax advantages to donors who were US taxpayers. If the IMU were to establish an organization like FIMU in the EU, it would be able to offer similar tax incentives to EU donors.

FIMU gratefully acknowledged and thanked the following recent donors:

- The recipients of the Breakthrough Prize in Mathematics during the period 2018–2022, namely Christopher Hacon, James McKernan, Vincent Lafforgue, Alex Eskin, Martin Hairer and Takuro Mochizuki.
- 542 individual members of the AMS who donated to the IMU Developing Country Fund in 2021.
- CIMPA, for contributing to GRAID and for making GRAID part of their regular donation program.
- And many other generous donors.

Other organizations

14.14. ICIAM

Presented by Wil Schilders, President-elect of ICIAM

The International Council for Industrial and Applied Mathematics (ICIAM)

<https://iciam.org/>



The current President of ICIAM could not attend the GA due to travel restrictions, but as President-elect, Wil Schilders presented some of the important updates from ICIAM's report to the IMU GA.

- ICIAM was a worldwide organization for professional applied mathematics societies, and for other societies with a significant interest in industrial or applied mathematics. The Council worked to advance the applications of mathematics in all parts of the world. There were currently 54 member organizations worldwide. In addition to ICIAM's

congresses, regional meetings had also been held recently. ICIAM published its newsletter DIANOIA every three months.

ICIAM Congresses

- Since 1987 (Paris), ICIAM had organized a large congress every four years.
- The last congress took place in Valencia with 4000 participants.
- Other past venues: Vancouver (2011), Beijing (2015), Valencia (2019).
- Future venues: Tokyo (2023), The Hague (2027).

- A call for mini-symposia for ICIAM 2023 was open until 23 December 2022.

ICIAM prizes, recognitions, and support

- Six prizes were awarded at every ICIAM Congress:
 - ICIAM Collatz prize, ICIAM Lagrange prize, ICIAM Maxwell prize, ICIAM Pioneer prize, ICIAM Su Buchin prize;
 - New from 2023 onward was the ICIAM Industry prize, to provide international recognition to scientists who had made outstanding contributions to innovative mathematical techniques with demonstrated impact in industry.
- The Olga Taussky-Todd (OTT) honorary lecture was given by a female mathematician at every ICIAM congress (since 2007). The 2019 OTT lecturer was Françoise Tisseur (University of Manchester).
- ICIAM also provided support to the applications of mathematics in developing countries, by funding events and the participation of young researchers in scientific events all over the world.

ICIAM collaboration with IMU

In the past, ICIAM had collaborated with the IMU on educational interfaces between mathematics and industry, and on quantitative assessment of research.

Currently, ICIAM was participating in the ISC funded Gender Gap Project “A Global Approach to the Gender Gap in Mathematical, Computing, and Natural Sciences: How to Measure It, How to Reduce It?”.

ICIAM and the IMU were both members of the ISC. ICIAM had just been accepted for full membership, after having been an associated member for some time, and was an active participant in ISC meetings.

ICIAM and the IMU were also both active in the steering committee of the IYBSSD 2022, proclaimed by the UN, with the launch scheduled for 8 July 2022 in Paris.

ISC collaboration with BBC – ICIAM movie

The ISC had initiated a project with BBC StoryWorks entitled “Unlocking Science”:

What does science look like to you? Is it a flashlight illuminating the dark? Or is it the shadows dancing on the walls, elusive and obscure? Really, it's both. It's what we know and what we don't know. The co-existence of those truths is what makes science such an incredibly important tool to understanding our world. And never has it been more vital to decipher science's complexities for a wider audience. We face unprecedented circumstances and intricate challenges. But science can help us navigate a path forward. With remarkable dedication and vision, scientists around the world are laying foundations to tackle major issues like climate change while creating inclusive, flourishing societies. In this series, the stage is set to explore their stories, happening all over the world from Antarctica to the Amazon. This is science, unlocked.

As part of this initiative, ICIAM approached Ken Golden (Utah) to produce a video titled [“Counting on mathematicians to help save the planet”](#).

15. Presentation of Resolutions Committee

Prior to the presentation of the draft resolutions by the Resolutions Committee, IMU President Carlos E. Kenig – acknowledging the generosity of the offers already made by members to contribute to an emergency fund – proposed that a “reserve fund” should be established, to which members and benefactors could contribute financially. The allocation from the fund to members in need would be considered and determined by the IMU EC on a case-by-case basis. An appropriate resolution to this effect would be drafted.

László Lovász, Chair of the Resolutions Committee, then presented resolutions drafted by the Resolutions Committee. Each resolution was voted on by a show of hands.

Resolution 1:

The General Assembly of the IMU expresses its deep gratitude to the numerous mathematical colleagues who contributed to the planning and organization of the 29th ICM in 2022, working under the extremely challenging circumstances of the last years. While ICM 2022 cannot take place as originally planned, the General Assembly gratefully acknowledges the preparatory work undertaken by *Stanislav Smirnov* and *Andrei Okounkov*, who showed tireless dedication and commitment in their efforts.

Resolution 1 was passed.

VOTE (by show of hands): IN FAVOR = Unanimous

Resolution 2

The General Assembly of the IMU expresses its deep gratitude to those who helped make the transition to a virtual ICM 2022 possible, with particular acknowledgement of the Heidelberg Laureate Forum Foundation for its most generous support.

The General Assembly further expresses its deep gratitude to the Council of Finnish Academies and the Finnish mathematical community for their organizational and financial support in hosting the 19th General Assembly.

Resolution 2 was passed.

VOTE (by show of hands): IN FAVOR = Unanimous

Resolution 3

The General Assembly of the IMU expresses its deep appreciation to the Executive Committee, in particular to the IMU President *Carlos E. Kenig* and to the chairs of the Structure Committee and of the Program Committee, *Terence Tao* and *Martin Hairer*, respectively, for their excellent work during the period 2019–2022. It especially thanks the IMU Secretary General *Helge Holden* for his dedication and his passionate work for the IMU and its Adhering Organizations as the Secretary General of the IMU.

Resolution 3 was passed.

VOTE (by show of hands): IN FAVOR = Unanimous

Resolution 4

The General Assembly of the IMU thanks *Dietmar Hömberg, Scott Jung, Lena Koch, Mariusz Szmerlo, Birgit Seeliger, Frank Klöppel, and Vanessa Chung* for their dedicated work in the IMU Secretariat and for all their multiple contributions to the IMU.

The General Assembly further thanks *Alexander Mielke* for his work and dedication throughout his tenure as Head of the IMU Secretariat and IMU Treasurer, which ended in June 2020.

Resolution 4 was passed.

VOTE (by show of hands): IN FAVOR = Unanimous

Resolution 5

The General Assembly of the IMU thanks the members of all the IMU Committees and Commissions for their dedication and hard work for the mathematical community and the IMU.

Resolution 5 was passed.

VOTE (by show of hands): IN FAVOR = Unanimous

Resolution 6

The General Assembly of the IMU thanks individuals and organizations that have contributed with funds to the IMU.

Resolution 6 was passed.

VOTE (by show of hands): IN FAVOR = Unanimous

Resolution 7

The General Assembly of the IMU acknowledges the great success of the International Day of Mathematics (IDM) following its launch in 2020, and gives particular thanks to *Christiane Rousseau*, Chair of the IDM Governing Board, for her dedication and work on the project.

Resolution 7 was passed.

VOTE (by show of hands): IN FAVOR = Unanimous

Resolution 8

The General Assembly of the IMU expresses its deep gratitude to Germany, and in particular to the Weierstrass Institute for Applied Analysis and Stochastics (WIAS) for their generous support of the IMU Secretariat.

The General Assembly reaffirms its endorsement of the Stable Office for the International Mathematical Union as hosted at WIAS.

Resolution 8 was passed.

VOTE (by show of hands): IN FAVOR = Unanimous

Resolution 9

The IMU General Assembly resolves that Article 2 (a) of the IMU Statutes shall be changed to “To adhere to the International Science Council;”

Resolution 9 already passed, see Item 4.1 of the agenda.

VOTE (by show of hands): IN FAVOR = Unanimous

Resolution 10

The IMU General Assembly resolves that a new Article 3 with the following text shall be incorporated into the IMU Statutes:

The Union adheres to the International Science Council’s principle of embodying the free and responsible practice of science, freedom of movement, association, expression and communication for scientists, as well as equitable opportunities for access to science, its production and benefits, access to data, information and research material; and actively upholds this principle, by opposing any discrimination on the basis of such factors as ethnic origin, religion, citizenship, language, political or other opinion, gender, gender identity and sexual orientation, disability or age.

The number of each subsequent article will thereby increase by one.

Resolution 10 already passed, see Item 4.2 of the agenda.

VOTE (by show of hands): IN FAVOR = Unanimous

Resolution 11

The IMU General Assembly approves the Annual Financial Reports for the years 2018 to 2021. Moreover, it approves the building up of financial reserves from any annual surplus as reported in the income and expenditure statements.

Resolution 11 already passed, see Item 11.3 of the agenda.

VOTE (by show of hands): IN FAVOR = Unanimous

Resolution 12

The IMU General Assembly grants discharge to the IMU Executive Committee and to the IMU Treasurer for their activities during the period 2018 to 2021.

Resolution 12 already passed, see Item 11.3 of the agenda.

VOTE (by show of hands): IN FAVOR = Unanimous

Resolution 13

The General Assembly of the IMU approves that the unit contribution for the years 2023–2026 be increased from EUR 1,430 to EUR 1,460.00.

Resolution 13 already passed, see Item 12.1 of the agenda.

VOTE (by show of hands): IN FAVOR = 151, OPPOSED = 0, ABSTENTIONS = 1

Resolution 14

The General Assembly approves the 2023–2026 budget as proposed by the IMU Treasurer to the General Assembly.

Resolution 14 already passed, see Item 12.1 of the agenda.

VOTE (by show of hands): IN FAVOR = Unanimous

Resolution 15

The IMU General Assembly accepts the offer from the Adhering Organization of the United States of America to host the 2026 International Congress of Mathematicians in Philadelphia and the 20th General Assembly of the IMU in New York City.

Resolution 15 already passed, see Items 8.6 and 8.7 of the agenda.

VOTE (by show of hands): IN FAVOR = 149, OPPOSED = 0, ABSTENTIONS = 3

16. Ballot results of Elections, Finance and Dues voting

Not required as the votes had already been conducted under the relevant agenda items above.

17. Procedure for selecting the site of an ICM post 2022

17.1. ICM 2030, announcement of interest to bid

Helge Holden, IMU Secretary General, informed the GA that there had been no announcement of interest to bid from any parties and that this agenda item was accordingly not required.

18. IMU Membership

18.1. New Members

Not required, covered under Item 3.1 of the agenda.

18.2. Group changes

Not required, covered under Item 3.1 of the agenda.

18.3. Applications for Membership/Associate Membership Presentations of new members

Not required, covered under Item 3.1 of the agenda.

18.4. Membership applications balloting

There were no membership applications to consider. Item 18.4 was thus not required.

18.5. Termination of membership in case of unpaid dues

Helge Holden, IMU Secretary General, reminded the GA that any termination of membership due to unpaid dues was governed by the IMU Statutes, Article 32:

Any Adhering Organization which is in arrears for four years shall cease to be an adherent of the Union. In any case, before taking action, the Executive Committee shall submit the question to the Members of the Union by postal ballot or at a meeting of the General Assembly who under special circumstances may waive these provisions by a two-thirds majority of the total number of votes assigned to the Members.

As at 24 June 2022, there were no countries with four or more years of arrears (excluding the dues for the current year). There were however three countries, which were three or more years behind on their dues, namely Cameroon, Iran, and Kyrgyzstan, with the latter being just under four years in arrears having not made any payment on dues since being admitted to the IMU at the 2018 GA. Regarding Iran, it was acknowledged that the AO had tried hard to pay the dues but transactions out of the country were difficult due to international sanctions. The IMU had proposed to Iran the option of downgrading its group of adherence, so as to stop arrears accumulating so quickly, but this had as yet not been taken up.

The IMU maintained contact with each of the three countries, albeit with different levels of responsiveness, and was working towards resolving the issue. While the new reserve fund (see Resolution 17 under Item 19) to be established would not apply in every case of arrears, it was an additional measure to assist members in temporary difficulty due to extreme circumstances. It would now be for the EC to review these cases and consider eligibility for support. Given this, there was no need for further action or a vote on the matter at present, it sufficed that the GA had been informed.

The proposal to take no further action at present in this matter was approved by the GA by a show of hands.

VOTE (by show of hands): IN FAVOR = Unanimous

19. Resolutions balloting

Following the presentation and votes for Resolutions 1–15, László Lovász, Chair of the Resolutions Committee, presented further resolutions drafted by the Resolutions Committee concerning a statement on the war in Ukraine, the request from Ukraine regarding its membership dues, and the establishment of an emergency “reserve fund”.

László Lovász chaired discussions on the resolution regarding a statement on the war in Ukraine. IMU President Carlos E. Kenig chaired discussions on the resolutions concerning Ukraine’s request re its membership dues and the reserve fund. Delegates discussed the wording of each resolution in turn and their order overall. Amendments were proposed and discussed, with agreed amendments adopted and incorporated into the resolutions. The final resolutions were presented to and voted on by the GA. Each resolution was voted on by a show of hands.

Resolution 16:

The IMU expresses support for all mathematicians affected by the war in Ukraine, and in particular calls upon its members and other scientific organizations to do everything they can to assist our Ukrainian colleagues in these difficult times.

Resolution 16 was passed.

VOTE (by show of hands): IN FAVOR = Unanimous

Resolution 17:

The IMU will set up a “reserve fund” to help Adhering Organizations whose dues are in arrears, due to temporary extreme, adverse circumstances. The “reserve fund” will be funded by earmarked contributions. The requests for help will be considered by the IMU Executive Committee, who will decide on them on a case-by-case basis. The IMU Executive Committee will report to the next IMU General Assembly on the working of this program.

Resolution 17 was passed.

VOTE (by show of hands): IN FAVOR = Unanimous

Resolution 18

In response to a request from the Ukrainian Mathematics Union (UMU), we resolve to waive the IMU membership dues for the UMU for the years 2022 and 2023, unless these fees are covered by a third party or third parties.

Resolution 18 was passed.

VOTE (by show of hands): IN FAVOR = Unanimous

Yuriy Drozd, Delegate of Ukraine, thanked the GA for its decision and the resolutions passed.

20. Miscellaneous

There were no further issues raised under Item 20.

21. Any other item with the permission of the President

The IMU President, Carlos E Kenig, invited any further comments or questions from delegates.

Wilfredo Urbina, Delegate of Venezuela, addressed the GA regarding the situation in Venezuela, which had come close to losing its IMU membership at the 2018 GA. This was because of extensive arrears that had accumulated as a result of hyperinflation and economic collapse in the country. Thanks to the solidarity of colleagues from Colombia, Brazil, and other Latin America countries, Venezuela was allowed additional time and the funds were also collected by benefactors from these countries, for which there was enormous gratitude. The situation had improved but was still difficult. Additional efforts to raise revenue by activities and crowdfunding were ongoing. It was hoped that further contributions would be forthcoming.

Seyed Hassan Alavi, Delegate of Iran, addressed the GA and confirmed that – as mentioned under 18.5 – the Iranian Mathematical Society had difficulties in settling arrears due to the international sanctions on money transactions and also to an extent due to inflation. If the IMU allowed a temporary reduction in group of adherence, this could be an option to allow countries among the higher groups more time to settle the arrears. IMU President noted that Iran had been offered the opportunity to downgrade its membership to achieve this but the offer had not been taken up. There was now also the reserve fund to which an application could be made.

Jorge Buescu, Delegate of Portugal, informed the GA that the next European Congress of Mathematics, organized by the EMS, would take place from 15–19 July 2024 in Seville, Spain. All mathematicians were warmly invited to the congress.

Ali Iranmanesh, Delegate of Iran, proposed that the IMU EC approach the AMS with the request to make access to *MathSciNet* free of charge, just like *zbMath Open*. The IMU President noted that the IMU EC could raise this possibility with the AMS. It was noted that the US delegation present at the GA could also relay this feedback to the AMS.

Zurab Janelidze, Delegate of South Africa, noted that the IMU YouTube channel currently had only 923 subscribers with very limited content. It was therefore proposed that informal discussions by mathematicians be organized, recorded, and made available via YouTube to increase activity on the channel and reach young people. The IMU President commented that the virtual ICM 2022, due to start on 7 July, would be made available on YouTube in its entirety after the congress, so there would soon be a significant increase in content.

Finally, the IMU Secretary General reminded delegates that the IMU Award Ceremony 2022 would take place the following day on 5 July at Aalto University.

There were subsequently no further comments or questions.

The IMU President thanked all those in attendance for their efforts and contributions to the GA meeting. The IMU President declared the 19th General Assembly closed.

19th IMU General Assembly Participants

EC MEMBERS

Kenig, Carlos E. (IMU President)
Holden, Helge (IMU Secretary General)
Joshi, Nalini (IMU Vice President)
Nongxa, Loyiso G. (IMU Vice President)
Ambrosio, Luigi (EC Member-at-Large)
Piccione, Paolo (EC Member-at-Large)
Ramadas, R. T. (EC Member-at-Large)
Tian, Gang (EC Member-at-Large)
Ziegler, Günter M. (EC Member-at-Large)
Mori, Shigefumi (IMU Past President)

Hömberg, Dietmar (IMU Treasurer)
Jung, Scott (IMU Manager)

MEMBERS

Algeria, group I

Nouri, Fatma Zohra

Armenia, group I

Davidova, Diana

Australia, group IV

Burachik, Regina [*remote*]

Neeman, Amnon

Ramagge, Jacqui

Warnaar, Ole

Belgium, group III

Caenepeel, Stefaan [*remote*]

Bosnia & Herzegovina, group I

Kalabušić, Senada

Brazil, group V

da Silva Pereira, Miriam

Kohayakawa, Yoshiharu

Lima, Yuri Gomes

Mesquita, Jaqueline Godoy

Pacífico, Maria José

Bulgaria, group I

Revalski, Julian

Canada, group V

Bierstone, Edward

Darmon, Henri

Haskell, Deirdre

Ramdorai, Sujatha [*remote*]

Chile, group III

Godoy Molina, Mauricio

China, Chinese Mathematical Society, group V

Gong, Fu-Zhou [*remote*]

Li, Jun [*remote*]

Xiao, Dongmei [*remote*]

China, Mathematical Society located in Taipei, group V

- Hsia, Chun-Hsiung
Lee, Yuan-Pin
- Colombia, group I**
Onshuus, Alf
- Croatia, group I**
Kraljevic, Hrvoje
- Czech Republic, group III**
Kaiser, Tomas
Loebl, Martin
Nesetril, Jaroslav
- Denmark, group III**
Fournais, Soeren [*remote*]
Galatius, Soeren [*remote*]
- Ecuador, group I**
di Teodoro, Antonio
- Finland, group III**
Gyllenberg, Mats
Hytönen, Tuomas
Järvenpää, Maarit [*remote*]
- France, group V**
Besse, Christophe
Dhersin, Jean-Stéphane
Planchon, Fabrice
Rémy, Bertrand
Sarti, Alessandra
- Georgia, group I**
Natroshvili, David
- Germany, group V**
Agricola, Ilka
Grieser, Daniel
Pohl, Anke
Urban, Karsten
- Hungary, group III**
Krisztin, Tibor
Lovász, László
Pálffy, Péter Pál
- India, group IV**
Prasad, Dipendra
Srinivas, Vasudevan
- Indonesia, group II**
Baskoro, Edy Tri [*remote*]
Wijayanti, Indah Emilia
- Iran, group IV**
Alavi, Seyed Hassan
Daneshkhah, Ashraf
Iranmanesh, Ali
Moslehian, Mohammad Sal [*remote*]
- Ireland, group II**
Carroll, Tom
Kitson, Derek
- Israel, group V**

Kalai, Gil
Kojman, Menachem [*remote*]
Teicher, Mina
Ziegler, Tamar

Italy, group V

Cannarsa, Piermarco [*remote*]
Canuto, Claudio
Donatelli, Donatella
Pardini, Rita
Patrizio, Giorgio

Ivory Coast, group I

Desquith, Etienne

Japan, group V

Ito, Yukari
Kozono, Hideo
Ozawa, Tohru
Saito, Masahiko
Shimizu, Senjo

Kazakhstan, group I

Suragan, Durvudkhan

Korea, Republic of, group V

Kang, Nam-Gyu
Keum, JongHae
Lee, Yongnam
Park, Jongil
Yun, Ki-Heon

Kyrgyzstan, group I

Turatova, Tynara

Lithuania, group I

Štikonas, Artūras

Luxembourg, group I

Peccati, Giovanni

Mexico, group III

Araujo Pardo, Martha Gabriela
de Teresa, Luz
Guevara, Mucuy-Kak

Morocco, group I

Zerouali, El Hassan

Netherlands, group IV

Koren, Barend
Schilders, Wilhelmus Hendrikus Antonius

Nigeria, group I

Ali, Bashir

Norway, group III

Markina, Irina
Neshveyev, Sergiy

Oman, group I

Al-Hinai, Magda Talib [*remote*]

Philippines, group I

Lope, Jose Ernie C.

Poland, group IV

Łuczak, Tomasz
Miękisz, Jacek
Skalski, Adam
Strzelecki, Paweł

Portugal, group III

Buescu, Jorge
Clementino, Maria Manuel
Costa, Fernando

Romania, group I

Marinoschi, Gabriela

Russia, group V

Kashin, Boris Sergeevich

Serbia, group I

Ikodinović, Nebojša

Singapore, group I

Tan, Victor

Slovakia, group II

Kalina, Martin

Slovenia, group I

Prezelj, Jasna

South Africa, group II

Janelidze, Zurab [*remote*]
Naidoo, Jayaluxmi [*remote*]

Spain, group IV

Gordaliza, Alfonso
Herbera, Dolores
Herrero, Henar
Narváez, Luis

Sweden, group IV

Bengmark, Samuel
Di Rocco, Sandra

Switzerland, group IV

Morgenthaler, Stephan
Tretter, Christiane
Valette, Alain
Viazovska, Maryna

Thailand, group I

Lewkeeratiyutkul, Wicharn

Tunisia, group I

Baklouti, Ali

Turkey, group II

Tanbay, Betül

U.S.A., group V

Bryant, Robert [*remote*]
Friedlander, Eric
Friedlander, Susan
Shatah, Jalal
Tschinkel, Yuri

Ukraine, group II

Drozd, Yuriy [*remote*]

United Kingdom, group V

Lombardo, Sara
Neumann, Frank
Nucinkis, Brita
Parker, Chris
Tillmann, Ulrike

Uruguay, group I

Markarian, Roberto

Uzbekistan, group I

Ashurov, Ravshan

Venezuela, group I

Urbina, Wilfredo

Vietnam group I

Vu, Hoang Linh

ASSOCIATE MEMBERS

Mongolia

Altangerel, Lkhamsuren

AFFILIATE MEMBERS

African Mathematical Union (AMU)

El Yacoubi, Nouzha

European Mathematical Society (EMS)

Mehrmann, Volker [*remote*]

Mathematical Council of Americas (MCofA)

Solotar, Andrea

GUESTS/OBSERVERS

Bailey, Kathie (United States of America)
Balmaceda, José Maria P. (Philippines)
Barrow-Green, June (United Kingdom)
Curbera, Guillermo (Spain)
Dorier, Jean-Luc (Switzerland)
Falconer, Isobel (United Kingdom)
Fall, Mouhamed Moustapha (Senegal) [*remote*]
Fonseca, Irene (United States of America) [*remote*]
Gangbo, Wilfrid (United States of America) [*remote*]
Gil Medrano, Olga (Spain)
Hairer, Martin (United Kingdom)
Hoa, Le Tuan (Vietnam) [*remote*]
Hounkonnou, Norbert (Benin)
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Ramasubramanian, Krishnamurthi (India)
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Rousseau, Christiane (Canada) [*remote*]
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