

IMU News 114: July 2022

A Bimonthly Email Newsletter from the International Mathematical Union

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CONTENTS

1. Editorial: The 19th IMU General Assembly and virtual ICM 2022
2. News from the Commission for Developing Countries (CDC)
3. News from the Committee for Women in Mathematics (CWM)
4. News from the Committee for Electronic Information and Communication (CEIC)
5. News of the International Day of Mathematics
6. IMU Election results
7. Request for comments from the ICM Structure Committee
8. Framing Global Mathematics, by Norbert Schappacher
9. EMS Council meeting in Bled: election results
10. Subscribing to IMU News

1. EDITORIAL: THE 19TH IMU GENERAL ASSEMBLY AND VIRTUAL ICM 2022

We have just completed the first ever virtual ICM, and we are writing this editorial in the evening after the closing ceremony. Let us take this opportunity to walk you through some of the biggest and most exciting events in mathematics over the last two weeks.

The background as to why the IMU chose to host the IMU General Assembly in Helsinki, Finland, and why ICM 2022 had to be organized as a fully virtual congress, was already described in our [editorial](#) for IMU News 113 in May 2022. We can now report on the events themselves.

The 19th IMU General Assembly (GA) took place on 3-4 July in Helsinki. Just as in 2018, the IMU offered to cover travel expenses for one delegate from each Adhering Organization and hotel accommodation for all participants at the GA. There were around 165 participants present in Helsinki, with a further 30 participants joining the meeting remotely. The fact that air traffic, in particular in Europe, continues to be difficult in the post pandemic period, and that several participants unfortunately tested positive right before they were due to travel, made the number of remote participants higher than anticipated in the weeks before the GA. For the first time in the history of the GA, all votes were carried out using a fully electronic system, and this turned out to be a great success.

Many important decisions were made at the GA, and we will report on a few key ones here. The GA decided to emphasize the IMU's commitment to freedom of science by including a new article in the IMU Statutes. Specifically, the Article

"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.”

was added to the IMU Statutes.

The new IMU President and Secretary General will be Hiraku Nakajima (Japan) and Christoph Sorger (France), respectively. Their four-year term will commence on 1 January 2023.

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

Some of the IMU's Adhering Organizations face temporary adverse circumstances that result in problems paying their IMU membership dues. The GA decided to establish a “reserve fund”, based on earmarked donations to assist members in financial difficulties. The IMU Executive Committee will administer this fund and consider requests for assistance from members on a case-by-case basis.

It is the prerogative of the GA to decide the location of the next ICM, and the GA voted in favor of the bid from the USA, with ICM 2026 to be held in Philadelphia on 22–29 July 2026, preceded by the 20th GA in New York City on 19–20 July 2026.

On 5 July we held the first ever IMU Award Ceremony, hosted in the Aula of Aalto University. We were honored that Mr Sauli Niinistö, the President of Finland, opened the ceremony. Fortunately, all four Fields Medalists – Hugo Duminil-Copin, June Huh, James Maynard, and Maryna Viazovska, the inaugural IMU Abacus Medalist Mark Braverman, as well as the recipient of the Leelavati Prize, Nikolai Andreev, were able to be present in Helsinki. The recipients of the Chern Medal and the Gauss Prize, Barry Mazur and Elliott H. Lieb, participated in the ceremony remotely. For each winner, the audience heard the brief citation of the prize committee and a laudatio by an expert in the field, and also watched the superb videos made by the Simons Foundation. The fully packed Aula enjoyed a delightful award ceremony in an electric atmosphere.

On 6 July, we took advantage of the fact that the Fields Medalists and the IMU Abacus Medalist were all present in Helsinki, and arranged for them all to give their plenary ICM prize lectures in front of a live audience in the Auditorium of Aalto University. This was a great success, with outstanding lectures delivered by the laureates. Both the IMU Award Ceremony and the ICM 2022 opening ceremony/prize lectures are posted on the [IMU YouTube channel](#).

Over 7–14 July we had a fully virtual ICM for the first time in IMU history. In the lead up to the ICM, we worked closely with the K.I.T. Group to develop a platform that would not only deliver the lectures, but also allowed for a Q&A with the speakers. However, in the last few days before the virtual ICM launched, we were victims of a vicious DOS (Denial of Service) attack, which necessitated the restructuring of the format for the virtual ICM at very short notice. This was an exceptionally stressful period for all involved. To cut a long story short, we ended up with a simplified platform that posted all talks on the [IMU YouTube channel](#) but eliminated the possibility of a Q&A with the lecturers. This was of course disappointing, but the upside was that, in this format, no registration was necessary, and thus the ICM was truly open to all.

We had decided to remain in Helsinki after the in-person events there for the duration of the virtual ICM, so as to have the opportunity to attend as many lectures as possible, and to be able to interact with the K.I.T. Group whenever necessary. Hence, we have attended many lectures, and we have been very impressed by how the invited speakers have handled the new format. All speakers were given the opportunity to submit a prerecorded lecture, or to give their talk live via zoom (with the possibility to submit a prerecorded lecture as a back-up). The program of lectures was scheduled according to the CEST time zone. Many lectures were given in person in front of a live audience, and we felt that the speakers had gone the extra mile to make their lectures as engaging and accessible as possible. The experience we have all gained in giving video lectures over the two years of the pandemic was certainly evident.

All lectures of the virtual ICM 2022 are now published on the IMU YouTube channel and it pleases us to see that many are taking the opportunity to watch the lectures after they were given at the ICM. We hope that this will continue to serve as a repository of the most exciting and cutting-edge work currently being undertaken in Mathematics, and one which is freely and openly accessible to the world. We are also certain that this feature of recording all ICM lectures and posting them on the IMU YouTube channel will become a part of future ICMs.

The successful outcome and delivery of the GA and ICM in 2022 are the consequence of a concerted effort by many colleagues. The IMU is grateful for the support we have received from the community in this endeavor – indeed it was not clear what the right decision would be when we had to make it in the latter part of February this year, nor could we foresee how things would turn out given that we only had four months to deliver these events. We are glad that we were able to organize an in-person GA and a full-scale virtual ICM at short notice – although we would not volunteer to do so again another time under similar constraints!

Berlin, 14 July 2022

Carlos E. Kenig
IMU President

Helge Holden
IMU Secretary General

2. NEWS FROM THE COMMISSION FOR DEVELOPING COUNTRIES (CDC)

The CDC Panel Discussion during the virtual ICM 2022 is now on YouTube. The panel discussion organized by the IMU Commission for Developing Countries is now available on the [IMU YouTube channel](#) at [this link](#).

The video contains the complete session as streamed on July 12, including the pre-recorded presentations by the panellists as well as the live Q&A final part where the speakers discussed and answered comments and questions received via the ICM Discord channel.

The topic of the virtual panel session Online International Cooperation in Mathematics: Challenges and Opportunities for Developing Countries was addressed by eight speakers from organizations and institutions across the continents, such as those that work on increasing capacities within developing countries, those focusing on education and gender within mathematics, as well as institutions from the developing regions themselves.

You can find more information on the [CDC webpage of the event](#): the panellists and institutions represented, the abstract booklet and the text of some of the presentations.

[Olga Gil-Medrano](#)

[Secretary for Policy of the CDC](#)

3. NEWS FROM THE COMMITTEE FOR WOMEN IN MATHEMATICS (CWM)

Congratulations to Professor Maryna Viazovska for her Fields Medal. CWM is absolutely delighted to congratulate [Maryna Viazovska](#) for being awarded the [Fields Medal](#) “for the proof that the E_8 lattice provides the densest packing of identical spheres in 8 dimensions, and further contributions to related extremal problems and interpolation problems in Fourier analysis”. See [here](#).

Inauguration of the Ladyzhenskaya Prize in Mathematical Physics (OAL Prize), awarded to Svetlana Jitomirskaya. Congratulations to Professor Svetlana Jitomirskaya for being awarded the inaugural Ladyzhenskaya Prize in Mathematical Physics (OAL Prize) “for her seminal and deep contributions to the spectral theory of almost periodic Schrödinger operators”. See more about her [here](#), and more about the OAL Celebration in the paragraph below.

Success of the (WM)² 2022. The second edition of the World Meeting for Women in Mathematics - (WM)² - took place as a mostly virtual meeting on July 1-2 2022. More than 1100 people from more than 100 countries registered.

An overview of the (WM)² program can be found [here](#).

The program of (WM)² 2022 featured, on July 1, a virtual session with four plenary lectures by distinguished female mathematician: Maryna Viazovska, Natalia Maslova, Mina Aganagic and Eugenia Malinnikova. Titles and abstracts can be found [here](#).

This was followed by a lively panel discussion “*Girls and Mathematics: reflections and initiatives*”, dedicated to the memory of Yulia Zdanovska and moderated by Ekin Ozman and Olga Paris-Romaskevich. The names of the panelists and their abstracts can be found [here](#).

The program of (WM)² 2022 on July 2 was devoted to the *Olga Alexandrovna Ladyzhenskaya (OAL) Celebration*, in a joint session organized by (WM)² and the Probability and Mathematical Physics conference in Helsinki. See [here](#). The OAL celebration started with the world premiere of the film of Ekaterina Eremenko about OAL and her influence ([trailer here](#)) and continued with the awarding the OAL Prize: Presentation of the Prize by Ingrid Daubechies, former IMU president, Announcement of the Prize Winner, Svetlana Jitomirskaya, Laudatio by Artur Avila and Lecture of Svetlana Jitomirskaya, which was also a plenary ICM lecture.

The (WM)² has been recorded and can be seen on [\(WM\)² YouTube channel](#). Visit also the [\(WM\)² website](#).

Participation of CWM in the ICM. The panel *Best Practices Towards a More Diverse and Inclusive Mathematical Community* was jointly organized by the Committee for Women in Mathematics (CWM) and the Committee on Diversity (CoD) during the virtual ICM 2022 with moderators Motoko Kotani (CWM) and Edray Goins (CoD). More information on the panelists and their abstracts may be found [here](#), while a recording of the panel is available [here](#).

[Marie-Françoise Roy](#) and [Carolina Araujo](#)

Chair and Vice-chair of the IMU [Committee for Women in Mathematics](#)

4. NEWS FROM THE COMMITTEE FOR ELECTRONIC INFORMATION AND COMMUNICATION (CEIC)

The [Committee for Electronic Information and Communication](#) (CEIC) is a standing committee of the IMU, which recommends actions, conveys opportunities and advice to the Executive Committee (EC) on emerging issues related to publications, electronic information, data repositories, archives, and related practices.

The membership of CEIC is determined by the EC. Henry Cohn is the current chair of the CEIC. New members Kevin Buzzard and Ingrid Rewitzky replaced Tim Cole and Alf Onshuus in 2021 and Jean-Pierre Bourguignon joined the CEIC later in 2021. Mila Runnwerth changed jobs and left the committee in 2022. Below we outline actions and issues that the current CEIC considered during 2019–2022.

CEIC recommended that the IMU endorse [DORA, the 2012 San Francisco Declaration of Research Assessment](#). This is a worldwide initiative covering all scholarly disciplines and key stakeholders including funders, publishers, professional societies, institutions, and researchers. It promotes best practices of research assessment and builds on issues that were covered by the [IMU report on “Citation Statistics”](#).

The IMU signed the declaration in March 2022.

CEIC revised the document “[Best Current Practices for Mathematics Journals](#)” in June, 2021. Other existing IMU best-practice documents have been archived, as they originated in the context of a very different culture of publishing and the CEIC felt that minor changes to update such older documents could not capture subtle issues arising from current rapidly changing practices. For example, the question of whether authors should choose to publish in open-access publications is shaped for many by financial considerations that are outside individual control. The CEIC felt that it would be inappropriate to offer advice to mathematical authors on this choice. Recommendations from CEIC are most useful when they reflect a strong consensus among a representative group of those with expertise and the CEIC agreed that many current issues will require further discussion and experience over time to reach consensus.

Another significant subject of discussion in the CEIC is accessibility of mathematical knowledge. A major initiative called the Global Digital Mathematical Library (GDML) was endorsed by the GA in 2006, with the aim of enabling seamless access to the mathematical literature and make as much of it as possible freely available. It gave rise to the [International Mathematical Knowledge Trust](#) (2015), but little momentum has resulted on actions outlined in the 2014 document “[Developing a 21st Century Global Library for Mathematics Research](#)”.

The CEIC recommends initial steps, including an interface and index, called GDML_0, and for actions to make as many papers as possible to be freely available.

The best current foundation for GDML_0 is [zbMATH Open](#), the online version of Zentralblatt MATH, which is now freely available worldwide. Several other initiatives have been discussed. CEIC awarded US\$3,689.45 left over from a Sloan Foundation grant aimed at GDML-related activities to the [Sophize Foundation](#) to fund the creation of a prototype Online Structured Content Extraction Tool.

The most challenging aspect of the GDML is ensuring access to mathematics papers. CEIC would like to see publishers establish a uniform window of time to enable access to back issues via a moving wall, in which all papers published in mathematics journals are eventually made freely and publicly available under a suitable license. At CEIC's recommendation, the IMU Executive Committee has established a [Committee on Permissions](#) to study this idea, discuss it with publishers, and offer concrete recommendations. We hope to have this settled before considering the tricky issue of access to mathematical books.

[Nalini Joshi](#)

[IMU EC liaison with the CEIC](#)

5. NEWS OF THE INTERNATIONAL DAY OF MATHEMATICS

The 2023 theme for the International Day of Mathematics (IDM 2023) is [Mathematics for Everyone](#). The theme was proposed by Marco Zarco Rotairo of the Trece Martires City National High School at Indang, Cavite, Philippines. The same theme had also been proposed for IDM 2022 by the London Mathematical Society. Others also proposed this theme, with slight variations in the wording: Blanca Margarita Parra Mosqueda, from ENES León, UNAM, Mexico, Fin McLaughlin from Cabot Learning Federation, Bristol, UK, and Luis Miguel Paz Corrales, from Universidad Pedagógica Nacional Francisco Morazan, Langué, Valle, Honduras.

IDM 2022. It is still possible to relive some of the IDM 2022 highlights on the IDM website:

- See the [thousands of photos](#) sent to the 2022 Mathematics Unites Photo Challenge.
- Watch the short talks with guest mathematicians who joined us in the Global Celebration, with [English](#), [Arabic](#), [French](#), [Portuguese](#), and [Spanish](#) sessions.
- Discover photos and reports from IDM celebrations from all over the world in the [live blog](#).

If you have not yet done so, sign up to the [IDM Newsletter](#) on the [IDM website](#) to learn of all our announcements.

[Christiane Rousseau](#)

Chair of the [IDM Governing Board](#)

6. IMU ELECTION RESULTS

The elections held at the 19th IMU General Assembly in Helsinki for the IMU President, the IMU Secretary General, and the IMU Executive Committee for the period 2023–2026 had the following results:

President: Hiraku Nakajima (Japan)

Secretary General: Christoph Sorger (France)

Vice Presidents: Ulrike Tillmann (UK) and Tatiana Toro (US, Colombia)

Members-at-Large: Mouhammed Moustapha Fall (Senegal), Nalini Joshi (Australia), JongHae Keum (Republic of Korea), Paolo Piccione (Brazil), Günter Ziegler (Germany) and Tamar Ziegler (Israel)

Furthermore, elections to the IMU Commission for Developing Countries (CDC) and to the IMU Representatives of the International Commission of the History of Mathematics (ICHM) took place in the 19th IMU GA, with the following results:

CDC President: Andrea Solotar (Argentina)

CDC Secretary for Policy: Ludovic Rifford (France)

CDC Secretary for Grants: Jose Maria P. Balmaceda (Philippines)

CDC African member: Norbert Hounkonnou (Benin)

CDC Asian member: Le Tuan Hoa (Vietnam)

CDC Latin American member: Mariel Saez (Chile)

IMU Representatives at ICHM: Guillermo P. Curbera (Spain) and Isobel Falconer (UK)

7. REQUEST FOR COMMENTS FROM THE ICM STRUCTURE COMMITTEE

The [ICM Structure Committee](#) is responsible for the preparation of the Scientific Program of the International Congress of Mathematicians (ICM). This committee will conduct deliberations on proposed changes to the structure of the congress for the next ICM (to be held in-person in Philadelphia in 2026) and beyond. As part of the preparation for these deliberations, the committee solicits feedback from the general mathematics community on the current state of the ICM, and any proposals to improve that state for the subsequent congresses.

Read the full request for comments in Terry Tao's blog following [this link](#).

8. FRAMING GLOBAL MATHEMATICS, BY NORBERT SCHAPPACHER

This open-access book by [Norbert Schappacher](#), on the history of institutions created to frame the international dimension of mathematical research leading to today's IMU, should be of great interest to the readership of IMU News.

Recently published, on the occasion of the centennial of the IMU, the book is [freely accessible here](#).

The author gave a talk based on his book at the [opening](#) of the meeting [Mathematics without Borders: The Centennial of the International Mathematical Union](#), in September 2021. A [video recording of the talk](#) and the [presentation slides](#) are freely available.

9. EMS COUNCIL MEETING IN BLED: ELECTION RESULTS

The [EMS Council met in Bled \(Slovenia\) on 25–26 June 2022](#) and elected the new EMS President, Vice-President, and Treasurer, with their starting in January 2023:

President: Jan Philip Solovej (Copenhagen)

Vice president: Beatrice Pelloni (Edinburgh)

Treasurer: Samuli Siltanen (Helsinki)

Executive Committee Member-at-Large: Victoria Gould (York)

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