

IMU News 115: September 2022

A Bimonthly Email Newsletter from the International Mathematical Union

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CONTENTS

1. Editorial
2. News from the Commission for Developing Countries (CDC)
3. News from the Committee for Women in Mathematics (CWM)
4. News of the International Day of Mathematics
5. IMU Reserve Fund
6. Call for nominations for the ICMI EC Nominating Committee
7. The 9th HLF 2022
8. The 2023 Breakthrough Prize in Mathematics
9. News from ICIAM
10. Subscribing to IMU News

1. EDITORIAL

Welcome to IMU News. I am Hiraku Nakajima, President-elect of IMU. I would like to explain my early encounter with ICM. In 1987, I started my academic career as a differential geometer working on nonlinear PDE on manifolds in Tokyo. I heard George Lusztig's talk on representation theory at ICM 1990 in Kyoto. I saw a hint of a possible connection between my work with representation theory during the talk. Since then, I shifted my interest toward the interaction between geometry and representation theory. I rarely heard research-level talks in other fields before, and I would not have attended the ICM if it had not been held in Japan. It was a miracle moment in my research career.

I am also interested in mathematical aspects of theoretical physics, in particular supersymmetric gauge theories. My interest grew around the Second Superstring Revolution in 1994, but I believe that it was already started when I heard Witten's talk at the same ICM. Because of this interest, I am currently working at the Kavli Institute for the Physics and Mathematics of the Universe (IPMU), whose aim is to understand the universe from the synergistic perspectives of physics, cosmology, and mathematics.

Besides the participation at ICM 1990 mentioned above, I gave a talk at ICM 2002, was a member of the Geometry Section Panel in 2006, and of the Program Committee in 2018. I served IMU as a member of the ICM Structure Committee for 2022. It is a good experience and I understand some aspects of ICM. I was also a colleague of Shigefumi Mori, IMU's President during 2015–2018. I heard from him about his experiences. Therefore, I felt familiar with IMU.

Nevertheless, I was extremely surprised when I was asked if I was willing to be a candidate for IMU president. This was a great honor and will be a huge responsibility. I accepted the offer and decided to work at the IMU in return for the large benefits which I received from my experiences at previous ICMs. My knowledge and experiences are limited, but it will not be a problem. I will cooperate with the Secretary-General-elect, Christoph Sorger, the staff at the IMU permanent office in Berlin, the newly elected Executive Committee (EC), and with help from the mathematical community.

As an observer, I was invited to participate in the EC meeting in February. The meeting was to discuss the preparation of the IMU General Assembly (GA) and ICM 2022, planned to be held in St. Petersburg. Just a few days before the meeting I was shocked and saddened by hearing about the Russian invasion of Ukraine. I condemn the Russian government's action and am sorry for Ukrainian mathematicians and the Ukrainian people. It was clear that I could not visit St. Petersburg and meet my Russian colleagues for the first time in two and a half years after the Covid 19 pandemic started. The main topic of the EC meeting was changed to the rearrangement of the ICM. As an observer, I carefully listened to the discussion. The decision was made, as all of you know. It was the hardest time in the recent history of the IMU. Readers are encouraged to consult [IMU News 112](#) for the details of the discussion. I understood the huge responsibility of the IMU president.

At the GA in Helsinki, moved from the originally planned St. Petersburg, several important decisions were made. The GA adopted a resolution expressing support for all mathematicians affected by the war in Ukraine. The GA decided to establish a "reserved fund" based on earmarked donations to assist Adhering Organizations in financial difficulties by temporary circumstances to pay their IMU membership dues.

It was also decided that ICM 2026 will take place in Philadelphia, preceded by the GA in New York. We are looking forward to meeting our colleagues in person. I am happy to announce that Claire Voisin, CNRS, Institut de Mathématiques de Jussieu-Paris Rive Gauche, has agreed to chair the Program Committee for ICM 2026.

ICM 2022 was held in a virtual format for the first time in history. The talks were wonderful and accessible to the audience behind the screen. I, as a member of the audience, thank the speakers who spent time and effort on the preparation of their talks. They were certainly key to the success of the virtual ICM. Talks were recorded and published on the IMU [Virtual ICM 2022 homepage](#); hence they are freely accessible to the world. This feature was a great success and should be continued in future ICMs. I am also grateful for the effort of many colleagues which was indispensable for the success of the GA and the Virtual ICM that had to be put in place at such a short notice.

I attended the [World Meeting for Women in Mathematics](#) - (WM)², organized by the Committee for Women in Mathematics (CWM), held just before the GA. It was a great success to increase the visibility of women in mathematics. Much work remains to be continued in this direction by the next EC.

Many of the supporting programs of the Commission for Developing Countries (CDC) were affected by travel restrictions during the pandemic. Restrictions might be lifted soon, but the IMU should work hard to recover the loss. Our experiences in online workshops and lectures could give new ways to support research in mathematics in developing countries. There are lots of problems to be solved, such as securing stable internet connection, but I believe that they have big potential.

The war in Ukraine might cast a dark shadow on international cooperation. Activities of the IMU might not escape from that. As the president of the IMU, I will refer to the title of a book on the history of the IMU: *Mathematicians of the World, Unite!*

Hiraku Nakajima
IMU President-elect

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

Upcoming deadlines for several programs of the IMU Commission for Developing Countries. Many of the IMU-CDC programs are continuously open for applications. Here is a list of the next deadlines:

- *Volunteer Lecturer Program* (including *Virtual VLP*): December 1, 2022, for lectures to be held between April 1, 2023, and April 1, 2025
- *IMU Abel Visiting Scholar Program*: December 31, 2022, for visits between May 1 and August 31, 2023
- *IMU-CDC Individual Travel Support Program*: January 15, 2023, for research visits between May 15, 2023, and May 15, 2024
- *Conference Support Program*: January 15, 2023, for conferences starting after May 15, 2023

For more information, visit the [IMU-CDC home page](#).

Free subscriptions for two journals of the Institut Henri Poincaré. The *Annales de l'Institut Henri Poincaré* series C and D are published by the EMS Press. The not-for-profit Association Publications de l'IHP offers 5-year subscriptions free of charge to academic libraries in developing countries. Applications should be filed [on this webpage](#) before November 15, 2022.

[Olga Gil-Medrano](#)
[Secretary for Policy of the CDC](#)

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

Establishment of AOWM. CWM is very happy to report that *Asia-Oceania Women in Mathematics* (AOWM), the continental organization for women in mathematics in Asia and Oceania, was established on August 1, 2022, at an online meeting.

There are more than 200 founding members from 17 Asian and Oceanian countries. The [CWM ambassadors](#) and their continental meetings played a key role in the creation of AOWM. The preparation process was taken care of by a group led by Motoko Kotani and Kyewon Koh Park.

The AOWM Executive Committee is the following:

- *President*: Sanoli Gun (India)
- *Vice-President*: Melissa Tacy (New Zealand)
- *Vice-President*: Polly Sy (Philippines)
- *Secretary*: Hyang-Sook Lee (Korea)
- *Ordinary EC members*: Budi Nurani Ruchjana (Indonesia), Yukari Ito (Japan), Dongmei Xiao (China), Bakhyt Alipova (Kazakhstan), Zohreh Mostaghim (Iran)

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

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

4. NEWS OF THE INTERNATIONAL DAY OF MATHEMATICS

The theme for the [2023 International Day of Mathematics](#) is [Mathematics for Everyone](#).

Ahead of the next celebration, on March 14, 2023, we want to showcase individuals and organizations that actively work in helping mathematics reach “everyone.” We would appreciate contact information for individuals and organizations that work to reach underserved, marginalized, or vulnerable populations, or at bridging gaps of sex, age, ethnicity, location, social group (or others) anywhere in the world, whether they provide formal education, outreach, or any sort of activity that connects people to mathematics. The contact information can be sent to info@idm314.org.

Our dream is that the IDM 2023 will be celebrated in all schools around the world. We are looking for more [IDM Ambassadors](#) that can help us invite the local schools to celebrate. Please feel welcome to become an IDM Ambassador or to find an IDM Ambassador in your community. You can contact us at info@idm314.org.

Please invite anyone interested in the IDM to [subscribe to the IDM Newsletter](#) to receive announcements about the celebration.

[*Christiane Rousseau*](#)

Chair of the [IDM Governing Board](#)

5. IMU RESERVE FUND

At the IMU General Assembly held over 3–4 July 2022, a resolution for the setting up of a “reserve fund” was passed. The purpose of the fund is to help Adhering Organizations whose dues are in arrears, owing to temporary extreme, adverse circumstances. Following this resolution, the IMU Executive Committee has set up the *IMU Reserve Fund*, and its [regulations](#) have now been prepared.

For information on how to contribute to the fund and on how to apply for support from the fund, check the [IMU AO Circular Letter 24/2022](#).

6. CALL FOR NOMINATIONS FOR THE ICMI EC NOMINATING COMMITTEE

Frederick K. S. Leung, President of the [International Commission on Mathematical Instruction](#) (ICMI), invites members of the community to propose, in consultation with the Adhering Organizations of their country, one candidate for serving on the ICMI Executive Committee Nominating Committee.

The call for nominations is available [here](#). Visit the [ICMI homepage](#) for further news.

7. THE 9TH HLF 2022

The [9th Heidelberg Laureate Forum](#) (HLF) took place from 18 to 23 September 2022 as an in-person event in Heidelberg, after two digital editions. About 200 selected young researchers in mathematics and computer science from all over the world attended the exciting event, with a programme including laureate lectures, panel discussions, and plenty of opportunities for interaction. More than a total of twenty-five Abel Prize, Fields Medal, Turing Award, and ACM Prize laureates attended the meeting.

All lectures and panel discussions of the 9th HLF are now available on the [HLF YouTube channel](#). A visit to the [HLF Foundation Blog](#) is also highly recommended.

Young researchers are encouraged to check the [FAQ page](#) of the HLF for information on how to apply to attend the forum.

8. THE 2023 BREAKTHROUGH PRIZE IN MATHEMATICS

Daniel A. Spielman, from Yale University, is the 2023 laureate of the *Breakthrough Prize in Mathematics*, for “breakthrough contributions to theoretical computer science and mathematics, including to spectral graph theory, the Kadison-Singer problem, numerical linear algebra, optimization, and coding theory.”

The 2023 *New Horizons Prize* laureates are Ana Caraiani, Imperial College London and University of Bonn, Ronen Eldan, Weizmann Institute of Science and Microsoft Research, and James Maynard, Oxford University and Institute for Advanced Study.

The 2023 *Maryam Mirzakhani New Frontiers Prize* laureates are Maggie Miller, Stanford University and Clay Mathematics Institute, Jinyoung Park, Stanford University, and Vera Traub, University of Bonn.

Visit [this page](#) for the announcement of the 2023 Breakthrough Prizes.

9. NEWS FROM ICIAM

ICIAM 2023. The *10th International Congress on Industrial and Applied Mathematics*, ICIAM 2023, will be held at Waseda University, Tokyo, from 20 to 23 August 2023. The call for minisymposia is open, with closing date 23 December 2022. Calls for contributed talks, embedded meetings, and satellite meetings are now also open. Visit the [ICIAM 2023 homepage](#) for the calls and much more.

ICIAM Prizes. The [winners of the 2023 ICIAM Prizes](#) have been announced: ICIAM Collatz Prize: Maria Colombo, EPFL Lausanne; ICIAM Lagrange Prize: Alfio Quarteroni, Politecnico di Milano; ICIAM Maxwell Prize: Weinan E, Peking University and Princeton University; ICIAM Pioneer Prize: Leslie Greengard, New York University; ICIAM Su Buchin Prize: José Mario Martínez Pérez, University of Campinas; ICIAM Industry Prize: Cleve B. Moler, Math Works Inc. These prizes will be awarded during the opening ceremony of ICIAM 2023.

10. SUBSCRIBING TO IMU NEWS

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