IMU News 126: July 2024

A Bimonthly Email Newsletter from the International Mathematical Union

Editor: Yoshiharu Kohayakawa, University of São Paulo, Brazil

imu-news-editor@mathunion.org

CONTENTS

- 1. Editorial
- 2. ICM 2026: Nomination of speakers and of laureates of IMU prizes
- 3. Ninth European Congress of Mathematics
- 4. 2024 Wolf Prize in Mathematics
- 5. 2023 ACM A.M. Turing Award
- 6. News from the Commission for Developing Countries (CDC)
- 7. News from the Committee for Women in Mathematics (CWM)
- 8. News from the International Day of Mathematics
- 9. Subscribing to IMU News

1. EDITORIAL

Like IMU, <u>ICMI</u> has a very busy schedule every four years with its International Congress on Mathematical Education (ICME) and its General Assembly (GA), but while ICM runs on years 2 modulo 4 (or Winter Olympics years), ICME runs on leap years (Summer Olympics years).

The <u>15th Congress</u>, ICME-15, was held in Sydney (Australia) from July 8 to 14, 2024, with the GA on July 7. IMU President, Hiraku Nakajima, and IMU Secretary-General, Christoph Sorger, as well as Paolo Piccione, ICMI liaison from IMU EC, followed both events with great interest and interacted with the ICMI Community.

The Congress gathered nearly 2500 participants from nearly 100 different countries, around 200 being financed through a solidarity funds committee. The <u>program</u> included 4 plenary lectures and 2 panels, 3 awardees lectures, 59 invited lectures, 56 Topic Study Groups divided in 2 streams, 50 Discussion Groups, 70 Workshops, 5 National Presentations and several other events.

ICMI has 8 Regional and 9 Thematic <u>Affiliate Organizations</u>. As usual, they present during the GA a quadrennial report and run some specific activities during the Congress. Moreover, several of them also organize a satellite conference before or after the Congress in a region within or near the host country of the Congress. So, for many math educators an ICME year means often nearly 2 full weeks of congress and networking activities.

ICME is also preceded by an Early Career Researchers' day.

During the 2024 ICMI General Assembly, the ICMI Country Representatives elected the new ICMI Executive Committee (58 of them voted). This new committee will be in service from January 1, 2025, for 4 years and it is composed of:

President:Merrilyn GOOS(Australia)Secretary-General:Jean-Luc DORIER(Switzerland)

Vice Presidents: Jinfa CAI (U.S.A.)

Betina DUARTE (Argentina)

Members-at-large: Mercy KAZIMA (Malawi)

Nùria PLANAS (Spain)
Susanne PREDIGER (Germany)
Ramaswamy RAMANUJAM (India)
Cristina SABENA (Italy)

Moreover, the immediate past President of ICMI, Frederick K.S. LEUNG (Hong Kong, SAR, China) as well as the President and the Secretary-General of IMU, Hiraku NAKAJIMA (Japan) and Christoph SORGER (France), are members ex-officio. Paolo PICCIONE (Brazil) is the IMU liaison person for ICMI.

One important event during ICME is the Awards Ceremony. Indeed, ICMI delivers three different awards with one recipient each, every four years.

- The <u>Felix Klein Award</u>, named after the first President of ICMI (1908–1920), honors lifetime academic achievement in mathematics education. This award is aimed at acknowledging those excellent scholars who have shaped the field of mathematics education over their lifetimes.
- The <u>Hans Freudenthal Award</u>, named after the eighth President of ICMI (1967–1970), honors an outstanding scholar who has initiated a major cumulative program of research and brought it to maturation over the past 10 years.
- The <u>Emma Castelnuovo Award</u>, named after the Italian mathematics educator (1913–2014), recognizes outstanding achievements in the practice of mathematics education.

The ninth recipients of the Klein and Freudenthal Awards and the third recipient of the Emma Castelnuovo Award, who were made public at the opening ceremony of ICME-15 in Sydney (Australia) on July 8, 2024, are as follows.

<u>Ferdinando Arzarello</u>, Professor Emeritus of the University of Turin, Italy, receives the **2024 Felix Klein Award**, in recognition of his more than forty years of sustained, consistent, and outstanding achievements in mathematics education research and development.

<u>Ole Skovsmose</u>, Professor Emeritus of Aalborg University, Denmark, receives the **2024 Hans Freudenthal Award**, for his outstanding contributions to the very foundations of mathematics education through his career-long explorations of Critical Mathematics Education.

<u>Kaye Stacey</u>, Professor Emeritus of the University of Melbourne, Australia, receives the **2024 Emma Castelnuovo Award** in recognition of her more than 40 years of research-based design, development and implementation of innovative, influential work in the practice of Mathematics Education.

For further information, visit the <u>ICMI Awards page</u>. The list of recipients of the ICMI Awards, including their full citations, can be found on <u>this webpage</u>.

<u>Jean-Luc Dorier</u> <u>ICMI Secretary-General</u>

2. ICM 2026: NOMINATION OF SPEAKERS AND OF LAUREATES OF IMU PRIZES

The Adhering Organizations of the IMU and the mathematical societies worldwide are invited to nominate plenary and sectional speakers for the <u>International Congress of Mathematicians 2026</u> in Philadelphia, USA, 23–30 July 2026.

The list of the ICM 2026 sections as proposed by the ICM Structure Committee and endorsed by the Executive Committee of the IMU can be found in Section 4 of their 2023 report (see <u>Circular Letter 8/2023</u> on the <u>IMU Circular Letters webpage</u>).

When you make nominations for speakers please specify whether you suggest them as plenary speakers or sectional speakers. In case of proposals of sectional speakers, please indicate to which sections you would like the persons to be invited. Shared lectures between sections are also possible.

The IMU Executive Committee also endorsed the proposal to leave 20 sectional talks, and one or two plenary talks, to be assigned to special lectures (described in Section 3.3 of the Structures Committee report). Nominations for these talks are also invited.

All communication concerning the scientific program of ICM 2026 is handled by the Chair of the Program Committee, Claire Voisin. Please direct all your proposals for invited plenary and sectional speakers to Claire Voisin using the email address chair@pc26.mathunion.org. Nominations should be received by the PC Chair no later than 1 November 2024.

The Adhering Organizations of the IMU are also invited to submit nominations for the IMU distinctions listed below, thus assisting the corresponding committees in their task of selecting the awardees who will receive their distinctions at the ICM 2026. Nominations are solicited for

- The Fields Medals Chair: IMU President Hiraku Nakajima Email: chair@fields26.mathunion.org
- The IMU Abacus Medal Chair: Endre Süli Email: chair@abacus26.mathunion.org
- The Carl Friedrich Gauss Prize Chair: Felix Otto Email: chair@gauss26.mathunion.org
- The Chern Medal Award Chair: Nathalie Wahl Email: chair@chern26.mathunion.org
- The Leelavati Prize Chair: Hinke Osinga Email: chair@leelavati26.mathunion.org
- The ICM Emmy Noether Lecture Chair: Jill Pipher Email: chair@noether26.mathunion.org

More information about each of these awards and the Noether lecture, as well as lists of past laureates, can be found on the <u>IMU website</u>.

The IMU stands for and promotes diversity in mathematics, with a commitment to fostering diversity and inclusion in all its activities. Committee members abide by the IMU's guidelines on conflicts of interest, unconscious bias, and the principle of freedom and responsibility in science.

To allow the committees sufficient time for this decision process, the IMU has set **31 December 2024** as the deadline for nominations.

Because the ICM Emmy Noether Lecture is a special lecture at the ICM, the deadline for nominations for the ICM Emmy Noether Lecture is earlier and is set for 1 **October 2024**.

Please send your nomination to the special email address of the committee chair as given above, thereby ensuring that it will automatically reach the corresponding committee. A copy of your nomination material will be archived in the IMU Secretariat in Berlin with an embargo of 70 years for anyone outside the committee.

3. NINTH EUROPEAN CONGRESS OF MATHEMATICS

The 9th edition of the European Congress of Mathematics (ECM) was held in Seville, Spain, from 15 to 19 July 2024. The ECM is organized by the European Mathematical Society (EMS) every four years and it brings together central figures of European mathematics and showcases the subject from diverse points of view: research, applications, education, history, knowledge transfer and outreach, among others. The 9th ECM was a great success and attracted 1400 participants from 70 countries.

At the opening ceremony, the following 14 prizes of the EMS were awarded.

The ten laureates of the EMS Prize are

- Maria Colombo (EPFL, Switzerland),
- Cristiana De Filippis (University of Parma, Italy),
- Jessica Fintzen (University of Bonn, Germany, and Duke University, USA),
- Nina Holden (New York University, USA),
- Thomas Hutchcroft (California Institute of Technology, USA),
- Jacek Jendrej (Université Sorbonne Paris Nord, France),
- Adam M. Kanigowski (University of Maryland, USA, and the Jagiellonian University, Poland),
- Frederick Manners (University of California San Diego, USA),
- Richard Montgomery (University of Warwick, UK) and
- Danylo Radchenko (CNRS, Université de Lille, France).

The Felix Klein Prize

Fabien Casenave (Safran Tech, Digital Sciences & Technologies, France)

The Otto Neugebauer Prize

Reinhard Siegmund-Schultze (University of Agder, Norway)

The Paul Lévy Prize in Probability Theory

Jeremy Quastel (University of Toronto, Canada)

The EMS/ECMI Lanczos Prize

 Patrick Amestoy, Jean-Yves L'Excellent and Theo Mary, for MUMPS (MUltifrontal Massively Parallel sparse direct Solver)

A short biography of the awardees can be found on the 9th ECM <u>Prize Winners</u> page; the citations can be found on the <u>Fourteen prizes awarded to European mathematicians at the 9th ECM</u> page of the EMS.

The 10th ECM will be held in 2028 in Bologna, Italy. Note that this will also be the centennial of the 1928 ICM in Bologna.

4. 2024 WOLF PRIZE IN MATHEMATICS

The <u>Wolf Prize</u> in Mathematics for 2024 has been awarded to <u>Noga Alon</u>, Professor of Mathematics at Princeton University and Baumritter Professor Emeritus of Mathematics and Computer Science at Tel Aviv University, and <u>Adi Shamir</u>, Professor at the Department of Computer Science and Applied Mathematics at the Weizmann Institute of Science. Readers are warmly invited to visit their Wolf Prize webpages <u>linked here</u> and <u>here</u>, which close with the following paragraphs.

Noga Alon is being awarded the 2024 Wolf Prize for his profound impact on Discrete Mathematics and related areas. His seminal contributions include the development of ingenious techniques in Combinatorics, Graph Theory, and Theoretical Computer Science, and the solution of long-standing problems in these fields as well as in Analytical Number Theory, Combinatorial Geometry, and Information Theory.

Adi Shamir is awarded the Wolf Prize for being a truly exceptional scientist and has been the leading force in transforming cryptography into a scientific discipline that is heavily based on Mathematics. His foundational discoveries combine mathematical ingenuity with a range of analytical tools. They had a huge impact on several mathematical areas, advancing both mathematics and society in an unparalleled manner.

5. 2023 ACM A.M. TURING AWARD

On 10 April 2024, the <u>Association for Computing Machinery</u> (ACM), announced the 1994 Nevanlinna Prize Laureate Avi Wigderson as the recipient of the <u>2023 ACM A.M. Turing Award</u> for his "foundational contributions to the theory of computation, including reshaping our understanding of the role of randomness in computation and mathematics, and for his decades of intellectual leadership in theoretical computer science." See <u>this ACM page</u> and the <u>press release</u> for further details.

<u>Avi Wigderson</u> is a member of the Institute for Advanced Study, Princeton, USA. Among his many other prizes are the 2009 Gödel Prize, the 2019 Knuth Prize and the 2021 Abel Prize of the Norwegian Academy of Science and Letters.

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

The next <u>International Congress of Mathematicians</u> will take place in Philadelphia, USA, from June 23 to June 30, 2026. The <u>Commission for Developing Countries</u> (CDC) is actively working with the organizing committee of ICM 2026, the American Mathematical Society (AMS), and the Simons Foundation, on the funding program that will be offered to mathematicians from developing countries to participate in this exceptional event. We are pleased to announce that the call for applications will open in September 2024. Feel free to subscribe to the <u>AMS mailing list</u> to stay up to date.

We would also like to remind you about our new <u>IMU-Simons Research Fellowship Program for Developing Countries</u>, generously funded by the Simons Foundation. This new grant program supports mathematicians based in developing countries in undertaking collaborative research at mathematical institutions abroad. The CDC strongly encourages mathematicians and students from developing countries to apply to our calls listed below and to contact us for further detail <u>via email</u>.

Grants to Institutions

- <u>Volunteer Lecturer Program</u> (next deadline September 5, 2024, for courses to be held between March 1, 2025, and March 1, 2026)
- <u>Library Assistance Scheme</u> (no fixed deadline)

Grants for Conferences and Projects

• <u>Conference Support Program</u> (next deadline October 1, 2024, for conferences starting after February 1, 2025)

Grants to Individuals

- <u>Abel Visiting Scholar Program</u> (next deadline August 31, 2024, for research visits between January 1 and April 30, 2025)
- <u>IMU-Simons Research Fellowship Program for Developing Countries</u> (next deadline October 1, 2024, for research visits starting between February 15, 2025, and February 15, 2026)

Graduate Scholarships

- IMU Breakout Graduate Fellowship Program (the 2024 call for nominations is now closed)
- Graduate Research Assistantships in Developing Countries (GRAID) Program (the 2024 call for applications is now closed)

<u>Ludovic Rifford</u> <u>Secretary for Policy of the CDC</u>

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

The first in-person meeting of <u>CWM 2023–2026</u> took place on June 3–4, 2024, at the <u>Abdus Salam International Centre for Theoretical Physics</u> (ICTP), Trieste, Italy. CWM warmly thanks ICTP for its hospitality. Among the topics discussed and decisions made during these intense two days, we highlight the following:

- The CWM Call 2025 will be launched in mid-October 2024 and will use the IMU Grant Management system, which is the same system that has been used by the CDC Conference Support Program since 2023. Following CDC's initiative, CWM plans to host a webinar to advertise and explain the features of the call. Moreover, CWM has formulated an addendum to the IMU Guidelines for Handling Conflicts of Interest specific for the CWM annual call, which has been endorsed by the IMU EC.
- The CWM has reviewed its scheme of <u>CWM Ambassadors</u>, whose duties are to circulate the <u>CWM Newsletter</u> and other communications within their country, geographical region, or organisations, as well as to report back to the CWM about relevant events and activities. CWM will periodically check ambassadors' intention and availability to continue as active CWM Ambassadors, and will create a distinguished group of Alumni Ambassadors for those that feel that it is time to pass the baton to someone else.
- Earlier in 2024, the IMU EC approved and supported CWM's request to make the "May 12 Initiative" an official IMU CWM Initiative. The interactive May 12 website will soon be moved to Berlin, and CWM will be working in coordination with the current May 12 coordination group to ensure a smooth transition.
- CWM has started shaping the third <u>World Meeting for Women in Mathematics</u> (WM)², to take place in Philadelphia in 2026 as a satellite activity of ICM 2026. The organising and scientific committees of the next (WM)² are being formed, and the event will be planned with a focus on "celebrating diversity".

Carolina Araujo and Hélène Barcelo

Chair and Vice-Chair of the IMU Committee for Women in Mathematics

8. NEWS FROM THE INTERNATIONAL DAY OF MATHEMATICS

Every year a theme is chosen to flavor the celebration of the <u>International Day of Mathematics</u> (IDM) on March 14, to spark creativity and to bring light to connections between mathematics and all sorts of fields, concepts and ideas.

The <u>IDM 2025 theme</u> is

MATHEMATICS, ART, AND CREATIVITY

The 2025 IDM theme celebrates the creativity found in mathematical discovery and art. Using mathematics in art opens doors to new ideas, and to beautiful and captivating creations.

You are invited to <u>subscribe to the IDM Newsletter</u> in order to learn more about the resources and activities (including the annual challenge) around IDM 2025.

Christiane Rousseau

Chair of the <u>IDM Governing Board</u>

9. SUBSCRIBING TO IMU NEWS

To subscribe to IMU News, please visit www.mathunion.org/organization/imu-news and go to the "Subscribe to IMU News" section at the bottom of the page.

When you subscribe, you will receive an e-mail message to confirm your subscription so that misuse will be minimized. IMU will not use the list of IMU News emails for any purpose other than sending IMU News, and will not make it available to others.

IMU News is the electronic newsletter of the International Mathematical Union.

More details about IMU News can be found at www.mathunion.org/organization/imu-news