

## IMU-Net 95: May 2019

A Bimonthly Email Newsletter from the International Mathematical Union

Editor: Martin Raussen, Aalborg University, Denmark

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#### 1. EDITORIAL: LOOKING BACK AT MY PRESIDENCY

At the end of December 2018, I completed my four-year-term as IMU President. I am so grateful to the members of the IMU Executive Committee 2015 - 2018 (EC18), who are great mathematicians willing to help IMU.

When the term started, the members of EC18 did not know each other well. Therefore, it was crucial to understand the EC members first and build a consensus within EC. Soon it became customary that Secretary, Helge Holden, and I talked with each other regularly on skype at my late night and in his afternoon because of the time difference. We thus took a particular care to maintain the consensus within the EC18 in a combined Japanese-and-Norwegian way.

The orchestral efforts of IMU committees and commissions culminated at the events in Brazil in 2018: The highest administrative event, the IMU General Assembly (GA) took place at Sao Paulo in the end of July 2018. Let me mention just a few among the many items treated at the GA. The IMU Secretariat, which had been an arrangement until 2020, was endorsed to become permanent in view of the great contribution of the IMU Secretariat to IMU and the generous support of the Weierstrass Institute ([WIAS](#)), the Federal Republic of Germany, and the Land Berlin. The Structure Committee (SC) was created to lessen the heavy workload on the Program Committee (PC) in such a way that the structure of the ICM is decided by the SC, and the invited speakers of the ICM by the PC - from the year 2019. The new Executive Committee EC 2019-2022 (EC22) as well as other commissions of IMU were appointed at the GA. Finally, the GA decided the site of the ICM 2022 to be St. Petersburg. The meeting was constructive and closed with the promise to meet again in St. Petersburg in 2022.

The most memorable event was the [ICM2018](#) in Rio de Janeiro. It was a gigantic event with thousands of participants, which was made possible by the cooperation of hundreds of volunteers. Its preparation started in 2014 with the appointment of the Program Committee (PC) Chair, János Kollár. The EC appointed the PC and also the IMU Prize committees. The PC later appointed the Panel Committee and decided the academic content of ICM2018 after all. Based on the results of these committees, the Local Organizing Committee of ICM2018 chaired by Marcelo Viana handled all the practical matters. Having overcome a few difficulties, they achieved a spectacular success. I

am also very grateful to the speakers for their preparations, whose talks were very much praised by the audiences. I leave further details to the several editorials Marcelo Viana already wrote in the IMU-Net.

Back to the work during 2015-2018, the EC18 altogether could put great ideas initiated by the previous EC14 (2011 - 2014) into practice, including the Graduate Research Assistantships in Developing Countries ([GRAID](#)) Program, the [IMU Breakout Graduate Fellowship Program](#), and the Committee for Women in Mathematics ([CWM](#)). The first was a unique program aiming at fostering research and scholarship in mathematics, which was made possible by the cooperation of the American Mathematical Society ([AMS](#)), the Friends of IMU ([FIMU](#)), and the Commission for Developing Countries ([CDC](#)). The second program was created so that the generous donations of the Breakthrough Prize winners could support the young generation, with the cooperation of CDC, FIMU, and The World Academy of Sciences ([TWAS](#)). As for the third, it was a great news that its proposal on the [Gender Gap](#) was awarded one of the three major grants of the International Science Council ([ISC](#)), thanks to the Chair, Marie-Francoise Roy. I am also grateful to Christiane Rousseau, an EC18 member, who had represented IMU and enhanced its visibility in the ISC. There was also a new development in IMU, the project of having UNESCO proclaim March 14 (Pi Day in many countries) as the International Day of Mathematics (more details below in this IMU-Net issue).

Problems the IMU faces were so diverse that it was unrealistic for EC alone to treat them. To cope with the situation, the EC often created an ad hoc committee for a new issue as well as many other regular committees. When we agreed on the candidates of a committee, it was the President's role to invite each candidate to join. I was so impressed that our requests were most likely accepted. I could feel that the IMU is highly trusted and supported by mathematicians from all over the world.

Since the promotion of international cooperation in mathematics is the purpose of IMU, it is important for IMU to have opportunities to meet with representatives from various organizations as well as researchers in other disciplines, and this was particularly important for an algebraic geometer from Asia like me. The EC often sends representatives to international events related to mathematics worldwide for this purpose. Still it was sometimes best that I attended the event myself.

One such example is the Heidelberg Laureate Forum ([HLF](#)), which was well described by the editorial by Dierk Schleicher in the [IMU-Net 80](#), November 2016 issue. At HLF, about 200 young researchers invited from all over the world meet the laureates of Abel Prize, Turing Award, ACM Prize in Computing, Fields Medal, and Nevanlinna Prize in a relaxed atmosphere. When they are exhausted with mathematical discussions, they can enjoy the natural and historic environments of Heidelberg. I recommend ambitious students and Post Doctors to apply this coming winter for HLF2020.

Looking back, though the IMU Presidency came with very heavy responsibility, I was amply repaid by sincere support and cooperation. I am happy to have completed my term with genuine gratitude to my colleagues of EC18.

Shigefumi Mori (IMU past-president, KUIAS/RIMS, Kyoto University)

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## 2. INTERNATIONAL DAY OF MATHEMATICS

### Theme of IDM 2020

Following a consultation with the IMU members the IDM Governing Board has decided the theme of the 2020 IDM, which will be "**Mathematics is everywhere**".

The theme was proposed by Jaime Carvahlo e Silva from Portugal and former Secretary General of ICMI. Examples of topics related to the following sub-themes can be found in several languages on the [IDM website](#):

- *Mathematics is everywhere in science and technology.*
- *Mathematics is everywhere in the organization of the civilization.*
- *Mathematics is essential to meet the UN Sustainable Development Goals.*
- *Mathematics is everywhere in whatever you do.*
- *Tell me about some activity or area and I will tell you where mathematics is.*

The official **IDM logo** can now be found on the [IDM website](#). Versions in several languages will be made available soon. The website will post material related to the theme "Mathematics is everywhere" in September or October 2019.

If the [UNESCO 40th General Conference](#) adopts the proclamation of March 14 as the International Day of Mathematics, then the **official launch** at the UNESCO Headquarters in Paris will take place in March 2020. Considering that March 14 2020 is a Saturday, the celebration will take place on Friday March 13, 2020.

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## 3. INSIDE THE IMU

On the occasion of its 100<sup>th</sup> anniversary, the IMU invites potential authors to write a [monograph](#) presenting the IMU in a larger framework of international scientific unions, and the internationalization of science and mathematics, in particular. The [Klaus Tschira Stiftung](#), Heidelberg, Germany, generously funds the project.

Bids should be submitted in pdf by email to IMU Secretary General Helge Holden ([secretary@mathunion.org](mailto:secretary@mathunion.org)) no later than August 1, 2019.

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## 4. CEIC: NOTES AND COMMENTS

One barrier to fully understanding the scholarly publishing environment is that publication practices can differ between fields or subfields, over time, and between countries. In mathematics we are lucky to have high-quality, mathematics-specific databases such as [zbMATH](#) and [MathSciNet](#), as well as free resources such as [Google Scholar](#), but getting a broad perspective on publishing remains difficult. Here are two recent articles that shed some light on this subject, the first about open access in general (not primarily in mathematics) and the second about a study of large commercial publishers in mathematics:

Indonesia tops open-access publishing charts, by Richard Van Noorden  
<https://www.nature.com/articles/d41586-019-01536-5>

On the share of mathematics published by Elsevier and Springer, by Jean-Christophe Mourrat  
<https://arxiv.org/abs/1905.05635>

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## 5. NEWS FROM THE CWM

### CWM Newsletter, Issue 1, May 2019

Newsletter Editor, Ekin Ozman, Bogazici University, Turkey, introduces our new initiative:

It is our great pleasure to announce the first issue of the CWM Newsletter. CWM has a very active web page with lots of information, <https://www.mathunion.org/cwm>, and we think the Newsletter will be a good companion to our webpage. Most of its content relies on the information that is already on our webpage, to be found under the "CWM News" and "Other News and Announcements" sections of the Newsletter. There are some additional articles too. One of these articles is an interview with the chair of CWM, Marie-Francoise Roy. We plan to continue this tradition by interviewing a CWM member in every issue. In the last section of the Newsletter, you can find an article written by Carolina Araujo announcing the new book "World Women in Mathematics". We hope to have similar articles in future issues.

We invite feedback and suggestions about the Newsletter. It is our first such experience, and it would be helpful if this Newsletter becomes a collaboration of all activities for Women in Mathematics worldwide. We hope to publish the Newsletter two times per year for now, hoping that we can increase the frequency as time goes by.

The first CWM Newsletter can be found at

<https://www.mathunion.org/fileadmin/CWM/Initiatives/CWMNewsletter1.pdf>

### Book announcement "World Women in Mathematics 2018"

The forthcoming book *World Women in Mathematics 2018 - Proceedings of the First World Meeting for Women in Mathematics (WM)<sup>2</sup>*, organized by CWM in coordination with the Association for Women in Mathematics (AWM), records the first (WM)<sup>2</sup> and the CWM panel discussion at ICM 2018. It is edited by Carolina Araujo, Georgia Benkart, Cheryl E. Praeger and Betül Tanbay, and is expected to be published still in 2019 by Springer, as part of their AWM Series.

The first part of the volume starts with a short report on the activities of (WM)<sup>2</sup> including pictures that attest to the lively and friendly atmosphere of the meeting. Survey research papers from invited lecturers provide a panoramic view of different fields in pure and applied mathematics: optimization (by Etienne de Klerk and Monique Laurent), applications of computational and real algebraic geometry to biochemistry (by Alicia Dickenstein), and stochastic processes (by Stella Brassesco and Maria Eulália Vares). The first part closes with the note by Maria J. Esteban, based on her public lecture entitled "How mathematics is changing the world."

The second part of the volume documents the CWM panel discussion at ICM 2018. The paper by Helena Mihaljević and Marie-Françoise Roy surveys women lecturers in the ICM since its inception. June Barrow-Green's essay investigates the historical context of the gender gap in mathematics. Finally, Silvina Ponce Dawson describes a series of actions taken by the International Union of Pure and Applied Physics to reduce the gender gap.

This book is dedicated to the memory of Maryam Mirzakhani. Her shining light was a great inspiration to the organization of the (WM)<sup>2</sup> and will always be a beacon for women in mathematics.

### **News from May 12, a Celebration for Women in Mathematics**

May 12 was chosen for the Celebration of Women in Mathematics because it is the birthdate of Maryam Mirzakhani. The initiative was proposed by the Women's Committee of the Iranian Mathematical Society and voted by a vast majority of attendees to (WM)<sup>2</sup>, the World Meeting for Women on Mathematics on last July 31 in Rio.

The initiative is supported by several organisations for women in mathematics worldwide (European Women in Mathematics, Association for Women in Mathematics, African Women in Mathematics Association, Indian Women and Mathematics, Colectivo de Mujeres Matemáticas de Chile and the Women's Committee of the Iranian Mathematical Society).

There were more than 100 events, announced on <https://may12.womeninmaths.org/#>, taking place in the following countries: Argentina, Australia, Belgium, Benin, Brazil, Canada, Chile, Congo, Denmark, Egypt, Ethiopia, France, Germany, India, Indonesia, Iran, Israel, Italy, Mexico, Nepal, Panama, Peru, Philippines, Portugal, Russia, Senegal, Slovakia, South Africa, Spain, Sweden, Thailand, Tunisia, Turkey, UK, Ukraine, and USA. Local events were varied: films, exhibitions, panel discussions, lectures, lunches, dinners,...

The film *Journeys of Mathematics* and the exhibition *Remember Maryam Mirzakhani*, both created by CWM, were used in several local events.

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## **6. NOMINATIONS FOR COSPAR AWARDS SOLICITED**

[COSPAR](#) (Committee for Space Research) is calling for nominations for awards, which will be presented at the 43rd COSPAR Scientific Assembly to be held in Sydney, Australia, 15 – 23 August 2020. Further information about these awards can be seen at <https://cosparhq.cnes.fr>. As a Scientific Union Member of COSPAR, the IMU is eligible to nominate candidates for these awards. Nominations are due at the COSPAR secretariat by 30 November 2019, but require endorsement by the member organization. If you are interested in nominating a candidate, we suggest you contact Nalini Joshi ([nalini.joshi@sydney.edu.au](mailto:nalini.joshi@sydney.edu.au)), the IMU Liaison on COSPAR, in the first instance by 01 October 2019 to indicate interest.

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## 7. SHAW PRIZE AWARDED TO MICHEL TALAGRAND

The [Shaw Prize in Mathematical Sciences 2019](#) has been awarded to Michel Talagrand, Sorbonne University, France, “for his work on concentration inequalities, on suprema of stochastic processes and on rigorous results for spin glasses”.

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## 8. SUBSCRIBING TO IMU-NET

There are two ways of subscribing to IMU-Net:

1. Click on <http://www.mathunion.org/organization/IMU-Net> with a Web browser and go to the "Subscribe" button (at the bottom) to subscribe to IMU-Net online.
2. Send an e-mail to [imu-net-request@mathunion.org](mailto:imu-net-request@mathunion.org) with the Subject-line:  
Subject: subscribe

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

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You can find here, for instance, detailed information about subscribing to the IMU-Net mailing list and unsubscribing from it.

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