

IMU-Net 90: July 2018

A Bimonthly Email Newsletter from the International Mathematical Union

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1. EDITORIAL: THE MATHEMATICAL COUNCIL OF THE AMERICAS

The Mathematical Council of the Americas is a network of professional mathematics societies and research institutes based in the Americas, dedicated to promoting the development of mathematics in all its aspects throughout the continent. The [MCofA](#) aims to highlight the excellence of mathematical achievements in North, Central and South America within the context of the international arena. It fosters scientific integration of all mathematical communities in the continent. The MCofA organizes the quadrennial Mathematical Congress of the Americas which rotates between the countries in the Americas. It also promotes and collaborates with other initiatives that aim to advance the development of mathematics and cooperation among mathematicians in the continent. We are delighted that this year the MCofA became an affiliated member of the IMU.

The decision to launch the Mathematical Congress of the Americas was made at a meeting held in New Orleans in January, 2011, at the invitation of the American Mathematical Society. This meeting was attended by representatives of a number of mathematical societies and institutes including the national mathematical societies of Brazil ([SBM](#)), Canada ([CMS](#)), Mexico ([SMM](#)), and the mathematical union for Latin America and the Caribbean ([UMALCA](#)). A subsequent meeting hosted by the SBM in Rio in May 2011 was attended by representatives of most of the national mathematical societies as well as many of the major mathematical institutes in the continent who all supported the initiative. A steering committee was formed; it had only 2 year to create from scratch the Mathematical Congress of the Americas!

The choice of 2013 for our quadrennial new Congress seemed natural because it was the open year in the round of the existing major quadrennial congresses, namely the ICM, the [ICIAM Congresses](#) and the [ECM](#). We had to work hard and fast to ensure that [MCA 2013](#) was successful. With the dedicated help of many mathematicians in the Americas and generous financial support from various sources the first MCA took place in beautiful Guanajuato, Mexico on August 5-9, 2013. It was attended by close to 1000 mathematicians of all ages and from institutions throughout the Americas.

After the success of [MCA2013](#) it was clear that we needed to develop a more formal structure to ensure the future continuity of the MCA. We took as our model the IMU and the ICM and the steering committee morphed into the Mathematical Council of the Americas. Details of the MCofA can be seen

on the [web](#). At present the MCoFA is formed of 5 “large” mathematics societies, 5 “small” mathematics societies, 15 institutional members, and 7 associate members. The dues and the number of representatives to the Council for each constituent member are calibrated by the type of membership. The Council is the main decision making body: it sets the strategic goals of the MCoFA, it elects the executive committee, it approves membership dues, it approves the site of the host institution for the upcoming MCA. The 5 member executive committee includes the Chair, the Treasurer, and the lead organizer of the upcoming MCA. This structure was in place for the organization of [MCA2017](#) last year in Montreal which once again had over 1000 registrants and showcased excellent mathematics. Work is currently in progress to organize MCA2021 which will be in Buenos Aires, Argentina on July 19-23, 2021. Please visit the [web](#) and consider adding this Congress to your calendar.

In addition to supervising the quadrennial MCA, the MCoFA also co-sponsors other mathematical activities. This includes a program of co-sponsorship of workshops that involve at least two societies or institutes that are members of the MCoFA. The financial resources of the MCoFA are currently still very limited but we hope to be able to provide support to educational activities such as [EMALCAs](#) in underserved regions of the Americas.

We are delighted to be able to take advantage of the location of the first ICM in South America and to hold an in-person meeting of the MCoFA at the upcoming ICM in Rio on the afternoon of Friday August 3rd, 2018.

Susan Friedlander
Chair, Executive Committee of the Mathematical Congress of the Americas.

2. CEIC: NOTES AND COMMENTS

CEIC wrote earlier ([IMU-Net 80](#)) about the importance of arXiv.org, saying “One of the most useful things mathematicians can do to aid their colleagues working in low-income nations, is to post one’s own work to arXiv.org”. As well as being useful to others, it can also be helpful to oneself. A study of several journals, including three mathematics ones, in a Master’s Thesis (<http://arxiv.org/abs/1306.4856>) showed that publishing the preprint tended to make the first citations occur earlier. A more systematic study (<https://arxiv.org/abs/1805.05238>) of the Computer Science literature (where the publishing culture is much more oriented towards conferences) has shown the same. It would be good to have a similar systematic study in mathematics.

3. IMU GENERAL ASSEMBLY IN SÃO PAULO: THE MOST IMPORTANT DECISIONS

Prior to the ICM 2018 in Rio, the [General Assembly \(GA\)](#) of the IMU took place in São Paulo, Brazil, July 29-30. A more comprehensive report on the discussions and results of the GA will be given in the September issue of this Newsletter. The most important decisions taken at the GA read as follows:

- Two excellent bids from Paris and from St. Petersburg for hosting the ICM 2022 were presented to the GA. The delegates decided that Saint Petersburg will host the [2022 International Congress of Mathematics](#) (in the period August 15-23). The ICM 2022 will be preceded by the IMU GA on August 12-13, 2022.

- Elections of the IMU President, the IMU Secretary, and the IMU Executive Committee for the period 2019 – 2022 had the following result:
 President: Carlos Kenig (US)
 Secretary General: Helge Holden (Norway)
 Vice Presidents: Nalini Joshi (Australia) and Loyiso G. Nongxa (South Africa)
 Members at Large: Luigi Ambrosio (Italy), Andrei Okounkov (Russia), Paolo Piccione (Brazil), Trivandrum Ramakrishnan Ramadas (India), Gang Tian (China), and Günter M. Ziegler (Germany).
- 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, with the following results:
 CDC President: Dipendra Prasad (India)
 CDC Secretary for Policy: Olga Gil-Medrano (Spain)
 CDC Secretary for Grants: Alf Onshuus (Columbia)
 CDC African member: Mama Foupouagnigni (Cameroon)
 CDC Asian member: Jose Maria P. Balmaceda (Philippines)
 CDC Latin American member: Andrea Solotar (Argentina)
 IMU Representatives at ICHM: Isobel Falconer (UK) and Catherine Goldstein (France)

4. ICM 2018 OPENS ON AUGUST 1 IN RIO

The Opening Ceremony of the International Congress of Mathematics 2018 in Rio de Janeiro (Brasil) begins on August 1 at 8:30 local time. The names of the laureates (Fields medals, Nevanlinna prize, Gauss prize, Chern medal and Leevalati prize) will be announced and the significance of their work and key results will be emphasized in laudatory lectures that same day. A special issue of IMU-net on the prizes awarded at ICM 2018 will be broadcasted as soon as possible.

Full information on ICM 2018 (August 1 – 9) and its program is available on <http://www.icm2018.org/portal/en/home> .

5. (WM)², THE WORLD MEETING FOR WOMEN IN MATHEMATICS: THE PROGRAM

More than 350 participants, half of which Open Arms grantees, from at least 53 countries, are expected to participate in this satellite event of the ICM 2018 on July 31 in Riocentro. The meeting was initiated by the IMU Committee for Women in Mathematics ([CWM](#)) and put together by its program and organization committees.

The program starts with the World Premiere of "Journeys of Women in Mathematics", a film created by CWM and made possible by a grant from the Simons Foundation. Neela Nataraj from India, Aminatou Pecha from Cameroon and Carolina Araujo from Brazil are featured in their respective countries. The film documents both the successes and barriers for women in mathematics, in the words of women themselves.

The Keynote Lecture from Monique Laurent entitled *Convergence analysis of approximation hierarchies for polynomial optimization*, is followed by a Memorial Session for Maryam Mirzakhani. A

Maryam Mirzakhani Memorial with 15 original posters, a book of condolences, and volumes with her papers as well as a book with papers about her will remain available during (WM)² and ICM.

Discussions in small groups will be organized on topics suggested by the participants such as strategies to encourage women to continue with research in mathematics, the Gender Gap in mathematics, power relations and harassment, maternity and career, etc. .

Poster presentations include about 80 mathematical posters but also about 20 thematic posters on various initiatives for Women in Mathematics.

The three invited mathematical lectures are given by women in mathematics from Argentina, Chile and Brazil: Alicia Dickenstein, Salomé Martínez and Maria Eulália Vares.

The Public Lecture entitled *Why Mathematics is changing the world?* by Maria J. Esteban is followed by a panel discussion with propositions coming from group discussions and short presentations of networks for Women in Mathematics in Africa, Europe, India, North America and finally Latin America.

Complete information on <https://www.worldwomeninmaths.org/> .

6. INSIDE THE IMU

A ballot among the IMU Adhering Organizations had the result that membership applications from Oman and Uzbekistan were approved: As of July 2018, Oman is a Member in group I and Uzbekistan is an Associate Member of the IMU.

7. NEWS FROM THE FOUNDING GENERAL ASSEMBLY OF THE INTERNATIONAL SCIENCE COUNCIL (ISC)

The [ISC](#), formed from the merger of the International Council for Science (ICSU) and the International Social Science Council (ISSC), held its inaugural General Assembly in Paris on July 4 2018. The new International Science Council is a unique global non-governmental organization that represents both the natural and social sciences.

The main item of business for the meeting was the election of a new President and a new Governing Board to lead the Council for the next three years. The first President is the South African mathematician Daya Reddy, who will also attend IMU GA at the end of the month. The other members of the Governing Board are

- Peter Gluckman, natural sciences, New Zealand, President-elect
- Elisa Reis, Vice-President social sciences (Brazil)
- Jinghai Li, Vice-President natural sciences (China)
- Alik Ismail-Zadeh, Secretary, natural sciences (Germany)
- Renée van Kessel, Treasurer, social sciences (Netherlands)

The ordinary members of the Board are Geoffrey Boulton, Melody Burkins, Saths Cooper, Anna Davies, Pearl Dykstra, Sirimali Fernando, Ruth Fincher, James C. Liao, Natalia Tarasova and Martin Visbeck.

Eight of the 16 members of the Governing Board are women.

Let us cite Daya Reddy, President: “We have set ourselves an ambitious goal to be a powerful, visible, credible voice for science. There’s no time to waste. Let’s get to work!” and Peter Gluckman, President-elect: “The International Science Council must work to become the leading voice of science in leading fora of policy-making. This requires a coherent and focused strategy, where the Council is uniquely positioned.”

More details at <https://council.science/> .

8. EMS COUNCIL MEETING IN PRAGUE: ELECTION RESULTS

At the biannual council meeting of the European Mathematical Society ([EMS](#)), delegates of full, associate and individual members elected new officers and a new member of the Executive Committee (EC) for the period 2019 – 2022. Volker Mehrmann (TU Berlin, Germany) was elected new President, Betül Tanbay (Bogazici University, Istanbul, Turkey) was elected new Vice-President and Jorge Buescu (Coimbra University, Portugal) was elected new member-at-large of the EC. Sjoerd Verduyn Lunel (Utrecht University, Netherlands) and Mats Gyllenberg (University of Helsinki, Finland) were reelected as secretary and as treasurer of the society.

9. KYOTO PRIZE IN BASIC SCIENCES AWARDED TO MASAKI KASHIWARA

Masaki Kashiwara (Research Institute for Mathematical Sciences, Kyoto University) has been awarded the [2018 Kyoto Prize in the field of Basic Sciences – Mathematical Sciences](#) – for outstanding contributions to a broad spectrum of modern mathematics: advancement of D-module theory from its foundation. He established the theory of D-modules, thereby playing a decisive role in the creation and development of algebraic analysis. His numerous achievements—including the establishment of the Riemann-Hilbert correspondence, its application to representation theory, and construction of crystal basis theory—have exerted great influence on various fields of mathematics and contributed strongly to their development.

10. SUBSCRIBING TO IMU-NET

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