

IMU-Net 81: January 2017

A Bimonthly Email Newsletter from the International Mathematical Union

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1. EDITORIAL: ICMI - MOVING FORWARD IN STRENGTH, COLLABORATION AND EXCHANGE

[ICMI](#) is a distinctive space for reflection, exchange and collaboration, for the dissemination of ideas and results at all levels, to all those professionally concerned with mathematics education at all levels: teachers, teacher educators, curriculum developers, scholars, mathematicians, administrators, policy-makers. The [ICME13](#) in Hamburg, July 2016, was our largest international Congress to date with 3500 participants from 105 countries. In addition, 230 participants from less affluent countries were supported by ICMI's solidarity fund reflecting ICMI's concern to foster participation across the globe. Our regional congresses crisscross continents and we have just launched a timely ICMI study 24 on school mathematics curriculum reforms.

Over the past fifteen years ICMI has expanded its core activities, beyond ICMEs, regional congresses and its targeted international studies (see www.mathunion.org/icmi). I draw attention to two newer projects. The Capacity and Networking Project ([CANP](#)) aims to enhance mathematics education in developing countries by supporting those responsible for mathematics teachers, fostering sustained and effective regional networks of teachers, mathematics educators and mathematicians, also linking these to international support. Since 2011, there have been five two-week CANP workshops in Mali, Costa Rica, Cambodia, Tanzania and Peru, offered jointly by mathematicians, researchers, policy-makers, and key teachers. Each workshop has around forty participants, half from the host country and half from regional neighbours; organized by an international program committee. A recent survey undertaken by Lena Koch in the IMU permanent office concluded that the CANPs (and follow ups) have amply fulfilled the most optimistic expectations of their initiators.

The [Klein Project](#) - also in collaboration between IMU and ICMI - dates back to 2008. It is inspired by Felix Klein's book *Elementary Mathematics from an Advanced Standpoint*, and aims to produce resources for secondary teachers to encourage connections between the mathematics they teach and the field of mathematics and its evolution over the last century. The project has developed vignettes - short, readable pieces on topics of contemporary mathematics. The Klein Project blog is increasingly active, and many vignettes have been translated into Chinese, French, German, Italian, Spanish, Arabic and Portuguese (see <http://blog.kleinproject.org/>).

These two ICMI activities illustrate the growing and intensifying collaboration between the between ICMI and the IMU, where the interests of our communities overlap, by enlivening and refreshing mathematical ideas in and for learning and teaching in school, and building mathematical capacity in regions where this is needed. The future directions of these two projects, as well as the continuous development of ICMI, are the starting agenda for the first meeting of the new EC.

Being elected as the President of ICMI is an immense honour, especially at a time of strong institutional collaboration with the IMU, and it is also a huge responsibility, to ensure the continuing strength of the institution. This is a turbulent period in the world, and there are increasing threats to collaboration and social justice. However, as a South African, I have learned over and over again how turbulence brings opportunities. During my mandate, and with the wonderful executive committee elected to support ICMI's work over the next four years, we will work to maximize these opportunities.

Jill Adler, President of ICMI

2. CEIC: NOTES AND COMMENTS

International Mathematical Knowledge Trust (IMKT). The Alfred P. Sloan Foundation has funded an initial year, ending Jan 31 2018, of the project to create a well-functioning [IMKT](#) (International Mathematical Knowledge Trust). It is led by Ingrid Daubechies (Duke University, North Carolina USA) and Stephen Watt (University of Waterloo, Ontario Canada) and will have head-quarters at Waterloo [<http://imkt.org>]. The long-term goal is recognized to be "an organization that will compile and encode mathematical knowledge to make it more searchable, computable, linkable, checkable, and usable". The proposal developed out of the work of the GDML WG of the CEIC. IMKT begins to make concrete the 2006 endorsement by the IMU of a World Digital Mathematics Library. The first initiative is work already started toward a Special Function Concordance, but other initiatives will follow as the legal basis for the IMKT takes shape.

Of interest in connection with semantics for mathematics are also a 90-minute video [<https://www.youtube.com/watch?v=psSyM1zp82k>] based on interviews at the Semantic Representation of Mathematical Knowledge Workshop at the [Fields Institute](#) in February 2016 , co-organized by the Wolfram Foundation, the Fields Institute and the GDML WG, and a 9-minute condensed version [<https://youtu.be/HOtpVU4-FMc>]; note these are not the videos of the individual lectures which are at [<http://www.fields.utoronto.ca/video-archive/event/2053>].

Membership of CEIC. At the end of 2106, two members of CEIC came to the end of the eight years maximum service, and, reluctantly, we have said goodbye to them in this role. Carol Hutchins kept us connected with the Library world, very important for an "Information and Communications" Committee, and also served as our liaison with IMU-Net itself. Her eyes for a good story will be sadly missed. Olga Caprotti, as well as keeping us connected with the "semantic web" world, also served as our liaison with the [ICSU World Data System](#), of which IMU is an Associate Member. While mathematicians do not produce experimental data in the same sense as the Regular Members, we are increasingly concerned with issues of reproducibility etc., where WDS is important.

In their place, we welcome Alf Onshuus from Universidad de los Andes in Columbia, who will bring experience of Information and Communication in a different continent.

3. IMPORTANT DATES FOR ICM 2018

The Organizing Committee has set some important dates towards the International Congress of Mathematicians. They concern

- the Travel Grant Program for mathematicians from developing countries to attend the congress
- Preregistration and registration, and
- Submission of abstracts for short communications and posters.

Details can be found on the webpage <http://www.icm2018.org/portal/en/news23>.

To keep informed about preparations of ICM, you may subscribe to the [ICM Newsletters](#).

4. ICM 2022 – PARIS OR ST. PETERSBURG

One of the main objectives of the IMU is “to support and assist the ICMs” (IMU statutes). The IMU members were asked to submit bids to host the ICM 2022, and we received bids from France (venue Paris) and Russia (venue St. Petersburg). Both bids are very professional, and we are grateful to our colleagues for the work they have done in preparing the bids.

The Site Visiting Committee of the Executive Committee (EC) will visit the two sites, and the EC will make its recommendation to the General Assembly. The final decision will be taken by the General Assembly 29-30 July, 2018 in São Paulo, Brazil.

Helge Holden
Secretary of the International Mathematical Union

5. IMU/CDC PROGRAMS: UPCOMING DEADLINES

Several IMU/CDC Programs supporting activities during 2017 have deadlines for applications in the next 2-3 months.

[Abel Visiting Scholar Program](#). The [Niels Henrik Abel Board](#) and the International Mathematical Union invite applications from mathematicians professionally based in developing countries to visit an international research collaborator for a period of one month. Next Deadline: April 30, 2017 for research visits between September 1 and December 31, 2017.

[IMU-Simons African Fellowship Program](#). This new program is funded by the [Simons Foundation](#). It supports research visits for mathematicians from African developing countries employed in Africa to travel to an internationally known mathematical centre (university) of excellence for a limited research period. Next Deadline: March 15th, 2017.

[IMU-Simons Travel Fellowship Program](#). This program funded by the Simons Foundation supports collaborative research visits of mathematicians working in the developing world to a centre of

excellence in any part of the world for collaborative research in mathematics. Next Deadline: March 15, 2017. The Program is arriving to its end and the last deadline will be May 15, 2017.

[Conference Support Program](#). This program gives partial support to Mathematical Science based conferences organized in developing countries. The funds are for travel and accommodation only. The conference organizers must send the application form at least five months in advance. Next Deadline: March 15, 2017.

[Volunteer Lecture Program](#). IMU/CDC welcomes applications by universities and mathematics degree programs in the developing world that are in need of and interested to host a lecturer for intensive 3-4 week mathematics courses, at the advanced undergraduate or master level. Next Deadline: March 15th 2017 for lectures starting from June 1st 2017.

For more information, please visit <http://www.mathunion.org/cdc>.

6. REMINDER: 5TH HEIDELBERG LAUREATE FORUM

The 5th Heidelberg Laureate Forum ([HLF](#)), will take place in Heidelberg, Germany during September 24 – 29, 2017. At HLF all winners of the Fields Medal, the Abel Prize, the Alan Turing Award and the Nevanlinna Medal, and this year for the first time the ACM Prize in Computing, are invited to attend. In addition, young and talented computer scientists and mathematicians are invited to apply for participation. The HLF is supported by the IMU. Refer to the [editorial](#) of [IMU-Net 80](#) for further information.

Applications for participation at the 5th HLF are open in three categories: Undergraduates, PhD Candidates, and Postdocs. See the webpage www.application.heidelberg-laureate-forum.org for the online application form and for further information. The deadline for applications is February 14, 2017.

7. ICIAM PRIZES 2019: CALL FOR NOMINATIONS

The ICIAM Prize Committee for 2019 calls for nominations for the five ICIAM Prizes to be awarded in 2019 (the Collatz Prize, the Lagrange Prize, the Maxwell Prize, the Pioneer Prize and the Su Buchin Prize). Nominations for each of these prizes should be made electronically through the website <https://iciamprizes.org/>. The deadline for nominations is July 15th, 2017. Detailed information can be found at <https://iciamprizes.org/call-nominations-iciam-prizes-2019>.

8. WOLF PRIZE IN MATHEMATICS 2017

Charles Fefferman, Princeton University, and Richard Schoen, University of California, Irvine, have been named the winners of the 2017 Wolf Prize in Mathematics for "their striking contributions to analysis and geometry."

<http://www.wolffund.org.il/index.php?dir=site&page=content&cs=3142&langpage=heb&language=eng>

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