

IMU-Net 61: September 2013

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Editor: Mireille Chaleyat-Maurel, University Paris Descartes, Paris,
France

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1. EDITORIAL

Women mathematicians form an important force in the mathematical research and education. After the establishment of organizations of women mathematicians in USA and Europe, in 2012 Chinese Mathematical Society established also its Working Committee for Women in Mathematics (WCWM-CMS). Recently WCWM-CMS has made a report on the current situation of women in the mathematical community in China (see below). According to this report, in seven major universities in China among 651 teaching and research staff members in mathematics, there are 139 women, which occupies 21.35% of the total. If one counts women doing the research in them, the number is much smaller. Comparing with the developed countries, world well-known women mathematicians are much fewer in developing countries. Another example is that in my university in China, among about 30 new bachelor degree students majoring in pure mathematics every year, there are only 1 or 2 girls, although for applied mathematics, numerical analysis, probability and statistics, there are more girls get in. In this situation, I believe that it is important to encourage more young girls to get into mathematics, and the societies including the mathematical communities should provide to them a good mathematical education system, loose and suitable environments for working, and good opportunities for their career developments. At the same time, the communication among women mathematicians around the world is also very important for enlarging their voices for their own rights and for the development of mathematics in the world. It is hoped that in the near future, the current situation of women mathematicians in the world, especially in the developing countries, can be improved substantially after common efforts of our mathematical community.

Yiming Long,
Member-at-large of the IMU Executive Committee

P.S.
The WCWM-CMS and women mathematicians in China

The Working Committee for Women in Mathematics, Chinese Mathematical Society (WCWM-CMS) was founded in October 2012. Its present chair is Xing

Li, Ningxia University. As one of the branches of Chinese Mathematical Society (CMS), this committee is a national non-profit academic organization in which women mathematicians who are engaged in research, teaching and applications of mathematics could share their scientific research through academic exchanges both in China and abroad and let their voice be heard by the world not only as scholars but also as female.

The aims and objectives of the WCWM-CMS are the following:

1. To encourage women to study and make careers in the mathematical sciences.
2. To promote women mathematicians and women who teach mathematics in schools and colleges to exchange their experience and cooperate with each other.
3. To ensure the academic rights and interest of women mathematicians and women who are doing relative jobs.
4. To cooperate with other organizations on similar objectives in other countries.
5. To support women mathematician and women members participating democratic supervision, and encourage them to join in social welfare activities.

In Chinese universities, the female teachers engaged in teaching and researches are about 45.5% of the total, but the proportions are variable from one university to the other. Among them, the professors (senior) account for 28.4%, the associate professors (sub-senior) 43.6%, and the lecturers (middle) 51.9%. The female teachers who work on Mathematical research are fewer. We did a survey about the number of teaching and research faculty of the department of mathematics in Fudan University, Zhejiang University, Peking University, Tsinghua University, Jilin University and Shandong University. The total number of teaching and research staff in this survey is 651, among which there are 139 women, which takes 21.35% of the total. There are 264 professors (senior), 30 are female, this number account for 11.36% of the total; the number of associate professors (sub-senior) is 230, including 57 female members, accounting for 24.78%, the number of lecturers (middle) is 157, including 52 female members, accounting for 33.12%.

The Working Committee for Women in Mathematics of the Chinese Mathematical Society hopes to get support from the International Mathematical Union and to increase communications with other countries to achieve further progress, and we do believe that such support and communications will be a crucial help for our future development.

2. SEOUL ICM 2014

The next International Congress of Mathematicians will take place at COEX in Seoul, Korea, from Wednesday August 13, through Thursday August 21, 2014. The pre-registration process for the ICM 2014 is underway. If you have not yet pre-registered, please do so by following the simple instructions at the homepage:

<http://www.icm2014.org>. The ICM e-News is being circulated to the people who pre-registered for the congress. We strongly recommend that you visit the homepage regularly for updated information and ICM related activities.

* NANUM 2014: Application Period Extended

1,000 mathematicians from developing countries will be invited to Korea during ICM 2014 under the ICM 2014 signature travel grant program, called "NANUM 2014". NANUM means 'generous sharing' in Korean. Travel grants awarded will be in the range of approximately US\$1,500 -US\$2,500 per person according to the regional groups, making the total sum of US\$2 million. See

<http://icm2014.org/en/participants/mathematicians> for more details, e.g., the prerequisites to be eligible for a travel grant.

Applications can only be submitted online at <http://nanum2014.org>. By Aug. 31, 2013, about 2,800 NANUM applications were received. The online submission system was deactivated by Aug. 31, 2013. However, by popular demand, the submission site will be re-opened on Oct. 16, 2013 and will remain open until Oct. 31, 2013. We hope that this grace period may enable the people who missed the deadline to submit their applications.

Important dates:

☐ Jun. 1, 2013 - Aug. 31, 2013: Applications received ☐ Oct. 16, 2013 - Oct. 31, 2013: Submission site re-opened ☐ Dec. 31, 2013: Review of Applications completed ☐ Jan. 2014: Notification of acceptance

* ICM Invited Plenary, Sectional, and Special Lectures The ICM 2014 Organizing Committee is delighted to announce the full list of the plenary speakers and sectional invited speakers of Seoul ICM. For the list of confirmed speakers, visit <http://icm2014.org/en/program/scientific>. Plenary lectures are invited one-hour lectures to be held without other parallel activities.

Sectional lectures are invited 45-minute lectures, several of which are scheduled in parallel.

* ICM Local Programs

This section gathers other scientific activities mostly promoted or organized by the ICM 2014 Organizing Committee.

The following ICM local programs are already scheduled as of Sep. 31, 2013:

- The Public Lecture for a general audience by James Simons, President of Euclidean Capital and Board Chair of Renaissance Technologies LLC, on Aug. 13, 2014,
- The Emmy Noether Lecture by Georgia Benkart, Professor of Mathematics at University of Wisconsin-Madison, on Aug. 14, 2014,
- The Abel Lecture on Aug. 15, 2014,
- The Panels on the risks of assessment and comparisons in mathematical education, mathematics teaching, and mathematical publicity during Aug. 18-20, 2014.

* ICM Event: Call for Application (e.g. meeting and/or reception) The ICM 2014 Organizing Committee welcomes any organization that wishes to plan an event in and around the congress (e.g. meeting and/or reception). Any of the events can be staged at COEX (congress

venue) and/or COEX Intercontinental Hotel (350m from COEX) and applications can be submitted to the appointed PCO of the congress, MECI, via email at icm2014@meci.co.kr. Once submitted, subsequent price quotes will be issued for applicant's review. Please return the completed application forms no later than Feb. 28, 2014.

* ICM Sponsorship

Several institutions have already committed their contribution to ICM 2014, especially for NANUM 2014 program. Any organizations willing to support this important event is invited to contact the Secretariat at icm@icm2014.org.

* ICM Exhibition: Call for Application

The ICM 2014 Organizing Committee invites organizations and colleagues to submit an application for exhibition booths. The ICM 2014 Exhibition is open to any organization, which may seek an opportunity to promote one's experience, programs, products and services through operating commercial and/or non-commercial booths at the congress. The exhibition will take place in Hall C1 (3F), COEX and the allotment of booths will be on a first-come-first-served basis. Applications for an exhibition space should be submitted to the appointed PCO of the congress, MECI, via email at es@icm2014.org by May 31, 2014. For more details, refer to the Exhibition Prospectus at <http://icm2014.org/en/sponsors/exhibitors>.

We look forward to welcoming you at the congress in Seoul, Korea.

Hyungju Park
Chairman, ICM 2014 Organizing Committee

3. IMU ON THE WEB

IMU letter's to ICSU on Questions on Open Access and Evaluation by Metrics

1. What requirements do funders of research in your country or subject area currently make, or plan to make, as regards open access publication, including open access to data? (Please give links to relevant documents.) What advantages and disadvantages do you see in such open access requirements, whether in your country/subject area or elsewhere?

Requirements vary from country to country and even within agencies in a country, e.g. NIH vs. NSF in the US. (Although NSF has recently been tasked by the Administration with formulating an open access policy for funded research.)

The mathematical community is fully in favor of open access to its publications. This is exemplified by the success of arXiv, along with other preprint repositories and personal web pages. Indeed, in 2001 the IMU issued a "Call to All Mathematicians to Make Publications Electronically Available"

[http://www.mathunion.org/fileadmin/CEIC/Publications/Call to All Mathematicians to Make Publications Electronically Available.pdf](http://www.mathunion.org/fileadmin/CEIC/Publications/Call_to_All_Mathematicians_to_Make_Publications_Electronically_Available.pdf)

There is a concern that a rapid switch to open access could affect the publishing system as a whole, thus putting at risk the integrity, quality, and long-term availability of the mathematical record.

A number of small independent publishers (such as societies) fear that there is no alternative source of revenue to subscription, that author-pay models will create an incentive to publish more or relax quality control, in addition to being unfair to authors with different profiles.

Most mandates are based on CC-BY licenses, which is of concern to mathematicians in that it is unsuitable for preserving the integrity of the scientific record. For instance, the copyright policy of Documenta mathematica is much more restrictive:

<http://www.math.uni-bielefeld.de/documenta/tex/akzept-eng.ps>

The obsession on open access might divert attention to some real issues:

a) The term open access is itself steadily losing its meaning (in principle: refereed publications are freely available to anyone over the internet as they are published, either at publisher's website (gold), or through some repository (green)). Mandates tend to accept embargo periods for green open access (OA), which is thus not OA), publishers tend to accept deposit of some preliminary version of the published paper (which is thus not OA), etc.

b) To empower authors in view of green OA, funders tend to develop open archives and mandate depositing there, where one can find preprints, postprints or other kinds of reports. This is considered a good thing in math, but mostly as the natural successor to preprint dissemination, while not replacing the reference library that mathematicians need on the long term to keep the version of record of validated papers. In some fields, notably cryptography, there is a growing tendency to place "long versions" in open archives and publish "short versions", which makes "the version of record" a subject of debate, especially when page numbers, or even theorem numbers, change.

c) Similarly, gold OA publishers tend to recover costs by charging for publication of new material. The preservation and availability of old papers not being a priority of today, there is a high risk to lose important reference papers in the mid term.

2. To what extent are metrics being used to evaluate universities, departments and individuals in your country or subject area, what metrics are used, and how are these influencing publication trends and incentives for researchers?

Again, this varies by country, by institution and by discipline. At most major US research universities, metrics play no role in Science and Engineering --- at least so far. On the other hand, in other countries, e.g. the research assessment exercises in the UK, in Spain, the Czech Republic, South America, China, etc. they play a very significant role in individual and/or departmental evaluations.

The U.K's 2013 REF exercise, the successor to the earlier metric-free Research Assessment Exercises, will use citation data from SCOPUS (Elsevier) in some subject (including Computer Science but not Mathematics). This is a supplement to peer assessment. (See <http://www.ref.ac.uk/pubs/2011-02/#d.en.69578>)

Among serious mathematicians, metrics have essentially no influence on publication or research incentives, although there is evidence of their influence in certain countries, e.g. China which rewards monetarily publication in high ranked journals, and among researchers in second tier institutions. Ranking of journals was tried in Australia, and subsequently withdrawn in part due to pressure from mathematicians. In their paper "Nefarious Numbers", in Notices of the American Math. Soc., Volume 58, issue 3 (2011) Douglas Arnold and Kristine Fowler document the unreliability and misuse of citation metrics, making them completely unusable in mathematics.

The mathematics community would generally agree that use of "Impact Factors", and other measures based on the journal rather than the article, are very flawed. We commend that the evaluation must be based on the articles and not on the journals. (see for instance <http://hal.archives-ouvertes.fr/hal-00604117>)

3. What useful role, if any, do you think ICSU can play in these matters?

One potential role would be to keep careful track of the differences between fields, and try to ensure that policies are suitably formulated so that they can be adapted to the culture and standards of each individual scientific field.

ICSU should also bear in mind the wider utility of science and that citation data is an introspective measure. (See for instance p. 83 of Rankings and Accountability in Higher Education: Uses and Misuses. UNESCO, 2013, <http://unesdoc.unesco.org/images/0022/002207/220789e.pdf>.)

4. ESTABLISHMENT OF AMMSI REGIONAL OFFICE IN NORTH AFRICA

The African Mathematics Millennium Science Initiative (AMMSI) is a distributed network of mathematics research, training and promotion in Africa. Overall coordination of AMMSI is from the Programme Office, under the directorship of Wandera Ogana, at the School of Mathematics, University of Nairobi, Kenya. Initially the network operated only in Sub-Saharan Africa but, in August 2013, it was extended to North Africa. Hence there are now six AMMSI regions, namely: Central Africa, Eastern Africa, North Africa, Southern Africa, Western Africa Zone 1, and Western Africa Zone 2. Each region is made up of a number of countries and has an office which promotes AMMSI activities in the constituent countries, under the direction of a Regional Coordinator.

Details can be found at the AMMSI website given below.

By joining AMMSI, North Africa will now benefit from a number of activities and projects which include: (a) Annual postgraduate scholarships, funded by IMU/CDC (b) MARM, a project which promotes mentorship and linkages and is implemented in collaboration with IMU and the London Mathematical Society (LMS) (c) Conference grants to enable postgraduate students attend conferences in Africa, funded by LMS. Envisaged future activities include visiting and postdoctoral fellowships, research funding, and support for organization of scientific meetings.

More details can be found at: <http://www.ammsi.org>

5. TWAS: FREE ACCESS TO MATHEMATICAL LITERATURE FOR DEVELOPING COUNTRIES

TWAS, the World Academy of Sciences for the advancement of science in developing countries (<http://twas.ictp.it/>) offers access to a lot of scientific resources (including mathematics), which are either 1. "Open Access", 2. freely accessible for developing countries, or 3. accessible at reduced price for developing countries: <http://twas.ictp.it/links/open-access-scientific-information>.

The special access to scientific literature for developing countries is through <http://www.research4life.org/>, which consists of the four networks HINARI, AGORA, OARE and ARDI. The ARDI network is the most relevant for mathematicians. On their website (<http://www.wipo.int/ardi/en/>) one can click in the left column on "Journals" and find the list of journals concerned by this program (see also <http://www.wipo.int/ardi/en/journals.html>). These journals are either freely accessible or accessible at reduced price (depending on the country's GBP) to the scientists of the countries appearing on the list approved by the World Intellectual Property Organization Organization (WIPO). This list can be consulted at <http://www.research4life.org/institutions/>

For the researchers who do not have access to sufficient bandwidth to download material from the Internet in a timely manner and/or cannot afford the connection, the Abdus Salam International Center for Theoretical Physics (ICTP) offers to send articles in mathematics and physics as email attachments. This is offered through the electronic Journals Delivery Service (eJDS): see <http://ejds.ictp.it/ejds/>, which requires registration and is cost-free.

6. SUBSCRIBING TO IMU-NET

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2. Send an e-mail to imu-net-request@mathunion.org with the Subject-line: Subject: subscribe

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<http://www.mathunion.org/imu-net/archive/>

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