

## **Reports of EWM coordinators for the Cortona General Meeting August 2015**

European Women in Mathematics has coordinators in 31 European countries (see their list on <http://www.europeanwomeninmaths.org/about-us/organization>).

In EWM Newsletter, in the period after Bonn's EWM General Meeting in 2013, several reports were given about the situation of women in mathematics in European countries:

- Germany (Newsletter number 23),
- Italy (Newsletter number 23),
- Spain (Newsletter number 25),
- Turkey (Newsletter number 25).

In addition, reports on activities in France, Poland and United Kingdom were given in Newsletter number 24. All these reports can be found in the section Resources of EWM website <http://www.europeanwomeninmaths.org/>

Now follow the reports received from the local coordinators for the Cortona EWM General Meeting in 2015, as well as two guest reports from India and Africa.

For each country, we include a reference to the Global Gender Gap Index 2014 (rank of a given country in a list of 142 countries, see <http://reports.weforum.org/global-gender-gap-report-2014/rankings/>). Through the Global Gender Gap Index, the World Economic Forum quantifies the magnitude of gender-based disparities and tracks their progress over time. While no single measure can capture the complete situation, the Global Gender Gap Index presented in this Report seeks to measure one important aspect of gender equality, the relative gaps between women and men across four key areas: health, education, economy and politics.

### **From Belgium**

#### **Global Gender Gap Index 2014: 10th**

There are few women in mathematics in Belgium, and too few of them are members of the EWM.

We hope to change that in a near future. A first step was to choose this year a coordinator for Belgium.

In our universities, every commission (nominations, promotions...) must include both men and women.

Simone Gutt, coordinator for Belgium

### **From Denmark**

#### **Global Gender Gap Index 2014: 5th**

#### **EWM activities and membership**

Sadly enough, there is nothing to report from Denmark in the two last years. There are simply too few women in mathematics in Denmark, so keeping up regular meetings seems not to have enough momentum. The work lies on too few shoulders. However, this “just” means that there will be years

where we have nothing to report, this one being one of them, and once in a while there will be a period with activities.

Tinne Hoff Kjeldsen, coordinator for Denmark

### **From Finland**

#### **Global Gender Gap Index 2014: 2nd**

EWM has less than 10 members in Finland. During the past 10 years, discussion on gender balance and especially on the number of female mathematics professors has been active. For instance, Aalto University has taken the initiative to improve the gender balance among math professors, having recently recruited 3 female tenure track professors (one tenured), which is a third of all tenure track professors. However, nationally the percentages are not as flattering - less than 5% of all Finnish professors in mathematical sciences are women. Activities to promote gender balance in science are already taking place and more are being planned especially in the capital area, including various women in science networks, lecture series, employees' well-being related events as well as more general diversity seminars. Many positive changes have taken place in the past few years so we may say the recent trend is towards the better.

Paola Elefante, coordinator for Finland

### **From France**

#### **Global Gender Gap Index 2014: 15th**

##### **EWM members and activities**

The situation in France is specific because there exists a French association *femmes et mathématiques* (Women and Mathematics). This association has about 120 members, most of them women, half of them are mathematicians or scientists, the other half are teachers in mathematics in high schools or in higher education institutions.

There are 6 members of EWM, paying the member fee, and 8 other women mathematicians are or have been associated to EWM activities in 2013-2015. Among the French members, Marie-Françoise Roy, the past convenor of EWM, is EWM webmaster and Jasmin Raissy is co-editor of EWM Newsletters.

All the activities concerning women in mathematics in France are organized either by or under the auspices of the association *femmes et mathématiques* (see below for some details about the activities). Information about the situation in France has been made known to EWM members through the EWM Newsletter, in particular Issue 21 (2012/2). Issues 23 (2013/2), 24 (2014/1) and 25 (2014/2) contain reports about the yearly forum which is organised in France for young women mathematicians, as well as reports about activities in France.

Information about the activities of EWM are spread on the electronic list of members and friends of *femmes et mathématiques*. The e-letter of EWM is sent on this list, as well as news about EWM local or international meetings. Moreover a newsletter in French is sent 3 times a year to the members and friends of *femmes et mathématiques*: information about EWM and other European associations such as the European Platform of Women Scientists (EPWS) is found there in particular.

## **The situation in France**

Since 2012, when a left government was established, the overall situation of women in France may seem a little better, especially in universities, after a law for higher education and research has been passed in July 2013.

By the law, the public service for higher education has to lead actions against gender stereotypes, in the courses as well as in the different aspects of the university life. The orientation should favor the access and an equilibrate representation of women and men in university programmes. A mission for equality between women and men has to be established in each university. The university management board has to obey certain rules of parity: the lists of candidates have to alternate sexes (as in European political elections); the elected board should name as many women members as men members exterior to the university to make it complete. The disciplinary committee of the university, which is part of the management board, has to have as many women as men. The academic council, when dealing with the careers of lecturers, has to have as many women as men, and as many of lecturers and of professors. The recruitment juries have to have at least 40 % members of each sex, but exemptions are in action for the next 4 years for professorships in disciplines where there are too few women professors at the national level (such as in pure mathematics where there are less than 7 % women professors, or in applied mathematics, where there are less than 15 % women professors). Mainly scientific disciplines are concerned with these exemptions (law disciplines too).

The CNRS (National Center for Scientific Research), which is the main institute for research in France for natural and exact science, has set up in 2014 grants called PEPS-Egalité (First Funding for Exploratory Projects – Equality): the research project, which is subsidized from 2000 to 5000 euros, has to be lead by a woman mathematician, has to have one third of each sex in the team and has the obligation to promote the results of the research toward younger women in high schools. Moreover, since 2013, the non-permanent 6-month to 1 year positions, called « délégations CNRS », are open especially to women mathematicians teaching at the university and returning to work after a maternity leave.

## **Activities of the French association *femmes et mathématiques* in 2014 and 2015**

The association *femmes et mathématiques*, which has celebrated its 25th birthday in 2012, has also updated its statutes in 2013: men now can also become ordinary members of its management board (it had been a privilege for women only since the creation of the association; the male members were named « friend members » and could not apply for the management board). The president of the association still has to be a woman. This move had been necessary for welcoming younger women mathematicians into the association.

*Forum for young mathematicians.* The forum consists of a series of lectures by senior women mathematicians, talks by doctoral students and young mathematicians, and mentoring activities for young mathematicians. The 13th forum was held in Lyon in November 2013, on the theme « Mathematics and Computer Science in Interaction ». The 14th forum was held in October 2014 in Paris, with the theme of « Women mathematicians in view of excellence ». It was one of the events taking place after the International Congress of Mathematicians in Seoul: three women mathematicians working for French institutions and having given talks in Seoul were invited in the forum, Zoé Chadzitakis, Sandrine Péché and Michela Varognola. It was also one of the events taking place in Institut Henri Poincaré, for the 20th birthday of its renovation as a research centre for mathematics and theoretical physics.

The 15th forum will take place in Lille in November 2015, and its preferred theme will be « Probability and statistics ». More information, in particular applications of young mathematicians, women or men, are welcome, on the web site <http://www.femmes-et-maths.fr/?p=2580>

*Math days for high school girls and beginning students.* These aims to attract high school aged girls towards the pleasure of mathematics and show them the stereotypes in the field of women in mathematics. This activity is also geared toward beginning women students in science, as a way to encourage them to continue their studies in mathematics. The huge French State contract we were thinking of two years ago did not yet materialized itself in an actual grant, but the association now benefits from a grant from the L'Oréal Foundation to organize these activities for younger women. Seven days in 2013, ten days in 2014 and fifteen days in 2015 have been or will be organized (in the cities of Rennes, Paris, Tours, Lille, Kremlin-Bicêtre, Villetaneuse, Grenoble, Nevers, Dakar in Senegal, Palaiseau, Saint-Denis in La Réunion, Metz, Lyon).

*Presentation of statistics on the presence of women mathematicians in France.* These statistics are regularly maintained on the web site of the association *femmes et mathématiques*. A study about the recruitment and the promotion of women and men mathematicians in France from 2008 to 2014 has been recently published on the web site of the association, as well as in the newsletters of the two main professional associations in France, the Société mathématique de France (the French Mathematical Society) and the Société de mathématiques appliquées et industrielles (the French Society for Applied and Industrial Mathematics).

*Becoming a member of CFEM.* In 2014 the association *femmes et mathématiques* has been accepted as a member of the Commission française pour l'enseignement des mathématiques (the French Commission for Mathematics Education - which is the French commission of the International Commission on Mathematical Instruction – ICMI). As member of CFEM, the association became a visible partner during the negotiation for the French national strategy for mathematics and was specifically consulted by the minister of education, higher education and research about what should be done to increase the number of students in mathematics, and especially of women students. The association also has been participating in the organisation of the public events which took place in March 2015, in Paris, Lyon and Marseilles, under the title « Forum pour les mathématiques vivantes : de l'école au monde » (Forum for Live Mathematics: from School to World).

*African mathematicians, a day for the African diaspora in France and for women mathematicians in Africa.* Marie-Françoise Ouadreogo (Burkina Faso) had been invited at the 15th EWM General Meeting in Barcelona in 2011. The association EWM serving as a model association, the African Women in Mathematics Association (AWMA) was then created in 2013 in Cape Town (South Africa) (see also the report from Africa, here below). Noting that a number of African women are holding positions at the university or in the private sector in France after studying there for 3 to 8 years, the association *femmes et mathématiques* organised a one-day meeting in Paris in May 2015 for presenting different experiences of African women mathematicians, either living in Africa or in France. This day was a real success in making African and French mathematicians work together for promoting mathematical studies for women and for helping women mathematicians in Africa.

*Other activities.* The association is also leading a number of activities. In collaboration with other French associations such as Femmes & Sciences (Women & Science), Femmes Ingénieurs (Women Engineers), Réussir l'Égalité Femmes Hommes (Succeed in Equality Between Women and Men) and the European Plattform of Women Scientists (EPWS), we organised:

- Visits in high school classes to give information about careers in STEM;
- Publication of the 2013-edition of the booklet about stereotypes regarding women in science,

- « Femmes & Sciences, au-delà des idées reçues » (Women & Science: Beyond Common Beliefs);
- Organisation of colloquia about the place of women in science and in the society;
  - Writing of about 30 notices of deceased women mathematicians for the « Dictionnaire universel des femmes créatrices » (General Dictionary of Creating Women), covering all disciplines of Arts, Culture, Politics and Science, which was published in November 2013 by the Editions des femmes in France;
  - Actions towards the French ministry of education about the new mathematics programmes for elementary and junior high schools for taking into consideration the fact that students in schools are of both sexes, not only male students;
  - Preparation of a MOOC (Massive Open Online Course) about « Être en responsabilité demain : se former à l'égalité femmes-hommes » (« Be in Responsibility Tomorrow: to Learn about Equality between Women and Men »), which was published in June 2015; the first session was held June 15 to July 31, 2015;
  - Lobbying actions for promoting women in STEM, for example by attending the 2014 General meeting of EPWS, which took place in Paris, « New perspectives for women scientists careers in Europe »; the association *femmes et mathématiques* is actually a member of EPWS;
  - Publication of a booklet about examples of jobs that students might think of after studying mathematics or computer science, in collaboration with the French professional associations in mathematics, statistics or computer science, « Zoom sur les métiers des mathématiques et de l'informatique » (Zoom on Mathematics and Computer Science Jobs). The publication includes portraits of close to as many professional women (10) as men (12).

Colette Guillopé, coordinator for France

### From Georgia

**Global Gender Gap Index 2014:** 85th

#### **Overall situation of women in science**

About 4 490 000 people live in Georgia. The number of women are 2 349 100. The unemployment rate is about 50 %. Among people employed, 39% are women, mainly employed in the private sector in small and medium businesses. The number of women is small in politics. In Georgian Parliament are 150 members. Among them 11% are women. Pensioner women in Georgia are about 549 000.

As research has shown, the girls academic achievements in STEM's subjects are equal to boys academic achievements. However, in the end, less girls continue their career in STEM professions. Compared to previous years the number of dynamics is rising, but only slightly.

2014 yearly research report has shown that in higher education institutions are employed 290 mathematicians. Among them 33% are women.

#### **EWM activities and membership**

Since 2007, Georgia regularly participates to the EWM meetings which took place in Cambridge, Novi Sad, Barcelona and Bonn. These meetings are helping women mathematicians to exchange about their experiences.

In Georgian scientific, research and educational institutions there are a variety of projects which are

trying to combine and integrate different fields of mathematics. Since 2013 we are involved in the projects MATH-GEAR and META-MATH. In these projects are involved Georgian, Armenian, Russian, German, French and Finnish mathematicians and among them some women, as evidenced by the meetings in Saarbrücken, Lyon, Tampere, Yerevan, Tbilisi, Batumi and Kutaisi universities.

The group of Georgian women mathematicians gathered in Tbilisi on December 3, where were discussed the latest EWM activities, the review of gender issues in academia at the international level and the support to women in their mathematical career in our country.

Then a meeting has been planned in Batumi, on June 5, 2015. We will discuss organizational issues to attend the meeting in Cortona, also about the possible change of the regional coordinator.

[http://www.gtu.ge/News/3843/?sphrase\\_id=25511](http://www.gtu.ge/News/3843/?sphrase_id=25511)

<http://www.bsu.edu.ge/sub-12/page/3377/index.html>

Nino Rokva, coordinator for Georgia

### **From Germany**

#### **Global Gender Gap Index 2014: 12th**

#### **EWM activities**

The German section of EWM currently has 50 members.

With the meeting in Aachen in April 2011, organized by Gabriele Nebe, Julia Hartmann and Eva Zerz (all from Aachen), regular German EWM meetings were re-established. The next meeting took place in Bielefeld in November 2012, organized by Barbara Baumeister (Bielefeld), Christine Bessenrodt (Hannover), Andrea Blunck (Hamburg), Evelyn Buckwar (Linz), and Barbara Gentz (Bielefeld). Since the EWM 16th General Meeting took place in Bonn in September 2013, the next German EWM meeting was postponed to this year. Ilka Agricola (Marburg) and Dorothea Strauer (Marburg) organized this meeting at Castle Rauischholzhausen near Marburg with a two-day scientific programme on 1–2 May 2015, see

<http://www.mathematik.uni-marburg.de/%7Eagricola/rauisch2015/index.html> .

The plenary talks were given by Verena Bögelein (Salzburg), Salma Kuhlmann (Konstanz), Reidun Twarock (York) and Gerlind Plonka-Hoch (Göttingen). With an additional 12 shorter talks and a poster session, the 55 registered participants enjoyed a broad and attractive programme. Since all participants were staying at Castle Rauischholzhausen, there was ample opportunity for discussions and strolls in the beautiful park surrounding the castle.

Our next meeting is planned for 2017. While the organizers have already been found, the date has not yet been fixed.

#### **Overall situation of women in mathematics**

Regarding the number of female professors in Mathematics in Germany, the map

<http://www2.iazd.uni-hannover.de/~bessen/FiM/Deutschlandkarte.html> ,

provided and kept current by Christine Bessenrodt, shows that there are 10 universities in Germany with no female professor of Mathematics, and another 5 universities which have only non-tenured female professors, while a few universities have been quite successful in increasing the number of female professors at a high level.

Barbara Gentz, coordinator for Germany

## **From Greece**

**Global Gender Gap Index 2014 : 91th**

### **EWM activities and membership**

Unfortunately, after the workshop we organized in 2011 at Heraklion nothing happened. We are trying to involve more people that can help us into organizing us better (create a list, etc.), organise a local event, etc.

Chrysoula Tsogka, coordinator for Greece

## **From Ireland**

**Global Gender Gap Index 2014: 8th**

A number of Women in Mathematics Day, Ireland, have taken place over the past five years, the most recent one in 2014 <http://www.conference.ie/Conferences/index.asp?Conference=371>. The one day conferences include presentations and posters by women active in mathematics, mathematics education and industry, at a variety of career stages. The aim of the events is to bring together those passionate about mathematics and to demonstrate the variety of opportunities available to those engaged in mathematics/mathematics education. The events provide an opportunity to hear some inspirational talks and to informally chat to others at different career stages.

Máire Ní Ríordáin, coordinator for Ireland

## **From Moldova**

**Global Gender Gap Index 2014: 25th**

Moldova is a small country with population around 3.5 million inhabitants (without Transnistria), where women make up about 51%. According Gender Gap Index Moldova is ranked 25th in the results for 2014 (it was 52nd in 2013 and 34th in 2010) improving its position because the country has promoted the rights of women and policies as one of the highest percentage of women employed in non-agricultural sector. However, women earn on average 12.9% less than men. The remuneration of women is lower than that of men in most of the economic activities. Gender pay gap in agriculture, forestry and fishing is 9.5%, industry 18.4%. In the field of education, where about three quarters of all teachers are women, the wage gap between women and men is 8.9%. Men have higher percentages among leaders of all levels. In leadership at all levels 56% are men and 44% are women. For example the State University State senate of 99 members, 46 are women, which is 46%, but at higher levels of the country leading women's participation rate are lower. Women exceed men among retired. From the total of pensioners registered with social security bodies 66% are women.

### **Overall situation of women in science**

In research we have the following situation: only 67 of 403 habilitated doctors are women; 654 women hold a Ph.D. in science, and 707 men. In the field of Education in Moldova women make up about 80%. Unfortunately in recent years in Moldova there is an increase of population migration,

especially among youth. This is due to the political situation and especially the country's economic: low wages, low employment opportunities. Of course, interest in research and education, where there is the lowest wages is declining. For example, in 2013 the faculties of the State University of Moldova (the largest institution of higher education in Moldova) have not filled available places in mathematics etc. In these circumstances it is quite difficult to promote science and research.

### **EWM activities and membership**

Since 2006, the local coordinator has attended all EWM meetings: Cambridge, 2007, Novi Sad, 2009, ICWM Hyderabad India 2010 and ICM Hyderabad, Barcelona 2011, Bonn 2013. The results of these meetings have been shared with the Moldovan women mathematicians interested in the work of EWM. The work of the coordinator is focused on the issue of women mathematicians Moldovan information about EWM, main events, summer school, organized opportunities for participation, scientific meetings, the experience of organizing the research work of women in other countries, etc.

At least once a month EWM members meet at the State University of Moldova and discuss the various scientific, research issues, opportunities to participate on various international meetings. In 2012, Mrs. Galina Rusu member of EWM participated to the satellite EWM activities and attended the 6<sup>th</sup> European Congress of Mathematics in Krakow, Poland, on July 2-7, 2012. In February 25, 2015 Maria Capcelea, a member of EWM obtained her PhD thesis, and became Doctorate in Sciences. I consider the activity of EWM a beneficial one, especially for the moral and spiritual sustainment of mathematician women. Of course it would be also useful if it could somehow encourage the financial sustaining, at least for participating at some absolutely necessary conferences for research or it could put at disposal journals, books, and other materials of free registering. For this target, may be it would be possible to initiate some common research projects with financing from European Funds. In this manner, the fame of EWM would grow, but also the interest towards it, becoming in a good measure as a savior for many women who have choose between family and research.

Currently EWM has eleven members from Moldova (3 of them only are registered on our website).

Alexandra Tkacenko, coordinator for Republic of Moldova

### **From Montenegro**

**Global Gender Gap Index 2014:** 74th (first time measured)

In Montenegro there isn't an association or any activity that is devoted to women in mathematics.

In the country there are just 7 women with PhD in mathematics, and in the whole population (about 650 000 residents) we have just 20-25 mathematicians.

The only novelty is that the Dean of the Faculty of Natural Science and Mathematics is a women, for the first time in the history of the faculty which was established in 1979.

Biljana Stamatovic, coordinator for Montenegro

### **From Netherlands**

**Global Gender Gap Index 2014:** 14th

## Overall situation of women in mathematics

The overall situation of women in mathematics in the Netherlands has not changed significantly since our last report.

The latest data on women in mathematics in the Netherlands were collected and published in 2008 by NWO (the Netherlands Organisation for Scientific Research) and can be found in the table below.

	Total staff (fte)	Number of women (fte)	% female
Professor	78	3,5	4,4
Associate professor	89	5,4	6,1
Assistant professor	117	14	12
Postdoc	89	7,3	8,2
PhD student	279	45,2	16,2

Table 1: statistics for women in mathematics at universities in the Netherlands

The data show that even though emancipation of women in science in general, and in mathematics in particular, has been given priority on the political agenda for a number of years, not much measurable progress has been made in the number of women in post-doctoral academic positions.

There are no new statistics on the number of women employed, but apparently NWO (the Netherlands Organisation for Scientific Research) is currently collecting these data again.

## EWM activities and membership

There is a EWM-the Netherlands website [www.uu.nl/ewmnetherlands](http://www.uu.nl/ewmnetherlands)

There are currently around 120 people (almost all women) on the EWM-the Netherlands mailinglist, that is also used to forward important information from EWM, job openings, etc.

Last Wednesday, the annual EWM-the Netherlands event took place. Press release about this meeting is included below.

Last Wednesday, 4 March 2015, the annual meeting of the European Women in Mathematics - the Netherlands took place at the Academieggebouw in Utrecht. It was generously sponsored by Platform Wiskunde Nederland (PWN).

*« The afternoon started off with four excellent talks by female researchers, each representing one of the four mathematics clusters in the Netherlands: Charlene Kalle (STAR, Leiden University) explained how random continued fractions arise on the intersection of ergodic theory and number theory; Miranda Cheng (GQT, University of Amsterdam) introduced the remarkable connection between monstrous sporadic groups and modular objects; Martina Chirilus-Bruckner (NDNS+, University of Leiden) shed some light on the mathematics (partial differential equations) behind optical fibres. Finally, Karen Aardal (Diamant, TU Delft) told us how mathematical algorithms can save lives by calculating the optimal positions and movements of ambulances in the Netherlands.*

*Afterwards, Petra de Bont (NWO) commented on the deplorable situation of women in mathematics in Europe and in the Netherlands in particular. She then invited the audience to engage in a discussion which yielded several helpful recommendations to NWO and mathematics departments, that could help to improve this situation. »*

EWM has only 6 registered members in the Netherlands.

KaYin Leung and Valentijn Kremaker, coordinators in the Netherlands

### **From Poland**

#### **Global Gender Gap Index 2014: 57th**

Since the last EWM General Meeting in Bonn I made some efforts to advertise the idea of EWM in my country. In February 2014 I was invited to the conference "Archipelago of Mathematics" in Warsaw University of Technology (I presented the report in the EWM Newsletter no.24). I talked about the contemporary women mathematicians and introduced European Women in Mathematics. The presentation included the basic facts about EWM, structure and activities, as well as some statistics on the situation of women mathematicians across Europe.

In September 2014 I participated in the Polish Conference of Applied Mathematics organized by Polish Academy of Science. It is one of the largest conferences in Poland. I made a presentation about EWM to invite new members and raised an interesting discussion about the work conditions and gender issues in Poland.

The participants made the points about the main differences between Polish and West European systems to organize the work at universities in general, not only in mathematics or science. Mainly, we do not rely on post-docs, hence we are not forced to compete for a job every 2-3 year. The research position is mostly connected to teaching obligations (with proportion 50-50 but it is often biased towards teachings which does not leave much time for the research). Additionally, the social security system in Poland does not provide any help for the families and working women in rising children. Together with the limited access to the kindergartens (too few) or afternoon care in schools, it forces women to focus mainly on family and child care than work, not to mention leaving for conferences. That is why we have still too few women professors while so many women study mathematics and science and complete PhDs. The scientific career often stops at the position of Assistant or Lecturer. As my friend summarized the situation: "with three kids at home forget about research". I only stress here that the above described situation concerns not only mathematics but all the disciplines and universities in Poland and to solve the problem we need deep changes in social security system from the government level.

There is the Polish Mathematical Society (PTM) - the largest mathematical organisation in Poland with long tradition (since 1919). Among many activities like the 6th European Congress of Mathematics in Cracow 2012 or support for the young mathematicians, the association supports the development of mathematical education and popularization of mathematics. Aside of this long-lasting and successful work there are also the government supported Campaigns to encourage girls to become engineers or to study science "Dziewczyny na Politechniki!" and "Dziewczyny do Scislych!" (the names mean "Girls as Engineers!" and "Girls go Science!") with the wide support of mass-media. Many women mathematicians are already engaged in the above mentioned activities, hence EWM has no much space left to attract new members.

Anna Grybos, coordinator in Poland

## From Portugal

**Global Gender Gap Index 2014: 39th**

### **EWM membership**

Currently, there are only 3 official EWM members from Portugal registered on the EWM website. Given the number of Portuguese members of the EWM Facebook group, I believe that, from our country, we have many more people interested and sympathizing with the aims of EWM. We intend to explain to Portuguese mathematicians how to register for official membership of EWM using our Facebook platform in Portugal:

[European Women in Mathematics – Portugal](#)

The objectives of this Facebook group include: providing posts in the Portuguese language, supporting and encouraging Portuguese beneficiaries, to research and evaluate the situation and working conditions of Portuguese women in Mathematics and to collect data for the production of a report. In addition, I have invited some women by email as well as in person at conferences.

During the next few months, I expect that more Portuguese mathematicians will join the Facebook group.

### **Portuguese EWM Activities**

With the aim of starting the Portuguese EWM Facebook group, the following invitation was sent to various Portuguese Facebook groups of Mathematics lecturers, Mathematics, Applied Mathematics and Statistics alumni:

*Dear Mathematician,*

*Are you interested in becoming a member of the group  
European Women in Mathematics?*

*This invitation (including various appropriate website links) was sent to teachers and lecturers, researchers and mathematicians working in industry, students and others. Interested individuals were asked to fill in a questionnaire with some of their details, to be contacted subsequently by email.*

*(P.S. Male members were also welcomed to join and participate in our objectives in supporting women mathematicians, since our aims do not promote any form of sexism.)*

This activity led to the creation of the new Facebook page and then Facebook group, which allowed and facilitated further and deeper interaction.

The group was opened in March 2015 and it currently has 240 members (both male and female mathematicians living in Portugal) and every day we receive new contacts interested in joining the group. Our current members include primary and secondary school teachers as well as university lecturers, university researchers and researchers working in industry (including consulting, information technology, insurance and banking) as well as training centres and private tutors.

In addition to the main objectives of the wider EWM movement, we define specific objectives for

EWM-Portugal, as follows:

1. To produce a report on the current professional situation of women mathematicians in Portugal in collaboration between the different members working in the various sectors listed above.

2. To encourage and facilitate online networking between our members, to share information about job opportunities, grants and other opportunities specifically for women, and also to provide a forum for our members to discuss difficulties while participating in mutual support, such as reconciling the challenges of motherhood combined with career, tips for classroom management techniques and communication with parents/guardians when this can be challenging, and communicating concerns with managers.

3. Arranging and organising national meetings for women mathematicians.

4. Promoting participation in international events organised by EWM.

5. Proposing open discussion questions, such as:

Have you been awarded a prize in a competition or contest in which only women could be candidates? Have you been awarded any grant for female students/pupils? Have you and your spouse made use of any childcare provision at work or during a conference, etc?

Have you ever felt discriminated against in the world of work because you are a woman? (For example, were you ever asked in a job interview about whether you were single or whether you were planning to have children in the next few years?)

What would you like to change in any of these or related contexts?

Up until the present, we have been focusing on our first above-mentioned objective, which is to analyse the situation facing women mathematicians in Portugal. We researched and collected data and information relative to:

*Situations facing Portuguese mathematicians:*

1. Proportion of mathematicians working in Portuguese universities (as coordinators, lecturing staff or as temporary uncontracted lecturing staff, researchers and other types of contracts or positions) who are female.

2. Proportion of grant candidates in mathematical subjects and the proportion of grants awarded to females (FCT, Gulbenkian, ERC etc.)

3. Proportion of female mathematicians working in industry, programming, consulting, banking and so on.

4. Proportion of secondary school mathematics teachers who are female.

5. Proportion of personal mathematics tutors who are female.

6. Proportion of mathematicians opening their own personal tutor outfit or business, who are female.

7. Proportion of mathematicians who open or are principals/headteachers of private schools and colleges, who are female.

8. Proportion of university students (undergraduate, masters, and PhD) who are female mathematicians.

9. Proportion of female pupils enrolled on secondary school courses involving a strong mathematical component (such as sciences, information technology, economics, finance, etc).

Note: at the moment, data is available only for points 1, 4 and 8.

In a first analysis resulting from this study, we observed that, in Portugal, the majority of mathematicians work as mathematics teachers/lecturers, and only a small number work in industry, or in research.

In this way, we were able to compare the number of women Mathematics teachers and lecturers

with the total number of Mathematics teachers and lecturers involved in each respective level of education delivery. Here are some results:

**Table 1 – Teachers working in primary, secondary and higher education during the academic year 2013/2014 in Portugal (including the Azores and Madeira as well as mainland Portugal)**

<b>Level of course</b>	<b>Type of institution</b>	<b>Women</b>	<b>Total staff</b>	<b>Percentage who are women</b>
Secondary school (Maths and science, years 5 and 6)	all	<b>4492</b>	<b>5739</b>	<b>78,27%</b>
	state	4157	5303	78,39%
	Academies	195	261	74,71%
	Private/independent	140	175	80,00%
Secondary (years 7 to 12)	all	<b>6286</b>	<b>8483</b>	<b>74,10%</b>
	state	5656	7597	74,45%
	Academies	335	457	73,30%
	Private/independent	295	429	68,76%
Higher (university and polytechnics)	State and private	<b>692</b>	<b>1324</b>	<b>52,27%</b>
<b>Total</b>		<b>11470</b>	<b>15546</b>	<b>73,78%</b>

Sources : DGEEC-MEC: <http://www.dgeec.mec.pt/np4/96/>

Rebides - Registo Biográfico dos Docentes do Ensino Superior, DGEEC/MEC

It was observed that the higher the level of education, the lower the proportion of women involved as teachers/lecturers. That is, the proportion of women teachers is high at the primary level (78.27%) and decreases a little towards the upper end of secondary level (74.1%) and the decreases is accentuated at the higher education level (52.27%)

It is important to underline the percentage difference between women teachers at state and private institutions, as this could be due to the fact that while recruitment of teachers at state institutions takes place by online competitions (while not selecting candidates, the ordering of candidates takes place through a computer program that compares candidates' curricula), the recruitment process at private institutions normally involves a traditional interview and therefore there could be difference factors influencing the selection process.

At the lower secondary levels, this phenomenon occurs with less emphasis, which could be because the number of male teachers interested in teaching mathematics and sciences to pupils aged 10 to 11 years, is considerably less, that is, the number of male candidates seems to be much fewer.

In terms of lecturing at university level (private or independent) in Portugal, the percentage of women lecturers was compared with the percentage of women lecturers with qualifications in Maths and Statistics at the same level. The overall results are presented in the table below:

**Table 2 - Total number of lecturing staff with qualifications in the areas of Mathematics and Statistics in Portugal in the academic year 2013/2014**

<b>Higher Education</b> (Universities and polytechnics, both private and state)					
Total n°. lecturers	Women lecturers	% women lecturers	Total n°. Lecturers qualified in Maths and/or Statistics	Women lecturers qualified in Mathematics and/or Statistics	% women lecturers qualified in Mathematics/Statistics
33528	14745	<b>44,0%</b>	1324	692	<b>52,3%</b>

Source: Rebides - Registo Biográfico dos Docentes do Ensino Superior, DGEEC/MEC.

According to the database of the Portuguese Ministry of Education and Science, and our proceeding analysis of the 294 institutions of higher education in Portugal (all higher education institutions including private, state, university, polytechnical, in all the Portuguese territories: mainland, Azores and Madeira), it is found that, (perhaps unexpectedly), the percentage (52.3 %) of women mathematicians lecturing on university courses is higher than the percentage of women teaching in other disciplines (44%).

According to an investigation into the current interest in studying mathematical subjects at university level and careers involving mathematical subjects amongst the younger sector of the Portuguese population, the following data was collected and analysed:

**Table 3 – Gender of students enrolled on higher education courses during the academic year 2013/2014**

Educational level	Gender		Total	Male		Female	
			%		%		%
<b>Total</b>			<b>362200</b>	<b>168252</b>	<b>46,5</b>	<b>193948</b>	<b>53,5</b>
Training			36	6	0,0	30	0,0
First degree			1	-	-	1	0,0
First part of first degree <sup>(1)</sup>			220786	101486	60,3	119300	61,5
Specialisations <sup>(2)</sup>			3431	1198	0,7	2233	1,2
Masters degree <sup>(3)</sup>			62950	33156	19,7	29794	15,4
Second part of Masters			54751	23076	13,7	31675	16,3
PhD (first part)			19801	9118	5,4	10683	5,5
PhD			444	212	0,1	232	0,1

(1) Includes courses "Licenciatura - 1.º ciclo" and "Preparatórios de licenciatura - 1.º ciclo"

(2) Includes courses of "Especialização pós-licenciatura" and "Especialização pós-bacharelato".

(3) Includes courses of "Mestrado integrado", "Preparatórios de mestrado integrado" and "Mestrado integrado (parte terminal)".

Sources: DGEEC-MEC: <http://www.dgeec.mec.pt/np4/96/>

Inquérito ao Registo de Alunos Inscritos e Diplomados do Ensino Superior, MEC.

Given these data, obtained from the Portuguese Ministry of Education and Science, and our proceeding analysis of the 295 higher education institutions (both independent and state) in Portugal, it was observed that, at all levels of training, the number of women enrolled on higher education courses in the academic year 2013/2014 was higher than the number of men enrolled, with an overall proportion of 53.5 % women.

*Which higher education disciplines do women tend to prefer?*

**Table 4 – N.º of first year women enrolled in each subject area in Portuguese higher education for the academic year 2013/2014**

First year women students enrolled – Higher education – 2013/2014	
Subject Area	N.º women
Education	5953
Arts and Humanities	8608
Social sciences, Commerce and Law	25421
Sciences, Mathematics and Information technology	<b>4862</b>
Engineering, Civil Construction industry	5876
Agriculture	1139
Health and Social care	12263
Other Services industries	3597
Unknown or unspecified	168
<b>Total</b>	<b>67887</b>

Source: DGEEC-MEC: <http://www.dgeec.mec.pt/np4/96/>

Although as many as 67,887 first year women students were enrolled on higher education courses in the academic year 2013/2014, only 7.16% of these were enrolled in Sciences, Mathematics and Information technology courses.

In particular, we studied the proportion of female students enrolled on first degrees, masters and PhD degrees in the areas of Mathematics and Statistics.

**Table 5 – Total N.º of students enrolled on Mathematics or Statistics course and their gender. Data for 2013/2014**

a)

N.º higher education institutions (independent and state)	Total enrolled on Mathematics or Statistics courses	N.º women enrolled on Mathematics or Statistics courses	% women enrolled on Mathematics or Statistics courses
23	2 566	<b>1 340</b>	<b>52%</b>

Source: Inquérito ao Registo de Alunos Inscritos e Diplomados do Ensino Superior, MEC.

From the database obtained from the Portuguese Ministry for Education and Science, 23 higher

education institutions were analysed (both private and state-funded). One observes that of the total number of students enrolled on Mathematics or Statistics courses, 52% are women.

In summary, from the information presented in tables 3 and 5, one concludes that the total number of women studying at higher level in 2013/2014 (193,948 women) only 0.69% of them chose a course in Mathematics and/or Statistics (1,340 women). It is our endeavour to organise activities that will lead to an increase in this number during the years to come.

### **Acknowledgements**

To Rachel Martins for the great help on translation to English.

To João Faria Martins and Teresa Araújo for the help on the creation of the EWM-Portugal Facebook page and group.

Catarina Oliveira Lucas, coordinator for Portugal

### **From Russia**

#### **Global Gender Gap Index 2014: 75th**

#### **Activities for women in science**

At the second Russian conference “Women - mathematicians” in 1994, held in Pushchino, it was established Russian Association “Women in Science and Education”. This Association is headed in the last 20 years by Galina Y. Riznichenko, professor of Lomonosov Moscow State University.

The Association WSE has divisions in different Russian cities and also carries out the work through these divisions. Every year it organizes three different conferences:

- 1) The International Conference MATHEMATICS. COMPUTER. EDUCATION. This conference takes place every winter in scientific Moscow region centers of Pushchino or Dubna.
- 2) Conference “Women in Mathematics. Education. Information technology”. The conference takes place annually in the different cities of Russia.
- 3) Conference “Nonlinear world”, a conference-dialogue between scientists and representatives of art and culture. The conference takes place in the different cities of Russia.

In 2015 the conference MCE took place in winter in Pushchino, the conference “Women in Mathematics. Mathematical Education” took place in May at the Kazan' State University, the conference “Nonlinear world. Kurdyumovsky readings” took place in April in Tver.

The 23th International conference MCE will be held in January 25-30, 2016, Dubna, Russia. The Official Conference Website is <http://www.mce.su/>

Natalya Lyulko, coordinator for Russia

### **From Serbia**

#### **Global Gender Gap Index 2014: 54th**

#### **Activities for women in science**

Last year, the Serbian Mathematical Sciences Association [“SNMD-Srpsko naučno matematičko

društvo”, snmd.mi.sanu.ac.rs] was founded as a non-profit association, established for an indefinite period in order to achieve objectives in the development of mathematics as a scientific discipline. Almost 50% of members are women. Before that, there had been a society of mathematicians and physicists, established in 1948. For a short period, the society changed name to Society of mathematicians, physicists and astronomers. From 1981, when society was split, with a Society of mathematicians in Serbia [“DMS-Društvo matematičara Srbije”, www.dms.rs].

There is no any female mathematical association yet. The number of EWM members from Serbia is less than 20, but number of active members is even less than 10. Recently, active members of EWM started to talk about an idea of forming the Female Mathematical Network of Serbia. Four members of EWM (Dušanka Perišić, Sanja Rapajić, Sanja Konjik and Jelena Aleksić) applied for a project entitled “The fulfillment of the conditions for the establishment of women's mathematical networks in Serbia” to the Provincial secretariat for science and technological development of Autonomous Province of Vojvodina. Almost all active members are from University of Novi Sad. We are also active in making contacts with women mathematicians from five universities in Serbia, University of Belgrade, Niš, Kragujevac, Novi Pazar and Kosovska Mitrovica, and from the Serbian Academy of Science and Arts.

As we wrote in previous reports, women are almost 50% of mathematicians in Serbia. Regarding teaching of mathematics, the percentage of women is even higher.

The only grant in science available only for women is the L'Oréal-Unesco scholarship. Every year, 3 women scientists obtain these grants. Sometimes a woman mathematician gets it, but it is rare.

Jelena Aleksic, coordinator for Serbia

## **From Slovakia**

### **Global Gender Gap Index 2014: 90th**

#### **Overall situation of women in mathematics**

Basic facts:

- about 25% of active mathematicians working at the Mathematical Institute of Slovak Academy of Sciences are female (10 women);
- about 40% of mathematicians working as university lecturers at 10 universities in Slovakia are female (about 200 women);
- about 35% of leading positions in the boards of 2 existing Slovak professional mathematical societies (with about 160 members) are female;
- Union of Slovak Mathematicians and Physicists - 8M + 5F; Slovak Mathematical Society - 3M + 6F.

#### **Activities for women in mathematics**

Currently there are no special committees or members of steering committees within any from above two professional organisations that would be responsible for promoting women in mathematics nor the agenda related to these issues.

The non-profit professional scientific organisation Slovak Society for Geometry and Graphics aimed to stimulate scientific development in the field of geometry and computer graphics, to

support young scientists in these disciplines, and to enhance the quality of geometry and graphics education at all levels has about 45 members, while 33 of them are women.

This society organized under its own costs several special events for women in mathematics:

- Seminar Women in Geometry and Geometric Modelling, October 16-18, 2013, Kočovce, Educational Centre of Slovak University of Technology.

- In December 2013, during the annual meeting of Slovak mathematicians regularly organised by the Union of Slovak Mathematicians and Physicists a general discussion was held with the topic of possible establishment of a special board for women in mathematics that could take care about special needs of more women mathematicians and their promotion. Information about EWM was also provided here for all participants in order to foster interest of women to participate in EWM and benefit on its activities.

- A special seminar on position of women in mathematics in Slovakia was held during the international conference on applied mathematics Aplimat 2014, February 4-6.

- On October 16, 2014, during the Symposium on Computer Geometry held at the Institute of Mathematics and Physics, Slovak University of Technology in Bratislava, an informal meeting of participating women mathematicians was held, where information about EWM organisation and its activities was presented and possibility of individual membership was promoted.

### **EWM activities and membership**

The EWM national coordinator for Slovakia has collected addresses of all women mathematicians who articulated interest to receive information about EWM and its activities, and disseminates all information received from the EWM to them.

They have been invited to participate in the first EWM meeting in Slovakia that will be held at the Institute of Mathematics and Physics, Slovak University of Technology in Bratislava, on September 30, 2015. Informations will be given about the 17th EWM General Meeting in Cortona, and it will be suggested to establish of a Slovak Group of Women in Mathematics – an official body dealing with gender issues, hidden forms of invisible discrimination and under-representation of women in decision bodies and boards related to Mathematics. In the meantime we will try to encourage more women mathematicians to attend this event. During the seminar possibilities and ideas on how to continue in order to promote better gender awareness in Slovak mathematical community remaining reluctant towards various gender problems in STEM.

So far, there are no other activities related to EWM in Slovakia, and there are only 2 members, while some others might hopefully appear during the meeting in September 2015.

Daniela Velichová, coordinator for Slovakia

### **From Spain**

#### **Global Gender Gap Index 2014: 29th**

#### **Activities for women in mathematics**

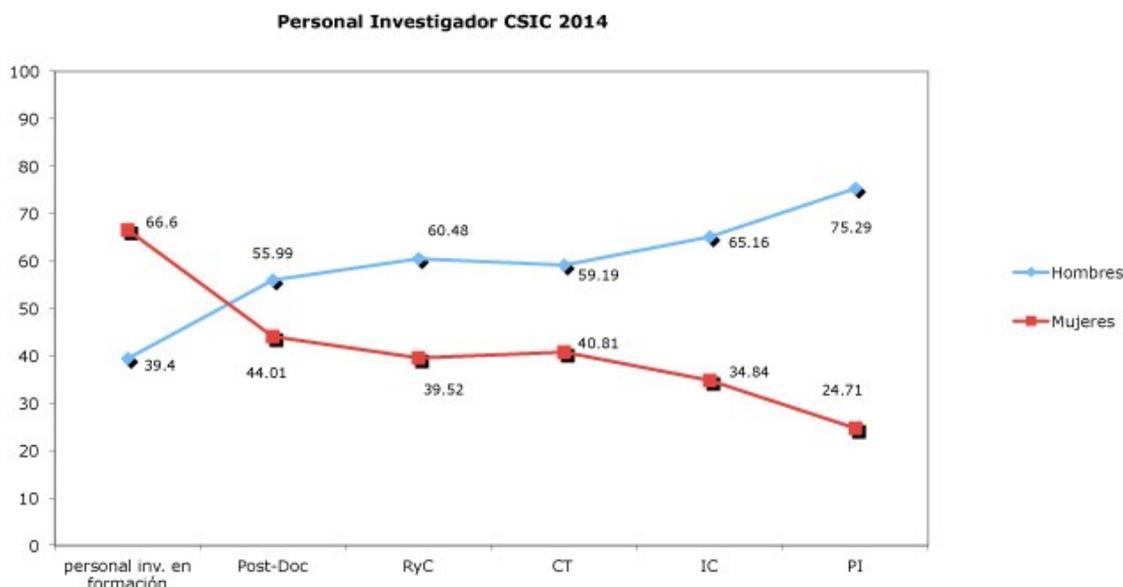
While there are several national/local associations for women in Science along the different Spanish universities, there is only one organization for women in mathematics: the commission for women in the Real Sociedad Matemática Española (Spanish Royal Society of Mathematics).

The main associations or commissions for women in science are:

- Unit of Women and Science of the Ministry of Economy and Competitiveness: organization established in 2006 that fights for the effective equality between genders. It produced the White Paper about the Situation of Women in Science in Spain in 2013. Available online at

- Women and Science at CSIC (Spanish Council for Scientific Research): commission that produces a yearly report with statistics about women scientists. Available at <http://www.csic.es/mujeres-y-ciencia>. It organized different raising-awareness events to celebrate its tenth anniversary in 2013.

None of these commissions distinguishes between the different sciences, so we cannot infer accurate data about the general situation of women mathematicians. However, studies from both commissions show and underline the existence of the so-called Glass ceiling for women. Even when the percentage of women studying mathematics at an undergraduate level is larger than the percentage of their male colleagues, as far as we follow the ascending positions line, these percentages get reversed.



The Commission for Women of the Real Sociedad Matemática Española (RSME) is formed by 9 members and it is led by Marta Casanellas Rius, professor at Universitat Politècnica de Catalunya. It pursues spreading the most relevant women mathematician contributions and stressing some of the difficulties and integration problems that stop women to reach senior positions. The main activities that were accomplished since 2012 are:

- Updating the webpage of the commission: <http://mym.rsme.es/>
- Starting a new initiative in which women mathematicians are recorded while explaining and sharing their concerns about their jobs. Some videos are available at the previous webpage.
- Organization of different debates and discussions about the situation of women in Science, mainly inside the program Dona 2.0 (Woman 2.0) at Universitat Politècnica de Catalunya and also at some other Spanish universities.
- Producing a detailed [report](#) (2014) with information about the percentage of women mathematicians in different positions at universities in Spain. The data was collected by the Spanish National Institute of Statistics in 2010.
- Insisting to the Spanish Government on including special clauses in all research calls for maternity leaves.

### **EWM activities and membership**

The main aim of the Spanish section of the EWM is keeping going with the awareness of the worries and difficulties of women mathematicians in order to try to detect the specific problems and find solutions to them.

Some of the precise actions that the Spanish section of the EWM expects to accomplish to reach these goals are the following ones:

- Organizing a round table inside the Congress of Young Researchers of the RSME (September 2015).
- Taking part in the European Girls' Mathematical Olympiad in 2016.

Elisa Lorenzo García, coordinator for Spain

### **From Switzerland**

#### **Global Gender Gap Index 2014: 11th**

There are approximately 15 female mathematicians who hold a permanent position in a Swiss research university (from lecturer to professor level). There are many more post-doctoral researchers and doctoral students. There are no specific activities organized for female mathematicians in Switzerland, nor is there an organization whose membership is defined by this common attribute.

The Swiss National Science Foundation has a funding program and various policies aimed at encouraging and assisting female researchers, see for example

<http://www.snf.ch/en/funding/careers/mhv-grants/Pages/default.aspx>

On the occasion of the 100th anniversary of the Swiss Mathematical Society, Christine Riedtmann wrote an informative article about the history of women mathematicians in Switzerland (in German), which can be found in the Reports section of <http://europeanwomeninmaths.org>

Relinde Petronella Maria Johanna Jurrius and Donna Testerman, coordinators for Switzerland

### **From Turkey**

#### **Global Gender Gap Index 2014: 125th**

#### **Activities for women in mathematics**

The first workshop of women mathematicians was held during May 02-04, 2014, in Gebze, Kocaeli, at the Gebze Institute of Technology. The main themes of the workshop were Algebra, Algebraic Geometry, Graph Theory and Numerical Analysis. There were three talks in each area; one general talk given by a senior women mathematician, following two talks given by young women mathematicians. There were also poster presentations, mostly done by graduate students. From undergraduate to senior mathematicians, mostly women but also some men, there were nearly 150 participants. We did not get any financial support except that the host university arranged accommodation and lunches at reasonable prices.

The second one is taking place from Friday, May 1, 2015 to Tuesday, May 5, 2015 in Cumhuriyet University Merkez/Sivas, and will be organized with the EWM moral support.

Information communicated by Semra Pamuk

## From United Kingdom

### Global Gender Gap Index 2014: 26th

There are several activities in the UK now to support and increase the participation of women to STEM (Science, Technology, Engineering and Mathematics). Universities can apply for an Athena Swan award, at three different levels (bronze, silver and gold). These awards are granted after a very demanding application and peer review process, based on collection and analysis of diversity data. While this poses several problems, for example that junior women tend to be lumbered with the job of preparing the application for their departments, it has served well to raise awareness of the massive gender imbalance in STEM.

UK EWM works closely with the London Mathematical Society Women in Mathematics Committee, which among many other activities runs a Good Practice Scheme supporting mathematics departments interested in embedding equal opportunities for women, and preparing Athena Swan applications. The Isaac Newton Institute also have a Gender Balance Programme.

The main meeting point of women mathematician in the UK is the annual Women in Mathematics Day. Usually this is a one, or sometimes two-day event, with a few invited lectures and PhD-junior short lectures, plus time to network. This year the event lasted four days celebrating women across the mathematical sciences, and for the first time it had a day dedicated to high school students as well. The event was held in Oxford in 2015 as part of the 150th anniversary year of the LMS. You can follow what is going on Twitter: @womeninmaths.

Beatrice Pelloni, coordinator for UK

## GUEST REPORTS

### From India

#### Global Gender Gap Index 2014: 114th

Three women related activities were held in the year 2014-15 in India.

**1. Indian Women and Mathematics : 2-4 April, 2015.** University of Delhi, South Campus, New Delhi, India. More information can be found at

<http://maths.du.ac.in/webpage-IWM/symposium.html>

**2. Young Women and Mathematics** : 25-27 July 2014 at IISER, Pune.

<https://sites.google.com/site/ywmiisc/>

**3. Teachers Training Programme** : 20-24 November 2014 at Vellalar College for Women, Erode, Tamil Nadu. <https://sites.google.com/site/iwmttp2014/home>

All these activities were funded by the **National Board for Higher Mathematics (NBHM)**, DAE, Govt. of India (<http://www.nbhm.dae.gov.in/>) to a large extent and the institute/university, where the particular activities took place, also sponsored partly.

Dr. Anisa Chorwadwala, a woman mathematician and a faculty of IISER Pune, India, maintains a website for women related activities, past and present, in India which also gives information about opportunities and some useful link. The website is at <https://sites.google.com/site/homepageiwm/> . This website has a link to EWM and we also mention EWM in all the activities of women and mathematics that we are involved in.

Apart from these, there was a one day seminar held titled "**Women in Science: A Career in Science**" at the Karnataka State Women University, Bijapur, India, on the International Women's Day (8th March, 2015) which was sponsored by the **Panel for women in Science (WiS), of the Indian Academy of Sciences (IASc)**. Five women scientists including a mathematician were invited to give one hour talk on their research to encourage women students to take up a career in science. There will be report regarding this in Current Science. For more activity of WiS, IASc see the website <http://www.ias.ac.in/womeninscience/>. Moreover, there have been special seminars on the occasion of 8th March, 2015, like a common program of DRDO Institutions, National Cell Science Centre, a common program of all the ISRO institutions. There was also an Indo-French seminar on women in science in the first week of March.

I would like to add that in 2014 CSIR-NISCAIR (Concil of Scientific and Industrial Research (CSIR)-National Institute of Science Communication and Information Resources (NISCAIR)), India made a tele-series called 'Scientifically Yours' which comprised of half an hour interviews of Indian women scientists. The series was aired, one interview every weekend from July to October, 2014, on one of the national television channel called DD-Bharati so that it reaches a wider audience. It was also re-telecast again this year. They took interviews of 13 women scientists including a mathematician. The series was made to encourage girl/women students to take up a research career in science by highlighting the journey of successful women scientists. The link to the website of some videos is here: <http://scm.niscair.res.in/category/scientifically-yours/> This year, CSIR-NISCAIR is compiling all the interviews in a book and would publish it.

Talking about books, I would like to mention one book 'Women Scientists: Reflections, Challenges and Breaking Boundaries' written by Magdolna Hargittai and published by the Oxford University Press this year (2015).

Riddhi Shah, EWM corresponding person in India

### **From Africa**

**Global Gender Gap Index 2014:** from Burkina Faso 110th, South Africa 18th, Kenya 7th (only the three countries where women in mathematics workshops were organized are listed. For other African countries GGGI see <http://reports.weforum.org/global-gender-gap-report-2014/rankings/>).

Since Bonn's EWM general meeting, the main AWMA (African Women in Mathematics Association) activity was its first General Meeting in Lake Navaisha, Kenya from 16-18 July 2015, in the framework of a AMUCWMA/AWMA workshop.

The theme of the workshop was "Women in Mathematics for Social Change and Sustainable Livelihoods". This workshop was a follow-up one of a series workshops jointly organized by AMUCWMA (African Mathematical Union Commission on Women in Mathematics in Africa) and CIMPA (International Center for Pure and Applied Mathematics). The first one was held in Ouagadougou (Burkina Faso), 26th-27th October 2012, and the second one was held at the African Institute of Mathematical Sciences (AIMS), Cape Town, 17th-19th of July 2013.

The main objective of this workshop was to bring together women from various countries within the continent to a platform where they can present their work, exchange experiences and discuss initiatives that promote Mathematics with the aim of addressing social change and creating sustainable livelihoods. There was also plenary sessions from invited speakers representing various African regions as well as experts from elsewhere to address and facilitate specific themes of the workshop. More precisely, the event had four main components:

- scientific lectures by renowned mathematicians in their area of research,
- lectures on women mathematicians situation in Africa,
- scientific presentations of the work of some participants,
- the first General Assembly of AWMA since its establishment in 2013.

The workshop attracted 43 participants from at least 17 African Countries within the continent: Algeria [1], Burkina Faso [1], Cameroon [2], Ivory Coast [3], DRC Congo [1], France [2], Gabon [1], Ghana [1], Kenya [11], Morocco [3], Nigeria [5], Senegal [3], South Africa [5], Tanzania [1], Uganda [1], Tunisia [1], Zimbabwe [1].

The aims of the first AWMA General Assembly were multiple, mainly adopt the report of activities of the period 2013/2015, adopt the logo of AWMA and approve the new website of AWMA.

It was noted that several national associations for Women in Mathematics have been created since 2013 in Congo, Ivory Coast, Kenya, Nigeria, Tunisia.

See more information on Women in Mathematics activities in Africa on AWMA website <http://africanwomeninmath.org/>

Marie-Françoise Ouedraogo, AWMA president, EWM corresponding person in Africa