CWM NEWSLETTER
ISSUE 1, MAY 2019

Editorial To The First Issue

Dear Friends and Ambassadors of the International Mathematical Union Committee for Women in Mathematics (CWM),

It is our great pleasure to welcome you to the first issue of the CWM Newsletter. We are very excited about this beginning and hope that our new communication channel will keep you even more connected with the rest of the community. As you may already know we have a very active web page with lots of great information, https://www.mathunion.org/cwm. Thanks to Petra Bonfert-Taylor for managing such a resourceful web page. We think that this newsletter will be a good companion to our webpage. Most of its content relies on the information that is already on our webpage. You can find this under the "CWM News" and "Other News and Announcements" sections of our Newsletter. There are of course some additional articles too. One of these articles is an interview with the chair of CWM, Marie-Francoise Roy. We hope to continue this tradition by interviewing a CWM member in every issue. Our newsletter begins with this interview and continues with news and announcement sections in which we try to emphasize some of the initiatives listed on our web page. Since there are many such initiatives we decided to profile only a few in this issue. The others will be highlighted in the next issues of the Newsletter. In the last section of the Newsletter, you can find an article written by Carolina Araujo announcing the new book "World Women in Mathematics". We hope to have similar articles in future issues.

Since this is the first issue allow us to introduce the current CWM Members:
*   **Marie-Françoise Roy,** Université de Rennes 1, France, Chair,
*   **Carolina Araujo,** IMPA, Rio de Janeiro, Brazil, Vice Chair,
*   **Alejandro Adem,** University of British Columbia, Canada,
*   **Petra Bonfert-Taylor,** Dartmouth College, USA (web management),
*   **Tony Ezome,** USTM, Franceville, Gabon,
*   **Josephine Kagunda,** University of Nairobi, Kenya,
*   **Neela Nataraj,** IIT Bombay, India (grant management),
*   **Mokoto Kotani,** Tohoku University, Japan,
*   **Ekin Ozman,** Bogazici University, Turkey(Newsletter Editor),
*   **Cheryl Praeger,** University of Western Australia, Australia (reports management),

*   **Carlos Kenig,** University of Chicago, USA (IMU EC liaison).

We invite your feedback and suggestions about the Newsletter. It is our first such experience and it would be really helpful if this Newsletter becomes a collaboration of all friends of CWM. We hope to publish the Newsletter two times per year for now, hoping that we can increase the frequency as time goes by. Hope you enjoy reading it!
Please distribute it in your country and your scientific network.

Ekin Ozman

Foreword From the Chair of CWM
Marie-Francoise Roy

Marie-Francoise Roy works in real algebraic geometry. She has been Professor of Mathematics at the University of Rennes 1 since 1985 and in 2009 was made a

Chevalier of the French Legion of Honour. She was president of Société Mathématique de France from 2004 to 2007, was one of the founders of European Women in Mathematics, EWM, and was EWM convenor in 2009-2013. In 1987 she co-founded the French organization for women in mathematics and became the organization's first president. Marie-Francoise was scientific officer for Sub-Saharan Africa in Centre International de Mathématiques Pures et Appliquées,CIMPA and is president of Association d'Echanges Culturels Cesson Dankassari (Tarbiyya-Tatali) an organization working for joint activities in a commune Dankassari in Niger and the French commune Cesson-Sévigné. Marie-Francoise has been the chair of CWM since CWM was approved by the IMU Executive Committee in March 2015. In this interview we learn more about her.

Q: Tell us some story about you! Where were you, say, 35 years ago?

M-F: I spent two years in Niger, at Niamey University from 1981 to 1983, with my husband Michel Coste and our two children, then 5 and 7 years old. This was the start of a life long passion and dedication to Africa: from doctoral training of local mathematicians, to a twinning program between my city in France, Cesson and the rural community of Dankassari (80 000 inhabitants) in Niger devoted to various aspects of the Sustainable Development Goals in the area. My motto is "help to self-development". I have been meeting wonderful people, women and men, and I feel my action is making a difference so this part of my life is very rewarding.

Q: Tell us something about your math.

M-F: I have been working on algorithms in real algebraic geometry for about 30 years. I am very interested in historical and epistemological aspects of my topic, and fascinated by the combination of abstract algebra and explicit constructions. One of my major research achievements (with H. Lombardi and D. Perrucci) is to prove elementary recursive degree bounds for Hibert's 17th problem, a difficult problem since Artin's original solution was non-constructive. Throughout my career, I have written very few single author papers, I have currently collaborators in several European countries, Argentina, Senegal and the US, a few of them my age, most of them much much younger.

Q: What were your first projects for women in math? How were they conceived?

M-F: The very fist activities started at the beginning of the Women's Liberation movement in France, not long after the 1968 events. It was natural for us to be mathematicians but we were discovering stereotypes, preconceptions, and constant "erasement" of women's contributions. As if each of us had to start it all over again and again. We were also experiencing the joys of being together and sharing our ideas. The creation of Femmes et Mathématiques in France, and European Women in Mathematics followed at the end of the 80's, and finally the launch of the African Women in Mathematics Association. It has always been a collective enterprise for me, even when I was president, or convenor, or special advisor.

Q: What do your family: spouse, children and grandchildren think about your work around women in math?

M-F: They are very supportive and proud of me. If it was not the case, nothing would have been possible.

Q: What moves you to be dedicating so much of your time and energy to this service?

M-F: I do not know. I wake up and read emails and start a new day. I have often good ideas of things to do but then I need to follow them up. I really love the network of CWM ambassadors that we started and I know they are behind us. I must meet their hopes and expectations.

Q: What do you hope to accomplish?

M-F: Rather than asking women to be able to compete like men do, we need a more friendly atmosphere in the community that allows and values other types of behaviour. The values and the sociology of the community need to be revised so that it becomes more women-friendly and more inclusive in general. I am not very optimistic though since misogyny and male domination are so deeply rooted in all our civilizations, and fear, stupidity and hate are so strong. However "One need not hope in order to undertake, nor succeed in order to persevere. "

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Don't forget to visit our web page regularly for more news and information!

https://www.mathunion.org/cwm

NEWS FROM CWM

CWM ACTIVITIES

CWM sponsors a number of events and activities with the aim of encouraging women in mathematics, with priority given to **developing or emerging countries**. Our main focus has been aimed at establishing or supporting networks at the continental or regional level. Other events, workshops and projects have also been supported.

● Networks and Schools Funded by CWM in 2019

This years call received 41 applications of which CWM decided to support 7. In the selection of grants, the priority has been given to projects developing regional networks for Women in Mathematics, in Africa, Latin America, and Asia. Here is the list of events that will be supported this year:

Africa: Regional workshop of the African Women in Mathematics Association, July 13-14, 2019, Limbe, Cameroon.

This workshop will be held jointly with the Cameroon Women in Mathematics Association. The main objectives of this workshop are to bring together African female Mathematicians in Cameroon in order to motivate and provide role models for young Cameroonian girls, girls and women of the region. Furthermore, mentoring networks for young girls and women in mathematical research will be created.

Contact:
- Dr. Aminatou PECHA, President CAWOMA
- Prof. Marie Francoise OUEDRAOGO, President AWMA

Argentina and Chile: A Meeting of Women from Argentina and Chile, September 23-28, 2019.

This project will create a forum for women mathematicians during the joint meeting of the Union Matemática Argentina (UMA) and the Sociedad de Matemática de Chile Activities will include a day of workshops preceding the conference, lectures and/or panels during the conference on the situation of women mathematicians in Argentina and Chile. Furthermore, mathematical lectures by women researchers are planned.
Contact: Gabriela Ovando, gabriela @fceia.unr.edu.ar

Dominican Republic: Workshop "Women and Mathematics", Key issues for Sustainable development in the Caribbean, June 26-28, 2019, Santo Domingo.

One of the main objectives of this workshop is the creation of a Network of Women in Mathematics in the Dominican Republic and to hold a First Meeting of Dominican Women in Mathematics in conjunction with the First International Symposium of Mathematics in the Universidad Autónoma de Santo Domingo. The workshop will be focussed on the lack of inclusion of women in the sciences and mathematics in the Dominican Republic. One of the main outcomes will be the official creation of the Network of Women in Mathematics of the Dominican Republic (REMUM-RD) as well as strategies to strengthen the cooperation with similar networks in Latin America and the Caribbean.

India: Women and Mathematics Activities, January-December, 2019, India

Activities to encourage more women in India and countries of the South Asian Association for Regional Co-operation to pursue higher education in mathematics. Through these activities, women are provide a supportive environment, and they are exposed to new trends both of which are meant to enable them to take up careers in mathematics.
Contact: indwmmath.siteadm@gmail.com

Indonesia: South East Asian Women Mathematicians Meeting 2019, July 30, Yogyakarta-Indonesia.

The focus of this meeting will be to establish a network of women mathematicians in South East Asia in order to address issues regarding opportunities, challenges and involvement of women in mathematics. The meeting is expected to be attended by close to 100 women mathematicians from South East Asia and is supported by all their Mathematical Societies, especially those from Singapore, Brunei, Malaysia, Philippines, Thailand, Vietnam, Cambodia, Laos, Myanmar and Indonesia.

South Africa: A conference for African Women in Mathematics, July 2-5, 2019.

The four-day conference aimed at African female mathematicians (both pure and applied) will be focussed around the theme of Women in Mathematical Communities. Activities will include scientific talks by women in various areas of mathematics, open problem discussions, workshops on special topics, poster sessions and panel discussions on career planning, work-life balance and other topics of interest.

Contact: Karin-Therese Howell: kthowell @ sun.ac.za

Tunisia: International School on Dynamical Systems and Applications, September 5-10, 2019, Monastir, Tunisia.

Dedicated to graduate students (both at the Masters and the PhD level), this mathematical school is dedicated to enrich the mathematical training of the attending students. Three mini-courses in dynamical systems will be offered during the 5-day summer school. One of the main goals is to encourage and bring together researchers in the field of dynamical systems, in particular ambitious women in the area.

Contact:
- Pr. Nehla Abdellatif (FST, University of Mannouba, Tunisia)
- Pr. Zagharide Zine El Abidine (ISIMM, University of Monastir, Tunisia)
- Dr. Selma Negzaoui (IPEIM, TWMA President, Tunisia)
- Dr. Rim Jday (ISEAHM, General Secretary of TWMA, Tunisia)
- Dr. Khadija Mbarki (FSM, Treasurer of TWMA, Tunisia)

Networks and Schools funded by CWM in the previous years

Events sponsored by the 2018 funding call have taken place in Austria, El Salvador, Ethiopia, India, Italy (ICTP) Macedonia, Nigeria, Uruguay, Uzbekistan and a booklet project on women role models in Africa is being supported. For a brief report on these activities, follow this link to the CWM web page.

Events sponsored by the 2017 funding call took place in Brazil, Canada, Chile, India, Iran, Japan, Mexico, Morocco, Nepal, Tunisia, South Africa and Vietnam. For a brief report on these activities, see here.

The 2016 events took place in Colombia (Latin America), India, Indonesia (S. and E. Asia), Kazakhstan (Central Asia), Mexico (Latin America), Senegal (West Africa), Tunisia (North Africa). For a brief report on these activities, see here. In 2015-16, similar activities were also funded in Kenya (Africa) and Brazil (Latin America).

Gender Gap Project

CWM is leading the project "A Global Approach to the Gender Gap in Mathematical and Natural Sciences: How to Measure It, How to Reduce It ?" funded by the International Council for Science (ICSU).

There are various helpful documents in the project webpage but we would especially like to highlight the following two papers: "A data analysis of women's trails among ICM speakers" and "A global approach to the gender gap in mathematical, computing and natural sciences: How to measure it, how to reduce it?".

The Gender Gap in Science Project Final Meeting takes place at ICTP,

Trieste (Italy), 4-8 November 2019. The registration is now open and will be open till August 2.

The first aim of the meeting is to report on the methodology, tools produced and results of the project and to formulate recommendations and open questions based on the results. All talks will be informed by the results of the survey, data analysis of publications, and compilation of good practices. The second aim is to present the tools of the project in an interactive way and to make it possible for attendees to learn how to use them and to answer their own questions. The program of the meeting will include computer activities and discussions in small groups.

There will be a selection process due to budget limitation and the wish to ensure a geographical and thematic balance. If you have grants or funding you can use for your participation please indicate so when you register, as it will make possible for more people to attend.

OTHER NEWS AND ANNOUNCEMENTS

- ## First Woman to Receive the Abel Prize: Karen K. Uhlenbeck

"For her pioneering achievements in geometric partial differential equations, gauge theory and integrable systems, and for the fundamental impact of her work on analysis, geometry and mathematical physics" Karen Uhlenbeck (University of Texas at Austin, USA) will be awarded the Abel Prize for 2019 on May 21 in Oslo.

The Abel Prize recognizes mathematicians who have greatly influenced their field and is awarded by the King of Norway. The prize was first awarded in 2003.

In 1990, Uhlenbeck held a Plenary Lecture at the International Congress of Mathematicians (ICM) in Kyoto, Japan. At that time, she was only the second woman in history to have done so. The first was Emmy Noether in 1932.

Uhlenbeck is a mathematician, but she is also a role model and a strong advocate for gender equality in science and mathematics. She is also the co-founder of the "Institute of Advanced Study" , Women and Mathematics program (WAM), created in 1993 to recruit and empower women to lead in mathematics research at all stages of their academic careers.

Several interviews have been made by Uhlenbeck, see for instance here, here and here. If you would like to read about comments of her students about her, follow this link.

• L'Oréal-UNESCO International Awards for Women in Science

On the 21st anniversary of their awards, the L'Oréal-UNESCO International Awards for Women in Science extended the scope of their awards to include mathematics. We are delighted that Ingrid Daubechies (Duke University, United States) and Claire Voisin (Collège de France) became on March 14 the first mathematicians to receive a L'Oréal-UNESCO award. They were two of the five outstanding awardees for 2019. Warm congratulations to both of them! If you would like to read more please follow this link.

• May 12, a Celebration for Women in Mathematics

May 12th (the birthdate of Maryam Mirzakhani) is a joyful opportunity for the mathematical community to celebrate women in mathematics. The celebration takes place every year, all around the world.

The goal of the day is to inspire women everywhere to celebrate their achievements in mathematics, and to encourage an open, welcoming and inclusive work environment for everybody.

The May 12 initiative was approved by the participants of (WM)² in July 2018, and is coordinated by European Women in Mathematics (EWM), African Women in Mathematics Association (AWMA), Association for Women in

Mathematics (AWM), Colectivo de Mujeres Matemáticas de Chile, Indian Women and Mathematics (IWM), and Women's Committee of the Iranian Mathematical Society.

The May 12th initiative brings together events celebrating women in mathematics which take place during the month of May. The main focus are initiatives coming from within academia. All of the events related to May 12th are organized locally. As of now, it has already recorded 61 events taking several different places in the world! There may be <u>already more</u> by the time you read this newsletter!

Feel free to disseminate the information and encourage more events, to be announced at this <u>web page</u>.

CONFERENCE ANNOUNCEMENTS

- <u>**Women in Geometry and Topology**</u>, Centre di Recerca Matemàtica, Barcelona, Spain, September 27-27. The workshop will feature several plenary talks, public lectures, a panel and other activities.

- <u>**Women in Topology,**</u> Hausdorff Research Institute for Mathematics, Bonn, Germany, August 26-30. Applications to be part of a collaborative team for this workshop are now being accepted at this <u>link</u>.

- <u>**Women in Analysis**</u>, BIRS, Canada, June 4-9. The workshop will host eight different research teams of five/six women each in different, but related, subject areas in Analysis and Partial Differential Equation.

- <u>**Women in Numbers Europe 3**</u>, Centre de la Hublais, Rennes, France, August 26-30. This workshop aims to support new collaborations between female mathematicians in number theory.
- <u>**Connections for Women:**</u> Holomorphic Differentials in Mathematics and Physics, MSRI, USA, August 15-16.

- **Women in PDEs,** University of Vienna, Austria, June 17-18. The aim of this workshop is to support the promotion of women in mathematics bringing together students, young researchers (PhD students and postdocs) and established female mathematicians working in the area of partial differential equations.

- **Summer School "Modern Theory of Group Actions and the Special Role of Finite Simple Groups",** Institut Mittag Leffler, June 3-7. The Summer School is aimed especially at young women mathematicians.

- **WINART2,** Leeds University, May 20 - 24. The second workshop for Women in Noncommutative Algebra and Representation Theory. A website is under development and details are forthcoming.

- **Women in Commutative Algebra(WICA)**, October 20 - 25, BIRS, Canada. WICA is a five-day workshop focused on research collaboration in small groups. The women algebraists, ranging from early-career mathematicians to leaders in the field, will conduct research on cutting edge topics in commutative algebra.

MEETINGS

- **Women in Mathematics Meeting,** NOVA University, Caparica, Portugal, July 22-24, 2019. The conference aims to cover, as broadly as possible, the diversity of interests of Portuguese women mathematicians. Early registration is open until June 10.
- **LMS Women in Mathematics** at Kent: 24 May 2019 . Follow this link for more information.
- **Brazilian Meeting of Women in Mathematics** . The meeting aims to promote inclusion and permanence of women in research career in mathematics in Brazil. The program includes special lectures, presentations by young researchers, tutoring sessions, poster presentations and round tables.
- **2019 Diversity in Mathematics** at PIMS(Pacific Institute for the Mathematical Sciences), July 22 - August 2, 2019 is part of a multi-year, multi-level program geared towards promoting diversity and inclusivity in STEM.

Book announcement
World Women in Mathematics 2018
by Carolina Araujo

It is my pleasure to announce the forthcoming book World Women in Mathematics 2018 - Proceedings of the First World Meeting for Women in Mathematics (WM)²

This historical proceedings book, organized by CWM in coordination with the Association for Women in Mathematics (AWM), records the first (WM)² and the CWM panel discussion at ICM 2018. It is edited by Carolina Araujo, Georgia Benkart, Cheryl E. Praeger and Betül Tanbay, and is expected to be published still in 2019 by Springer, as part of their AWM Series.

The first part of the volume is devoted to (WM)². It starts with a short report on the activities of (WM)² (based on the report that can be found here), including pictures that attest to the lively and friendly atmosphere of the meeting. Following the report, survey research papers from invited lecturers provide a panoramic view of different fields in pure and applied mathematics: optimization (by Etienne de Klerk and Monique Laurent), applications of computational and real algebraic geometry to biochemistry (by Alicia Dickenstein), and stochastic processes (by Stella Brassesco and Maria Eulália Vares). The first part closes with the inviting note by Maria J. Esteban, based

on her public lecture at the (WM)², entitled "How mathematics is changing the world."

The second part of the volume documents the CWM panel discussion at ICM 2018, with articles from the panelists. The paper by Helena Mihaljević and Marie-Françoise Roy traces the footprints of women lecturers in the ICM since its inception. June Barrow-Green's essay investigates the historical context of the gender gap in mathematics, analyzing challenges faced by women mathematicians during the last two hundred and fifty years, and shedding light on some of the problems still encountered today. The second part closes with the paper by Silvina Ponce Dawson, which describes a series of actions taken by the International Union of Pure and Applied Physics to reduce the gender gap and increase diversity and inclusion in physics.

This book is dedicated to the memory of Maryam Mirzakhani. She was the first woman mathematician to be awarded the Fields Medal, at ICM 2014 in Seoul, and died untimely on July 14, 2017, at the age of forty. Maryam Mirzakhani's shining light was a great inspiration to the organization of the (WM)², and will always be a beacon for women in mathematics. May she rest in peace.

About the Author:
Carolina Araujo s a Brazilian mathematician specializing in algebraic geometry. She is a researcher at the Instituto Nacional de Matemática Pura e Aplicada in Brazil (IMPA). Araujo won L'Oreal Award for Women in Science in Brazil in 2008.

Araujo is an organizer and invited speaker at the 2018 International Congress of Mathematicians. She led the inaugural World Meeting for Women in Mathematics — (WM)² in August 2018. She was also one of the female mathematicians profiled in the short documentary called Journeys of Women in Mathematics, funded by the Simons Foundation.
She was also featured in Quanta Magazine on "Closing the Gender Gap in Mathematics".