



EUROPEAN WOMEN IN MATHEMATICS

Newsletter 17

Edited by Sara Munday and Elena Resmerita

A large, abstract graphic composed of several overlapping, semi-transparent, brownish-orange polyhedral shapes, resembling a complex geometric structure or a stylized architectural element. The shapes are arranged in a way that creates a sense of depth and movement.

2010/2



At the opening of the ICM 2010 the following prizes were awarded: Fields Medals (started in 1936), the Nevanlinna Prize (started in 1982), the Gauss Prize (started in 2006), and the Chern Prize (started this year). The winners were:

- Fields Medals: Elon Lindenstrauss of Hebrew University of Jerusalem, Israel; Ngô Bảo Châu of Université Paris-Sud in Orsay, France; Stanislav Smirnov of the University of Geneva, Switzerland, and Cédric Villani of the Henri Poincaré Institute in Paris, France.
- Nevanlinna Prize: Daniel Spielman, Yale University, USA
- Gauss Prize: Yves Meyer, École Normale Supérieure de Cachan, France
- Chern Medal Award: Louis Nirenberg of Courant Institute of Mathematical Sciences, USA

Some statistics (according to http://www.austms.org.au/tiki-read_article.php?articleId=70):

Four out of twenty plenary speakers were women: Irit Dinur, Israel, R. Parimala, USA, Kim Plofker, USA, Claire Voisin, France. As of total sectional speakers, 23.5 were women out of 171 (fractions are due to joint lectures and shared affiliations). Moreover, the Emmy Noether lecture was delivered by Idun Reiten, Norway.

International Conference of Women Mathematicians, August 17-18, 2010, Hyderabad, India

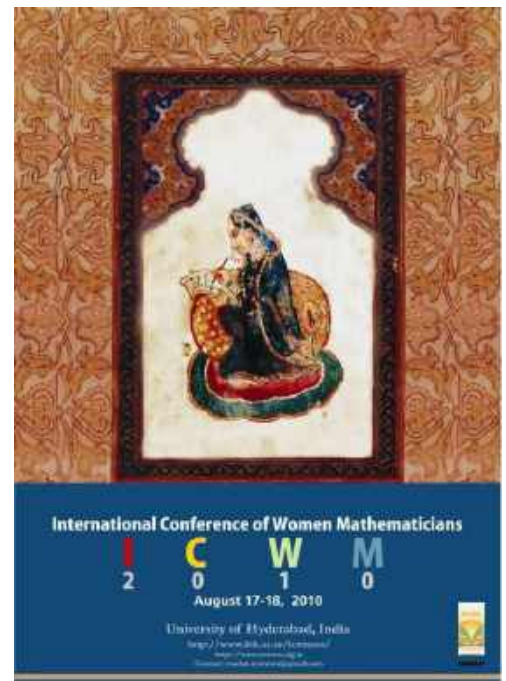
The first ICWM took place this year in Hyderabad, from 17 to 19 of August 2010, just before the ICM. The ICWM took place on the beautiful campus of the university of Hyderabad, and was hosted there with wonderful grace and kindness by the local organisers. Approximately 200 mathematicians attended, mostly but not exclusively women, in the majority Indian but with representations from all over the world.

The meeting consisted of eight talks by exceptional mathematicians from all over the world, all women, of whom some were also plenary or invited speakers for the ICM. The speakers came from India, France, US, China, UK and Denmark, and the topics of the talks spanned a large part of mathematical endeavour, including topology, algebra, and numerical analysis.

The first afternoon of the two-day meeting was dedicated to a panel discussion on “Women mathematicians around the world”. The discussion was organised by Prof Caroline Series, and chaired by me in Prof Series’ absence. It was introduced by eight short presentations aimed at illustrating the situation of women mathematician in most geographical regions of the world: Africa, South America, North America, Japan, Korea, India, Pakistan, Europe. The list of panelist is given at the end. The presentations generally contained an illustration of the statistical data on the percentage of mathematicians that are women at different stages in the academic and research career, within the different social and political context in the various regions considered. The panellists also gave a description of the existing organisations that focus on supporting women mathematicians.

The latter aspect of the presentations motivated most of the ensuing, lively discussion. Although the time available was painfully insufficient, a dozen interventions followed one another without break from the audience. Many more views were expressed in writing on a questionnaire distributed at the meeting, and returned to the organisers the following day.

The issue raised most often was the need to establish national, or perhaps regional, organisations that can coordinate the flow of information and make sure it reaches all potentially interested women, and offer support and leadership to women mathematician in all regions of the world. The discussion referred mostly to the situation in India, sometimes with reference to the specific social issues that make it difficult for young women to become scientists or even acquire information at crucial stages, but the topics were certainly more general. Many times the speakers hinted that the presentations, and the fact that the ICWM was organised, had provided new and essential information on the potential and resources available for women that are or want to be in a research career in mathematics.



International Conference of Women Mathematicians, Hyderabad, 17-18 August 2010

A few of those who spoke asked for advice on how to obtain financial assistance, for individuals or meetings, or for establishing peer support groups. These kind of queries channelled into a widespread request that information on all types of support available for women mathematicians is organised and made widely available on a sort of "master" website.

In partial response to this request, a report on the discussion and the electronic version of all presentations has been made available on the EWM website. This website also hosts a blog that could become a useful tool for further discussion of how to create a central information and support platform for women mathematicians (see <http://womenandmath.wordpress.com/>). In my view, it would be particularly useful if the existing organisations, the Association for Women in Mathematics, the European Women in Mathematics, the Korean Women in Mathematical Sciences, and the LMS Women in Mathematics Committee could use this blog to open and maintain a discussion on how best to disseminate information and on how to help the existing efforts to establish similar organisations elsewhere.

The next ICM will be held in Seoul, Korea, in 2014. While no final decision has been made yet whether a second ICWM will take place at the same time, the association of Korean Women in Mathematical Sciences has already announced that they will use a received donation of \$90,000 to support women from developing countries to attend the ICM 2014, Seoul.

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REPORT: International Conference of Women Mathematicians

Walking into the foyer of the DST Auditorium of Hyderabad University just minutes before the opening ceremony was an exciting moment. Women mathematicians, many in colourful saris, were mingling in purposeful anticipation, registering, putting up posters, greeting colleagues. I shook hands with Shobha Madan, the chair of the local organising committee. She introduced me to Professor Seyed Hasnain, Vice-Chancellor of the University of Hyderabad and guest of honour for the opening ceremony. After a few more hand shakes we were ready for the inauguration of the (first) ICWM. As is customary in India for such occasions, an oil lamp was lit, symbolising light that may shine on the meeting and light that may come from it.

Shobha Madan had worried the lecture room might be too big but she needn't have done. Some two hundred women (and quite a few men) filled the room. After the inauguration, an Indian buffet lunch was waiting in a marquee outside the lecture hall, a beautiful and convenient setting for our breaks throughout the conference. But before lunch I had time to pick up my conference pack: a blue denim bag with a colourful, patterned border contained amongst other things the much talked about book "Lilavati's Daughters", a collection of biographical and autobiographical essays of women Indian scientists¹.

After lunch it was time for the scientific part of the meeting to start. Our speakers for both days were (in order of appearance):

Frances Kirwan (Oxford)
Neela Nataraj (IIT Bombay)
R Parimala (Atlanta)
Nathalie Wahl (Copenhagen)

Julie Deserti (Paris)
Maryam Mirzakhani (Stanford)
Yana Di (Beijing)
Mythily Ramaswamy (IIT Bangalore)

The topics varied from the applied to the very pure. Each speaker used at least part of the 45 minutes lecture to introduce her topic to a broad mathematical audience².

Another important part of the scientific programme were the poster sessions. The posters had a prominent place in the foyer of the lecture hall and offered a whole variety of food for discussion between lectures. In total there were 33 exhibitions of recent research results, historical contributions, as well as suggestions on how to motivate, teach and popularise mathematics.

A highlight of the two day meeting was the round table which had been put together by Caroline Series. After the members of the panel reported on the situation of women in mathematics in different parts of the world, Beatrice Pelloni led the discussion which heard many contributions by the audience. I cannot do justice to the discussion and contributions here but I was impressed by the positive and self-assured presence of the women who spoke up or to whom I had a chance to talk later on. Many had their own ideas and plans for how women can be helped to pursue a career in mathematics. The lively discussion continued throughout the evening.

At tea time I had welcomed the rain storm that replaced the humid heat as my first experience of a monsoon. Soon I was to have my next proper Indian experience when due to the water the traffic came to a virtual standstill in many parts of the city. As a result our bus journey to the conference dinner took two hours: What an opportunity to talk! and the food seemed all the more delicious when we finally got it.

The scientific programme of the second day was broken up by an impromptu violin performance by 12-year-old Kaavya Jayram who had also contributed to the conference with a poster on her research in number theory. At the end of the second day a four page ICWM Newsletter published by the ICM Press Committee was distributed. Under the headline of "Maiden Endeavour" it reported on the inauguration and gave a detailed account of the panel discussion of the previous day. It also featured on several pages interviews with Shobha Madan and Ragni Piene.

The next ICM in Seoul will be under the auspices of the first women IMU president, Ingrid Daubechies. Many participants of ICWM 2010 hope a similar event will be held in 2014 and already look forward to it.

Ulrike Tillmann, Oxford, 26.09.2010

¹ The book is also available online at <http://www.ias.ac.in/womeninscience/liladaug.html>

² Both R Parimala and Maryam Mirzakhani had also received invitations to speak at the ICM. Many congratulations!

Isaac Newton Institute for Mathematical Sciences

WOMEN IN MATHEMATICS MEETING

Women in Mathematics Two Day Meeting (including the annual Women in Mathematics Day)

Thursday 15 & Friday 16 April 2010

The view from the audience.

The Women in Mathematics Day is an annual event organised by the LMS, usually held at De Morgan House. For this year's meeting, funds were obtained from the UK Resource Centre for Women in SET to follow the WiM day with an additional day of talks, discussion groups and seminars. The two-day meeting was held in the congenial surroundings of the Isaac Newton Institute for Mathematical Sciences in Cambridge.

To start things off on Thursday morning, Julia Gog from the University of Cambridge gave a talk entitled Disease dynamics: From equation to experiment (and back). This described her long-term interdisciplinary collaboration with experimental biologists and physicists, giving both interesting results and lots of advice on how to work successfully in such a way. The remainder of the morning session consisted of two wonderful talks, both from mathematicians from the University of Bristol. First up was Hinke Osinga, who explained The mystery of chaos in the Lorentz equations with great enthusiasm; she left the audience with a real feel for what was going on. Next came Nina Snaith, whose talk Random Matrices and Riemann zeros came back to the benefits of interdisciplinary working, although this time it was applying techniques from physics to important questions in number theory.

During lunch, there was a poster session, where the participants were treated to a beautiful display of interesting and varied posters. By popular vote, Amy Mason from the University of Bristol was declared the winner.

Thursday afternoon saw six shorter contributed talks, on topics ranging from Number Theory, Financial Mathematics and Quantum Mechanics to Optimisation problems and wave propagation. The last speaker, Nathalie Vriand, described her PhD work on booming sand dunes and ensured everyone was awake before tea by playing amazing videos of this bizarre natural phenomenon and handing around samples of types of sand to shake, so we could experience the difference first hand.

After tea, the European Mathematical Society Women in Mathematics Committee was introduced. Caroline Series did the honours and also mentioned that this meeting was the first time that a face-to-face meeting of the committee had occurred, and extended thanks to the organisers for making this possible. Each of the members present (Caroline Series, Bodil Branner, Elena Fernandez and Dušanka Perišić) gave an interesting presentation on some topic concerning Women in Mathematics. A very full and enjoyable day was rounded off by a reception hosted by the Isaac Newton Institute and then dinner at Newnham College.

On day two, Alison Etheridge from the University of Oxford started proceedings with a talk on population genetics and probability theory entitled The pain in the torus: modelling populations in a spatial continuum. Most of the rest of the day was occupied with more practical matters. First was a session on initiatives for women in mathematics, with presentations from UKRC, Ben Mestel from the Isaac Newton Institute and Gwyneth Stallard from the LMS. The next session was devoted to funding opportunities for postdocs and beyond. This was very well received, with lots of questions and discussion. After lunch, the participants split up into various smaller discussion groups, to talk over issues such as balancing work and family, why do mathematics at all and what is good practice in a mathematics department. The only gripe about these groups is that it was not possible to be in more than one at a time! Finally, Bodil Branner gave the last talk of the day, with the title Why mathematics continues to fascinate me – surgery in holomorphic dynamics in particular. This was a great ending to two informative and stimulating days.



(Photo: Emily White, © Isaac Newton Institute for Mathematical Sciences)

The WiM days participants

Equal Appletunities: Gender Balance at the Isaac Newton Institute

The Isaac Newton Institute for Mathematical Sciences is an international visitor research institute based in the University of Cambridge serving the whole of the UK, European and world mathematical sciences communities. We are committed to equal opportunities in all our activities. This commitment is founded not just on principles of fairness and justice but on the recognition that the Institute has a pivotal role in utilizing, encouraging and supporting the whole spectrum of mathematical research talent.

As part of this commitment, the Institute has formulated a Gender Balance Action Plan: www.newton.ac.uk/women/gbap.html. The Plan has been written after consultation with Institute stakeholders, as well as with the London Mathematical Society's Women in Mathematics Committee, the UK Resource Centre for Women in Science (UKRC), Engineering and Technology, and the European Women in Mathematics Committee.

Our aim is to increase the (currently) 15% of women participating in Institute programmes by 20% over the coming years. This will be achieved by a series of measures including:

- (i) encouraging programme organisers to aim for at least 20% participation by women;
- (ii) removing barriers to women's participation and ensuring the Institute supports women's involvement in Institute events;
- (iii) showcasing the achievements of women mathematical scientists in the Institute;
- (iv) developing special funds to support women mathematical scientists to visit the Institute.

As part of this initiative, the Institute hosted a highly successful Women in Mathematics two-day event in April 2010: www.newton.ac.uk/programmes/WIM/ comprising the annual London Mathematical Society's Women in Mathematics day, with an additional second day oriented to career opportunities and development. The conference was supported by the UKRC. Video recordings of the principal talks are available from www.newton.ac.uk/programmes/WIM/wimw01p.html

To showcase women's achievement, the Institute has just started a 'Six Questions With...' series www.newton.ac.uk/women/sixquestionswith/ in which women visitors to the Institute reflect on their career paths and achievements in the mathematical sciences.

The Institute's gender balance initiatives are still in their early stages and it is too soon to tell what effect they will have. However, we hope they will provide a valuable model for other mathematical sciences research institutes as they develop their own policy and initiatives in this area.

Acknowledgement: The Institute is grateful for the support of the UK Resource Centre for Women in Science Engineering and Technology (via a grant held jointly with the London Mathematical Society) and the Thriplow Trust in their generous support for Institute's work in this important area.

REPORT: On Organising the Women in Mathematics Meeting

The London Mathematical Society Women in Mathematics Committee has, for a number of years, organised an annual one day Women in Mathematics meeting held at the LMS headquarters in London. This has proved very popular (especially amongst postgraduates/ postdocs) and, for the last few years, has been oversubscribed. In September 2009, the committee was awarded a grant from the UK Resource Centre for Women in SET under their new Innovative and Collaborative Grants Scheme to fund a number of joint initiatives with the Isaac Newton Institute in Cambridge. We used a large proportion of this grant to enable us to extend the one day Women in Mathematics meeting to a two day event which we held at the INI. This meant that, in addition to talks on mathematics, we were able to include a number of practical sessions covering topics such as initiatives for women mathematicians and funding opportunities for mathematicians at various career stages.

The meeting would not have taken place without lots of hard work from a number of people and I was very appreciative of the input from a number of people on the WIM committee and also of the support of the administrative staff at the INI who did an excellent job. It was great to work with Ben Mestel at the INI who was the driving force behind the grant application – it was particularly good to be working with a man who was keen to see more women mathematicians achieve their true potential. As a WIM committee, it is very good to have got to the stage where people are approaching us for ideas as to how to increase the number of women mathematicians.

The practical sessions required input from a number of people and I was pleasantly surprised by the very positive replies from everyone that I approached. The funding sessions were run by programme managers from the EPSRC and by staff from the Cambridge University Research Office who came up with a huge range of grants that mathematicians could apply for. We also had input from the UKRC (who funded the event) and from the INI. Those who led sessions also mixed with participants over dinner etc. and took an active role in the discussion groups so that there was as much opportunity as possible for people to benefit from their presence.

There was also a European dimension to the meeting that we had not originally envisaged – Caroline Series suggested that the European Mathematical Society's Women in Mathematics Committee could meet during the two day event – this provided them with a rare opportunity to meet up and provided us with a number of leading women mathematicians from across Europe who took an active role in leading sessions.

The meeting required far more organisation than the one day meeting but was hugely rewarding. It enabled participants to get to know each other much better and the discussion groups held at the end of the meeting were hard to stop! I was overwhelmed by the number of people that said how much they had appreciated having a two day meeting, inspired at the sight of so many talented young women and delighted to hear of departments that were particularly welcoming towards women.

By Gwyneth Stallard (The Open University, UK)

News: Glory of India Award & Certificate of Excellence

Ms. Meena Kotecha was presented with a Glory of India Award & Certificate of Excellence at an international event in London on Saturday the 25th September, organised by the India International Friendship Society (IIFS). IIFS presents awards annually to honour Indians across the globe, for their contributions to (a) fields such as Science, Engineering, Technology, Medicine, Education and (b) the strengthening of India's international relations. The award was presented by Baroness Sandip Verma, House of Lords and was attended by about 300 people from all over the world including several members of parliament and dignitaries from UK and abroad.

Ms. Meena Kotecha has worked as a class teacher in departments of Mathematics as well as Statistics at London School of Economics.



INTERVIEW

Jaya Iyer had her education (BSc, MSc) in Mumbai. She then enrolled at the University of Mumbai to obtain her PhD in mathematics and worked with Professor S. Ramanan at the Tata Institute, Mumbai in Algebraic Geometry. She did post-doctoral studies at the University of Paris-6, University of Essen, Max-Planck Institute, Bonn

EWM: When and why did you decide to follow a career in Mathematics? Are you aware of a significant number of women in your country working in modern fields of Mathematics?

Jl: During my Masters course at IIT Mumbai, I was exposed to better teaching in mathematics and it induced a keen interest to study further. I also saw women Phd students working in various disciplines, and in general enjoying the work and extended student life. Also, my sister went to US to pursue Phd studies. All these factors influenced me to take up Phd studies. Today, I am more aware of the women working in advanced mathematics, perhaps because the number is still relatively small.

EWM: After graduating from the Bachelor/Master program in India, the family usually requires a young

(1999-2003), and spent a year at IAS, Princeton (2006-07).

She has been at the Institute for Mathematical Sciences, Chennai since 2003, and currently is at the University of Hyderabad. Her current research interests are in Algebraic cycles, Moduli spaces and the Chern-Simons theory.

woman to get married and devote a good part of her time to the future household, thus making difficult for a woman to pursue PhD studies. How was your case, did you get a lot of support from your family?

Jl: Due to economic reasons and other issues, marriage was not considered in the early years. Though my family didn't approve of the choices I made in my mathematical pursuit, eventually, after I landed up in a job at a Government Institute at Chennai, it pleased them.

EWM: Are there organizations for women in science (particularly in Mathematics) in India? Are women present in leading positions at well established universities there?

Jl: There is an organization "Women in Science" associated to the Indian Academy of Sciences, Bangalore, but



none in mathematics. In well established universities/institutes, women do well in their respective fields and reach senior positions, although I am not aware of anyone at a leading position viz. Head/Dean/ViceChancellor.

EWM: What did you expect from the ICWM and to what degree were your expectations achieved?

Jl: Since ICWM was a two day meeting, I expected it to generate awareness and need for successful women mathematicians to come together, and inspire younger women students and other women who may not have had similar opportunities and circumstances. I feel this was fairly achieved. Maybe, future meetings could aim to create more mathematical interaction and programs as a follow-up action.

INTERVIEW

Prof. Shrikrishna Dani is a Distinguished Professor at the Tata Institute of Fundamental Research, Mumbai. He obtained his bachelor's, master's and Ph.D. degrees from the University of Mumbai. He did post-doctoral work at the Institute for Advanced Study, Princeton and Yale University. He has held visiting positions at various institutions in the U.S. and Europe.

He has contributed close to 100 research papers in dynamics and

ergodic theory of flows on homogeneous spaces, applications to diophantine approximation, probability measures on Lie groups and other related areas, and has guided nine Ph.D. students.

He was Editor of the Proceedings of the Indian Academy of Sciences (Math.Sci.) during 1987-2000 and has also served on Editorial Boards of various international journals.

He has received the TWAS Prize for Mathematical Sciences and is also a



recipient of the S.S. Bhatnagar Prize and the Ramanujan medal of the Indian National Science Academy.

He was elected Fellow of the three National Academies in India, and also TWAS. Prof. Dani is President of Commission for Development and Exchange (CDE) of IMU for the term 2007-10. He has been a member of

EWM: In your opinion, what has the ICM event this year meant for the Indian mathematical community? Moreover, you have been an enthusiastic supporter of the ICWM in Hyderabad. Would you like to explain why?

SD: India has had a long tradition in mathematics, going back over three millenia to the Vedic period, and aptitude in mathematics has been greatly valued by the Indian society over the ages. Participation in modern mathematics also began relatively early in India compared to much of the world outside of Europe. The legendary, and almost magical genius Srinivasa Ramanujan is well-known to the world. While undoubtedly Ramanujan was a unique and isolated phenomenon, a strong mathematical edifice had emerged in India by the early decades of the twentieth century. After independence from the British rule in 1947, pursuit of science, and in particular mathematics, got a big impetus under the leadership of Jawaharlal Nehru. Several new institutions devoted to research were created and over the years have made a name for themselves internationally for their mathematical contributions. The Indian mathematical community has had a vigorous interaction with the global mathematical set up, and has also played a leadership role in certain areas. With this background it was natural for India to host an ICM, International Congress of Mathematicians, an event that has long symbolised the essential unity of the global mathematical community. The integrating aspect has also a developmental potential.

the National Board for Higher Mathematics since 1997 and its Chair since 2006. He served as Vice Chair of the Executive Organising Committee of ICM 2010. Prof. Dani was a member of the Organising

Hosting the ICM offered us, the Indian mathematical community, an opportunity to consolidate our gains in research and academia, to provide our faculty and student community the benefit of exposure to the ideas of leading intellects in the world, and to generate greater awareness in the society at large of the role of mathematics in human progress, thereby bringing out the identity of the Indian mathematical community. Though there were many apprehensions along the way, it has turned out to be a very fruitful and happy event for all, and the community will no doubt build up on it in the coming years.

I had the good fortune of being associated with the organisation of the ICM, as a member and Vice Chair of the Executive Organising Committee. While the preparations were going on we received a proposal from EWM, European Women in Mathematics, for organising a conference of women mathematicians alongside ICM. This was greeted with much enthusiasm. I was myself very keen on such an event being organised, interested as I have been in women's issues over the years. Anyway, it did not take much persuasion in case of others either. In India there is substantial awareness of the potential of women and the need to develop their abilities in the cause of progress. While indeed there are still many unsettled issues of gender equity and gender-justice, there is a general sense of support to women in the intellectual sphere. Personally I believe it is important in the historical context to celebrate the achievements of women in mathematics (as also in other

Committee of ICWM. Since 2005, he has been a member of the Tata Institute's Women's Cell, a Committee appointed for promoting gender harmony and facilitation of women employees in the Institute.

endeavours) in order to motivate younger women, to help them overcome the pressures emanating from the traditional mindset and the constraints arising from it. This is a much needed step towards creating a society in which men and women can collaborate in harmony. The proposal from EWM accorded us an opportunity to present women achievers from around the world to the women from the mathematical community of India, especially from the younger generation who would hopefully be inspired by the illustrious examples, and also to interested men around the country.

EWM: The high quality of Sciences departments in India is well known throughout the world. Could you give a short description of the recruitment/admission processes in such institutions?

SD: Thanks for the positive comment on our institutions. Independent India has been able to bring up a few good institutions in science and mathematics. In the overall context of the country these are actually rather too few, and a lot more development needs to take place for a viable and self-sustaining scientific community to be in place, but that is a different story. As to your question, a few points come to mind. The institutions that are doing well, and have acquired a reputation internationally, have typically benefited, at some time or other, from high class leadership of eminent scientists, C. V. Raman, P.C. Mahalanobis, C.R. Rao, Homi Bhabha, K. Chandrasekharan and in recent years C.S. Seshadri, to name a few in respect of the institutions that I am familiar with, who devoted

themselves to institution-building. Apart from the inspirational value that the leadership provided, it has enabled the institutions to function with the best scientific interest in view, warding off undesirable political or other interference. Over the years a good degree of democratic functioning has also set in with the creation of various internal structures with checks and balances. The overall ethos in the country has also been beneficial in this respect. Coming to recruitment procedures, I may note firstly that these vary to quite an extent from institution to institution. There are nevertheless some common features. For faculty appointments all of them draw candidates from a broad domain and invariably involve evaluation by international experts. Recruitment of graduate students (who routinely get scholarships during their studies) is usually through a rigorous selection involving a written test followed by interviews of selected candidates which probe the aptitude of the candidates. I would hasten to add however that notwithstanding various safeguards, and the favourable impressions, the situation continues to be such that persistent care is warranted and the community is continually seized with issues of maintaining standards.

EWM: Could you tell us about the caste criterion in the ranking at the

bachelor (master?) program at the universities? Do you think it's still a good criterion these days and why?

SD: I suppose you are referring here to reservations in favour of scheduled castes and tribes. The policies in this respect are a form of "affirmative action". It is important that all communities should develop and be part of the national mainstream in the intellectual and social sphere. In this respect it is essential that individuals from the underprivileged communities be given a head start. Admittedly some problems have arisen from the implementation of the policies. In my view the problems are primarily on account of the policies being implemented more in form, and not so much in substance, with full appreciation of the objectives for which they are meant. While there can be many issues of detail that could be debatable, on the whole I believe a vibrant affirmative action policy needs to be in place until there is a substantial social transformation.

EWM: Most of the Indian population is rural (about 60%) and has little information about academic education. Therefore, brilliant minds might not get the chance to go for higher education. What are universities doing in this respect, to encourage young people from the rural population to study in universities?

SD: It is a massive problem and the universities alone can not be expected to make a dent in it. For their part the universities, which are for the most part funded by the government (of the state or, in a few cases, the government of India) have tended to be receptive to the talent from the underdeveloped regions. Universities are run around the country even in fairly remote regions. In most cases there are no fees for those who do not afford to pay. Those who stand out can expect to get support in the form of scholarships. Nevertheless a large section of the population is outside the net of college education, since even the school system is not sufficiently developed, to put it mildly indeed. India needs a massive investment in education at various levels, both in terms of funding as well as intellectual resources. While there is some, albeit feeble, inclination on the part of the government towards addressing the funding aspect, the issue of investing a good part of our intellectual resources for overall development of education through some mechanism is a daunting problem. There is rising awareness on the issue however, and one may hope that it would lead to a way out being found.

INTERVIEW

Barbara Kaltenbacher obtained her bachelor, master and PhD from the Johannes Kepler University in Linz. After a couple of years of postdoc at the same university based on a career grant, she was a leader of an Emmy Noether junior research group at the University of Erlangen-Nuremberg, Germany, and held temporary professor positions in Erlangen-Nuremberg and Göttingen. She has been a full professor at

several universities in Germany and Austria, such as University of Stuttgart, University of Graz and University of Klagenfurt (to start in March 2011), where she has advised five PhD students. Her research interests are mainly in the field of inverse problems, with focus on regularization methods, parameter identification in partial differential equations, optimization with PDE constraints, direct and inverse



problems in piezoelectricity and magnetics, nonlinear acoustics. Her research in these areas has led to about 50 journal publications and a

EWM: According to some statistics, Austria has one of the lowest percentage of women professors in mathematics in Europe. Germany has a slightly higher percentage. You have been a professor in both countries. What do you think are the reasons for the small percentages in these countries?

BK: The percentage for full professors is currently 5.6, in absolute numbers there are four women professors out of 71 full mathematics professors in total in Austria. For "außerordentliche Professor" (associate Professor), the women represent approximately 5%: they are 7 from a total of 132. I think the reasons for this low percentage are mainly traditional role models, which are still relatively strong in Austria and Germany at least on a subconscious level. There is some hope that things will change as the number of female PhD students has definitely increased in the last few years. But it is also necessary to keep on trying to convince women to apply for academic positions and to provide an appropriate framework for them. There are countries in Europe where the women to men ratio in mathematics is much better, partly because of better child care facilities and partly because of different traditions, e.g. in the eastern European countries. But I have also heard that one reason might be that these are not very well paid jobs (which is a plausible but not very nice reason, of course). Certainly also the programs for supporting women in academia help a lot, but they are just about to start taking effect on the professor level.

EWM: There are efforts in both Austria and Germany to support women working in academia,

number of conference articles. Mother of three children, she has also been very active within the scientific community as a conference

through several scholarships and grants. Have you ever been supported in your research in such a way? Do you think this form of support for women in sciences is appropriate?

BK: While working on my habilitation, I had a Hertha Firnberg grant from the Austrian Science Foundation, which is a really very well planned and organized program, I think. It covers all areas of research from medicine to philosophy and it was really interesting to get to know women in completely different fields, learn a bit about their work, and find out that they often had quite similar problems as I had - e.g., asserting their position at the department where they were working or managing child care. I think for such a program to work effectively, it is always important to point out that the candidates are very well selected according to their scientific qualification, so that such a grant can also serve as a good argument in the selection process for a professorship.

EWM: How many hours in an average day do you do mathematics?

BK: It depends on what kind of mathematical work I am doing that day. When I do teaching, I can switch on and off, but when I am working on some theorem, it is basically permanently on my mind. Sometimes I even dream of a proof - unfortunately, usually I have forgotten it when I wake up.

EWM: What does the daily routine look like in your family? Can you sketch the schedule of the family in a working day?

organizer, third-party project leader and so on.

BK: We have three children (13, 8, and 1.5 years old) and my husband works at a different university than me (University of Klagenfurt). When we returned to Austria two years ago, we decided to first of all live in Klagenfurt since at that time the chances seemed to be better that some day both of us would get a job there (which actually turned out to be true). At the moment I am still commuting to Graz, so I usually get up at six to catch the bus to Graz at 7:20. My youngest daughter Katharina comes with me (sleeping in her baby carrier on the bus) and spends the time during my working hours in the day care in Graz, very close to my office. We return home at seven in the evening. Meanwhile my husband is responsible for the two older ones, who return from school at 4:30 p.m. and 5:30 p.m., respectively. While having dinner together, we talk about our school and work day and Katharina receives all the hugs and kisses from her brother, sister, and father, that she has missed during the day. This kind of family life is somewhat challenging, I must admit. We are used to it since I got my first professorship at the University of Stuttgart in 2006. Luckily I will have a position at the University Klagenfurt from March 2011 on, which will make things much easier.

EWM: What do you suggest EWM does in order to increase its chances of achieving its goals?

BK: I think I do not know EWM sufficiently well yet to make serious suggestions. I have the impression that EWM does a very good job in supporting women mathematicians by promoting networking via the meetings and by providing role models and interesting information

via the newsletter. A possible additional idea could be some kind of mentoring program - I had very good experiences with such a

program in Erlangen - but of course it is not sure whether this would work over distances just via email.

UPCOMING EVENT

Women in Applied Mathematics

The Department of Applied Mathematics of the University of Crete and the Archimedes Center for Modeling, Analysis and Computation are organising a workshop with title "Women in Applied Mathematics", to be held in Heraklion, Crete, Greece between May 2-5 2011.



There will be poster sessions for junior researchers and it would be nice if you encourage your students/postdocs to take part. There are limited funds for partial support of junior women researchers. For more details please see the webpage of the workshop: <http://acmac.tem.uoc.gr/WAM2011/>

Organizers: Georgia Karali, Chrysoula Tsogka

UPCOMING EVENT

EWM2011

The 15th general meeting of European Women in Mathematics will take place at the Centre de Recerca Matemàtica (CRM) in Barcelona during September 5-9, 2011.

Professor Karen Vogtmann of Cornell University will be the 2011 EMS lecturer, and she will give three of her EMS lectures at EWM2011. The plenary speakers at the meeting will also include

Pilar Bayer Isant (Barcelona)
Annette Huber (Freiburg)
Laure St-Raymond (Paris; provisional acceptance)
Barbara Schapira (Amiens)
Caroline Series (Warwick)
Catharina Stroppel (Bonn)

In addition there will be parallel sessions of shorter talks and poster sessions.

For more than 20 years EWM has organized biennial conferences which are open both to members and to non-members of EWM. The most recent, the 14th general meeting, was held in Novi Sad, Serbia at the end of August 2009 and the 13th general meeting took place in September 2007, at the University of Cambridge, UK.

EWM 2011 will be hosted by the Centre de Recerca Matemàtica (CRM) at the Universitat Autònoma de Barcelona. The programme will begin mid-morning on Monday 5 September 2011 and will finish at lunchtime on Friday 9 September.

More details are available on the CRM website <http://www.crm.es/>

15th general meeting of
**European Women
in Mathematics**

**Centre de Recerca
Matemàtica
Barcelona**

**September 5-9
2011**



EWM/EMS SCIENTIFIC COMMITTEE: Ulrike Tillmann (Oxford, UK: Chair), Viviane Baladi (ENS, Paris, France), Eva Bayer-Fluckiger (Lausanne, Switzerland), Christine Bernardi (Paris VI, France), Christine Bessenrodt (Hannover, Germany), Antonella Grassi (U Penn, USA), Ursula Hamenstädt (Bonn, Germany), Dusa McDuff (Stony Brook, USA), Ragni Piene (Oslo, Norway), Vera Sòs (Renyi Institute, Budapest, Hungary), Nina Uraltseva (St Petersburg, Russia), Michèle Vergne (Ecole Polytechnique, Paris, France)

ORGANIZING COMMITTEE: Maria Aigueles (Universitat de Girona), Laura Ciobanu (Fribourg University), Núria Fagella (Universitat de Barcelona), Lisbeth Fajstrup (Aalborg University), Gemma Huguet (CRM & New York University), Frances Kirwan (Oxford University, Deputy EWM Convenor), Maria del Mar Gonzalez Nogueras (Universitat Politècnica de Catalunya), Tere Martinez-Seara (Universitat Politècnica de Catalunya), Sanja Rapajic (Novi Sad University), Marie-Françoise Roy (University of Rennes, EWM Convenor)

UPCOMING EVENT

European Women in Mathematics Summer School

The fourth European Women in Mathematics Summer School will be held on the 6th - 10th June 2011 at the Lorentz Center in Leiden, the Netherlands.



The aim of the European Women in Mathematics summer school is to provide a stimulating intellectual environment for PhD students from different countries and different mathematical disciplines to learn new mathematics and to meet new colleagues. The summer school is particularly aimed at encouraging female students and researchers at the beginning of their career, but, as in previous years, male students are also very welcome to participate.

The topics of the summer school will be Logic, Geometry and History of Mathematics. The emphasis in the history lectures will be on women in Mathematics. The lectures start at an introductory level, so as to appeal to any student with a general mathematics background. Towards the end of the week, there will be more in-depth lectures offered.

For more information and to see the preliminary program, please visit the website:

<http://www.lorentzcenter.nl/lc/web/2011/429/info.php3?wsid=429>

Registration forms are available on the webpage above and registration will begin shortly.

ACKNOWLEDGMENTS

The newsletter editors would like to extend thanks to all the contributors of this issue. They also acknowledge the help of Dr. Sivananthan Sampath (Radon Institute, Austria), who has provided them with useful background information on Indian society.

USEFUL LINKS AND CONTACTS

EWM website:	http://www.europeanwomeninmaths.org/	
EWM convenor:	Marie-Françoise Roy	marie-francoise.roy(at)univ-rennes1.fr
EWM deputy convenor:	Frances Kirwan	kirwan(at)maths.ox.ac.uk
EWM email list:	Olga Lukina	ol16(at)le.ac.uk

Other organisations with similar aims to the EWM:

The European Mathematical Society (EMS): <http://www.euro-math-soc.eu/>

EMS Women in Mathematics Committee: <http://www.euro-math-soc.eu/comm-women.html>

France: Femmes et mathématiques: <http://www.femmes-et-maths.fr/>

UK: LMS Women in Mathematics Committee: http://www.lms.ac.uk/activities/women_maths_com/

Job announcements: <http://www.math-jobs.com>

Membership renewal: Direct transfer of the membership fee can be made to the EWM bank account. For details, please contact Camilla Hollanti at [cajoho\(at\)utu.fi](mailto:cajoho(at)utu.fi)