Scientific Report

From 6-10 June 2011 the European Women in Mathematics (EWM) summer school took place at the Lorentz Center in Leiden. The aim of the summer school was to provide a stimulating intellectual environment for PhD students from different countries and different mathematical disciplines to learn new mathematics (outside the scope of their own research) and to meet new colleagues. The summer school was especially aimed at encouraging female students and researchers at the beginning of their career, but also male students were very welcome to participate.

Participants

By contacting the mathematics departments in the Netherlands, the EWM coordinators and our personal contacts at European universities, we gathered 180 e-mail addresses of young female mathematicians, whom we all invited to the summer school. In the end 30 students participated in summer school.

Scientific program

The scientific program consisted of mini-courses on the three topics: Logic, Geometry and History of Mathematics. The Logic session started off with a general introduction into the central concepts of the field. Thereafter the logic speakers covered the following topics: the relation between logic and automata theory, certified mathematics and model theory.

Due to absence of the scientific committee member, there was no general introduction into the Geometry session. However, this allowed us to schedule two talks on symplectic geometry, enabling the speaker to go into some more depth. The other talks in the Geometry session covered directed topology and its applications on computer science, and real algebraic geometry. This last lecture was closely related to the model theory talk, thereby nicely connecting the Geometry and the Logic session.

The lectures in the history session gave an account of the role of women in the History of Mathematics in the 18th, 19th and 20th century. The talks portrayed several women who were doing mathematics either in academia or in domestic spaces. Moreover, the existence of barriers for women who wanted to enter academics throughout the centuries was discussed, the barriers being in the scientific institutions themselves or in the thought system of people.

To get the students actively involved, there were problem solving sessions in Logic and Geometry and a mini workshop on History in Mathematics

The problem sessions were very interesting and diverse. The lecturers had prepared exercises at various levels, so that the sessions were of interest to both students with a background in the field and newcomers. The sessions merged very well with the talks and promoted plenty of discussions among the participants.

During the mini workshop on History of Mathematics the participants read original mathematical articles, answered questions to these articles and in the end presented their work to the other participants of the mini-workshop. This workshop was a success, the students were very enthusiastic about working with the articles and presenting their work.

Another activity to encourage discussions between the students was the ‘present yourself session’ during which the participants were divided into small groups, accompanied by a senior researcher, and gave a mini-talk about their current research.

The whole session proceeded smoothly and the participants were pleased with the advices received and, perhaps more importantly, enjoyed very much each other's talk. It was an opportunity to broaden their view and get inspiration. One of the participants said: "Thank you for this great summer school. I feel refreshed; now I can go back to my work very motivated. I liked the mini-talks we gave to each other; that's where I could step back and look at mathematics as a whole. It was great!"

Gender issues

During the summer school there were two sessions about gender issues. Both sessions consisted of a presentation followed by a panel discussion. The first lecture was about gender practices in recruitment and election of full professor and the under-representation of women in senior academic positions in the Netherlands. The second talk discussed the fact that few girls choose to study Science, Technology, Engineering and Mathematics. Statistical data from Norway, UK, Slovenia, Italy and Denmark were shown, and some examples of stories of Norwegian girls studying these subjects were given.

The panel discussions after these talks were very lively, addressing diverse aspects of gender issues in academia, and the participants of the summer school got actively involved in the discussion as well.

Overall result

The summer school has been an inspiring and motivating week, as also became clear from some of the responses we got from participants. They said: ‘I am more motivated as a woman mathematician’, ‘I felt lonely at my department, with hardly any female colleagues, I was very happy to discover that there are actually female mathematicians’ and ‘I was very inspired this week to do new stuff’. One of the students was still at the bachelor level, for her it has been very useful to discuss the possibilities of doing a master in France, England or The Netherlands with the senior researchers.

Some students mentioned that it would have been nice if there were more applied talks as well. This was the case at the previous summer school, we choose to cover history of mathematics this time instead. It might be good to cover a more applied topic at the next summer school again.

Compared to the previous summer school we cut down on the gender discussion sessions and instead introduced the problems solving sessions, mini-workshop on history and presentation sessions. The participants enjoyed the fact that they were actively involved and many mentioned they learned a lot from the feedback on their presentations. Hence we would definitely repeat this interactive set-up in a next edition.