Mathematics departments hosts Sonia Kovalevsky High School Day

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The NDSU mathematics department hosted the 19th annual Sonia Kovalevsky High School Day Sept. 24. High school teachers from throughout North Dakota and western Minnesota were invited to bring their female students to Fargo to meet NDSU mathematics faculty, professional women from the Fargo area who use math in their careers and other high school students who are interested in math. The day was divided into morning and afternoon sessions with mathematics activities for the young women.

James Coughanowr, NDSU mathematics professor, presented the first workshop of the day, "Mathematics of the Rubik's Cube." He demonstrated solution strategies for the Rubik's Cube and explained the mathematics behind it. Each student received a Rubik’s Cube as part of the workshop.

In the second workshop, NDSU graduate student Elizabeth Sellier gave examples of fractals and how they can be created from simple shapes.

A career roundtable rounded off the morning session. Students got to speak with Maria Afonso-Cubero, NDSU mathematics department; Marilyn Busching, Microsoft; Brenda Dorr, City of Fargo, and Elizabeth Moseberg, National Security Agency.

Moseberg then delivered the keynote address where she described the role of barcodes and gave a brief introduction to codes used for compression and error-correction.

In the afternoon session, graduate student Aaron Pavlick discussed winning strategies of some simple games such as tic-tac-toe and rock-paper-scissors in the workshop "Mathematical Games."

William Martin brought the day to a close with his game of "Math Jeopardy."

Participants came from several high schools from North Dakota and Minnesota, some traveling almost 300 miles. A total of 47 female students participated, up from 25 students last year. Afonso-Cubero and Logan Gomez, both from the NDSU mathematics department, and William Martin from the School of Education organized the event.

The 2011 Sonia Kovalevsky Day was supported by a grant from the Association for Women in Mathematics, National Security Agency (Department of Defense), Elizabeth City State University, NDSU Office of the Provost, NDSU FORWARD, College of Science and Mathematics, College of Engineering and Architecture and Department of Mathematics.