CCSU

DEPARTMENT OF MATHEMATICAL SCIENCES

COLLOQUIUM

Friday, October 19
3:00 – 4:00 PM
Maria Sanford, Room 101

SECONDARY STUDENTS' LEARNING OF 2D ISOMETRIES: THE INTERACTION OF GEOMETRIC AND SPATIAL REASONING

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Abstract: The relationship between spatial reasoning and success in mathematics has been well established by both educational researchers and cognitive psychologists. However, the ways in which spatial reasoning is used in mathematics learning is not clearly understood. Many current studies investigating spatial reasoning in mathematics quantitatively correlate aspects of students' mathematical proficiency with standardized measures of spatial reasoning. To extend the research that connects spatial ability and the learning and doing of mathematics, there is a need for qualitative studies that elaborate the ways in which students use spatial reasoning while learning specific mathematics content. This talk will present the results of one-on-one teaching experiments with three secondary students. The students developed spatial analytic strategies while solving problems about 2D isometries (specifically reflections and rotation) in a special dynamic geometry learning environment. Through the identification of the static and dynamic mental models used by the students to support their reasoning, we will examine the student-generated strategies for problem solving, the difficulties the students faced implementing their strategies, and the impact of pedagogical interventions during the teaching experiments.

For further information:
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