RUME Practice Talks
Texas State University
1:00 pm in DERR 338
February 21, 2020

Mathematical Modeling Competitions From the Participant’s Perspective
Elizabeth Roan

Mathematics competitions have historically been a part of mathematics education. When discussing how a competition is impactful there are three perspectives to consider: the researcher, the designer, and the participants. In this talk I will describe the expectations participants held going into a mathematical modeling competition and compare them to those held by researchers and designers of modeling competitions. Additionally, I will report measures of participants’ satisfaction with the competition.

Investigating Students’ Mathematical Analogizing Activity in Abstract Algebra
Michael D. Hicks

Evidence suggests that reasoning by analogy can aid students in developing conceptual understanding of mathematical concepts. However, unguided analogical reasoning can prove to be unproductive for students. By examining the ways in which students reason by analogy in mathematics, we can better support students to leverage analogical reasoning productively in their mathematical thinking. In this talk, I will (a) present a framework for conceptualizing students' reasoning by analogy in mathematics developed within the context of abstract algebra, and (b) exhibit the utility of the framework in characterizing various mathematical activities related to analogical reasoning. In addition, I will describe several activities that have been identified so far.

Elizabeth Roan is a mathematics education PhD student at Texas State University. Elizabeth completed her undergraduate degree in mathematics at the University of Arkansas. Elizabeth’s primary research interest include investigating how undergraduate students think, reason, and feel about mathematical modeling and how STEM instructors’ views and beliefs influence the inclusion of modeling in mathematics courses.

Michael D. Hicks is a mathematics education PhD candidate at Texas State University. Michael completed his Master’s and undergraduate degrees in mathematics. Michael's primary research interests include investigating how undergraduate students think and reason about topics in advanced mathematics. His dissertation is currently focused on investigating how students reason by analogy between various mathematical structures in group theory and ring theory.