

You are cordially invited to attend the
MSU Mathematics Education Colloquium



Presented by:
Professor
Elise Lockwood

Oregon State University

Tuesday,
January 23, 2018

1:15 – 2:45 p.m.
252 Erickson Hall
MSU

Investigating Subtleties of the Multiplication Principle

Central to introductory probability, and a primary feature of most discrete mathematics courses, the Multiplication Principle is fundamental to combinatorics, underpinning many standard formulas and providing justification for counting strategies. Given its importance, the ways it is presented in textbooks are surprisingly varied. In this talk, I identify key elements of the principle and present a categorization of statement types that emerged from a textbook analysis. I also incorporate excerpts from a reinvention study that sheds light on how students reason through key elements of the principle. Findings from both the textbook analysis and the reinvention study reveal surprisingly subtle aspects of the multiplication principle that can be made concrete for students through carefully chosen examples. I conclude with a number of potential mathematical and pedagogical implications of the categorization.

Elise Lockwood is an Assistant Professor in the Mathematics Department at Oregon State University. She received her PhD in Mathematics Education from Portland State University, and was a Postdoctoral Fellow at the University of Wisconsin at Madison. Her research interests focus on the teaching and learning of combinatorics (particularly counting problems) at the undergraduate level. She is currently working on two NSF funded projects – Co-PI on a project in which her colleagues and her examine students' generalization across multiple mathematical areas (She will focus on generalization within combinatorial contexts), and also is PI on a project that investigates students' combinatorial reasoning in computational contexts (NSF-CAREER). Through this project Elise hopes to gain insight into the relationship between the disciplines of mathematics and computer science. She also serves as Treasurer for the Special Interest Group of the MAA on Research in Undergraduate Mathematics Education. In her spare time Elise enjoys running, cooking, playing with her cats, and cheering for the Portland Trail Blazers.

The Program in Mathematics Education sponsors this event.