

Mathematics Colloquium

What is Qualitative Research and How Does it Give Us Answers? Exploring “mathematical rigor” as an example

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Building 38, Room 219

Abstract

When mathematics education researchers get curious about something and identify a research topic, there are two overarching ways to answer those topics: quantitatively (for ex: using surveys) and qualitatively (for ex: using interviews). Quantitative research draws on statistical methods to make big claims. I once made the following claim: women are 1.5 times as likely to leave their STEM plans after taking Calculus I compared to men, after controlling for major and mathematical preparation. Whoa - these types of big claims can be very impactful. Qualitative research is different, and gives us more of an understanding of why something happens or how people experience it. In this talk, we will use one example - mathematical rigor - to explore qualitative research methods. My goal for this talk is to pull the curtains back on some of my team's approach to making our conclusions to give a taste of what some of mathematics education research can look like, because when I was an undergrad math major at Cal Poly in the early 2000's, I had no idea about math ed as a research area.

About the speaker: Jess Ellis Hagman is an Associate Professor in the Department of Mathematics at Colorado State University in Fort Collins. She completed her PhD in Mathematics Education from the joint program between San Diego State University and the University of California, San Diego, with Chris Rasmussen as her PhD advisor. Her area of research is undergraduate mathematics education. Her work is focused on working with mathematics departments to support them to make critical transformations of their introductory mathematics programs. In addition to her research, she loves working with graduate students, spending playful time outside with her family, working in her garden, and playing in and near water of all forms. She got her BS and MS in mathematics from Cal Poly, and is so happy to back.