

Mathematics Colloquium

What's Rigor Got To Do With It

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Friday, October 10, 2025
11:10 am – 12 pm
Building 38, Room 219

Abstract

“Rigor” is often used as a benchmark to determine whether mathematical work is sufficiently high-quality, and, thus, has significant bearing on students’ course success and continuation in STEM majors. However, judgements about what constitute rigor are deeply subjective and may function as a vehicle for social bias. To interrogate possible connections between disciplinary standards and exclusionary gatekeeping, my team and I analyzed references to rigor by members of an “elite” mathematics department’s equity-oriented change community. Our findings indicate two main findings: that rigor is conflated with difficulty, deep understanding, and other notions associated with teaching and learning mathematics; and that perceptions of rigor unveil a culture of power operating in undergraduate mathematics. The goal of this talk is to share research but also to engage in a discussion about how rigor is understood at Cal Poly, and to understand how rigor is impacting undergraduate mathematics at Cal Poly and more broadly.

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.