Idaho State University | Mathematics and Statistics

Colloquium

Transforming introduction to proof instruction using set-based reasoning and reading activities

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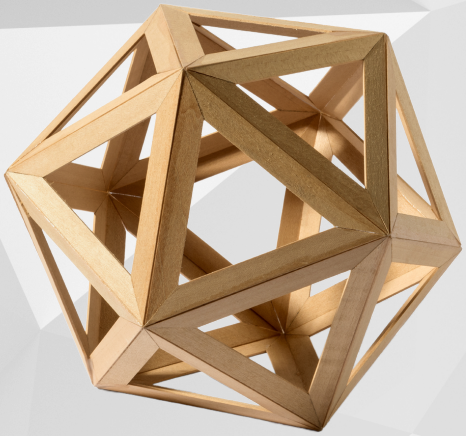

Over the last three decades, many mathematics departments began to offer introduction to proof courses. While a range of curricular pathways are available, only limited research informs the way we teach logic and proof techniques in such courses. We have run a long series of exploratory teaching experiments studying how students reflect on and refine their use of mathematical language. From these experiments, we have identified some key ways that conventional approaches to logic do not meet students where they begin. However, students have also taught us ways to teach logic that cohere with their mathematical language use. This new approach unifies set theory, logic of statements, and beginning proof techniques. In this talk, we shall give a quick tour of the teaching sequence highlighting the motivating research findings, the resolutions to those challenges, the core ways of reasoning we now seek to foster, and the novel research findings that have emerged within the new approach. Finally, I will outline an ongoing grant project that is expanding this instructional unit to a full introduction to proof curriculum focused on learning to read and reading to learn.

Tuesday, April 9
3:00 pm
PS 307
(or) Zoom: https://isu.zoom.us/j/83918530990

For colloquium guests, light refreshments will begin at 2:30 pm