

Department of Mathematics and Statistics Colloquium

Set Theory in the Real World

Elizabeth Θ Brown, JMU

Abstract: What, if anything, can we gain from translating our intuitive experience of mathematics to explicit formalism? Early motivations for doing this included desire for a universal language of mathematics, and an interest in clarifying our understanding of proof, infinity, and the real numbers. Beyond these historical roots, axiomatic set theory illuminates many areas of mathematics, especially those which deal with unbounded or infinite notions.

In this talk, we use nonstandard analysis and independence arguments to analyze topics which are familiar to anyone who has seen some calculus: limits, double integrals, and unbounded functions. We also provide meta-mathematical context relevant to anyone who has wondered about the nature of mathematical truth.

This talk will be accessible to students who have studied any amount of calculus.

Monday, November 17 at 3:45 in Roop 103
refreshments at 3:30