

**Department of Mathematics and Statistics Colloquium**

# **Finite Element Methods and Applications**

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**Abstract:** When using computers to find a good approximation of the solution to a given problem, we want to use a computational method that is not only fast but also mathematically proven to give an accurate approximation. Finite Element Methods (FEMs) are popular computational methods that are well-known for their efficiency and the solid mathematical theory behind them. In this talk, I will explain the general theory and applications of FEMs. Some current research on FEMs will also be presented. I will also talk about an in-class linear algebra project on FEMs that helped students see linear algebra in action in the real world. This talk will be accessible to students that have taken linear algebra.

**Monday, February 2 at 3:45 in Roop 103  
refreshments at 3:30**