Undergraduate Math Colloquium
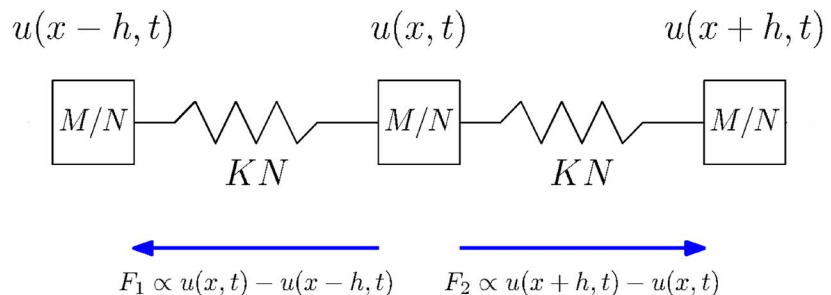
Friday, February 1ˢᵗ 3:00-4:00pm
Durham Science Center Room 115

A Linear Introduction to Nonlinear Waves
By Dr. Nicholas Kass, University of Nebraska at Omaha

Abstract: Partial Differential Equations (PDEs) are useful for modeling and understanding a wide variety of physical phenomena and also offer many unique and rewarding challenges for both mathematicians and those in computer science. In this talk we will derive several classical PDEs including the transport, heat, and wave equations from their physical principles and visualize the solutions with a variety of tools. Along the way we will discover that even simple equations can produce oftentimes unexpected difficulties, and it is these challenges which will serve as an introduction to several notions integral to a modern treatment of PDEs including weak derivatives, weak solutions, and energy methods.

With this background we will motivate a nonlinear generalization of the wave equation afforded by the p-Laplacian and ascertain its unique behavior in the presence of a variety of source and damping terms.

Math Social with Pizza

Friday, February 1ˢᵗ 2:00-3:00pm
Durham Science Center, 2ⁿᵈ Floor Foyer

Please join the UNO Math Department for a math social with refreshments and pizza provided. Come and **chat with other math enthusiasts** or speak with our 3pm colloquium speaker about how he recently earned his doctorate in mathematics: our theme for the week is **Ph.D. programs in mathematics.** *All are welcome to join!*