

# Physics & Astronomy Colloquium

Presents



## Peter Palffy-Muhoray

Professor  
Kent State University

Thursday, October 27, 2022  
12:10 pm, Webster Room 11

*Please meet our guest speaker and share in  
refreshments 11:45 a.m. -12:10 p.m.  
in the foyer on floor G above the lecture hall*

## “Whip Dynamics in a Freely Falling Chain”

Chains, consisting of jointed rigid segments, can exhibit unexpected and fascinating dynamical phenomena; one example is the chain fountain<sup>1</sup>. Whips, typically formed from continuously deformable soft materials, also show interesting dynamical phenomena, such as supersonic tip velocity<sup>2</sup>. In this talk, I will discuss the processes responsible for the intriguing responses of these two mechanical systems and demonstrate astonishing dynamical behavior when they are combined to form a chain whip.

1. Biggins, J.S. and M. Warner, Understanding the chain fountain. Proc. Roy. Soc. 470, 2163, (2014).
2. A. Goriely and T. McMillen, Shape of a Cracking Whip, Phys. Rev. Lett. 88, 224301 (2002)

*Host: Dr. Mark Kuzyk*

*ZOOM Information: Meeting ID: 965 8240 9398 • Passcode: physastro*