

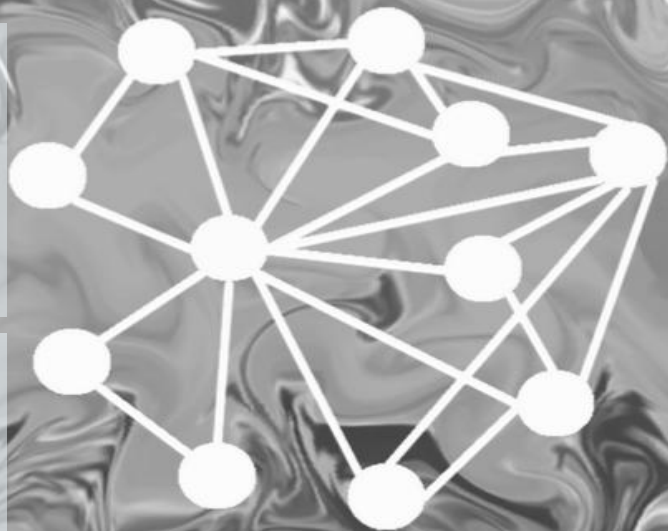
ACMS Applied Math Seminar

Parker Edwards
University of Notre Dame
Thursday, March 11
3:00 PM EST

Zoom Link:

<https://notredame.zoom.us/j/94452221633?pwd=SkVBNVNHhHYzbHhoeXZuMTJsczRjQT09>

Meeting ID: 944 5222 1633
Passcode: 939063



Some Vignettes in Applied Topology

In this talk I will give an overview of my current research program as a new member's introduction to the Department. The unifying theme is applied topology: theory and applications for assigning topological descriptors to data sets.

Most of the talk will discuss a new image analysis pipeline which extracts localized topological summaries from images and uses them to segment out distinct geometric structures. While the pipeline is generally applicable to grayscale images, I will show some results from the motivating data set: Microscopy images of cells' actin cytoskeletons that have undergone various genetic and drug perturbations.

I will also briefly summarize two other research directions: combining applied topology with numerical algebraic geometry to analyze real algebraic varieties and new theoretical results in persistent homology.

The Department of Applied and Computational
Mathematics and Statistics

Please visit acms.nd.edu to view the full list of speakers.