

Mathematics Colloquium
December 2, 2016 - 4:00 pm in PB 011

Dr. Micah Chrisman (Monmouth University)

Title: Calculus, Cobordisms, and Knots

Abstract: In calculus, we learn to sketch curves and surfaces from their critical point data. Besides sketching the graph, you can tell a lot about a surface from its critical points. Is it a sphere, a doughnut? This is related to a contemporary research area in mathematics called knot concordance. Given two knots in three space, \mathbb{R}^3 , when is it possible to connect them by a smooth tube in the four dimensional space $\mathbb{R}^3 \times I$ whose ends are the given knots?

In this talk, we will look at knot concordance through the combinatorial lens of virtual knots. This point of view, being fairly recent, has many accessible open questions. Throughout the talk, we will introduce a few tricks of the trade so that the listener can begin to think about them!

