WICHITA STATE UNIVERSITY
Department of Mathematics, Statistics & Physics

The Lecture Series in the
Mathematical Sciences Presents Our Guest:

Prof. Curtis Pro
Notre Dame University

“Bounding Volume by Critical Points”

Abstract:

A Riemannian manifold $M$ is a metric space. So, for every point $p$ in $M$, we get a real valued function $f_p$ defined as the distance from $p$. In general, this function is not smooth. However, there is a geometric notion of a critical point to $f_p$ that shares many similarities with the usual notion of a critical point for a smooth function.

In this talk, we'll describe how these critical points bound the geometry of $M$. In particular, when $M$ is compact and has a lower sectional curvature bound, these critical points provide a geometric bound on the volume of $M$ from above. In the end, we'll describe how to detect the topology of $M$ if its volume is sufficiently close to this upper bound.

Friday, October 23, 2015
3:00 PM in 372 Jabara Hall

Please come join us for refreshments before the lecture at 2:30 p.m. in room 353 Jabara Hall.