

Geometric Analysis Seminar



Speaker: **Curtis Pro**
University of Notre Dame

Thursday, April 7, 2016
10:30 am
Room: 258 Hurley Hall

Title: Diffeomorphism stability and codimension 4

Abstract:

The class of n -dimensional Riemannian manifolds with a lower sectional curvature bound, upper diameter bound, and lower volume bound is precompact in the Gromov-Hausdorff topology. Perelman's Stability Theorem implies that for any converging sequence $\{M_i\}$ of manifolds in this class, all but finitely many of the M_i 's are homeomorphic. A natural question to ask is if the result still holds if "homeomorphic" is replaced with "diffeomorphic". A positive answer to this question in general would close many open questions in Riemannian Geometry with a lower sectional curvature bound. I'll discuss joint work with Fred Wilhelm where we answer this question affirmatively in the special case when all of the singularities of the limit space occur along smoothly and isometrically embedded Riemannian manifolds of codimension at most 4.