

University of Notre Dame Department of Mathematics

FELIX KLEIN SEMINAR

David Ben McReynolds

University of Chicago

Will give a lecture entitled:

Geometric spectra

On

Monday, January 24, 2011 *Special Day*

At

4:15 PM *Special Time*

In

117 Hayes-Healy Hall

Abstract

The purpose of this talk is to explore the relationship between a manifold and its totally geodesic submanifolds. The two primary directions we will explore are motivated by the following pair of questions. First, how much global geometry is determined by a manifold's submanifolds? Second, what relationship exists between the (co)homology of the manifold and the (co)homology of its submanifolds? In the talk, we restrict ourselves to arithmetic locally symmetric manifolds. Aside from being a beautiful, natural, explicit family of examples, the geometry/cohomology has important and direct connections to many other areas of mathematics. Various bits of this material are separately joint with Benson Farb, Amir Mohammadi, and Alan Reid.