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**Speaker:** Matt Gursky  
University of Notre Dame

Friday, November 20, 2015

4:00 PM

129 Hayes-Healy Hall

**Title:** Why surfaces with constant curvature sound better than those with variable curvature, and some other ideas from spectral geometry

**Abstract:**

In this talk I want to provide a very quick introduction to the famous question, "Can you hear the shape of the drum?" This leads to the more general question of what geometric information we can extract from the spectral (i.e., analytic) information of a Riemannian manifold. At the end I will show the connection to some very difficult questions in the theory of nonlinear PDEs in four dimensions.