

THE MATHEMATICS DEPARTMENT PRESENTS

A MATHEMATICS COLLOQUIUM

THURSDAY, May 29, 2008

BOND HALL 428

4:00 pm

Title: **Boundary Rigidity in Riemannian Geometry**

Speaker: **Dale Trockel**, Western Washington University

Abstract:

Early Geologists used data of the travel times of seismic waves from their origin to various points on the globe to determine information on the interior of the earth. The ability to determine the interior of an object based solely off of the information from the boundary distance function is known as boundary rigidity. In this talk I will give a short overview of topics in Riemannian Geometry relating to boundary rigidity. I will include topics such as: Tangent spaces, Connections, Geodesics, and Conformal metrics. Then I will apply these tools to prove a ground breaking theorem by Croke showing boundary rigidity on a small class of manifolds.

Refreshments will precede the talk from 2:30 - 4:00 pm in Bond Hall 300