Department of Mathematics
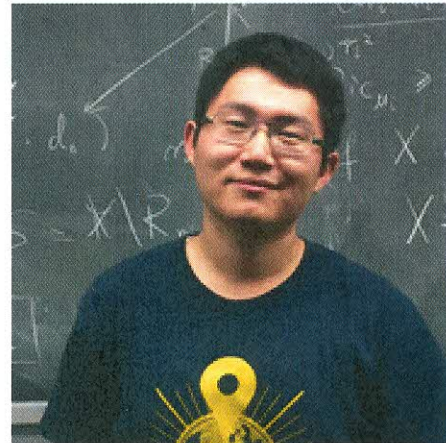## University of Notre Dame

GEOMETRIC ANALYSIS SEMINAR

Speaker: Xiaoxiao Li

University of Notre Dame

Date: Thursday, March 9, 2017
Time: 11:00 AM
Location: 258 Hurley Hall

Lecture Title:
The Yamabe problem I

Abstract

For compact surfaces, the uniformization theorem shows that one can find a metric of constant curvature on each surface by conformal changes of metric (multiplication of the metric by a positive function). The natural generalization to higher dimensions is the following Yamabe Problem: Given a compact Riemannian manifold (M, g) of dim¿2, find a metric conformal to g with constant scalar curvature. Form the PDE point of view, it is to solve a semilinear equation of the form $a_n \Lambda u + Su = u^{p-1}$ with critical exponent $p = 2n/(n-2)$. This problem was completely solved by works of Yamabe, Trudinger, Aubin and Schoen, and the solution marks a milestone in the development of the theory of nonlinear PDE's. In this time, I'm going to talk about the Yamabe's approach in the case that the Yamabe invariant is less than the sphere's.

Xiaoxiao Li - University of Notre Dame