## Department of Mathematics University of Notre Dame

## PDE, COMPLEX ANALYSIS AND DIFFERENTIAL GEOMETRY SEMINAR

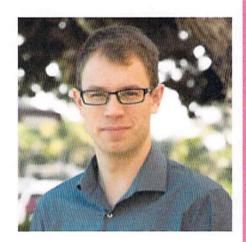
**Guest Speaker: Sean Curry** 

University of California, San Diego

Date: Tuesday, October 2, 2018

Time: 11:00 AM

Location: 258 Hurley Hall



## Lecture Title:

## Strictly pseudoconvex domains in $C^2$ with obstruction flat boundary

Abstract

A bounded strictly pseudoconvex domain in  $C^n$ , n>1, supports a unique complete Kahler-Einstein metric determined by the Cheng-Yau solution of Fefferman's Monge-Ampere equation. The smoothness of the solution of Fefferman's equation up to the boundary is obstructed by a local curvature invariant of the boundary called the obstruction density. In the case n=2 the obstruction density is especially important, in particular in describing the logarithmic singularity of the Bergman kernel. For domains in  $C^2$  diffeomorphic to the ball, we motivate and consider the problem of determining whether the global vanishing of this obstruction implies biholomorphic equivalence to the unit ball. (This is a strong form of the Ramadanov Conjecture.)