

***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.)