

## ***FELIX KLEIN SEMINAR***

**Guest Speaker: Hannah Alpert**  
**Ohio State University**

**Date:** Thursday, November 29, 2018

**Time:** 12:00 PM

**Location:** 258 Hurley Hall



**Lecture Title:**

**Macroscopically minimal hypersurfaces**

***Abstract***

A decades-old application of the second variation formula proves that if the scalar curvature of a closed 3-manifold is bounded below by that of the product of the hyperbolic plane with the line, then every 2-sided stable minimal surface has area at least that of the hyperbolic surface of the same genus. We can prove a coarser analogue of this statement, taking the appropriate notions of macroscopic scalar curvature and macroscopic minimizing hypersurface from Guth's 2010 proof of the systolic inequality for the  $n$ -dimensional torus. The appropriate analogue of hyperbolic area in this setting turns out to be the Gromov simplicial norm. Joint work with Kei Funano.