

Department of Mathematics

University of Houston

# Analysis Seminar

**FRIDAY, February 16, 2018**

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**13:00-14:00 – Room 646 PGH**

**Speaker:** Timothy Rainone (Arizona State University)

**Title:** A dichotomy for groupoid  $C^*$ -algebras

**Abstract:** Notions of paradoxical decompositions appear in the work of Hausdorff, Banach, and Tarski who showed that a discrete group satisfies the amenable/paradoxical divide. In this talk we study paradoxical phenomena in the field of operator algebras; directing our focus to  $C^*$ -algebras arising from dynamical systems, graphs, and, more generally, groupoids. Like Tarski, we use the type semigroup construction to move from non-paradoxicality to the existence of means or traces. These semigroups witness the stably finite/purely infinite nature of the corresponding  $C^*$ -algebras.