WABASH
EXTRAMURAL MODERN ANALYSIS
SEMINAR

April 21

2:00 p.m.

at

Wabash College

in rooms 114 and 118 Baxter Hall

Times given are Eastern Time,
which is currently local time for Central Indiana and Ohio.

2:00–2:30	*Refreshments and conversation*
2:30–3:30	**Ergodic hyperfinite decomposition of pmp equivalence relations.** *Anush Tserunyan, University of Illinois at Urbana-Champaign*
3:30–4:00	*More refreshments and conversation*
4:00–5:00	**C*-superrigidity of two-step nilpotent groups** *Caleb Eckhardt, Miami University, Oxford, Ohio*
5:00–...	*Refreshments and farewells*

The purpose of Wabash Seminar talks is to present surveys of interest to all analysts, including graduate students and scholars working in areas far from the speaker's specialty. Come and meet your fellow analysts, learn what's going on, and spread the word.

Next Meeting: Miniconference IUPUI September 15-16, 2018

For further information call

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Ergodic hyperfinite decomposition of pmp equivalence relations.

Anush Tserunyan

A countable Borel equivalence relation E on a probability space can always be generated in two ways: as the orbit equivalence relation of a Borel action of a countable group and as the connectedness relation of a locally countable Borel graph, called a *graphing* of E. When E is probability measure preserving (pmp), graphings provide a numerical invariant called *cost*, whose theory has been largely developed and used by Gaboriau, Popa, and others in establishing rigidity results. A well-known theorem of Hjorth states that when E is pmp, ergodic, treeable, and has cost $n \in \mathbf{N} \cup \{\infty\}$, then it is generated by an a.e. free measure-preserving action of the free group $\mathbf{F_n}$ on n generators. Jointly with Benjamin Miller, we develop new techniques of modifying the graphing, which yield a strengthening of this theorem: the action of $\mathbf{F_n}$ can be arranged so that each of the n generators alone acts ergodically.

C*-superrigidity of two-step nilpotent groups

Caleb Eckhardt

(Joint work with Sven Raum) We examine the classic question–Does a group ring remember its generating group?–from a C*-algebraic perspective. A group G is called C*-superrigid if $C_r^*(G) \cong C_r^*(H)$ implies $G \cong H$ for any group H. It has long been known that torsion free abelian groups are C*-superrigid because such a group G is recovered as the quotient of the unitary group of $C^*(G)$ by the connected component of the identity. Beyond the abelian case, very little was known about C*-superrigid groups. The "next" natural class of groups to consider are the nilpotent ones. In this talk I will discuss a recent result with S. Raum that shows finitely generated two-step nilpotent groups are C*-superrigid and how precisely one recovers G from $C_r^*(G)$.