

Speaker: **Jesse Johnson**
University of Notre Dame

Thursday, August 30, 2012
2:00 pm
125 Hayes-Healy Hall

Title: Computable categoricity for quasiminimal-excellent classes

Abstract:

We define an important type of classes important in modern model theory - the quasiminimal-excellent classes. Some examples of which are the algebraically-closed fields of characteristic 0, any strongly minimal theory (in a countable language with algebraic closure), and the theory of one equivalence relation whose blocks each have size \aleph_0 . We will concentrate on Zilber's "Pseudo-exponential fields" and his "covers of the multiplicative group of \mathbb{C} ." It is a fact of Zilber that any quasi-minimal excellent theory is definable in $L_{\omega_1, \omega}(Q)$ and is categorical in all uncountable powers. We define a notion of computable structure theory in the uncountable setting to analyze the complexity of these isomorphisms. We show that for the pseudo-exponential fields, the isomorphism is Δ_2^0 -categorical, but not computably categorical. We also show that the multiplicative covers are relatively computably categorical. We generalize! this idea to all quasiminimal-excellent classes and show that a quasiminimal-excellent class is computably categorical if and only if it is definable in $L_{\omega_1, \omega}$.