



**Speaker:** Alex Rennet  
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Thursday, November 1, 2012  
2:00 PM  
125 Hayes-Healy Hall

**Title:** The First-Order Theory of O-Minimality

**Abstract:**

The "first-order L-theory of o-minimality" is the set of those L-sentences true in all o-minimal L-structures. It follows from a classical model-theoretic result that the models of this theory are either o-minimal or (an elementary substructure of) an ultraproduct of o-minimal L-structures. For most languages L, the latter kind of model will not in general be o-minimal; we call these structures 'pseudo-o-minimal'.

In this talk, I will discuss how the study of pseudo-o-minimality fits in to the ongoing project of classifying the 'tame' weakenings of o-minimality. My main focus will be on a recent suggestion in the literature that pseudo-o-minimality might be (recursively) axiomatizable by certain first-order axiom schemas (in particular by 'local o-minimality' and 'definable completeness'). Not only is this false in most cases of interest, but we can show that in general this strategy will not work. After going through the (pleasantly non-technical) proof of this result, I will spend the remaining time outlining the research program that it suggests and connections to other work.