



**Speaker:** Yevgenij Vasilyev  
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Friday, April 27, 2012  
2:00 PM  
258 Hurley Hall

**Title:** Linearity and expansions of geometric theories

**Abstract:**

A theory is called geometric if in all of its models algebraic closure satisfies the exchange property and the theory eliminates the infinity quantifier. Examples include o-minimal and strongly minimal theories, as well as supersimple theories of SU-rank 1. In a joint work with Alexander Berenstein, we introduce several equivalent conditions, including weak local modularity, weak one-basedness and generic linearity, which are closed under reducts and provide a common generalization of the "classical" linearity notions used in the strongly minimal, SU-rank 1, o-minimal and geometric C-minimal settings, to the general class of geometric theories. One of our main tools, the lovely pair expansion, allows us to find a connection between linearity and the presence of vector spaces over division rings. I will also talk about expansions obtained by adding an independent "dense" subset, and the structure induced on such a subset.