

**COLLOQUIUM**  
**University of Regina**  
**Department of Mathematics and Statistics**

**Speaker:** Karen Meagher (University of Regina)

**Title:** Extensions of the Erdős-Ko-Rado Theorem

**Date:** Friday, November 30, 2007

**Time:** 3:30

**Place:** Math & Stats Lounge (CW 307.20)

**Abstract**

The Erdős-Ko-Rado Theorem is a major result in extremal set theory. It gives the exact size of the largest system of sets that has property that any two sets in the system have non-trivial intersection. There have been many extensions of this theorem to combinatorial objects other than set systems, for example to systems of permutations, subspaces of a vector space and chains in Boolean algebras. In this talk I will present two possible extensions of this theorem to systems of partitions. The first of these is a more natural extension and has a straight-forward proof. The second extension seems to be much more challenging - it has only been proven for a very limited number of cases. While this extension is less natural, it is related to interesting problems in algebraic graph theory, the theory of association schemes and multiplicity-free representations of the symmetric group.