Mathematics, Statistics, and Computer Science **@ UIC**

Departmental Colloquium

Constructive Invariant Theory and Noncommutative Rank

Harm Derksen (University of Michigan)

Abstract: If G is a group acting on a vector space V by linear transformations, then the invariant polynomial functions on V form a ring. In this talk we will discuss upper bounds for the degrees of generators of this invariant ring. An example of particular interest is the action of the group SL_n x SL_n on the space of m-tuples of n x n matrices by simultaneous left-right multiplication. In this case, Visu Makam and the speaker recently proved that invariants of degree at most mn^4 generate the invariant ring. We will explore an interesting connection between this result and the notion of noncommutative rank.

4:15 Tea at 4:15

Friday, April 13 at 3:00 PM in SEO 636