**COLLOQUIUM**

Mara Neusel

**“Degree Bounds in Invariant Theory”**

Tuesday, September 30, 2008 at 3:30 p.m. in CH 107

Refreshments will be served in Math 238 at 3:00 p.m.

**Abstract**

In this talk I want to give a survey on Invariant Theory of Finite Groups.

Now, Invariant Theory of Finite Groups is constantly challenged by hard questions coming from a broad variety of fields like, e.g., Algebraic Topology, Coding Theory, Material Sciences, or Theoretical Physics. On the other hand, invariant theorists make use of methods from many different fields like, e.g., Commutative Algebra, Homological Algebra, Geometry, or Combinatorics.

So in order to be able to give an insight into the field, I will restrict myself to the particular problem of degree bounds as this is a very basic but also very important problem. We will start with a introduction to the field. Then we will discuss what degree bounds are and why they are interesting. Then I will present many (mostly quite recent) results with an emphasis on methods used.