

Meeting: 998, Houston, Texas, SS 2A, Special Session on Representations of Algebras

998-13-261 **Mara D Neusel*** (mneusel@math.ttu.edu), Dept of Mathematics and Statistics, Mailstop 4
1042, Texas Tech University, Lubbock, TX 79409. *On the depth of rings of invariants*. Preliminary
report.

Let $G \leq GL(n, \mathbf{F})$ be a finite subgroup of the general linear group over some field \mathbf{F} . The action of G on the n -dimensional vector space \mathbf{F}^n induces an action of G on the polynomials in n variables, denoted by $\mathbf{F}[V]$. The subalgebra of invariant polynomials is $\mathbf{F}[V]^G$. If the order of G is invertible in \mathbf{F} , then the ring of invariants is always Cohen-Macaulay. This is no longer true when the characteristic of \mathbf{F} divides the group order. In this talk we present recent results on the depth of $\mathbf{F}[V]^G$. (Received February 29, 2004)