Speaker: Michael Geline

Title: Some progress on an old conjecture of Brauer

Abstract: Let $G$ be a finite group. Richard Brauer attached a conjugacy class of $p$-subgroups (called defect groups) to each primitive central idempotent of the group algebra $kG$, where $k$ has characteristic $p$. Lifting such an idempotent to characteristic zero results in a subset of the irreducible characteristic zero representations of $G$. Brauer made some conjectures about how these representations relate to the structure of the defect group. I will state (at least) one of these conjectures (the Height Zero Conjecture), and describe a strategy for proving it which motivates a study of certain integral representations of abelian $p$-groups. Finally, I will describe my progress in understanding these integral reps.