1056-20-1001   **Leonard L Scott***, Dept. Mathematics, The University of Virgina, Kerchof Hall, Cabell Drive, Charlottesville, VA 22903. *Some 1- and n-cohomology results for finite and algebraic groups.*

This talk will discuss recent results in collaboration with Brian Parshall, and also with Cline and Parshall, and with Nanhua Xi, dealing with dimension bounds for 1-cohomology and Ext^1 for algebraic groups and finite groups of Lie type with irreducible coefficients, as well as some new results with Parshall dealing with cohomology and Ext in higher degree. The general area of these results, which perhaps began with a 1984 conjecture by Bob Guralnick, has seen considerable activity recently, with contributions to cross-characteristic in the finte group 1-cohomology case by Guralnick and Tiep, and questions raised for higher degree cohomomology by Guralnick, Kantor, Kassabov, and Lubotsky. Quantum groups play a big role in the new work with Parshall (and in previous work with Cline and Parshall) and a number of related results will also be presented for quantum groups. Another ingredient, especially useful for dealing with singular weights in the algebraic groups case, is a new kind of derived category filtration, in some sense generalzing the notion of a "good" (costandard) filtration in algebraic groups module categories. (Received September 19, 2009)