1016-32-21 **John P D'Angelo*** (jpda@math.uiuc.edu), Dept. of Mathematics, 1409 W Green St, Urbana, IL 61801. *Group-Invariant Mappings from Spheres to Hyperquadrics.*

This talk concerns group-invariant polynomial mappings from spheres to hyperquadrics. Given a finite group, represented as a subgroup G of the unitary group $U(n)$,we will construct a canonical G-invariant polynomial mapping Φ_G; the numbers of positive and negative eigenvalues in the defining equation for the hyperquadric depend on G. We will consider various representations of cyclic groups and how the mappings Φ_G depend on the representations. We will determine asymptotic information on the Φ_G as the order of G tends to infinity. One of the easiest cases reveals an appearance of the Fibonacci numbers in CR Geometry. Harder cases lead to higher order recurrences with no explicit solutions, but we can still determine asymptotic information that evokes the classical Szegö limit Theorem. We will also mention a primality test arising from these considerations. (Received January 03, 2006)