1077-11-533   **Benjamin Linowitz*** (`benjamin.linowitz@dartmouth.edu`), 6188 Kemeny Hall, Hanover, NH 03755. *Selectivity in Quaternion Algebras.*

The subject of embedding number fields into quaternion algebras was the realm of class field theory and is the subject of the famous Albert-Brauer-Hasse-Noether theorem which gives necessary and sufficient conditions for the existence of such an embedding. In this talk we will discuss an integral refinement of the Albert-Brauer-Hasse-Noether theorem. Let R be an order of an indefinite quaternion algebra defined over a number field K and S be an order in a quadratic field extension of K. We determine, for a broad class of orders R, the proportion of isomorphism classes of orders in the genus of R admitting an embedding of S and in particular show that this proportion is either 0, 1/2 or 1. This generalizes work of Chinburg and Friedman in which maximal orders were considered. As an application we will show how this result can be used to produce examples of hyperbolic two-manifolds which are isospectral but not isometric. (Received September 06, 2011)