Discrete Mathematics Seminar

UNIVERSITY OF NOTRE DAME
Department of Mathematics

Speaker: **John Engbers**
University of Notre Dame

Tuesday, September 11, 2012
1:00 pm
117 Hayes Healy Hall

Title: Extremal questions for H-colorings of graphs

Abstract:
An *H-coloring* of a finite, simple graph G is a map from the vertices of G to the vertices of a finite graph H (without multiple edges, but possibly with loops) that preserves edge adjacency. H-colorings generalize many important graph theoretic notions, such as proper q-colorings (via $H = K_q$) and independent sets (via H as an edge with a loop on one endvertex).

After familiarizing ourselves with the notion of an H-coloring, we will consider the following extremal graph theory question: given a family of graphs $\mathcal{G}$, which graph in the family has the largest number H-colorings for a given H? We present several recent results for $\mathcal{G}(n, \delta)$, the family of graphs on n vertices with minimum degree δ.