An n-distinguishing coloring of a graph G, with vertex set V_G, is a map $\phi : V_G \to \{1, 2, \ldots, n\}$ such that, for any nontrivial automorphism f of G, $\phi(v) \neq \phi(f(v))$ for every $v \in V_G$. The distinguishing number of a graph G, denoted $D(G)$, is the smallest number n such that G has an n-distinguishing coloring.

This talk will cover several aspects of distinguishing colorings, and compare the distinguishing number of a graph to other, more familiar, properties of the graph, including the maximum degree of a vertex, and the chromatic number. In addition, we will look at colorings which are both distinguishing and proper, as well as consider a generalization of this concept to arbitrary group actions on sets.