Coloring, Domination and Combination of Both

Renu Laskar, Clemson University

A k-coloring of a graph $G = (V, E)$ in general is a partitioning of $V(G)$ into vertex sets $V_1, V_2, \ldots, V_k$, such that each class V_i has a certain prescribed property $\mathcal{P}$. Thus, graph coloring falls into the category of partitioning a set of objects into classes according to certain rules, which is a fundamental process in mathematics. In the first talk, we will discuss varieties of graph coloring including Grundy coloring, partial Grundy coloring, order chromatic coloring, b-coloring, fall coloring, $L(2,1)$-coloring, rankings, harmonious coloring, line-distinguishing coloring, t-partitions, etc. In the second talk we will look at the color classes where the property $\mathcal{P}$ is related to domination concepts. We will conclude with some open problems (about 40 open problems).