

1116-VF-2075      **Addie E. Armstrong\*** (aearmstrong@uri.edu). *On three coloring planar graphs containing no  $C_4$ ,  $C_5$ , or triangles sharing a vertex.*

In 1976, Richard Steinberg conjectured that any planar graph without 4-cycles or 5-cycles can be three-colored. Like the related Four Color Problem, a great deal of work has been directed toward proving Steinberg's conjecture, but to date none has been entirely successful. An  $(i_1, i_2, i_3)$ -coloring is a defective three-coloring in which any vertex colored in the first color may have  $i_1$  neighbors sharing its color, any vertex colored with the second color may have  $i_2$  neighbors of the same color, and so on. In this talk, we discuss a method to attack Steinberg's conjecture using defective three-colorings and a restriction upon triangles sharing vertices. (Received September 21, 2015)