1154-05-996 **Robert W Bell*** (bellro@msu.edu). *Cops and Robbers and the SURIEM REU Program.* Preliminary report.

The cop number of a discrete graph is a deceptively simple invariant to define: the least number of cops required to always win a pursuit-evasion game versus one robber on the given graph, where both players have complete information and alternate turns by moving any number of their cops/robber to an adjacent vertex. Here a win occurs if a cop moves to the same vertex as the robber. The richness of this invariant is more subtle and is the subject of active research. Here I will share some results obtained over the past ten years at the Summer Undergraduate Research Institute in Experimental Mathematics (SURIEM) REU program hosted at Michigan State University. In particular, I will define and discuss the weak cop number of an infinite graph and will discuss recent work on graphs that are edge critical with respect to the cop number or weak cop number. I will also share my experiences in collaborating with and mentoring many REU students who are at an early stage of their study of mathematics. (Received September 12, 2019)