1067-05-687 **Carl R Yerger*** (cayerger@davidson.edu), Davidson College, Department of Mathematics, Davidson, NC 28035, and **Robin Thomas** (thomas@math.gatech.edu). *Steinberg's Conjecture on Higher Surfaces.*

In this talk, we will describe work related to a conjecture of Steinberg, which states that if a planar graph excludes 4-cycles and 5-cycles, then it is 3-colorable. Our work aims to give baseline results for graphs on higher surfaces. In particular, we show that if G is drawn in surface Σ, is 4-critical and has no cycles of length four through ten, then $|V(G)| \leq cg(\Sigma)$, where c is an explicit constant that comes out of the proof. This is joint work with Robin Thomas. (Received September 13, 2010)