Bonnie Smith* (bonnie.smith@uky.edu). The Core of a Strongly Stable Ideal.

A reduction of an ideal $I$ is an ideal $J \subseteq I$ such that $J^r I^r = I^{r+1}$ for some $r$. Reductions are very similar to, but often simpler than, the ideal $I$. They are a key tool in Commutative Algebra, used to study algebraically the “blow-up” of a curve or other variety. An ideal $I$ has infinitely many reductions, and their intersection is called the core of $I$. Though natural to study, the core of an ideal is difficult to compute. We consider a certain family of ideals which have a graph-theoretical interpretation. Using the combinatorial object to which such an ideal corresponds, we are able to compute its core. (Received September 22, 2011)