1106-03-2628 **Noah A Hughes*** (hughesna@appstate.edu), Mathematical Sciences, Appalachian State University, 342 Walker Hall, Boone, NC 28680. *Reverse mathematics and marriage problems with unique solutions.*

A marriage problem M consists of a set of boys B, a set of girls G and a relation $R \subset B \times G$ where $(b, g) \in R$ means "boy b knows girl g." A *solution* of the marriage problem is an injection $f : B \to G$ such that for every $b \in B$, $(b, f(b)) \in R$. Using the standard anthropocentric terminology, we see that f assigns a unique spouse to each boy from among his acquaintances.

Work has been done within the program of reverse mathematics to analyze theorems regarding necessary and sufficient conditions for a marriage problem to have a solution. In this talk, we review these results and discuss recently completed work concerning the necessary and sufficient conditions for a marriage problem to have a *unique* solution as well as showing how these new theorems fit within the framework of reverse mathematics. (Received September 16, 2014)