1014-17-909 **Kristen Meyer*** (kristi@iastate.edu), 396 Carver Hall, Ames, IA 50014. *Message Authentication Codes and Quasigroups.*

One commonly studied problem in cryptography is that of ensuring that a message has not been changed in transit. Message Authentication Codes, or MACs, are often used to provide this assurance. This talk will describe a new MAC (called QMAC), whose security relies on the nonassociativity of quasigroups. In order for QMAC to be effective, highly nonassociative quasigroups of large order must be used. I will discuss how the multiplication group of a quasigroup can be used to measure its nonassociativity and will explore methods for creating quasigroups with large multiplication groups. (Received September 26, 2005)