1117-11-387 **Nathan Jones*** (ncjones@uic.edu), University of Illinois at Chicago, MSCS Dept., 322 Science and Engineering Offices (M/C 249), 851 S. Morgan Street, Chicago, IL 60607, and **Ken McMurdy** (kmcmurdy@ramapo.edu). *Elliptic curves with non-abelian entanglements.*

Let K be a number field. An elliptic curve E/K is said to have a non-abelian entanglement if there are relatively prime positive integers, m_1 and m_2, such that $K(E[m_1]) \cap K(E[m_2])$ is a non-abelian Galois extension of K. In this talk, we will discuss our ongoing efforts to classify, using explicit methods, all infinite families of elliptic curves E/K, for a fixed K, with non-abelian entanglements. This problem is closely related to that of determining when the image of ρ_E in $GL_2(\hat{\mathbb{Z}})$ is maximal, and to the study of correction factors for various conjectural constants for elliptic curves over $\mathbb{Q}$. (Received January 18, 2016)