1106-VJ-2194 **Chad R Mangum*** (cmangum@niagara.edu). *Free Field Representations of Twisted Toroidal Lie Algebras.*

Lie algebra representation theory has been significant in various areas of mathematics and physics for several decades. The topic of this talk will be representations of twisted 2-toroidal Lie algebras, which are universal central extensions of twisted multi-loop algebras. The loop realization generalizes the familiar realization of affine Kac-Moody algebras. To facilitate our study of the representation theory, we will first discuss an alternative presentation twisted toroidal algebras given via generators and relations. Subsequently, we will discuss a free field representation which is similar to that of a landmark work by Feingold and Frenkel in the case of affine algebras. This is joint work with Dr. Kailash Misra and Dr. Naihuan Jing. (Received September 16, 2014)