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Naihuan Jing and **Chad R. Mangum*** (cmangum@niagara.edu), Dunleavy 333, 5795 Lewiston Rd, Niagara University, NY 14109, and **Kailash C. Misra**. *A New Realization of Twisted Toroidal Lie Algebras*.

Lie algebra representation theory is a vibrant field of research and has been significant in various areas of mathematics and physics for several decades. In this talk, we will discuss a recent advance in the specific theory of twisted (2-)toroidal (Lie) algebras, which we view as universal central extensions of twisted multi-loop algebras. The usual loop algebra realization generalizes the familiar realization of affine Kac-Moody algebras. We will discuss a new realization of these algebras given by generators and relations, based on a similar realization for untwisted toroidal algebras by Moody, Rao, and Yokonuma. This has the advantage of being more amenable than the loop algebra realization to studying the representation theory. This is joint work with Dr. Kailash Misra and Dr. Naihuan Jing. (Received August 31, 2016)