1024-16-105        **Tom Cassidy*** (`tcassidy@bucknell.edu`), Mathematics Department, Bucknell University, Lewisburg, PA 17837, and **Brad Shelton**. *PBW deformations of graded algebras, Part I.*

An n-dimensional Lie algebra can be seen as a non-homogenous deformation of a polynomial ring in n variables. The classical Poincare-Birkhoff-Witt Theorem states that the universal enveloping algebra of the Lie algebra is canonically isomorphic, as a vector space, to the polynomial ring. Similarly, a deformation U of a graded algebra A is of PBW type if the graded algebra associated to U is isomorphic to A. The classical PBW Theorem has modern analogs in the theory of Koszul and N-Koszul algebras, where a deformation U is PBW if and only if the relations of U satisfy a Jacobi type condition. Using the notion of central extensions of algebras and a homological constant attached to A, we prove a completely general version of these results which applies to any connected graded algebra A. (Received January 03, 2007)