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**Michael K. Brown\*** (mkb0096@auburn.edu), **David Eisenbud**, **Daniel Erman** and **Frank-Olaf Schreyer**. *The BGG correspondence for toric varieties*. Preliminary report.

This is ongoing joint work with David Eisenbud, Daniel Erman, and Frank-Olaf Schreyer. The Bernstein-Gel'fand-Gel'fand (BGG) correspondence is a derived equivalence between a standard graded polynomial ring and its Koszul dual exterior algebra. One of the many important applications of the BGG correspondence is an algorithm, due to Eisenbud-Fløystad-Schreyer, for computing the cohomology of sheaves on projective space that is, in some cases, the fastest available. The goal of this talk is to discuss a generalization of the BGG correspondence from standard graded to multigraded polynomial rings and how one can use it to develop an Eisenbud-Fløystad-Schreyer-type algorithm for computing sheaf cohomology over weighted projective spaces. (Received January 15, 2021)