1016-14-84 **David Cox** and **Jessica Sidman*** (jsidman@mtholyoke.edu), 415A Clapp Lab, Department of Mathematics and Statistics, Mount Holyoke College, South Hadley, MA 01075. *On the dimension and degree of secant varieties of toric varieties.*

The dimension of the secant variety of a variety X in P^n is important in determining whether X can be projected isomorphically to a space of lower dimension, and questions about the possible dimensions of (higher) secant varieties remain a fertile research area even for special classes of varieties. Less is known about how to determine the degree of a secant variety. I will discuss joint results with David Cox in which we consider what can be said about the dimension and degree of the secant varieties of smooth toric varieties. In the toric case, general formulas involving intersection products can be made explicit via polytopes in low dimensions. Insights from the polyhedral perspective also help in understanding the picture in higher dimensions. (Received February 02, 2006)