1097-52-378 **Clifford T. Taylor***, clifford.taylor@uky.edu. *Triangulations Induced by Lifting and Deleting.* Preliminary report.

Let k, $d > 0$ be fixed integers and let $\mathcal{Q} \subseteq \mathbb{R}^d$ be a collection of points which we lift into $\mathbb{R}^{d+1}$. We will assign to each k-subset of the points of $\mathcal{Q}$ a triangulation obtained by deleting the specified k-subset and projecting down the lower hull of the resulting lifting. Next, for each triangulation we form the characteristic vector outlined by Gelfand, Kapranov, & Zelevinsky by assigning to each vertex the sum of volumes of all adjacent simplices. We then form a vector for the lifting, which we call the GKZ vector, by summing the characteristic vectors. Lastly, we construct a polytope $\Sigma_k(\mathcal{Q}) \subseteq \mathbb{R}^{|\mathcal{Q}|}$ by taking the convex hull of all obtainable GKZ vectors by liftings of $\mathcal{Q}$, and note that $\Sigma_0(\mathcal{Q})$ is the secondary polytope. In this talk, we discuss the case where $k = d = 1$ and will prove that the GKZ vectors for two liftings match iff the corresponding induced triangulations match and that all distinct GKZ vectors are all extremal in $\Sigma_1(\mathcal{Q})$. We will also discuss the affine relationships satisfied by the GKZ vectors and outline a labeling method which will allow us to enumerate the vertices of $\Sigma_1(\mathcal{Q})$. (Received January 27, 2014)