1171-05-50 **Derek W Hanely*** (derek.hanely@uky.edu), University of Kentucky, Department of Mathematics, 120 Patterson Drive, Lexington, KY 40506, and **Benjamin Braun**, **Robert Davis**, **Morgan Lane** and **Liam Solus**. *Geometric Properties of Weighted Projective Space Simplices.*

For each integer partition $\mathbf{q}$ with d parts, we denote by $\Delta_{(1,\mathbf{q})}$ the lattice simplex obtained as the convex hull in $\mathbb{R}^d$ of the standard basis vectors along with the vector $-\mathbf{q}$. The collection of all such simplices are known as weighted projective space simplices. These simplices exhibit interesting geometric properties related to Ehrhart unimodality, triangulations, and the integer decomposition property (IDP). In this talk, we survey recent developments regarding the aforementioned properties in the study of these simplices. This is joint work with Benjamin Braun, Rob Davis, Morgan Lane, and Liam Solus. (Received August 06, 2021)