

1106-AD-1130 **Catherine Stenson*** (stenson@juniata.edu). *Some Uses of Polytopes and Hyperplane Arrangements in Voting Theory*. Preliminary report.

We survey some of the ways in which polytopes and hyperplane arrangements are used in voting theory. In particular, these objects arise in the context of weighted voting, in which voters may have different numbers of votes (as in the U.S. Electoral College) and a quota must be met to pass a measure. We also present a new polytope whose vertices have a nice interpretation in terms of the Shapley-Shubik power index. (Received September 10, 2014)