1167-13-209 **Jake Levinson***, jake_levinson@sfu.ca, and **Brooke Ullery**. *A Cayley-Bacharach theorem and plane configurations.*

We examine linear conditions on finite sets of points in projective space implied by the Cayley-Bacharach condition. In particular, under certain bounds on the size of the set, we show that the set is forced to lie on a union of low-dimensional linear spaces.

These results are motivated by investigations into degrees of irrationality of complete intersections, which are controlled by minimum-degree rational maps to projective space. As an application of our main theorem, we describe the fibers of such maps for certain complete intersections of codimension two.

This is joint work with Brooke Ullery. (Received March 07, 2021)