

1125-I1-519

**Annalisa Crannell\*** ([annalisa.crannell@fandm.edu](mailto:annalisa.crannell@fandm.edu)), F&M Mathematics, Box 3003, Lancaster, PA 17604-3003. *Curve constraints in ruler-and-compass perspective drawings*. Preliminary report.

“You can draw a spiral staircase, but you can’t draw the handrail.” This statement describes a limitation that arises in ruler-and-compass perspective drawings. Projective geometry allows us to draw certain curves either as a collection of points or as an envelope of tangent lines (think of string art which creates hyperbolas from a collection of lines). Perspective art applies the tools of projective geometry to create realistic images of curves lying in three space. But ruler and compass constructions have their limitations, and those limitations translate into un-drawable curves in perspective art, including (as we will explain) the spiral handrail of a drawable staircase. (Received September 05, 2016)