

1106-H1-74

Fumiko Futamura* (futamurf@southwestern.edu), TX, and **Annalisa Crannell** and **Marc Frantz**. *Harmonic ratios: music and art in an inquiry-based Geometry course.*

Projective Geometry applied to Perspective Art is an inquiry-based course designed for sophomore- and junior-level mathematics majors. This talk highlights two of the modules we have developed for this course. The first module has students discover and make conjectures concerning a projective invariant called the harmonic ratio and more generally the cross ratio through exploring rectangles and rows of rectangles in perspective. In the second module, students experiment with stringed instruments to understand harmonics in music, the harmonic sequence and their connections to the harmonic ratio. (Received June 28, 2014)