NORTHERN ARIZONA UNIVERSITY

Department of Mathematics and Statistics

COLLOQUIUM
Tuesday, February 17th, 2015
4:00 – 5:00 pm, Adel Mathematics Bldg., Room 164
(refreshments at 3:45)

Dr. James Palmer
NAU
Electrical Engineering and Computer Science

Experiments in Exponential Perspective

Abstract: Exponential perspective is a non-photorealistic projection technique, where objects farther from the observer become smaller not based on a linear relationship with depth (i.e., linear perspective) but based on an exponential relationship with depth that has the useful property of preserving geometric similarity in the projection. While we are the first to formally describe this projection and its properties, this form of perspective has been used informally by artists for hundreds of years and was a particularly useful technique in dungeon crawling video games from the 80s and 90s. We describe the mathematics of this projection, its properties, and three-dimensional rendering techniques based on geometry projection and ray casting.

Algebra Combinatorics Geometry and Topology (ACGT) Seminar meets Tuesdays, 12:45 – 1:45 pm, AMB 164.

Applied Math Seminar (AMS) meets Thursdays, 12:45 – 1:45 pm, AMB 164.

Friday Afternoon Undergraduate Mathematics Seminar (FAMUS) meets Fridays, 3pm.