

1106-H1-1255      **Douglas G Burkholder\*** (burkholderd@lr.edu), Lenoir-Rhyne University, 625 7th Ave NE,  
Hickory, NC 28601. *Visualizing Affine Regular, Area-Preserving Decompositions of Irregular 3D  
Pentagons and Nonagons.*

We demonstrate a simple, elegant, and visual method for decomposing irregular pentagons into a pair of affine images of the two distinct types of regular pentagons. Moreover, the sum of the area of the two affine images equals the area of the original irregular pentagon. Similarly, we decompose irregular nonagons into a quadruple of affine images of the three distinct types of regular nonagons and one triangle. One can use these decompositions to design visually interesting sculptures reflecting these geometric relationships. (Received September 11, 2014)