1106-A1-1909 **Michael D Hvidsten*** (hvidsten@gac.edu), Department of Mathematics, Gustavus Adolphus College, 800 West College Avenue, Saint Peter, MN 56082. *Transformation Composition - A Concrete, Constructive Approach.*

Students in a college-level geometry class typically learn about geometric transformations by starting with reflections and then defining rotations, translations, and glide reflections as compositions of reflections. These basic transformation have specific, intuitive, behaviors that students have little trouble in understanding. However, more complex compositions, for example rotations composed with translations, are difficult for students to conceptualize. This is unfortunate as these compositions are exactly the ones used in fields such as computer graphics and computer vision to model real-world phenomena. This talk will demonstrate a project that is used in the presenter's geometry class where students construct compositions using geometry software. This "concrete" construction allows students to play with compositions and experience visually the effects of compositions on geometric objects. Students who carry out the work of this project invariably have "aha" moments in the computer lab, where they say things like "I finally get it!" (Received September 15, 2014)