

1125-P1-1638 **Tanya Cofer*** (tcofer@ccga.edu). *A Visual and Intuitive Approach to the Teaching of the Always Even or Always Odd Theorem for Permutations.*

In the epic story of the insolvability of the general quintic polynomial and the birth of modern algebra, the study of the alternating group plays a key role. So why is it so hard to motivate the proof that all permutations in the symmetric group can be classified as even or odd? In this talk, I will outline a visual approach to this quintessentially algebraic proof that allows students in an abstract algebra course to use their intuition as a guide for understanding the theorem. By interpreting permutations as certain braid projections, I can provide both motivation for and proof of the “Always even or always odd” theorem from a topological viewpoint. (Received September 18, 2016)