1116-05-2775 **Julianna Tymoczko*** (jtymoczko@smith.edu), Department of Mathematics and Statistics, Smith College, 44 College Lane, Northampton, MA 01063. *The geometry behind permutations and their subwords.*

The geometry of the flag variety and its subvarieties is intimately connected to the combinatorics of the permutation group. On a basic level, the permutations can be viewed as fixed points of the flag variety under a very natural group action. This extends to deeper structural connections involving subwords of permutations and subsets of roots negated by permutations. For instance Billey's formula defines polynomials that depend on pairs of permutations; these polynomials determine local features of the tangent space of Schubert varieties, as well as their cohomology classes. Other results use subwords of permutations to characterize the Betti numbers of Springer varieties. We will discuss these and other related results. (Received September 22, 2015)