1035-05-75 **Larry W Cusick*** (larryc@csufresno.edu), Larry W. Cusick, Deparment of Mathematics, California State University, Fresno, Fresno, CA 93740. *Finite Groups of derangements on the n-cube.*

W. Y. C. Chen and R. P. Stanley have characterized the symmetries of the n-cube that act as derangements on the set of k-faces. In this talk we aim to use their result to explore finite subgroups of symmetries whose non-trivial members are derangements of the set of k-faces. Our main results are (1) a characterization of the cyclic subgroups that can act freely on the set of k-faces of some n-cube, (2) a restriction on elementary abelian groups that are isomorphic a subgroups of symmetries of the n-cube that act freely on the set of k-faces, and (3) that every finite 2-group is isomorphic to a subgroup of symmetries that acts freely on the vertices (0-faces) of some n-cube. (Received July 12, 2007)