

Meeting: 1154, Denver, Colorado, SS 13A, AMS-MAA-SIAM Special Session on Research in Mathematics by Undergraduates and Students in Post-Baccalaureate Programs, I

1154-05-1948 **Ashleigh Adams*** (adams869@umn.edu). *Group actions on Stanley-Reisner rings and Stanley rings.*

A group G acting on a simplicial complex Δ or, more generally a simplicial poset P gives rise to an action on its Stanley-Reisner ring $\mathbb{C}[\Delta]$ or its Stanley ring $\mathbb{C}[P]$, respectively. Then, these rings being both graded, have \mathfrak{S}_n -representations on each graded piece of their respective rings. We are concerned with describing all of these \mathfrak{S}_n -representations compactly. We will use a result of DeConcini, Eisenbud, and Procesi to produce a canonical homogeneous system of parameters, $\boldsymbol{\theta} = (\theta_1, \dots, \theta_m)$ for these rings that is always G -invariant. If Δ or P is Cohen-Macaulay, their corresponding ring is a free module over the subalgebra $\mathbb{C}[\boldsymbol{\theta}]$ and one can describe the whole ring by describing the finite dimensional quotient $\mathbb{C}[\Delta]/(\boldsymbol{\theta})$ or $\mathbb{C}[P]/(\boldsymbol{\theta})$. In this talk we will give examples, such as the boundaries of simplices and the complex of injective words. (Received September 16, 2019)