1038-05-143 **Brendon Rhoades*** (rhoad030@math.umn.edu). *The Cyclic Sieving Phenomenon, Jeu-de-taquin Promotion, and Representation Theory.*

Let X be a finite set, $C = \langle c \rangle$ be a finite cyclic group acting on X, and $X(q) \in \mathbb{Z}[q]$ be a polynomial over the integers. Following Reiner, Stanton, and White, we say that the triple $(X, C, X(q))$ exhibits the cyclic sieving phenomenon if for any integer $d \geq 0$, the number of fixed points of c^d is equal to $X(\zeta^d)$ where ζ is a primitive $|C|^{th}$ root of unity. We prove a pair of conjectures of Reiner et al. concerning cyclic sieving phenomena where X is the set of standard tableaux of a fixed rectangular shape or the set of semistandard tableaux with fixed rectangular shape and uniformly bounded entries and C acts by jeu-de-taquin promotion. Our proofs involve modeling the action of promotion via irreducible $GL_n(\mathbb{C})$-representations constructed using the dual canonical basis and the Kazhdan-Lusztig cellular representations (Received February 05, 2008)