1086-05-2812 **John Shareshian** (shareshi@math.wustl.edu) and **Michelle L Wachs*** (wachs@math.miami.edu). *A q-analog of generalized Eulerian numbers.*

An r-inversion of a permutation $\sigma \in S_n$ is an inversion $(\sigma(i) > \sigma(j))$ such that $0 < j - i \leq r$. The generalized Eulerian number $a^r_{n,k}$ is the number of permutations in S_n with exactly k r-inversions. When $r = 1$, the generalized Eulerian numbers are the usual Eulerian numbers. De Mari and Shayman proved, using the hard Lefschetz theorem of algebraic geometry, that the sequence $(a^r_{n,k})_k$ is unimodal. We discuss a q-analog of $a^r_{n,k}$, which involves a well-known Mahonian permutation statistic of Rawlings, and we present several conjectures on them including one on unimodality. (Received September 25, 2012)