1043-20-125 **David J Hemmer*** (dhemmer@math.buffalo.edu), 244 Mathematics Building, Buffalo, NY 14260. *Cohomology and generic cohomology for Specht modules of the symmetric group.*

Cohomology of Specht modules for the symmetric group can be equated in low degrees with corresponding cohomology for the Borel subgroup B of the general linear group $GL_d(k)$, but this has never been exploited to prove new symmetric group results. Using work of Doty on the submodule structure of symmetric powers of the natural $GL_d(k)$ module together with work of Andersen on cohomology for B and its Frobenius kernels, we prove new results about $\mathrm{H}^i(\Sigma_d, S^\lambda)$. We recover work of James in the case $i = 0$. Then we prove two stability theorems, one of which is a "generic cohomology" result for Specht modules equating cohomology of $S^{p\lambda}$ with $S^{p^2\lambda}$. This is the first theorem we know relating Specht modules S^λ and $S^{p\lambda}$. The second result equates cohomology of S^λ with $S^{\lambda+p^a\mu}$ for large a. (Received August 23, 2008)