1077-11-2635 **Jeffery Breeding*** (jbreedi1@slu.edu), Department of Mathematics & Computer Science, Saint Louis University, 220 North Grand Boulevard, Saint Louis, MO 63103. *Bounds for dimensions of degree 2 newforms.* Preliminary report.

Dimensions of spaces of Siegel cusp forms of degree 2 over principal congruence subgroups $\Gamma(p)$ of $\mathrm{Sp}(4, \mathbb{Z})$ have been computed by several people using the Selberg trace formula. These cusp forms can be associated to cuspidal automorphic representations of $\mathrm{GSp}(4, \mathbb{A})$, where $\mathbb{A}$ is the adele ring of $\mathbb{Q}$. The dimensions of $\Gamma(p)$–fixed vectors at the local components of the representation contribute to the dimension formulas for spaces of cusp forms. By finding the possible dimensions for these spaces, we can compute bounds for dimensions of spaces of newforms. (Received September 22, 2011)