1039-05-103 **Chris Berg**, **Brant Jones*** (brant@math.ucdavis.edu) and **Monica Vazirani**. *A bijection on core partitions.*

Core partitions are combinatorial objects that appear naturally in various type A settings including the modular representation theory of the symmetric group and the geometry of the affine Grassmannian. At the level of Coxeter groups, cores index minimal length coset representatives for the parabolic quotient $\widetilde{S}_\ell/S_\ell$ where $\widetilde{S}_\ell$ denotes the affine symmetric group and S_ℓ denotes the finite symmetric group. Let ℓ, k be fixed positive integers. Recent work of Berg and Vazirani used a bijection between ℓ-cores with first part equal to k and $(\ell-1)$-cores with first part less than or equal to k in order to obtain certain generating functions. In this talk we give several new interpretations of that bijection, including a geometric description in terms of the root lattice of type $A_{\ell-1}$. We also show that the bijection has a natural description in terms of another correspondence due to Lapointe and Morse. This is joint work with Chris Berg and Monica Vazirani. (Received March 08, 2008)