

**Meeting:** 1001, Evanston, Illinois, SS 19A, Special Session on Algebraic Representations and Deformations

1001-20-86            **Tom Halverson\*** ([halverson@macalester.edu](mailto:halverson@macalester.edu)), Macalester College, Saint Paul, MN 55015, and  
**Arun Ram** ([ram@math.wisc.edu](mailto:ram@math.wisc.edu)), University of Wisconsin - Madison, Madison, WI 53706. *A*  
*q-Partition Algebra*. Preliminary report.

The partition algebra  $P_k(n)$  is in the centralizer algebra of the symmetric group  $S_n$  acting on the  $k$ -fold tensor product of its permutation representation. The partition algebra  $P_k(n)$  has a basis labeled by the set partitions of  $\{1, \dots, 2n\}$  and a multiplication described combinatorially on these partitions. The partition algebra can be constructed using successive iterations of restriction and induction of the trivial representation from  $S_n$  to  $S_{n-1}$  and back to  $S_n$ . We introduce a  $q$ -generalization of the partition algebra as the centralizer algebra of the finite general linear group  $GL_n(F_q)$  on the representation formed by successive iterations of Harish-Chandra between  $GL_n(F_q)$  and  $GL_{n-1}(F_q) \times GL_1(F_q)$ . (Received August 12, 2004)