1086-05-276 **Tom Halverson*** (halverson@macalester.edu), Macalester College, Saint Paul, MN 55105.
Combinatorial Gelfand Models for Diagram Algebras.

A Gelfand model (or model) for a semisimple algebra A is a complex linear representation that contains each irreducible representation of A with multiplicity exactly one. We derive a method of explicitly constructing models that works simultaneously for a large class of diagram algebras including: the partition, Brauer, rook monoid, rook-Brauer, Temperley-Lieb, Motzkin, and planar rook monoid algebras. In each case, diagrams act by "signed conjugation" on the linear span of their vertically symmetric diagrams. This model representation is a generalization of the Saxl model for the symmetric group, and, in fact, our method is to use the Jones basic construction to lift the Saxl model from the symmetric group to a model for each diagram algebra. In the case of the planar diagram algebras (Temperley-Lieb, Motzkin, planar rook monoid), our construction exactly produces the irreducible representations of the algebra. (Received August 15, 2012)