1046-13-1493   **Rachelle Renee Bouchat*** (`rachelle.bouchat@sru.edu`), Slippery Rock University, 1 Morrow Way, 003 Patterson Hall, Slippery Rock, PA 16057. *Square-free Monomial Ideals Associated to Ferrers Graphs.*

Each partition $\lambda = (\lambda_1, \lambda_2, \ldots, \lambda_n)$ determines a Ferrers graph, which is a class of bipartite graphs. In 2007, Corso and Nagel studied several characteristics of the toric rings of Ferrers graphs via Gorenstein liaison theory. We now consider several classes of square-free monomial ideals that arise as initial ideals of these toric ideals. Specifically, we will examine the reverse lexicographic term order and a modification of this term order using both basic double linkage from liaison theory and S-pairs from elementary Gröbner basis theory to generate and study these initial ideals. In particular, we will use these initial ideals to show that the toric rings of Ferrers graphs are level when certain restrictions are placed on the defining partition of the Ferrers graph. (Received September 15, 2008)

1