1116-05-2495 **Rose McCarty*** (rmccarty3@gatech.edu), **Becky Eastham**, **Paul Han**, **Bill Kay** and **David Spencer**. *Total Acquisition in Diameter 2 Graphs and Tournaments.* Preliminary report.

Let G be a graph where each vertex is given an initial weight of 1. At each time step, a vertex u may **acquire** all of the weight from a vertex $v \in N(u)$ if $w(u) \geq w(v)$. After this acquisition move, the new weight on u is $w(u) + w(v)$ and the new weight on v is 0. The total acquisition number of a graph $a_t(G)$ is the smallest integer so that there exists a sequence of acquisition moves ending with $a_t(G)$ vertices having weight greater than 0. LeSaulnier, Prince, Wenger, West, and Worah prove that, for G a diameter 2 graph with no 4-cycles, $a_t(G) \leq 2$. They further show that if G has diameter 2, then $a_t(G) \leq 32 \ln n \ln \ln n$, and conjecture that in fact, the total acquisition number of any diameter 2 graph is less than 2. We show that when G is a diameter 2 graph where every 4-cycle in G induces a K_4, $a_t(G) \leq 2$. We also give an additional family of diameter 2 graphs with acquisition number less than or equal to 2. Finally, we prove that all tournaments have acquisition number less than or equal to 2 for a suitable variant of acquisition on directed graphs. (Received September 22, 2015)