

1077-G1-2508 **Tina Hartley*** (tina.hartley@usma.edu). *Modeling a Baseball Defense as a Network.*

Baseball uses many different measures to rate a player's offensive abilities. However, defensive abilities are much more difficult to measure. One area that is often overlooked is how the team as a whole functions in defense, as opposed to recording statistics for individuals. In this paper, I will examine baseball defense from the perspective of a network, where the individual players are the nodes, with the ball traveling on various paths between the nodes. With this approach, we can look at performance in several different aspects: Which nodes are most valuable to a team, and does that vary for different teams? Which paths generate outs most frequently? Are different positions more critical against certain teams and with certain pitchers? In addition, by comparing performance across teams, we can compare individual performance of players in the same positions. (Received September 22, 2011)