

Meeting: 1003, Atlanta, Georgia, MAA CP D1, MAA Session on Mathematics and Sports, I

1003-D1-707 **John-Charles Bradbury** and **Doug Drinen*** (ddrinen@sewanee.edu), 735 University Avenue, Sewanee, TN 37383-1000. *Protection in the batting order: does it matter who hits behind Barry Bonds?* Preliminary report.

The goal of this paper is to study the phenomenon known to baseball fans as “protection.” That is, is a hitter helped by having a good hitter on deck? To answer the question, we used play-by-play data from Retrosheet to analyze every plate appearance in Major League Baseball during a nine year span. We employed a probit regression model and controlled for many factors that might influence the outcome of a plate appearance, such as the quality of the hitter and pitcher, the inning, the score, the baserunner configuration, the ballpark, and others. We find that the quality of the on-deck hitter has a statistically significant and negative, though almost negligibly small, impact on the current hitter’s probability of getting a walk, a hit, an extra-base hit, or a home run. (Received September 28, 2004)