1067-Z1-1795        **Lee J Stemkoski\*** (`stemkoski@adelphi.edu`), 211 Post Hall, Adelphi University, 1 South Ave., Garden City, NY 11530. *Applications of Calculus to Game Theory: The Prisoners' Dilemma.*

The Prisoners' Dilemma is a classic example of a two-player interaction that highlights the conflict between altruistic and self-centered behaviors. We assume that the players will interact repeatedly and that previous outcomes influence the decisions of each player. Given this scenario, techniques from calculus may be used to analyze strategies and determine an optimal sequence of decisions. In this talk, we present a teaching module centered around applications of calculus to the Prisoners' Dilemma; the module may be used for courses in differential, integral, and multivariable calculus. (Received September 21, 2010)