1044-60-164 **Marcus Pendergrass*** (marcus.pendergrass@gmail.com), P.O. Box 174, Hampden-Sydney, VA 23943. *A Path Guessing Game on Graphs, with Applications to the Lying Oracle Problem.* Preliminary report.

We consider a two-person game in which the first player (the Guesser) tries to guess, edge-by-edge, the path that second player (the Chooser) takes through a directed graph. At each step, the Guesser makes a wager as to the correctness of her guess, and receives an odds-weighted payoff if she is correct. Optimal strategies for both players are derived for various classes of graphs, including trees and strongly connected graphs. These results are applied to the infinite-duration *Lying Oracle Problem*, in which the Guesser must use information provided by a mendacious Oracle to predict the outcome of a coin toss. (Received August 31, 2008)