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David P Ebert* (david.ebert@go.tarleton.edu). *A genetic algorithm approach to finding an optimal strategy for a folk dice game.* Preliminary report.

This research discusses steps to formulating a genetic algorithm for optimizing strategy for Fargo, a multiplayer folk dice game. After introducing Fargo and describing its similarities to other multiplayer dice games, the research discusses the space of strategy vectors in the one-player Fargo game. Next, a recursive algorithm is developed for finding the expected value of a strategy vector. Finally, a genetic algorithm searches through the strategy vector space to find strategies that maximize the expected value. The results of the genetic algorithm clearly point toward an optimal strategy in the simplified version of the game, with likely future extensions to the Fargo game ending and multiplayer Fargo. (Received September 20, 2016)