1154-VV-2643 **Joshua Harrington**, **Kedar Karhadkar**, **Madeline Kohutka**, **Tessa Stevens*** (txs473@case.edu) and **Tony W. H. Wong**. *Two dependent probabilistic chip-collecting games.*

Alice and Bob take turns to collect chips in the following manner. In each turn, Alice tosses a fair coin, which decides whether she collects a or b chips, where a and b are positive integers. If Alice collects a chips, then Bob collects b chips, and vice versa. We consider two variants of game play that have different rules in determining the winner. Namely, the winner of Game 1 is the first player to collect at least n chips, while the winner of Game 2 is the first player to collect a positive number of chips congruent to 0 modulo n. We fully determine the formula for the winning probabilities of each player in Game 1, and determine the best and worst case scenarios in terms of winning probabilities in Game 2. (Received September 17, 2019)