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Kwadwo Antwi-Fordjour* (kantwifo@samford.edu), **Rana Parshad**, **Hannah E Thompson** and **Stephanie B Westaway**. *Fear-Driven Extinction and De(stabilization) in a Predator-Prey Model Incorporating Prey Herd Behavior and Mutual Interference*. Preliminary report.

A deterministic two-species predator-prey model with prey herd behavior is considered incorporating mutual interference and the effect of fear. In this talk, we will provide guidelines to the dynamical analysis of biologically feasible equilibrium points and in addition give conditions for the existence of some local and global bifurcations at the coexistence equilibrium. We will show that fear can induce extinction of the prey population from a coexistence zone in finite time. Our numerical simulations reveal that varying the strength of fear of predators with suitable choice of parameters can stabilize and destabilize the coexistence equilibrium solutions of the model. (Received July 31, 2021)