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Folashade B. Augusto*, Ecology and Evolutionary Biology, Lawrence, KS 66045. *To isolate or not to isolate: The impact of changing behavior on COVID-19 transmission*. Preliminary report.

COVID-19 is a respiratory disease caused by a recently discovered novel coronavirus, SARS-COV 2. Furthermore, disease transmission are often driven by public perception of risk/fear of the disease. In this talk I will present a model developed for COVID-19 using a system of ordinary differential equation following the natural history of the infection. The model uniquely incorporate the behavior of susceptibles and symptomatic individuals; the susceptible in the community are willing to support all social distancing efforts including lockdown while symptomatic are will to self-isolate. Using appropriate payoff functions relating to the perception of risk measured using disease incidence and severity of infection the model is coupled to a series of human behaviors including violating self-isolation rules. Analysis and simulations of the model show the possibility of multiple waves of infections. The results also show the importance of incentivizing self-isolation as a means to reduce disease transmission. (Received September 11, 2020)