

1086-AC-1075 **Abdul-Aziz Yakubu*** (ayakubu@howard.edu), 2441 6th Street NW, Department of Mathematics, Howard University, Washington, DC 20059, and **Avner Friedman** (afriedman@math.osu.edu), Department of Mathematics, The Ohio State University, Columbus, OH 43210. *Impact of host demographic Allee effect, fatal disease and migration on biodiversity.*

In this talk, we will focus on biodiversity, a major problem for ecosystem resilience. Using extensions of the Susceptible-Infected epidemic model of Hilker et al. we will illustrate how population persistence or extinction of a vulnerable species relates to habitat dependent Allee thresholds, fatal disease dynamics and migration rates in both discrete and continuum set of compartments. We will analyze the migration-linked models and establish verifiable conditions that guarantee host population persistence (with or without infected individuals) or extinction. (Received September 18, 2012)