

1125-VC-1310 **Sharee Brewer*** (snbrewer1@my.fisk.edu), 411 Annex Ave, Apt B4, Nashville, TN 37209, **Taylor Swett** (tswett26@my.fisk.edu), 411 Annex Ave, Apt B4, Nashville, TN 37209, and **Qingxia Li** (qli@fisk.edu), 411 Annex Ave, Apt B4, Nashville, TN 37209. *A predator-prey model for the ecological system in a lake with the effect of acid rain.*

Acid rain decreases the pH level in a lake and the lake acidity has an effect on organisms and can reduce their body size, reproduction capacity, egg viability and mortality rate. In this paper, a predator-prey model consisting of algae (cyanobacteria), an herbivore (*Daphnia magna*), and a predator (yellow perch) is developed and the coefficient functions governing dynamics of growth rate and death rate of organisms with respect to pH value in this model are determined. Parameter values in this model are adopted from experimental data in published references. This presentation is based on a summary report on an ecological modeling problem from Graduate Student Math Modeling Camp at Rensselaer Polytechnic Institute in 2009. (Received September 16, 2016)