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Vinodh Kumar Chellamuthu*, Department of Mathematics, Dixie State University, 225 South 700 East, St. George, UT 84770, and **Azmy S. Ackleh, Jacoby Carter** and **Baoling Ma**. *A Mathematical Model for Frog Population Dynamics with Batrachochytrium dendrobatidis Infection.*

Chytridiomycosis is an emerging disease caused by the fungal pathogen *Batrachochytrium dendrobatidis* (*Bd*) that poses a serious threat to frog populations worldwide. Several studies have shown that inoculation of bacterial species *Janthinobacterium lividum* (*Jl*) can mitigate the impact of the disease. However, there are many questions regarding this interaction. A mathematical model of a frog population infected with chytridiomycosis is developed to investigate how the inoculation of *Jl* could reduce the impact of *Bd* disease on frogs. The model also illustrates the important role of temperature in disease dynamics. The model simulation results suggest possible control strategies for *Jl* to limit the impact of *Bd* in various scenarios. However, a better knowledge of *Jl* life cycle is needed to fully understand the interactions of *Jl*, *Bd*, temperature and frogs. (Received September 11, 2015)