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**Hem Raj Joshi\*** (joshi@xavier.edu) and **Mark Miller**. *Modeling Harmful Algal Blooms in the Western Basin of Lake Erie and their Economic Impact.*

We propose a simple relationship between algal species and Zebra Mussel through a basic ecological predator-prey model: the Lotka-Volterra model. Through this model, we can learn what level of Zebra Mussel population will maximize water transparency through the elimination of algal populations with the most important result being the elimination of large-scale algal blooms. Then, the economic impact of the bloom will be assessed, as well as the necessary decrease in phosphorus loading needed to sufficiently reduce the risk of compromising the Toledo water supply. (Received September 20, 2016)