1086-92-2799 **Catherine King*** (cking@email.wm.edu) and **Kate Shipman**. *Accurately Modeling Zooplankton Mortality Rates.* Preliminary report.

Modeling zooplankton dynamics properly is increasing in importance because zooplankton grazing has been shown to impact critical issues ranging from eutrophication to climate change. Zooplankton mortality rates are the most critical aspect of the currently existing models; however, current models only include linear predatory mortality rates. This incomplete approach underestimates zooplankton mortality and therefore overestimates actual zooplankton abundances. In order to further determine the significance of the zooplankton mortality term, we performed both sensitivity and interval analysis on the currently existing model. These methods analyzed the changes in the eigenvalues and eigenvectors as the parameters were altered. Similarly, new techniques in interval analysis were used to determine the maximum epsilon, or error, allowed for a certain parameter that will still allow growth in the population. Analyzing the mortality term in this way will help us create more efficient and accurate models. Non-linear mortality terms that separate non-predatory and predatory mortality rates were also included. Correctly incorporating both predatory and non-predatory mortality terms will improve current models for aquatic ecosystems around the world. (Received September 25, 2012)