1154-92-1018 **Margaret Knight*** (m_knight@coloradocollege.edu), **Priscilla Cho** (priscilla.cho@emory.edu), **Lucas Fiet** (lauefiet@vols.utk.edu), **Aaron Lin** (aaron.lin@emory.edu), **Audra Hinson** (ahinson3@utk.edu) and **David Talmy** (dtalmy@utk.edu). *Viral infection rates of Micromonas pusilla under contrasting nutrient and light conditions.* Preliminary report.

Phytoplankton are central to oceanic photosynthesis and form the basis of the marine food web. In recent years, an increased understanding of the prevalence of viruses in marine ecosystems revealed a need to study the role of viruses in the microbial loop. Existing systems model the viral infection dynamics of phytoplankton, but the viability of these models requires assessment through comparison to data. We used the Metropolis-Hastings algorithm with experimental data to fit transfer affinity, lysis rate, host growth rates (susceptible, infected and control) and burst size in our model system of ordinary differential equations. We examined datasets which consider a host Micromonas pusilla (Mp-LAC38) and a virus (MpV-08T) populations under contrasting nutrient and light conditions. Host and virus exposure to both nutrient limited and low light conditions resulted in increased transfer affinities and decreased lysis rates. However, limited nutrients induced higher susceptible growth rates and burst sizes, while low light showed opposite effects. This implies that the virus has greater success infecting the host under limited conditions, while the production of free viruses is slower. These findings can be used to assess nutrient cycling and carbon fixation within ecosystem models. (Received September 12, 2019)