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DEVELOPMENT OF SIMULATED MICROGRAVITY MODEL FOR THE GREEN ALGAE,  
CHLAMYDOMONAS REINHARDTII**Abstract**

The green algae, *Chlamydomonas reinhardtii*, is a model for the genetic analysis of growth, circadian rhythm, motility and the physiology of photosynthesis. Space flight experiments have examined photosynthesis, phototaxis, and circadian rhythm. The purpose of this research is to set the groundwork for future GeneLAB spaceflight experiments using *Chlamydomonas*. *Chlamydomonas* is a good potential model for GeneLAB because of its simple life cycle, unicellular growth, and ability to grow in defined medium. We will first compare growth kinetics at 1g and under simulated microgravity. We will later use qRT-PCR to compare gene expression during simulated microgravity to 1g controls. mRNA will be extracted from *C. reinhardtii*, four to ten genes will be selected for testing qRT-PCR (to be determined). The results will help determine what further experiments are required to validate *Chlamydomonas* for use as a GeneLAB experimental organism.