

## **Stable isotope labeling of the zooplankton *Oxyrrhis marina* to track lipid metabolism**

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### **Project Location:**

Bryant University

### **Project Description:**

Fatty acids are important lipid compounds that are used as building blocks for the majority of lipid classes and serve as valuable source of energy. The mechanism of trophic upgrading by protozoans may bridge the gap of essential nutrients between higher trophic levels. Given the importance of heterotrophic dinoflagellates such as *O. marina* to trophic upgrading and providing essential nutrients to higher trophic levels, an understanding of the changes to the lipid profile under varying availability of prey can provide insight into the nutritional quality available for higher trophic levels in the food web. This project will focus on further investigating lipid upcycling in *O. marina* through the use of stable isotope labeling of prey (*S. ceriviseae*). Isotopic labeling of *O. marina* lipids will be monitored by GC-MS allowing the tracking of prey-based lipids as they are modified to long chain fatty acids and alcohols. Lipid metabolism in *O. marina* during starvation will be further investigated using this strategy

*This project involves **primarily lab or computer work***

### **Required/preferred skills for student applicant:**

basic microbiology skills

### **Student transportation needed for project?**

No