Marine microbial nutrient cycling

Marine microbes play a critical role in the chemistry of the ocean, moving material and energy from the surface ocean to the deep, and influencing the transfer of material from the ocean to the air. The Popendorf lab focuses on the understanding the role of marine microbes in global biogeochemical cycles, particularly quantifying the rates of cycling of phosphorus and carbon controlled by phytoplankton and heterotrophic bacteria. We address questions such as: What are the different strategies that microbes employ for acquiring limiting nutrients, and how do these strategies impact microbial production rates? We’ll explore these questions using experiments conducted at sea in different nutrients regimes along with biochemical and geochemical analyses in the lab utilizing mass spectrometry and flow cytometry.

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