

## Holly V. Moeller

My love of microalgae started early, as an undergraduate researcher enamored by kleptoplastidic ciliates at Rutgers University. Since that time, I've been using a combination of lab experiments (especially photophysiology; ask our lab members about my horrible tendency to pontificate on fluorescence measurements) and mathematical models to understand how eukaryotic phototrophs obtain their photosynthetic capacity and contribute to primary production. Our team especially focuses on mixotrophs, using *Mesodinium* ciliates as a model system for studying kleptoplasty and *Ochromonas* chrysophytes to explore evolutionary responses to climate change.

### *Select Publications*

1. Brown, AL, GA Casarez, and HV Moeller. 2023. Acquired phototrophy as an evolutionary path to mixotrophy. *The American Naturalist* 202(4).
2. Gonzalez, LM, SR Proulx, and HV Moeller. 2022. Modeling the metabolic evolution of mixotrophic phytoplankton in response to rising ocean surface temperatures. *BMC Ecology and Evolution* 22: 136.
3. Lepori-Bui, M, C Paight, E Eberhard, CM Mertz, and HV Moeller. 2022. Evidence for evolutionary adaptation of mixotrophic nanoflagellates to warmer temperatures. *Global Change Biology* 28: 7094-7107.
4. Moeller, HV, E Peltomaa, MD Johnson, and MG Neubert. 2016. Acquired phototrophy stabilizes coexistence and shapes dynamics of an intraguild predator and its prey. *Ecology Letters* 19: 393-402.
5. Moeller, HV, MD Johnson, PG Falkowski. 2011. Photoacclimation in the phototrophic marine ciliate, *Mesodinium rubrum* (Ciliophora). *Journal of Phycology* 47: 324-332.

### *Background*

I received my BA from Rutgers, the State University of New Jersey, where I worked with Dr. Paul Falkowski on kleptoplasty in *Mesodinium*. During my Masters degree at the MIT/WHOI Joint Program, I focused on building my mathematical repertoire, working on models of marine reserve bioeconomics with Dr. Michael Neubert. I then shifted gears to photosynthesis in terrestrial systems, studying tree-ectomycorrhizal mutualisms with Dr. Tadashi Fukami. Afterwards, I returned to Woods Hole for a postdoctoral position with Drs. Michael Neubert and Matthew Johnson, where I spent two years experimenting with and modeling protistan mixotrophs, work that continues today in our research group at the University of California, Santa Barbara.