BayCEER Kolloquium

Lectures in Ecology and Environmental Research

Summer 2025

UNIVERSITÄT BAYREUTH

Donnerstag/Thursday
05.06.2025
12:30 in H6, GEO

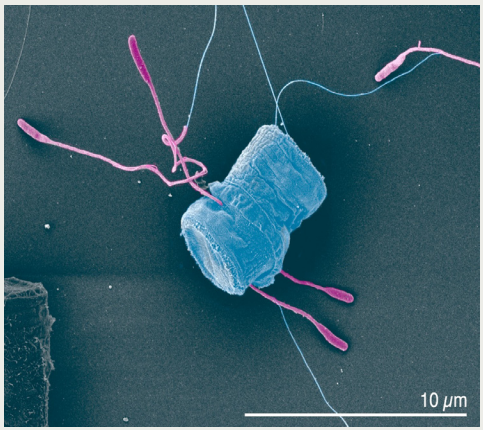
Dr. Clara Martínez-Pérez

Limnological Research Station,
Department of Hydrology, BayCEER

Biogeochemistry at the microscale: insights from algal–bacterial interactions

Around 20% of all the photosynthesis on Earth (comparable to the productivity of all terrestrial rainforests combined) is carried out by microscopic algae (diatoms) drifting in our oceans. Yet the rate of photosynthesis and the fate of the fixed carbon (whether it is rapidly recycled or sinks into long-term storage) are strongly shaped by the bacteria that interact with them.

In this talk, I will describe how bacterial strategies for locating and interacting with diatom hosts influence these outcomes. Drawing on examples from my recent research, I will show how certain bacteria "lure" their algal partners into shedding their protective silica shells, leaving them vulnerable to algicidal attack. I will also highlight how bacterial chemotactic behavior and cell morphology (such as long tubular extensions) enhance their ability to access algal-derived carbon and remain in close proximity to hosts. These strategies are not unique to marine systems and may offer broader insights into microbial interactions in other environments, such as plant rhizospheres.



Finally, I will outline ongoing work extending these findings from marine to freshwater ecosystems, where algal–bacterial interactions remain underexplored but are likely just as ecologically significant.

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