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**Planctomycetes: neglected major players in marine habitats**

Planctomycetes are bacteria that for long were seen as biological curiosities that might or might not play a role in eukaryogenesis and that comprise a conspicuous cell biology. They did not seem to be environmentally abundant based on clone library analysis nor of general environmental or biotechnological interest.

However, with the advent of deep-sequencing studies and modern ecological techniques, Planctomycetes were found to be significant, ubiquitous bacteria that are major players in global carbon- and nitrogen cycles. Although Planctomycetes are in average the fifth most abundant phylum in soil, they are in particular important in marine habitats where they seem to fill an ecological niche that is defended by fungi in terrestrial environments: scavengers of all sorts of complex carbon compounds and producers of bioactive small molecules that alter the species composition in their environment. Only recently (super resolution) microscopy shed light on the planctomycetal cell biology and on their unique cell architecture that allows them to be so successful in marine habitats. In my talk I will summarize key aspects of the planctomycetal biology with a focus on why Planctomycetes are not ancestral to bacteria and archaea and how they can act as 'Swiss army knife' of environmental microorganisms in terms of carbon remineralization. My laboratory recently cultivated, sequenced and characterized 85 novel planctomycetal strains that belong to one novel order as well as to multiple novel genera and species. This comprehensive analysis along with chemical ecology studies on the planctomycetal interaction with marine phototrophs revealed unseen aspects of marine microbiology and helps to explain why these slow growing organisms are so successful in the ocean that they can even account for up to 80% of the bacterial community in algal biofilms.

Date: Thursday, November, 8, 2018, 1:30 pm  
Venue: GEOMAR Westshore, Düsternbrooker Weg 20, Lecture Hall  
Host: Prof. Dr. Deniz Tasdemir