

Prof. Raquel Peixoto - Microbiome manipulation of marine hosts and its potential to foster ecosystem resilience

Our research group has summarized different beneficial roles of microbiomes and proposed new terms and approaches to potentially improve ecosystem resilience, such as the manipulation of Beneficial Microorganisms for Corals (BMCs - coral probiotics). Here I will present our recent data manipulating microbiomes associated with marine organisms (mangrove plants and two species of corals), applying an innovative way of thinking about ecology and environmental protection and recovery. The microbiome manipulation of corals and other marine animals is timely considering that it is well explored and has been applied in other organisms such as humans (probiotics) and habitats such as soils, in this case especially for agriculture (plants) and bioremediation (bioaugmentation or biostimulation) purposes. The topic has been nevertheless overlooked for marine ecosystems and organisms. Manipulations of the microbiome of marine organisms not only have the potential to improve the resilience of these organisms when subjected to environmental changes, but also will be useful for providing new insights into the molecular mechanisms of host-microbiome interactions. These manipulations and interactions are the key topics driving the recently created BMMO (Beneficial Microorganisms for Marine Organisms) network.