

## **Nitrogen-fixing cyanobacteria in the changing ocean**

Isaac Shunyan Cheung

Assistant Professor, Institute of Marine Biology, National Taiwan Ocean University

Marine nitrogen-fixing cyanobacteria reduce dinitrogen to bioavailable forms of nitrogen, which play critical roles in supporting primary productivity, carbon sequestration and fertility in the ocean. In the context of global climate change, marine nitrogen-fixing cyanobacteria were predicted to be an increasingly important source of nitrogen in the ocean. After decades of research, diverse nitrogen-fixing cyanobacteria have been discovered in the ocean, while our understanding of these organisms remains limited. A comprehensive understanding about the biogeography, ecophysiology and environmental control mechanisms of marine nitrogen-fixing cyanobacteria is essential for a better prediction of the fates of ecosystem and biogeochemical cycling in the future ocean. In this presentation, I will use case studies to demonstrate how we study the impacts of global climate change on the marine nitrogen-fixing cyanobacteria in field and laboratory. I will also introduce our on-going projects about the nitrogen-fixing cyanobacteria in the Kuroshio east of Taiwan and the vast North Pacific Ocean.