NUS National University of Singapore | Department of Biological Sciences, Faculty of Science

BIOLOGY COLLOQUIUM

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Hosted by Asst. Professor Huang Danwei

From ice to water: marine microbial eukaryotic diversity and ecology

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Molecular methods have completely transformed the study of marine microbes. After centuries of relative neglect, molecular data has revealed the surprising extent of diversity among microbial eukaryotes, also called protists. But major gaps in our understanding remain, especially how protist communities can impact and is linked to global processes. During this talk I will try to convince you that in order to understand microbial eukaryotes, we need to put a greater emphasis on taxonomy. As examples, I will explore the link between diversity and primary production rates in the Southwest Pacific Ocean and look into the diversity and biogeography of photosynthetic protists blooming in the Arctic.

About the Speaker

I am a molecular ecologist, working for the last 10 years on eukaryotic marine plankton communities. Throughout my career, I have gained a solid experience in producing and analysing metabarcoding datasets at global and local scales with the aim of understanding geographical patterns of planktonic microbial eukaryotes (protists), their community structure in the environment and in symbiotic associations (e.g., among planktonic groups) as well as their role in oceanic processes (e.g., carbon flux and nitrogen fixation). My work also incorporates classical methods to isolate and describe groups of phytoplankton. This led me to describe several new taxa and classes of phytoplankton from marine and freshwater environments and, to isolate more than 300 strains from oceanic and coastal waters, including from Singapore and polar environments. Since 2018, I have been working as an Assistant Professor, at the Asian School of Environment (NTU) where I have established the Genomics and Ecology of Eukaryotes laboratory (GEEK Lab - https://the-geek-lab.netlify.app/) and the Singapore Marine strains collection (SMS).