

Hong Kong Branch Distinguished Seminar Series



Life in the Dark: Symbioses between Chemosynthetic Bacteria and Marine Invertebrates

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Abstract: Symbioses between chemosynthetic bacteria and marine invertebrates were first discovered at hydrothermal vents in the deep sea but are now known to occur in a wide range of habitats including coral reef sediments, seagrass beds, cold seeps and sunken whale carcasses. In these nutritional associations, the bacterial symbionts use chemical energy sources such as hydrogen sulfide to fix CO₂ into organic compounds and feed their hosts. Chemosynthetic symbioses have evolved multiple times in convergent evolution from numerous bacterial lineages, and occur in at least nine protist and animal groups such as ciliates, flatworms, mussels, clams, snails, annelids, and nematodes.

Chemosynthetic symbionts have acquired a wide and flexible repertoire of pathways in adaptation to the energy and carbon sources available in their environment. Intriguingly, most of this flexibility appears to have been gained through high strain diversity and the acquisition, through horizontal gene transfer, of metabolic versatility. In my talk, I will describe how our toolkit of methods ranging from in situ experiments to meta'omic' and imaging analyses of chemosynthetic symbioses have revealed some of the adaptive processes that play a key role in the ecology and evolution of these host-microbe associations.

30 November 2021 (Tuesday)

4:00 – 5:15 pm (GMT +8, HK Time)

<https://hkust.zoom.us/meeting/register/tJEqcOqurDoqGd2FxxzlpF5mg0Gew0cW2lHj>

Meeting ID: 957 7362 1039

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