



The University of Hong Kong  
School of Biological Sciences



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Seminar

# The present and prospective ecology of a rocky shore predator: foraging, physiology and their microbiome

**Date: 18 August 2022 (THU)**

**Time: 1600**

**Venue: 6N-11 KBSB & Zoom**

(link available on request)



## About the speaker:

Kevin Geoghegan is a PhD candidate in The Swire Institute of Marine Science. Since joining HKU in 2017 he has been studying topics such as: predator prey interactions, seasonality of food webs, and the impacts of climate change and marine heatwaves on animal physiology and their microbiome.



## Abstract:

Ocean heating and marine heatwaves (MHWs) negatively impact many marine ecosystems and the species supporting their function. For many species, the present day and future impacts of thermal stress on their trophic ecology, behaviour, physiology and microbiome are unknown.

Here, I investigated these impacts on *Eriphia ferox*, a rocky shore predatory crab which is found along the Indo-Pacific region, and as a highly mobile predator with a varied diet plays a key role in structuring their community. First, I used stable isotope analysis to show that *E. ferox* will adapt their foraging strategy between seasons to take advantage of the regional bloom of macroalgae over the cooler winter period. Further, I used an experimental intertidal system in the laboratory to show exposure to temperatures experienced in present-day rock pools increase thermal tolerance. I then found that despite an increase in metabolic and therefore energetic needs, they did not match these demands with increased food consumption (or prey size choice) – creating an energetic mismatch. Subsequently, I found they were resistant to the potential physiological stress from future MHWs, though energetic demands did increase. Last, I described their microbiome and demonstrated that the bacterial community in their foregut, hindgut and gill were resistant to decadal warming and concomitant MHWs, though there were changes to individual taxa which could affect host digestion and health