Coral–algal symbiosis as a dynamic process during coral bleaching

Seminar by:

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Abstract

Thermal stress driven by climate change is a major threat to coral reef ecosystems, disrupting the symbiotic relationship between corals and their algal partners and leading to widespread bleaching. Despite extensive research, our understanding of the processes that determine symbiont fate under stress remains limited.

My research has focused on investigating coral responses to thermal stress across multiple biological scales, with a continuous emphasis on understanding the dynamics of symbiosis under changing environmental conditions. Building on this foundation, my current research examines how thermal stress regulates symbiont fate within coral hosts, including both retention and loss pathways, and how these processes collectively shape bleaching responses.

Findings suggest that coral responses to thermal stress extend beyond a simple reduction in symbiont abundance, involving more complex changes in their state and fate within the host. These findings highlight the need to view bleaching as a dynamic process, rather than simply a loss of symbionts.

This presentation adopts a conceptual framework to explore the processes underlying symbiotic dynamics under stress, processes that encompass multiple pathways of symbiont fate and remain incompletely understood, but are likely to play a key role in shaping coral responses to future environmental change.

Hosted by the Marine Structural Biology Unit
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