Proteomic and Lipidomic Alterations During Coral Symbiosis and Bleaching

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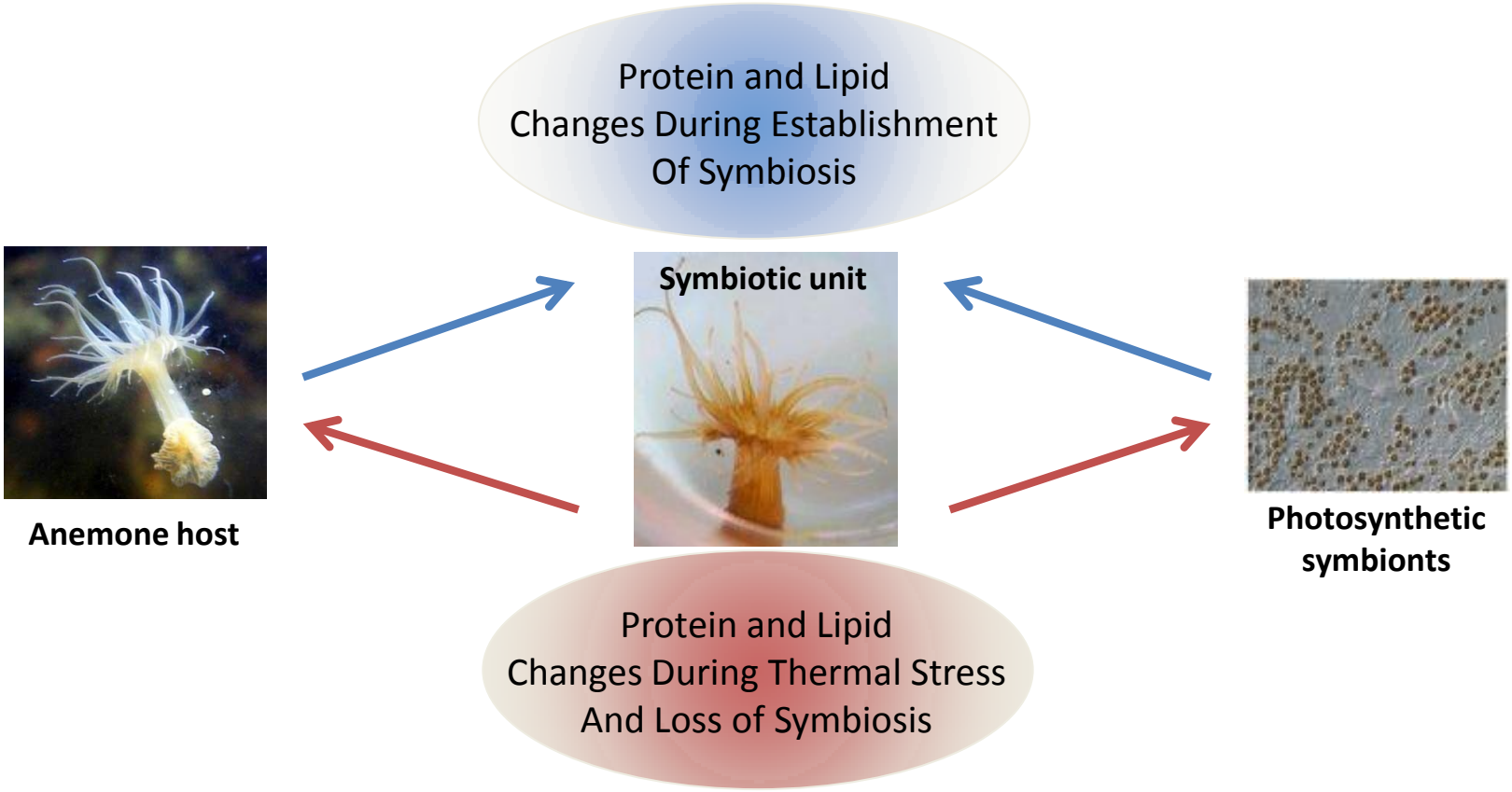
Background: Coral reef ecosystems are among the most biodiverse on the planet, yet they are suffering massive declines due to environmental stress. At the heart of the ecosystem is a symbiotic relationship between corals/anemones and photosynthesizing dinoflagellates that live inside their cells.



Project Goals and Approaches: We aim to understand the underlying cellular biology of the symbiosis, by focusing on cellular proteins and lipids that are produced during 1) the onset of symbiosis (blue arrows) and 2) the dissolution of symbiosis in response to thermal stress (red arrows). Mass spectrometry, genomics, and bioinformatic approaches will be employed to identify and characterize protein and lipid components of the symbiosis.