ASU School of Molecular Sciences
Arizona State University

SMS Spring 2024 Seminar Series

Friday April 26 | 3pm | Biodesign Auditorium

A microenvironmental view on coral ecophysiology and engineering for future coral reefs

Coral reefs are one of the most productive and biodiverse ecosystems on Earth and they are also critically threatened. Understanding and restoring coral reefs often requires interdisciplinary approaches, covering different areas of natural sciences and engineering. In this talk, I present a microenvironmental perspective on coral ecophysiology and highlight how physico-chemical microhabitats control key physiological parameters such as coral photosynthesis and stress susceptibility. I then explain how we can learn from these microenvironmental observations to develop new technologies for a wide range of applications, including the investigation of the coral-algal symbiosis and the engineering of coral reefs for rehabilitation and restoration.

Daniel Wangpraseurt, Ph.D.

Assistant Project Scientist, University of California, San Diego

Dr. Daniel Wangpraseurt is an Assistant Project Scientist at the Department of Nanoengineering UCSD and a visiting researcher at the Tresguerres lab at Scripps Institution of Oceanography and at the Department of Chemistry, University of Cambridge. He is a marine biologist with strong interdisciplinary interests and his research is broadly placed at the interface between marine biology, engineering and physics. His work includes coral reef science, microalgal photobiology, optical modeling, bio-imaging, 3D bioprinting and microenvironmental ecology. Currently, he is developing new 3D bioprinting approaches for a biomimetic coral-algal symbiosis model system, artificial coral reefs and microalgal cultivation. He worked as a Marie Curie Postdoctoral Fellow at the University of Cambridge and SIO to develop coral-inspired living photobioreactors. Prior to that, he worked as a Carlsberg Distinguished Postdoctoral Fellow at the University of Copenhagen where he used medical imaging techniques to understand the biophotonic and structural properties of corals. He received his PhD from the University of Technology, Sydney where he studied coral photobiology and bio-optics.

**ZOOM option available: https://asu.zoom.us/j/81517529537*