



# QUANTITATIVE & SYSTEMS BIOLOGY SEMINAR: Coral Symbiosis Cell Biology in the Age of Climate Crisis: Turning Discovery into Solutions for Saving Reefs

**Virginia Weis**

Professor of Integrative Biology  
Oregon State University

## About The Speaker:

Virginia Weis is a Distinguished Professor of Integrative Biology at Oregon State University and the Dr Russ and Dolores Gorman College of Science Faculty Scholar. She obtained her PhD in 1990 in Biology from the University of California at Los Angeles in the area of coral reef biology and coral symbiosis. She has been at OSU since 1996 where her group studies the cellular and molecular conversations that govern the relationship between corals and their microbial partners.



These symbioses are central to the health of coral reef ecosystems and when the partnerships breakdown due to environmental stress such as global warming, the entire reef ecosystem is threatened. Her current focus includes efforts to build coral germplasm repositories to preserve coral biodiversity. She has instructed thousands of undergraduate students in introductory biology, invertebrate zoology, and the biology of symbiosis. She has authored over 100 publications and mentored and trained 19 PhD students, 13 postdoctoral fellows and dozens of undergraduates.

## Abstract:

Corals engage in a mutualistic symbiosis with intracellular photosynthetic dinoflagellates. This intimate partnership forms the trophic and structural foundation of coral reef ecosystems. This presentation will examine some of the cellular mechanisms underlying the establishment, maintenance and breakdown of the symbiosis in coral- and anemone-dinoflagellate partnerships. I will present an overview of some past and present studies from my research group including the role of innate immunity in symbiosis regulation and inter-partner cell cycle regulation through host development. Finally, I will discuss global efforts to develop solutions to the coral reef climate crisis and where coral cell biology can play a role: in the value of sea anemone model systems and in the need to develop cryopreservation techniques and germplasm repositories.

## Date:

11/12/2021

## Time:

2:30 PM-3:45 PM

## Location:

COB2 140

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