



# Departments of Civil & Environmental Engineering & Earth Sciences and Biological Sciences Seminar

December 4, 2019  
120 DeBartolo Hall 3:30 p.m.-4:30 p.m.

*Wade McGillis*  
Geochemistry, Lamont Doherty Earth Observatory  
Earth and Environmental Engineering  
Columbia University

## Title

*Physical and Biogeochemical Processes Controlling Carbon Exchange  
at Marine Surfaces*

## Abstract

Quantifying local budgets of marine carbon are critical in advancing our understanding of the health and future state of water ecosystems. Integrated, the global carbon cycle plays a key role in controlling the amount of carbon dioxide in the atmosphere. Important in the fate of both global and local carbon, is quantifying and assessing the factors involved in carbon exchange. During this talk, studies of processes controlling the exchange of carbon at the ocean-atmosphere interface, as well as at ocean-bottom interfaces, will be presented. Specific examples that will be introduced include precipitation (ocean-atmosphere) and coral reefs (ocean-bottom) across ENSO conditions. In particular, the role of physical and biogeochemical processes will be highlighted. Future studies combining ocean surface and bottom exchange measurements and modelling will also be discussed.