



Joseph Pawlik

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Editorial board member of *Marine Ecology Progress Series*

Joseph Pawlik was born in Minneapolis, Minnesota, USA, and did his undergraduate education at the University of Minnesota before receiving a PhD in Marine Biology at Scripps Institution of Oceanography, UC San Diego, in 1988. After postdoctoral appointments at Friday Harbor Laboratory of the University of Washington and Woods Hole Oceanographic Institution, he was hired in 1991 at the University of North Carolina Wilmington as an Assistant Professor and in 2017 was awarded the Frank Hawkins Kenan Distinguished Professorship. Over his career, he has taught undergraduate courses in Invertebrate Zoology and Biodiversity and developed a research program with grant support primarily from NSF and NOAA. He has mentored over 36 graduate students and has been Chief Scientist on over 10 NSF-sponsored research cruises. He has authored over 160 scientific publications, mostly in the areas of marine chemical ecology and the biology of sponges on Caribbean coral reefs. He also enjoys documenting his research program using underwater videos, which can be found at the YouTube channel “Pawlik Lab.”

Title of the Lecture:

Natural products shape natural systems: The chemical ecology of sponges on Caribbean reefs

Abstract

Sponges are now the dominant habitat-forming animals on Caribbean reefs, where the combined effects of climate change, pollution, and disease have decimated reef-building corals. Natural products chemists have been isolating novel secondary metabolites from Caribbean sponges for many decades, but relevant studies of the ecological functions of these compounds have been more recent. Bioassay-guided surveys have revealed sponge chemical defenses against predators, competitors, and pathogens, but many common sponge species lack chemical defenses and appear to have followed a different evolutionary trajectory, investing instead in greater reproduction or growth. Differences in the abundances of fish- and sponge-eating fishes on Caribbean reefs have a cascading impact on the sponge community, with indirect effects on the benthic community of corals and seaweeds. Caribbean sponges provide an important alternative to terrestrial plant and insect communities for testing basic ecological theories about chemical defenses and resource allocation.

Keywords: Chemical ecology; Sponges; Caribbean; Natural Products; Chemical defense; Resource allocation