



ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

*Department of Biological, Geological
and Environmental Sciences*

Director: Davide Pettener

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CoralWarm project coordinators:

Stefano Goffredo and **Giuseppe Falini**, *University of Bologna, Italy*

Zvy Dubinsky, *Bar-Ilan University, Israel*

in collaboration with Master's Degree Course in:

- Biodiversity and Evolution
- Marine Biology
- Analysis and Management of the Environment
- Sciences and Management of Nature
- Geology and Territory
- Bioinformatics

present

CORALS AND CORAL REEFS IN SPACE AND TIME

speakers

Mary Alice Coffroth and Howard Lasker

Department of Geology

Graduate Program in Evolution, Ecology and Behavior

University at Buffalo, USA



University at Buffalo
The State University of New York

Monday, May 5, 2014, 15:00, Department of Biological, Geological and Environmental Sciences,
Via F. Selmi 3, 40126 Bologna. Main hall "Comparata"



Hosted by: Stefano Goffredo, *Marine Science Group, Department of Biological, Geological and Environmental Sciences*; s.goffredo@unibo.it

Mary Alice Coffroth

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Symbiont acquisition in cnidarian-algal symbioses

The symbiosis between algal symbionts within the genus *Symbiodinium* and corals form the basis of one of the most diverse ecosystems on earth – the coral reef. In the face of extensive reef degradation due to global warming and other anthropogenic effects, understanding the dynamics of this mutualism is critical. Although there is variation in the symbiont type(s) initially acquired by these cnidarian hosts, as the symbiosis develops, specific host-symbiont pairings become apparent in most host species. Knowledge of these dynamics in the ontogeny of these symbioses will enable us to predict the effects of increased sea surface temperatures and other perturbations to the reef ecosystem. In this study, we examined the role of various factors (environment, host genotype, etc.) in the establishment of symbioses in three cnidarian species: a common scleractinian coral (*Orbicella faveolata*), a scyphozoan (*Cassiopea xamachama*) and a common octocoral (*Briareum asbestinum*) to contribute to the understanding of the drivers of this selection.

Mary Alice Coffroth – Biographical Sketch

Mary Alice Coffroth obtained her MS and PhD in Biological Oceanography from the Rosenstiel School of Marine and Atmospheric Science University of Miami. She received a National Science Foundation post-doctoral grant to work at Smithsonian Tropical Research Institute, Panama and she is currently a professor in the Graduate Program in Evolution, Ecology and Behavior and the Department of Geology. Her research interests include the population dynamics of the dinoflagellate, *Symbiodinium* spp. and cnidarian hosts, the early ontogeny of coral-algal symbiosis and the response of the symbiosis to environmental perturbations.

Howard Lasker

Department of Geology, Graduate Program in Evolution, Ecology and Behavior, University at Buffalo,
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Connectivity of coral reef populations: you can't always get where you want.

Connectivity among populations is scale dependent. The wide distribution of Caribbean reef species demonstrates connectivity but the magnitude and temporal scale of connectivity is dependent on both the organism's life history and oceanographic conditions. The Caribbean octocoral *Antilloporgia elisabethae* broods negatively buoyant larvae on the surface of the colony. Data on recruitment rates and population structure suggest dispersal of <100m. Genetic analyses based on microsatellites demonstrate similar dispersal distances, a pattern of isolation by distance among contiguous reefs and distinct structure between more isolated reefs. While connectivity reduces genetic isolation among neighboring populations and may be important in metapopulation dynamics, it probably has limited effects on local population dynamics.

Howard Lasker – Biographical Sketch

Howard Lasker is a marine ecologist interested in the population ecology of coral reef species, with most of his work focused on Caribbean octocorals. He has worked extensively on reefs in Panama and The Bahamas, and has also worked at numerous reefs in the Caribbean and Pacific. He is the author of over 80 scientific papers and has received numerous research grants from agencies such as the U.S. National Science Foundation and the National Geographic Society. He is currently a Professor in the Department of Geology and in the Graduate Program in Evolution, Ecology and Behavior at the University at Buffalo, State University of New York. He received his Ph.D. from the Dept. of Geophysical Sciences at the University of Chicago, studying phenotypic variation in a reef coral. His B.S. and M.S. degrees were both from the University of Rochester in respectively, Biology-Geology and Geology. He is also Editor-in-Chief of the journal *Coral Reefs*.