

Scripps Institution of Oceanography
8750 Biological Grade
Hubbs Hall, room 4200
La Jolla, CA, 92037

Melissa S. Garren

Email: melissa.garren@gmail.com Tel: 831-277-3726

Education

Ph.D. Marine Biology, Scripps Institution of Oceanography (expected Spring 2011)

Advisor: Prof. Farooq Azam

Dissertation: *The Effects of Coastal Organic Matter Inputs on the Structure of Marine Microbial Assemblages and Coral Reef Ecosystem Functions.*

M.S. Marine Biology, Scripps Institution of Oceanography, UCSD (2008)

B.S. Molecular Biology, Yale University (2003)

Senior Thesis: *Coral-Algal Symbiont Distributions in the Caribbean Reveal Diversity across Scales from Single Colonies to Ecosystems.*

Research Experience

Graduate Researcher 2006-present. Prof. Farooq Azam, Marine Microbial Ecology, Scripps Institution of Oceanography (San Diego, CA)

Research Associate 2005-2006. Assay Development, Ambit Biosciences Inc. (San Diego, CA)

Marine Scientist 2004-2005. Gandoca-Manzanillo Wildlife Refuge (Manzanillo, Costa Rica)

Lab Manager 2003-2004. Prof. Jeffrey Powell, Conservation Genetics, Yale University (New Haven, CT)

Research Fellow 2002. Prof. Nancy Knowlton, Coral Ecology, Smithsonian Tropical Research Institute (Bocas del Toro, Panama)

Research Assistant 2001. Dr. Allen Nicholas, Genetics, The Curie Institute (Paris, France)

Research Assistant 2000. Dr. James Harvey, Vertebrate Ecology, Moss Landing Marine Lab (Moss Landing, CA)

Research Assistant 1999. Dr. Barbara Dunn, Genetics, Stanford University (Palo Alto, CA)

Teaching Experience

Guest Lecturer (2007-present) Scripps Institution of Oceanography, San Diego, CA

Graduate: Introduction to Marine Biodiversity and Conservation, *Undergraduate:* The Coral Reef Environment

Marine Science Educator (2004-2005) Gandoca-Manzanillo National Wildlife Refuge, Costa Rica

Designed and implemented educational programs for elementary school, high school, and adults

Mentor (2003-2004) Undergraduate Thesis Research, Yale University New Haven, CT

Directed two undergraduate thesis projects in molecular ecology and conservation genetics.

Instructor/Residential Advisor (2003) Exploration Summer Program, Wellesley College

Designed and taught courses in Marine Chemistry, Coral Reef Biology, Bioethics, and Genetics

Undergraduate Science Tutor (2001-2003) Yale University

Introduction to Biology, Genetics, Immunology, and Reaction to Injury

Instructor (2000-2002) Field Hockey Clinics, Yale University, New Haven, CT

Service Activities

Board Member (2008-present) Poseidon Academy, Mar Vista High School, Imperial Beach, CA

Serve as a community member on the board that guides decisions regarding the academic curriculum and skill development activities for this marine centered academy within the public high school. Provide mentoring to students and coordinate internship opportunities.

Program Coordinator (2008-present) Scripps Community Outreach Program for Education

Facilitate and coordinate community outreach events for all ages on behalf of Scripps Institution of Oceanography. We host more than 60 events per year.

Mentor (2007-present) National Ocean Science Bowl, San Diego, CA

Work with high school students twice a week in the classroom and on field trips to prepare them for the competition, develop their interests in science, and help with college applications.

Instructor (2007-present) Expand Your Horizons, San Diego, CA

Developed and taught a hands-on course called "Micro Marine World" to 7th-10th grade female students to encourage young women to consider careers in science.

Student Body Representative (2007-present) Birch Aquarium-Museum Panel

Improved student and staff communication and interactions with Aquarium, contributed ideas and feedback on new exhibits and building expansion plans, advocated informal science education among student body.

Alumni Interviewer (2006-present) Association of Yale Alumni

Interview applicants for the freshman class. Provides an opportunity for students who cannot go to CT for an on-campus interview, and the ability for them to ask questions about the institution to someone who experienced undergraduate life there.

Volunteer (2006-2008) Scripps Community Outreach Program for Education

Led tours of Scripps facilities, communicate current research, develop hands-on learning activities such as plankton tows, invertebrate labs, and microbiology experiments for middle school and high school students.

Naturalist (2007) MARE week, Cardiff, CA

Developed and led tide pool activities for 70 second grade students and their parents.

Coral Scientist (2005) Family Days at Birch Aquarium at Scripps, San Diego, CA

Communicated current coral reefs and climate change research to families using live coral displays.

Organizer (2005) Marine Festival, Manzanillo, Costa Rica

Designed, organized, fund-raised for, and executed a weekend festival raising awareness and celebrating ocean conservation. Included arts and crafts, student poster competition, beach clean up, dance performance, sustainable seafood round-table, and Blue Planet screenings.

Instructor (2002-2004) Dwight Hall Outreach Programs, New Haven, CT

Taught 2nd, 3rd and 4th grade science enrichment after-school program which brought hands-on experiments to underprivileged students.

Grants & Awards

2009 IGERT/NSF Internship (*Effects of Sewage Pollution on Coral Reef Microbial Ecology*)

2008 IGERT/NSF mini-grant (*Interactions between Zooxanthellae and Coral-Associated Bacteria*)

2008 Zobel Fellowship (*Awarded to two students each year for excellence in the field of marine microbiology*)

2006 National Science Foundation Graduate Research Fellowship

2006 Integrative Graduate Education and Research Traineeship (IGERT), Scripps Institution of Oceanography's Center for Marine Biodiversity and Conservation

2004 PADI Aware Foundation mini-grant (*For outreach education activities in Manzanillo, Costa Rica*)

- 2003 Ellsworth Memorial Prize for “**Most Distinguished Thesis of the Graduating Class**”, *Coral-Algal Symbiont Distributions in the Caribbean Reveal Diversity across Scales from Single Colonies to Ecosystems*. Jonathan Edwards College, Yale University
- 2003 Yale University Dean’s Research Fellowship
- 2002 Thoreau Environmental Research Fellowship

Publications

- D.G. Bourne, **M. Garren**, T.M. Work, E. Rosenberg, G.W. Smith, C.D. Harvell (2009) Microbial Disease and the Coral Holobiont. *Trends in Microbiology*. In press.
- M. Garren**, L. Raymundo, J. Guest, C.D. Harvell and F. Azam (2009) Resilience of coral-associated bacterial communities exposed to fish farm effluent. *PLoS One*. doi:10.1371/journal.pone.0007319
- M. Garren**, J. Myers, C. Arney (2009) Rebalancing Human-Influenced Ecosystems. *The Journal of Undergraduate Mathematics and Its Applications* 30: 100-107
- M. Garren** and J. Myers (2009) Authors’ Commentary: The Outstanding Coral Reef Papers for the Interdisciplinary Contest in Modeling. *The Journal of Undergraduate Mathematics and Its Applications* 30: 159-162
- S. Miller, **M. Garren**, R. Sturdivant (2009) Judges’ Commentary: The Outstanding Coral Reef Papers for the Interdisciplinary Contest in Modeling. *The Journal of Undergraduate Mathematics and Its Applications* 30: 163-168
- M. Garren**, S. Smriga and F. Azam (2008) Gradients of coastal fish farm effluents and their effect on coral reef microbes. *Environmental Microbiology* **10**: 2299-2312.
- M. Garren**, S. Walsh, A. Caccone, N. Knowlton (2006) Patterns of association between *Symbiodinium* and members of the *Montastraea annularis* species complex on spatial scales ranging from within colonies to between geographic regions. *Coral Reefs* 25: 503-512

Presentations

- M. Garren** (2009) Marine Microbes and Coral Reef Health. Hawaiian Islands Humpback Whale National Marine Sanctuary, Maui, HI. ***Invited public lecture.***
- M. Garren** (2009) Do coral-associated bacterial communities “fight back” against coastal pollution? Center for Marine Biodiversity and Conservation Research Symposium, San Diego, CA. ***Invited oral presentation.***
- M. Garren** (2009) Mariculture in a Changing Environment. Scripps Environmental Advocates, La Jolla, CA. ***Invited oral presentation.***
- M. Garren** (2008) Microbial Food Webs and Ocean Architecture. University of the Philippines Microbial Ecology Graduate Summer Course. ***Invited guest lecture.***
- M. Garren**, S. Smriga and F. Azam (2008) Gradients of coastal fish farm effluents and their effect on coral reef microbes. 12th International Symposium on Microbial Ecology, Cairns, Australia. ***Poster presentation.***

- M. Garren, S. Smriga, F. Azam (2008)** Potential for transport of bacteria between fish farms and coral reefs. 11th International Coral Reef Symposium, Fort Lauderdale, FL. ***Oral presentation.***
- M. Garren, E. Yozell (2006)** Integrative approach to marine protected area management: Case study of the Gandoca-Manzanillo Wildlife Refuge, Costa Rica. Student Conservation Conference, Duke University, NC. ***Oral presentation.***
- M. Garren (2006)** Una perspectiva sobre el manejo integrado de una area protegida marino-costero. University of Costa Rica, San Jose, Costa Rica. ***Invited departmental seminar speaker.***
- M. Garren, A. Caccone, N. Knowlton (2004)** Patterns of association between *Symbiodinium* and members of the *Montastraea annularis* species complex in the Bocas del Toro Archipelago, Panama. 10th International Coral Reef Symposium, Okinawa, Japan. ***Poster presentation.***

SCUBA Diving

2008 CPR/First aid/Oxygen renewal
2006 Scripps Institution of Oceanography diver
2004 PADI Divemaster
2004 PADI Rescue Diver
2002 Smithsonian Tropical Research Institute diver
1998 Naui Open Water Certification