

SERENA HACKEROTT

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RESEARCH INTEREST Coral Reef Ecology, Environmental Epigenetics, Marine Conservation

EDUCATION

2018-PRESENT PH.D. BIOLOGY, FLORIDA INTERNATIONAL UNIVERSITY

Primary Advisor: Dr. Jose Eirin-Lopez

Research Focus: Epigenetic responses to environmental stressors in corals, and connections between environmental epigenetics and coral reef conservation.

2013-2014 M.S. MARINE SCIENCES, UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

Primary Advisor: Dr. John Bruno

Thesis Title: The effect of invasive lionfish on reef fish community structure along the Mesoamerican Barrier Reef.

2009-2013 B.S. BIOLOGY, UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

Highest Honors and Carolina Research Scholar; GPA: 3.673

Research Advisor: Dr. John Bruno; Minors in Chemistry and Marine Sciences

2005-2009 CLAYTON HIGH SCHOOL, NC

Valedictorian (Rank 1 of 411); GPA: 5.0645

POSITIONS AUG 2018-PRESENT [Graduate Assistant](#), Florida International University (FIU) NSF-CREST Center for Aquatic Chemistry and the Environment (CACHÉ) Fellow

APRIL- AUG 2018 [Data Analysis Consultant](#), Marshall Islands Conservation Society (MICS) and Marshall Islands Marine Resource Authority (MIMRA)

AUG 2017-DEC 2017 [Marine Science Certificate Program Coordinator](#), College of the Marshall Islands (CMI), STEM Dept.

JAN 2016-DEC 2017 [Marine and Environmental Science Instructor](#), CMI STEM Dept.

JUNE-JULY 2015 [Instructor](#), Council on International Educational Exchange (CIEE) Research Station Bonaire

JAN-JUNE 2015 [Teaching and Research Assistant](#), CIEE Research Station Bonaire

AUG 2013-DEC 2014 [Teaching Assistant](#), University of North Carolina at Chapel Hill (UNC-CH), Biology Dept.

PUBLICATIONS

Hackerott, S., A. Valdivia, C. E. Cox, N. J. Silbiger, J. F. Bruno. (2017) Invasive lionfish had no measurable effect on prey fish community structure on the Belizean Barrier Reef. PeerJ 5:e3270

Valdivia A., J. F. Bruno, C. E. Cox, **S. Hackerott**, S. J. Green. (2014) Re-examining the relationship between invasive lionfish and native grouper in the Caribbean. PeerJ 2:e348

Hackerott, S., A. Valdivia, S. Green, I. Côté, C. E. Cox, L. Adkins, C. A. Layman, W. F. Precht, J. F. Bruno. (2013) Native predators do not influence invasion success of Pacific lionfish on Caribbean reefs. PLoS ONE 8(7): e68259.

PRESENTATIONS

2019 BIOSYMPIOSIUM, FIU BISCAYNE BAY CAMPUS (BBC), NORTH MIAMI, FL

Poster: *Epigenetic responses to environmental stressors in Acropora corals, and connections to coral reef conservation.*

2017 ASLO AQUATIC SCIENCES MEETING, HONOLULU, HI

Low lionfish, no problem? The effect of lionfish on reef fish communities in Belize.

2015 GCFI SCIENTIFIC MEETING, PANAMA CITY, PANAMA

Low lionfish, no problem? The effect of lionfish on reef fish communities in Belize.

2015 AMLC SCIENTIFIC MEETING, WILLEMSTAD, CURACAO

Low lionfish, no problem? The effect of lionfish on reef fish communities in Belize.

2014 INTERNATIONAL MARINE CONSERVATION CONGRESS, GLASGOW, SCOTLAND

Poster: *The impacts of the lionfish invasion on reef fish communities in Belize*

2014 ASLO OCEAN SCIENCES MEETING, HONOLULU, HI

Native vs invasive predators: Can anything stop lionfish?

2013 GRADUATE STUDENT SYMPOSIUM, UNC-CH IMS, MOREHEAD CITY, NC

Native predators do not influence invasion success of lionfish on Caribbean reefs.

2013 ANNUAL CELEBRATION OF UNDERGRADUATE RESEARCH, UNC-CH, CHAPEL HILL, NC

Native predators do not influence invasion success of lionfish on Caribbean reefs.

2013 BENTHIC ECOLOGY MEETING, SAVANNAH, GA

Native predators do not influence invasion success of lionfish on Caribbean reefs.

2013 HONORS BIOLOGY RESEARCH SYMPOSIUM, UNC-CH, CHAPEL HILL, NC

Native predators do not influence invasion success of lionfish on Caribbean reefs.

RESEARCH EXPERIENCE

DEC 2018 GRADUATE RESEARCHER, EIRIN-LOPEZ ENVIRONMENTAL EPIGENETICS LAB

Bonaire: Collaborated with Reef Renewal Bonaire to prepare 144 coral fragments of *Acropora cervicornis* and *A. palmata* at four coral nursery sites for an upcoming study to explore connections between environmental epigenetics and coral health.

AUG 2018 FIELD VOLUNTEER, EIRIN-LOPEZ ENVIRONMENTAL EPIGENETICS LAB

Curacao: Joined the Eirin-Lopez lab on coral spawning dives in collaboration with CARMABI and SCORE. Helped mark genotyped *Acropora* colonies and monitor for signs of spawning.

APRIL-AUG 2018 DATA ANALYSIS CONSULTANT, MICS AND MIMRA

Marshall Islands: Created a Microsoft Access Database and a Data Analysis Guide for the Marshall Islands Marine Resource Authority (MIMRA) to store and analyze coral reef survey data collected under the RMI REIMAANLOK Strategic Management Plan, with support from the Marshall Islands Conservation Society (MICS).

APRIL 2018 **FIELD VOLUNTEER, EIRIN-LOPEZ ENVIRONMENTAL EPIGENETICS LAB**
Puerto Rico: Joined the Eirin-Lopez lab to collect *Acropora cervicornis* fragments from reefs impacted by Hurricane Irma, replanted fragments at experimental sites to monitor recovery.

JUNE 2016 **CORAL REEF SURVEYOR, COASTAL MANAGEMENT ADVISORY COUNCIL**
Marshall Islands: Identified and counted marine invertebrates as a member of the Marshall Islands Coastal Management Advisory Council (CMAC) REIMAANLOK Strategic Management Plan.

FEB-JUNE 2015 **RESEARCH ASSISTANT, CIEE BONAIRE**
Bonaire and Curacao: Helped develop and co-lead a CIEE student-staff project comparing reef assessment methods. *Bonaire:* Co-led CIEE's long-term monitoring dives for the summer.

JULY 2014 **GRADUATE RESEARCHER, BRUNO LAB ANNUAL REEF SURVEY**
Akumal, Mexico: Responsible for herbivore grazing videos using SCUBA. Assisted in the collection of parrotfish tissue samples during night dives.

MAY-JUNE 2013 **GRADUATE RESEARCHER, BRUNO LAB ANNUAL REEF SURVEY**
Belize: Completed large predator and lionfish transect surveys, identifying species and estimating sizes using SCUBA. Met with managers regarding lionfish removal efforts.

MAY-JULY 2012 **UNDERGRADUATE RESEARCHER, BRUNO LAB ANNUAL REEF SURVEY**
Belize and Abaco, Bahamas: Completed large predator and lionfish transect surveys, identifying species and estimating sizes using SCUBA.

MAY-AUG 2012 **UNDERGRADUATE RESEARCHER, SURF INDEPENDENT RESEARCH**
Belize and Abaco, Bahamas: Captured, recorded weight, length, and stomach weight, and collected otoliths from 103 lionfish. *UNC IMS:* Processed and imaged 186 otoliths.

MAY-JUNE 2011 **UNDERGRADUATE RESEARCHER, DOLPHIN BEHAVIOR FIELD COURSE**
Bimini, Bahamas: Recorded dolphin species, sex, age class, characteristics, and behavior. Assisted PhD candidate Daisy Kaplan (Dr. Diana Reiss Hunter College, NY).

TEACHING EXPERIENCE

AUG-DEC 2017 **MARINE SCIENCE CERTIFICATE PROGRAM COORDINATOR, CMI STEM DEPT.**
 Coordinated with Marine Science Certificate (MSC) instructors on courses and curriculum, advised MSC students, organized the CMI Marine Science Symposium to highlight student work.

AUG 2016-MAY 2017 **MARINE SCIENCE CERTIFICATE PROGRAM, CMI STEM DEPT.**
 Created a 30-credit certificate program in marine science. Updated 6 existing courses and created 5 new courses for the program. Achieved both CMI and ACCJC program approval.

JAN 2016-DEC 2017 **SCIENCE INSTRUCTOR, CMI, STEM DEPT.**
 Developed and taught the curriculum for Marine Biology, Environmental Science, and Tropical Marine Ecosystems, each worth 4 credits with two lectures and one lab per week.

JUNE-JULY 2015 **INSTRUCTOR, CIEE BONAIRE**
 Led lectures, discussions, and dives for Marine Biology and Ecology of the Southern Caribbean. Topics: diversity, invasive species, habitat loss, MPA's, and effects of climate change.

JAN-MAY 2015 **RESEARCH ADVISOR, CIEE BONAIRE**
 Co-advised, with Dr. Enrique Arboleda, three undergraduate students on 13-week independent research projects offering guidance on planning, data collection, and writing.

JAN-MAY 2015 **TEACHING ASSISTANT, CIEE BONAIRE**
 Attended lectures, led students on dives to learn fish and coral identification, AGGRA and REEF surveys, video transects, and fish behavior analysis for Marine Ecology Field Research Methods.

SEPT-NOV 2014 **GUEST LECTURER, UNC MARINE SCIENCES DEPARTMENT**
 Guest lecture series on coral reef ecology, coral reef conservation, and invasive species in marine ecosystems for both Introduction to Marine Sciences and Ocean Exploration courses.

AUG-DEC 2014 **TEACHING ASSISTANT, UNC BIOLOGY DEPARTMENT**
 Attended lectures, assisted in lectures and discussions, lead review discussions, and gave a lecture on the effects of invasive lionfish on reef fish communities for Marine Ecology.

FEB 2014 **GUEST LECTURE, UNC ENVIRONMENTAL SCIENCE DEPARTMENT**
 Guest lecture on science communication via blogging and other social media outlets for Science Communication to Diverse Audiences.

JAN-MAY 2014 **TEACHING ASSISTANT, UNC ENVIRONMENTAL SCIENCES DEPARTMENT**
 Attended lectures, facilitated weekly discussions, held weekly office hours, and graded weekly assignments for Water in Our World.

AUG-DEC 2013 **TEACHING ASSISTANT, UNC BIOLOGY DEPARTMENT**
 Attended lectures, led review discussions, developed assignments for students to engage scientific literature, and gave a lecture on marine invasions for Marine Ecology.

AUG 2012-MARCH 13 **SURF PEER ADVISOR, UNC OFFICE OF UNDERGRADUATE RESEARCH**
 Attended SURF interest meetings to describe my experience. Attended proposal writing seminar. Advised four undergraduates preparing a proposal for the UNC SURF.

MAY-JUNE 2010 **EDUCATION VOLUNTEER, NORTH CAROLINA AQUARIUM AT FORT FISHER**
 Worked at the touch-tank, sea turtle, and alligator exhibits teaching visitors about the animals and answering questions. Ran hands-on exhibit on marine mammals.

OUTREACH **FEB 2019** **FIU BIOSYMPOSIUM, FLORIDA INTERNATIONAL UNIVERSITY, BBC**
 Led a second workshop to continue training employees of the Marshall Islands Marine Resource Authority (MIMRA) in the analysis of coral reef survey data (both fish and benthic data) using R.

MAY 2018 **DATA ANALYSIS AND R WORKSHOP LEVEL 2, MIMRA, MARSHALL ISLANDS**
 Led a second workshop to continue training employees of the Marshall Islands Marine Resource Authority (MIMRA) in the analysis of coral reef survey data (both fish and benthic data) using R.

SEPT 2017 **DATA ANALYSIS AND R WORKSHOP LEVEL 1, MIMRA, MARSHALL ISLANDS**
 Led a workshop to train employees of the Marshall Islands Marine Resource Authority (MIMRA) in the analysis of coral reef survey data (both fish and benthic data) using R.

APRIL 2017 **COMMUNITY PRESENTATION AT RMI NATIONAL OCEANS SYMPOSIUM**
Presented an introduction to coral biology and ecology, as well as the importance of coral reefs, to RMI community members the National Oceans Symposium Community Events

FEB-MARCH 2017 **SCIENCE COMMUNICATION WORKSHOPS, ASLO ASM, HONOLULU, HI**
Attended workshops at ASLO ASM 2017 by Bob Chen and Brian Palermo to further develop science communication skills especially in teaching introductory science courses.

JAN-APRIL 2017 **RMI NATIONAL OCEANS SYMPOSIUM, CMAC, MARSHALL ISLANDS**
Collaborated with local agencies, especially Marshall Islands Marine Resource Authority, to organize and execute the first National Oceans Symposium on Majuro, Marshall Islands.

JAN-MAY 2017 **STUDENT INTERNSHIPS IN MARINE SCIENCE, MARSHALL ISLANDS**
Collaborated with local marine agencies to organize internships for CMI students to gain field experience in marine science or marine conservation on Majuro, Marshall Islands.

JUNE 2016 **REMAANLOK COMMUNITY PRESENTATION, CMAC, MARSHALL ISLANDS**
Helped develop a presentation describing the importance of coral reefs and explaining the REMAANLOK plan for local communities on three remote atolls in the Marshall Islands.

JUNE 2015 **STINAPA JUNIOR RANGERS SHARK MONTH AND DEBATE, CIEE BONAIRE**
Helped develop workshops on shark biology, ecology, and conservation. Assisted in judging and moderating debate on shark conservation along with Angelo Villagomez (The Pew Foundation).

JAN-MAY 2015 **STINAPA JUNIOR RANGERS, CIEE BONAIRE**
Assisted in developing curricula and leading weekly lectures and hands-on activities for the Junior Rangers, the local youth conservation organization on Bonaire.

MARCH-APRIL 2015 **PUBLIC PRESENTATIONS, CIEE BONAIRE**
Gave presentations on my undergraduate and graduate research to local community members.

MARCH 2015 **ECO-COMEDY: CLEAN AIR CLEAN WATER FILM, CIEE BONAIRE**
Co-produced [SEASPN: Clean Water Healthy Reefs](#) for the [Eco-Comedy Film Competition](#).

JAN 2015 **PRESENTATION TO SCIENCE EXPLORERS CLUB, RALEIGH, NC**
Gave a presentation to the 6-8th grade Science Explorers of Dillard Drive Middle School about marine ecology and careers in marine sciences.

NOV 2014 **LED UNC IDEA SCIENCE COMMUNICATION WORKSHOP, UNC**
Led a workshops for UNC IDEA (Increasing Diversity and Enhancing Academia) undergraduate students on ways to communicate their science to various audiences.

OCT 2014 **CAREER FAIR AT MILLS PARK MIDDLE SCHOOL, CARY, NC**
Gave presentations to five eighth grade classes about how to pursue marine science careers and how students can start getting involved in science in North Carolina.

AUG 2014 **WROTE ARTICLE FOR DAN'S ALERT DIVER MAGAZINE**
Wrote an "Expert Comment" article for Alert Diver titled [Hazardous Conditioning](#) to explain the danger of the misguided practice of feeding speared lionfish to predators.

- FEB 2014** **SCIENCE COMMUNICATION WORKSHOPS, ASLO OSM, HONOLULU, HI**
 Attended workshops at ALSO OSM 2014 by Randy Olsen, Ari Daniel, and Christie Wilcox to further develop scientific outreach, education, storytelling, and presentation skills.
- JAN-MAY 2013** **SCIENCE COMMUNICATION AND OUTREACH COURSE, UNC**
 Developed outreach skills through scientific storytelling, social media, magazines or newspapers, speaking to policy makers, and in elementary to high school level classes.
- NOV 2013** **CREATED THE MARINE ECOLOGY STUDENT BLOG, UNC**
 Created the [Marine Ecology Student Blog](#) where undergraduate students in Dr. John Bruno's Marine Ecology class learned to convey marine science to a general audience.
- OCT 2013** **CO-FOUNDED UNDERTHEC BLOG, UNC**
 Co-founded [UndertheC Blog](#), a blog by Marine Sciences graduate students at UNC with the goal of making marine science accessible and interesting to the general public.
- OCT 2013** **SCIENCE ONLINE OCEANS CONFERENCE, MIAMI, FL**
 Attended the Science Online Oceans Conference to further my outreach skills and learn new techniques to communicate science and conservation to the public.
- SEPT 2013** **REEF LIONFISH WORKSHOP, MOREHEAD CITY, NC**
 Attended the REEF Lionfish Workshop in Morehead City and assisted in greeting guests, distributing educational packets, and demonstrating safe lionfish handling practices.
- SEPT 2013** **SCIENTIFIC WRITING COURSE FOR UNDERGRADUATES, UNC**
 Gave a presentation on how to get involved in undergraduate research, applying for a SURF grant, and my experience as an undergraduate researcher and SURF recipient.
- MAY 2013** **SAN PEDRO LIONFISH DERBY, SAN PEDRO, BELIZE**
 Gave a presentation at a lionfish derby about the lionfish invasion, expected impacts, and how to help control lionfish to derby participants. See news article [here](#).
- AUG-DEC 2012** **UNDERGRADUATE RESEARCH BLOG, UNC**
 Blogged about my experiences in the field as an undergraduate researcher and SURF recipient during the summer of 2012. Available [here](#) and [here](#).

RELEVANT SKILLS

FIELD METHODS

- Belt transect survey experience using SCUBA
- AGRRA protocol experience
- Identification and size estimation of Caribbean fish and coral species
- Identification of Pacific marine invertebrates
- Otolith removal, processing, and basic reading experience

DATA ANALYSIS

- R experience: data analysis and statistics
- Microsoft Access database experience

DIVING EXPERIENCE

- PADI Dive Master; 300+ logged dives
- AAUS Scientific Diver (60ft); 120+ logged AAUS dives
- Underwater photography and video experience

ADDITIONAL CERTIFICATIONS

- American Red Cross Adult CPR and First Aid
- DAN Oxygen First Aid for Scuba Diving Injuries
- IYT Crew Member and Navigation Master; 40 days sailing experience

ACHIEVEMENTS

HONORS

2018-Present NSF-CREST Center For Aquatic Chemistry and the Environment (CACHE) FELLOW
2018 GRE Verbal: 163; GRE Quantitative 158
2015 Eco-Comedy: Clean Air Clean Water Film Competition Finalist
2013 Highest Honors Biology and Carolina Research Scholar Program
2009-2013 UNC Dean's List
2012 GRE Quantitative: 165; GRE Verbal:163

GRANTS

2019 FIU Center for Coastal Ocean Research (CCOR) Travel Award \$500
2018 FIU Tropics Graduate Student Travel Grant \$1,500
2012 UNC Summer Undergraduate Research Fellowship (SURF) \$3,000

SERVICE

2018-2019	Florida International University Biosymposium Planning Committee
2016-2017	College of the Marshall Islands Curriculum Committee
2016-2017	Marshall Islands Coastal Management Advisory Council (CMAC)
2015-2017	AMLC Communications Committee
2015	Reviewer for Aquatic Biology
2015	Student Poster Judge at AMLC Scientific Meeting
2014	Reviewer for Coral Reefs
2013	Reviewer for the NOAA/NMFS Saltonstall Kennedy Grant

REFERENCES

Dr. Jose Eirin-Lopez [PhD Advisor] jeirinlo@fiu.edu
Dr. John Bruno [B.S. and M.S. Advisor] jbruno@unc.edu
Ernest Canonigo [CMI Supervisor, Previous STEM Chair] ecanonigo@cmi.edu
Dr. Patrick Lyons [CIEE Supervisor] lyonspj@lavc.edu