

CATHERINE LAWRENCE ALVES

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EDUCATION

- 2015 – present** **University of North Carolina at Chapel Hill, Chapel Hill, NC**
PhD Student in the Environment, Ecology, and Energy Program
Dissertation Advisor: Dr. John F. Bruno
- 2012** **CIEE Research Station Bonaire, Dutch Caribbean**
Study Abroad Program in Tropical Marine Ecology and Conservation
Research Advisor: Dr. Rita Peachey
- 2009 – 2013** **Connecticut College, New London, CT**
Bachelor of Arts in Biological Sciences
Academic Advisor: Dr. Stephen H. Loomis

RESEARCH AND WORK EXPERIENCE

- 2015 – present** **University of North Carolina at Chapel Hill, Chapel Hill, NC**
Dissertation research in coral reef ecology and fisheries governance
- 2014 - 2015** **Williams-Mystic Maritime Studies Program, Mystic, CT**
Marine Science Teaching Assistant and Laboratory Manager
- 2013** **Reef Environmental Education Foundation (REEF), Key Largo, FL**
Intern Project Coordinator and Marine Conservation Intern
- 2012 – 2013** **Department of Chemistry, Connecticut College, New London, CT**
Laboratory Technician
- 2012** **Romberg Tiburon Center, San Francisco State University, Tiburon, CA**
NSF-Funded Research Experience for Undergraduates (REU)
- 2012** **CIEE Research Station Bonaire, Dutch Caribbean**
Independent research: Examining the effect of different grazers on algal biomass

TEACHING AND MENTORING

- 2016 – 2017** **University of North Carolina at Chapel Hill, Chapel Hill, NC**
Mentored senior Biology honors thesis student, Zachary Locklear on research titled:
Belizean coral functional group shifts from 1997 to 2016
- 2016 – 2017** **Academic Support Program for Student Athletes, UNC-CH, Chapel Hill, NC**
Tutor for student athletes in Biology, Mathematics, Marine Science
- 2016 - 2017** **University of North Carolina at Chapel Hill, Chapel Hill, NC**
Teaching Assistant for BIOL 201: Ecology and Evolution
Teaching Assistant for BIOL 252 Lab: Human Anatomy and Physiology
- 2015** Teaching Assistant for ENEC 201: Environment and Society
- 2015 – 2017** **Wyzant Tutoring, Chapel Hill, NC**
Private freelance tutor in High School Biology, Chemistry, ACT preparation
- 2014 – 2015** **Williams-Mystic Maritime Studies Program, Mystic, CT**
Mentored 2-3 undergraduate lab assistants and 8-10 independent undergraduate
research projects in marine ecology and oceanography per semester

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GRANTS AND FELLOWSHIPS

- 2018 **Early Career Grant**, National Geographic Society (\$5,000)
- 2018 **Mingma Norbu Sherpa Memorial Fellowship**, Carolina Center for Public Service, UNC-Chapel Hill (\$1,250)
- 2018 **Marine Conservation Research Grant**, Women Diver's Hall of Fame (\$2,000)
- 2017 **Graduate Research Fellow**, National Science Foundation (\$138,000 for three years)
- 2017 **Pre-Dissertation Field Research Grant**, Institute for the Study of the Americas, UNC-Chapel Hill (\$2,000)
- 2013 **President's Sustainability Grant**, Connecticut College (\$4,000)
- 2012 **Travel Grant for Student Researchers**, Connecticut College (\$500)

HONORS AND AWARDS

- 2016 **Biology Teaching Assistant of the Year**, Beta-Beta-Beta Biology Honor Society, University of North Carolina at Chapel Hill
- 2016 **Honorable Mention**, National Science Foundation Graduate Research Fellowship
- 2013 **Collaboration Award**, Connecticut College Office of Student Engagement and Leadership Education
- 2013 **E. Frances Botsford Prize for excellence in biology and service to department**, Connecticut College Department of Biology
- 2009 **Lieutenant Governor's Leadership Award**, Rhode Island Lieutenant Governor Elizabeth Roberts
- 2007 **Environmental Awareness Award**, Narrow River Preservation Association

PUBLICATIONS

PEER-REVIEWED

- In Prep** Mudge, L., **C. Alves**, B. Figueroa-Zavala, and J. Bruno. *Diadema antillarum* correlated to more elkhorn coral (*Acropora palmata*) and less macroalgae in Akumal, Mexico. *In prep.*
- In Prep** **C. Alves**, C. Cox, A. Valdivia, M. McField, N. Bood, K. Castillo, J. Umbanhowar, L. Mudge, Z. Locklear, C. Fieseler, and J. Bruno. Twenty years of benthic community changes across the Belize Barrier Reef. *In prep.*
- In Prep** Donovan, M., **C. Alves**, R. Ritson-Williams, C. Logan, C. Sullivan, C. Drury, D. Knapp, E. Lingerfelt, G. Goodbody-Gringley, I. Knapp, J. Clark, J. Burns, J. Levy, J. Lowndes, J. Brun, K. Johnson, L. Mudge, L. Henderson, O. Meier, R. Dunn, R. McGuinn, R. Martin, R. Cuning, R. Gates, and G. Asner. From polyps to pixels: Understanding coral reef resilience to local and global change across scales. *In prep.*

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PUBLIC OUTREACH AND EDUCATION

- 2018** Baumann, J., L. Mudge, and **C. Alves**. North Carolina can lead the fight against climate change if we make it our priority. Op-Ed. Published December 11, 2018 in the [Herald Sun](#) and [News and Observer](#).
- 2018** **Alves, C.** Belize's coral reefs: Fostering sustainable practices through co-management. [National Geographic Open Explorer Expedition Posts](#). Supported by the Science Exploration Education (SEE) Initiative.
- 2015** **Alves, C.** The Offshore Adventures Continue. Blog post. [Williams-Mystic Maritime Studies Program Blog. Published February 11, 2015](#).
- 2012** **Alves, C.** Examining the effect of different grazers on algal biomass. *Physis Journal of Marine Science*, CIEE Research Station Bonaire. [Vol. XI pg. 1-8](#).

PRESENTATIONS

ACADEMIC CONFERENCES

- 2017** **Alves, C.**, Z. Locklear, M. McField, J. Bruno. *MPAs did not mitigate coral reef phase shifts in Belize caused by disease and warming*. Oral Presentation. Benthic Ecology Meeting (BEM). April 2017. Myrtle Beach, SC.
- 2014** Weiner, M., L. Gilbert, **C. Alves**, P. Poole, S. Schleicher. *A salt marsh erosion model: Interplay between biotic and physical factors at the seaward edge*. Poster Presentation. American Geophysical Union (AGU) Conference. December 2014. San Francisco, CA.
- 2013** Perry, E., **C. Alves**, C. Craig, V. Miller-Sims, W. Kimmerer, and C.S. Cohen. *Genetic variability of mitochondrial COI ranges from low to dramatically high in invasive species of copepods in San Francisco Estuary*. Poster Presentation. Society for Integrative and Comparative Biology (SICB) Conference. January 2013. San Francisco, CA.
- 2012** **C. Alves**, and E. Perry. *Determining genetic diversity at cytochrome c oxidase (COI) of copepod species in the San Francisco Estuary*. Oral Presentation. San Francisco State University (SFSU)'s Summer Undergraduate Research Symposium. August 2012. San Francisco, CA.

PUBLIC OUTREACH AND EDUCATION

- 2018** *A day in the life of a marine biologist*. Invited Speaker. Temple Beth Or Synagogue Senior Luncheon. March 2018. Raleigh, NC.
- 2017** *Life as a marine biologist: Using SCUBA to study coral reef communities*. Invited Speaker. Culbreth Science Day. April 2017. Culbreth Middle School, Chapel Hill, NC.
- 2014** *Coral Reef Ecology*. Invited Guest Lecture. Williams-Mystic Maritime Studies Program Marine Ecology Class. December 2014. Mystic, CT.
- 2014** *Citizen Science and the Reef Environmental Education Foundation (REEF)*. Invited Speaker. Connecticut College's Spring Log Jam Fundraiser. June 2014. New London, CT.
- 2013** *Invasive Lionfish Ecology*. Oral Presentation. Diving Equipment and Marketing Association (DEMA) Conference. November 2013. Orlando, FL.
- 2012** *Examining the effect of different grazers on algal biomass*. Oral Presentation. CIEE Research Station Bonaire's Public Lecture Series. May 2012. Kralendijk, Bonaire.

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PROFESSIONAL SERVICE

2017 – 2018	The Scientific Research and Education Network (SciREN), Chapel Hill, NC Co-Organizer
2016 – 2018	Graduate and Professional Student Federation (GPSF), UNC-CH, Chapel Hill, NC Senator; Representing Ecology graduate students; Serving on Joint Code Working Group, to re-write code between undergraduate and graduate students at UNC-CH
2016 – 2018	Graduate Environment and Ecology Association (GEEA), UNC-CH, Chapel Hill, NC GPSF Senator, co-organize annual Ecology research symposium
2016 – 2018	Biology Graduate Student Association (BGSA), UNC-CH, Chapel Hill, NC Liaison, Curriculum for the Environment and Ecology
2016 – 2017	Curriculum for the Environment and Ecology (CEE), UNC-CH, Chapel Hill, NC Seminar Committee Member, coordinating weekly guest seminar series
2012 - 2013	Forest Justice Student Organization, Connecticut College, New London, CT Co-President
2011 - 2013	Biology Student Advisory Board, Connecticut College, New London, CT Co-Chair

COMMUNITY ENGAGEMENT AND OUTREACH

2018 – present	National Geographic Society Open Explorer Expedition, Science Exploration Education (SEE) Initiative <i>Belize's coral reefs: Fostering sustainable practices through co-management</i> Recipient of OpenROV Trident underwater drone, write posts about expedition
2018 – present	Skype a Scientist Scientist, sharing research with students in classrooms around world via video calls
2018 – present	Narrow River Preservation Association, Narragansett, RI Volunteer Guide, teaching children and families about ecology of Narrow River
2017 – 2018	Inspiring Meaningful Programs and Communication through Science (IMPACTS), NC Science Communication Ambassador
2017 – 2018	Letters to a Pre-Scientist Pen pal to middle school student pre-scientist
2016 – 2017	The Scientific Research and Education Network (SciREN), Chapel Hill, NC Researcher, developed lesson plan in marine food webs for grades 8-12
2013	Biscayne National Park, Homestead, FL National Parks Service Blue-Card Diver, contributing to management projects
2013	John Pennekamp Coral Reef State Park, Key Largo, FL Volunteer Diver, assisted with lionfish research and seagrass restoration
2013	Coral Restoration Foundation, Key Largo, FL Volunteer, developed off-shore coral nurseries and reef restoration programs

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PROFESSIONAL DEVELOPMENT

- 2018** **National Geographic Science Telling Boot Camp**, Video Production Course designed to teach participants how to use video to communicate science, Online
- 2018** **Nor'eastR Conference**, participant at one-day R Studio statistics conference, sponsored by the Coastal Institute at the University of Rhode Island, Providence, RI
- 2018** **Policy Engagement Workshop Training**, led by Scholars Strategy Network, UNC-Chapel Hill
- 2018** **Data Science for Coral Reefs: Data Integration and Team Science**, Coral Reef Science and Cyberinfrastructure Network (CRESCYNT) and National Center for Ecological Analysis and Synthesis (NCEAS), weeklong-training in open data science. Santa Barbara, CA
- 2017** **Inspiring Meaningful Programs and Communication through Science (IMPACTS)**, Science Communication Ambassador training, Morehead Planetarium and Science Center, UNC-CH
- 2016** **Teaching in Challenging Times Workshop**, designed to prepare faculty and teaching assistants to discuss gender, race, sexuality and politics in the classroom, led by The Center for Faculty Excellence, UNC-Chapel Hill
- 2016** **Software Carpentry Workshop**, participant in two-day training in R Studio, GitHub, and Unix Shell, UNC-Chapel Hill
- 2015** **Graduate Funding Workshop**, Graduate Funding Information Center, UNC-Chapel Hill

PROFESSIONAL AFFILIATIONS

- 2018** Ecological Society of America (ESA), Student Member
- 2018** National Science Policy Network, Student Member
- 2017** Sigma Xi, The Scientific Honor Society, Associate Member
- 2017** Society for Conservation Biology (SCB), Student Member
- 2017** Association for the Sciences of Limnology and Oceanography (ASLO), Student Member
- 2016** American Association for the Advancement of Science (AAAS)
- 2013** Reef Environmental Education Foundation (REEF)
- 2011** Diver's Alert Network (DAN)

CERTIFICATIONS

- 2017** Divemaster (# 406704), Professional Association of Diving Instructors (PADI)
- 2016** Scientific Diver, American Academy of Underwater Sciences (AAUS)
- 2013** Emergency First Responder, Emergency First Response (EFR)
- 2013** Enriched Air Nitrox Diver & Equipment Specialty (PADI)
- 2012** Rescue and Advanced Open Water Diver (PADI)
- 2011** Open Water Diver, SCUBA Diving International (SDI)

LANGUAGES

- French** Intermediate written and oral proficiency
- Spanish** Intermediate conversational oral proficiency
- Italian** Beginner conversational written and oral proficiency