Steven M. Lombardo, Ph.D.

Fort Pierce, FL • 330-242-3014 • lombardo.steven.m@gmail.com
GitHub Research Page • LinkedIn

Education

2022 **Ph.D. Florida Atlantic University** (GPA: 3.6/4.0)
Integrative Biology—Marine Science and Oceanography (IBMO) Graduate Program
Dissertation: Resolving knowledge gaps in bonefish habitat conservation across Florida and The Bahamas
Committee: Drs. Matthew Ajemian (advisor), Aaron Adams, Paul Wills, Jonathan Shenker

2018 **M.S. North Carolina State University** (GPA: 3.7/4.0)
Fisheries, Wildlife, and Conservation Biology; Geospatial Information Sciences (minor)
Thesis: Phenological characterization & effects of environmental attributes on river herring spawning migrations within the Albemarle Sound watershed
Committee: Drs. Jeffrey Buckel (advisor), Ernest Hain, Emily Griffith

2012 **B.S. The University of Akron** (GPA: 3.7/4.0)
Biology

Research Interests

My research has focused on behavior and habitat use of coastal fishes with recreational and commercial importance. I leverage quantitative and computer programing skills to complement field studies in addressing dilemmas faced by fisheries managers and stakeholders, most often pertaining to habitat conservation. While my background is in fisheries and oceanography, I enjoy applying my skills to a wide variety of computational challenges and productions.

Skills

Data Science	Statistical inference, machine learning, linear and non-linear regression, hypothesis testing, spatial/time-series models, data aggregation, GIS
Programming and Software:	R, Matlab, Python, Command Line (Ubuntu), SQL, HTML, ArcPro/GIS/Online, VS Code, Ichthyop, IDV, ImageJ, Audacity, Raven Lite, Microsoft Office, Photoshop, Lightroom
Statistics:	GAM, Gradient Boosted Regression, PCA, NMDS, GLMM, GLM, LM, ANOVA, ANCOVA, Effect Size Measurement, ARIMA, Breakpoint Analysis, Granger Causality
GIS:	Python automation of analyses and data management, deep learning classification, ocean particle transport models, riparian zone assessment, cost surface/path, spatial interpolation, digitizing
Habitat:	Riparian zone assessment, sediment core/grain size, aquatic vegetation surveys, prey availability, field and benchtop water quality assessment, water column and current profiling and modeling, mesocosms, permitting
Fisheries:	Recreational and commercial stakeholder co-production, local ecological knowledge, active/passive acoustic telemetry, gillnet, seine, fish traps, long line, hook-and-line, electro-fishing, light trap, larval push net, biological sampling, permitting
Certifications:	DOI Motorboat Operator, NSABLA Motorboat Operator, DAN Diving Emergency Management Provider, OSHA 10-Hour Hazard Recognition

Professional Experience

Post-doctoral Researcher **• May 2022–Present**

Bonefish & Tarpon Trust • Miami, FL

Objective: Spatiotemporally quantify the decline of the Lower Keys Tarpon fishery, identify environmental and anthropogenic drivers of decline, provide technical advice and spatial management action suggestions to both stakeholders and NOAA sanctuary managers based upon modeling results.

Duties/Work Performed:

- Develop and conduct semi-structured interviews with fishing guide partners to co-produce a spatially explicit timeseries of maps (200+)
- Create Python script tools in ArcPro/Jupyter Notebooks to automate the georeferencing of guide drawn maps, convert to classified rasters, and quantify spatial change over time within geostatistical grids
- Review, gather, analyze, interpret, synthesize, and QA/QC over 100 environmental data sources (e.g., human impacts, climatological, habitat) from academic, state, federal, and non-profit research programs
- Prioritize and provide suggestions for management actions informed by timeseries analysis gradient boosted regression models (R Studio) that identify drivers of decline in the Tarpon fishery
- Develop GIS layers for habitat risk assessment
- Serve as Esri GIS Administrator for organization: licensing, ArcGIS Online, database management, data standardization
- Evaluate data collection, storage, and dissemination methods for programs operating within Florida for efficacy and utility in structured decision-making for habitat management
- Publish and present findings to stakeholders (Guide's Associations), the Bonefish & Tarpon Trust Board of Directors, and at scientific conferences.
- Programs and Software: R Studio, VS Code, Jupyter Notebooks, MATLAB, SQL, Planet Labs, ArcPro

Doctoral Research Assistant **• June 2018–2022**

Florida Atlantic University • Fort Pierce, FL

Objective: Discover and describe Bonefish spawning movements using acoustic telemetry, develop Bonefish larval dispersal models and evaluate the protective capacity of the Bahama's Marine Protected Area Network for Bonefish nurseries, describe Bonefish nursery habitat requirements in Florida Estuaries using field studies and 30-years of fisheries independent monitoring data.

Duties/Work Performed:

- Used R Studio, ArcGIS, and Python to perform parametric and non-parametric statistical analyses on fisheries catch and environmental data
- Used MS SQL SMS to create custom queries of the Florida Fish and Wildlife Conservation Commission (FWC) fisheries database (network drive)
- Used MATLAB and Ichthyop to develop ocean circulation and particle transport models
- Lead field team of 3 members in sampling of remote locations
- Executed passive/active acoustic telemetry studies nearshore/offshore using Vemco equipment
- Performed technical field sampling duties implementing seine, gillnet, tangle net, drumline, and longline gears to survey teleost and elasmobranch biodiversity and species abundance inshore and offshore
- Collected and analyzed oceanographic data using CTD and ADCP equipment, and satellite data
- Collected environmental and biological information from fisheries independent surveys for use in coastal habitat health assessments (i.e., fin clips, blood, gut contents, liver, biopsy, eye lens, eggs, otoliths)
- Wrote and submitted sampling permit applications to work with protected species (IUCN Red List) in national and state parks
- Organized, QA/QC, and wrrote SOPs for data collection and entry to ensure accuracy of deliverables
- Constructed and maintained large-scale mesocosm study tanks
- Present findings and methods at conferences with talks and posters
- Programs and Software: R Studio, ArcGIS, Matlab, Ichthyop, SQL, IDV, Audacity, Raven Lite, Command Line (Ubuntu), VR100HS, KorEXO, CastawayCTD

***Master Research Assistant / Technician* • January 2016–May 2018 • Full-time 40 hrs/wk**

NC State University & NC Division of Marine Fisheries • Elizabeth City, NC

Objective: Evaluate climatological, environmental, and anthropogenic impacts on North Carolina River Herring spawning behavior using field studies and 40 years of NC Division of Marine Fisheries (NC DMF) fisheries independent monitoring data. Provide suggestions for habitat management and the future of the closed fishery.

Duties/Work Performed:

- Used R Studio, ArcGIS, and Python to perform QA/QC, parametric, and non-parametric statistical analyses on fisheries and environmental data
- Create Python tool for ArcGIS analysis and report generation for state fisheries data
- Applied ArcGIS Network Analyst for migration analyses using USGS NHD data
- Coordinated, directed, and executed sampling efforts for NCDMF River Herring spawning habitat survey using gillnets, YSI Professional Plus, and Kor EXO2 sondes in large river systems and estuaries
- Collected biological information for use River Herring population status evaluation
- Wrote technical report for NCDMF to guide future monitoring and protection programs as required by Magnuson-Stevens Act and in accordance for species under Endangered Species Act considerations
- Delivered seven oral presentations at professional conferences and working groups, as well as led the discussion to decide future monitoring of River Herring stocks in North Carolina
- Programs and Software: R Studio, ArcGIS, Python

***Graduate Teaching Assistant* • August 2015–December 2015**

NC State University • Raleigh, NC

Duties/Work Performed:

- Presented lecture material and lead hands-on labs covering concepts and techniques in ecology, evolution, and biodiversity to two classes of 25 students

***Creel Clerk* • October 2014–July 2015**

Ohio Department of Natural Resources Division of Wildlife • Sandusky, OH

Duties/Work Performed:

- Followed creel survey design to collect recreational fishing and resource use data to be incorporated into stock assessment of Lake Erie sport fishes
- Provided fisheries management information to the public and acted as a public interface between fisheries/resource managers and stakeholders
- Maintained data and expense logbooks

***Wet / Radiological / Field Chemist* • October 2012–October 2014**

Summit Environmental Technologies Inc. • Cuyahoga Falls, OH

Duties/Work Performed:

- Performed bench and field tests of drinking waters, soils, and industrial byproducts in accordance with EPA and NELAP standards
- Conducted field sampling duties for water treatment facilities, sewers, and fracking industries
- Corresponded with industry regulators to ensure proper sampling schedule and procedure
- Prioritized assessment duties to meet client needs and deadlines
- QA/QC data entry and wrote SOPs to ensure accuracy of analyses and deliverables

Personal Contracted Work

Adnan Diaz Jomolca, et al. v. Atlantic Marine • July 2023

Duties/Work Performed:

- Used Ichthyop to create reverse particle dispersal models for forensic investigation of capsizing events.
- Created map products and report to present probability of capsizing locations

Friends of the Lower Keys v. City of Marathon • September 2021

Duties/Work Performed:

- Conducted data analysis on nearshore water quality monitoring in relation to failures in meeting EPA mandates
- Wrote report for coastal water quality lawsuit Friends of the Lower Keys (FOLKS) v. City of Marathon

Publications

Lombardo SM, Adams AJ, Shenker JS, Wills PS, Paperno R, MacDonald TC, and Ajemian AJ. *In prep*. Evaluation of juvenile bonefish (*Albula* spp.) habitat preferences in tropical and subtropical Florida.

Thurman MA, **Lombardo SM**, Loew ER, Wills PS, Robinson C, and Adams AJ. *In Prep*. Biofluorescence as a Tool to Resolve Crypsis in Two Bonefish Species, *Albula goreensis* and *Albula vulpes*, with Comments on Other External Morphology.

Adams AJ, Boucek RE, Brownscombe JW, Griffin LP, Lewis JP, **Lombardo SM**, Perez AU, and Wilson JK. *In review*. Stakeholder engagement as a core component of marine fisheries knowledge, research, conservation, education, and advocacy.

Krogman RM, Taylor SM, Adams AJ, Boucek RE, **Lombardo SM**, et al. 2024. Role of recreational fisher information in fisheries management. In *Understanding Recreational Fishers*. Pope K, Arlinghaus R, Hunt L, Lynch A, and van Poorten B eds. Wiley, New York, NY

Rudershausen PJ, **Lombardo SM**, Stilson GR, and O'Donnell MJ. 2023. *MEPS*. Relating absolute abundance of an estuarine fish to habitat area in an urbanizing environment. doi: 10.3354/meps14387

Cahill BV, DeGroot BC, Brewster LR, **Lombardo SM**, Bangley CW, Ogburn MB, and Ajemian MJ. 2023. Visitation patterns of two ray mesopredators at shellfish aquaculture leases in the Indian River Lagoon, Florida. *PLOS ONE*. doi: 10.1371/journal.pone.0285390

Lombardo SM, Chérubin LM, Adams AJ, Shenker JM, Wills PS, Danylchuk AJ, and Ajemian MJ. 2022. Biophysical larval dispersal models of observed bonefish (*Albula vulpes*) spawning events in Abaco, The Bahamas: An assessment of population connectivity and ocean dynamics. PLOS ONE. doi: 10.1371/journal.pone.0276528

Boucek R, Rehage JS, Castillo NA, Dwoskin E, **Lombardo SM**, Santos R, Navarre C, Larkin, M, and Adams AJ. 2022. Using recreational tournament records to construct a 52-year time-series of the Florida Keys recreational Bonefish fishery. *Env Biol Fish*. doi: 10.1007/s10641-022-01299-5.

Lombardo SM. 2021. Assessment of trends in Marathon coastal water nutrient concentrations and EPA target compliance within the Florida Keys National Marine Sanctuary. A report for Friends of the Lower Keys (FOLKS). Link

Rudershausen PJ, **Lombardo SM**, and Buckel JA. 2021. Linking historical changes in salt marsh coverage to lost production of a nektonic bioindicator. *Mar Coast Fish* 13:131–139. doi: 10.1002/mcf2.10147.

Lombardo SM, Adams AJ, Danylchuk AJ, Luck CA, and Ajemian MJ. 2020. Novel deep-water spawning patterns of bonefish (*Albula vulpes*), a shallow water fish. *Mar Bio* 167:187. doi: 10.1007/s00227-020-03799-3.

Lombardo SM, Hain EF, Griffith EH, White H, and Buckel JA. 2019. Evidence for temperature-dependent shifts in spawning times of anadromous alewife (*Alosa pseudoharengus*) and blueback herring (*Alosa aestivalis*). *Can J Fish Aqaut Sci*. doi: 10.1139/cjfas-2019-0140.

Rudershausen PJ, Lee L, **Lombardo SM**, Merrell JH, and Buckel JA. 2019. Survival and habitat of yellow-phase American eels *Anguilla rostrata* in North Carolina tidal creeks. *Trans Am Fish Soc*. 148(5): 978-990. doi: 10.1002/tafs.10190.

Marks C, **Lombardo SM**, Formanik KL, Moore FB-G, and Bagatto B. 2012. The influence of ontogenetic dietary fluctuations on zebrafish size and swimming performance. *Front Physio.* 3:310. doi: 10.3389/fphys.2012.00310.

Presentations and Posters

Lombardo SM, Adams AJ, Boucek RE, Black BD, and Shephard S. Mobilizing local ecological knowledge and mass public datasets to assess historical shifts in the Lower Keys tarpon fishery. *2023 Gulf and Caribbean Fisheries Institute Conference 176*. Oral presentation.

Lombardo SM, Chérubin LM, Adams AJ, Shenker JM, Wills PS, Danylchuk AJ, and Ajemian MJ. Bonefish nursery habitats: Marine spatial planning for the next generation. *2023 Gulf and Caribbean Fisheries Institute Conference 176*. Poster presentation.

Thurman MA, **Lombardo SM**, Loew ER, Wills PS, Robinson CB, and Adams AJ. Biofluorescence as a tool to resolve crypsis in two bonefish species. *2022 SICB*. Poster Presentation.

Lombardo SM, Chérubin LM, Adams AJ, Shenker JM, Wills PS, Danylchuk AJ, and Ajemian MJ. Biophysical modeling of bonefish (*Albula vulpes*) larval dispersal from observed spawning events in Abaco, The Bahamas. *2022 7th Annual Bonefish & Tarpon Trust International Science Symposium & Flats Expo*. Oral presentation.

Thurman MA, **Lombardo SM**, Loew ER, Wills PS, Robinson CB, and Adams AJ. Biofluorescence as a tool to identify bonefish species. *2022 7th Annual Bonefish & Tarpon Trust International Science Symposium & Flats Expo*. Poster presentation.

Lombardo SM, Adams AJ, Danylchuk AJ, Luck CA, and Ajemian MJ. Novel deep-water patterns of a shallow water fish. *2022 7th Annual Bonefish & Tarpon Trust International Science Symposium & Flats Expo*. Poster presentation.

Lombardo SM. Resolving habitat gaps for bonefish conservation across Florida and The Bahamas. 2021 *FAU Three Minute Thesis*. Oral Presentation

Lombardo SM, Adams AJ, Danylchuk AJ, Luck CA, and Ajemian MJ. Novel deep-water patterns of a shallow water fish. *2020 American Fisheries Society 150th annual meeting*. Oral presentation.

Lombardo SM, Adams AJ, Danylchuk AJ, Luck CA, and Ajemian MJ. Novel deep-water patterns of a shallow water fish. *2020 FAU Integrative Biology PhD Symposium 14th annual meeting*. Poster presentation.

Lombardo SM, Boucek RE, Adams AJ, Stevens J, and Ajemian MJ. Guides guiding graduate research. *2019 American Fisheries Society 149th annual meeting*. Oral presentation.

Thurman MA, **Lombardo SM**, Wills PS, and Ajemian MJ. Determining juvenile bonefish benthic habitat preference using mesocosms. *2019 Harbor Branch Oceanographic Summer Intern 46th annual Symposium*. Oral presentation.

Lombardo SM, Hain EF, Griffith EH, White H, and Buckel JA. Evidence for temperature dependent shifts in spawning times of anadromous alewife (*Alosa pseudoharengus*) and blueback herring (*Alosa aestivalis*). *2018 American Fisheries Society 148th annual meeting*. Oral presentation

Lombardo SM, Hain EF, Griffith EH, White H, and Buckel JA. Evidence for temperature-dependent shifts in spawning times of anadromous alewife (*Alosa pseudoharengus*) and blueback herring (*Alosa aestivalis*). *2018 Invited guest speaker at Florida Atlantic University Harbor Branch Oceanographic Institute*. Oral presentation.

Lombardo SM, Hain EF, Griffith EH, White H, and Buckel JA. The effects of global change on river herring spawning migrations within the Albemarle Sound watershed. *2017 Virginia Alosa Task Force Meeting*. Oral presentation.

Lombardo SM, Hain EF, Griffith EH, White H, and Buckel JA. Influence of riparian zone land cover on blueback herring catch within the Albemarle Sound watershed. *2017 Albemarle-Pamlico National Estuary Partnership Symposium*. Oral presentation.

Lombardo SM, Hain EF, Griffith EH, White H, and Buckel JA. Influence of riparian zone land cover on blueback herring catch within the Albemarle Sound watershed. *2017 American Fisheries Society 147th annual meeting*. Oral presentation.

Lombardo SM, Hain EF, Griffith EH, White H, and Buckel JA. Changes in river herring spawning phenology within the Albemarle Sound Watershed. *2017 Tidewater Chapter of the American Fisheries Society 31st annual meeting*. Oral presentation.

Lombardo SM, Hain EF, Griffith EH, White H, and Buckel JA. Changes in river herring spawning phenology within the Albemarle Sound Watershed. *2017 North Carolina Chapter of the American Fisheries Society 31st annual meeting*. Oral presentation.

Mentoring Experience

Mason Thurman • Sophomore-Senior • Florida Institute of Technology • 2019–2021
Project: Determining juvenile bonefish benthic habitat preference using mesocosms
Presented at: Harbor Branch Oceanographic Summer Intern 46th annual Symposium
Current Position: Ph.D. student—Clemson University

Awards and Scholarships

- Guy Harvey Scholarship • 2021 • $5,000
- FAU Hardship Scholarship • 2021 • $12,000
- FAU Cares Scholarship • 2021 • $2,000
- FAU Three Minute Thesis Finalist • 2021
- American Fisheries Society Best Student Paper Presentation Finalist • 2020
- FAU Integrative Biology PhD Symposium Best Poster • 2020 • $250
- American Fisheries Society Estuaries Section Student Travel Award • 2018 • $400
- North Carolina Chapter of the American Fisheries Society Travel Award • 2017 • $300
- Coastal Conservation Association North Carolina Scholarship • 2016 • $500
- North Carolina State University Student Fisheries Society Travel Award • 2016 • $300

Outreach and Professional Development

Q & A Session on Instagram Live with All Points Fly Shop & Outfitter • August 2020 • Portland, ME
- Interviewed about current research pertaining to bonefish, tarpon, and permit spawning and movement

Smithsonian Institute World Oceans Day Outreach • June 2019 • Fort Pierce, FL
- Shared PhD research and tools/gear used at the “This is what a scientist looks like” booth

Bonefish & Tarpon Trust Science Blog • April 2019
- Contributed an article detailing the importance of nursery habitat for juvenile bonefish in South Florida

Worldwide Sportsman Bass Pro Shops Seminar Series • April 2019 • Islamorada, FL
- Presented current state of research pertaining to bonefish and habitat use in South Florida and the Caribbean

NC Coastal Marine Teen Science Café • February 2018 • Morehead City, NC
- Presented an introduction to GIS as a tool for science and learning in fisheries research and management

Tidewater Meeting of the American Fisheries Society • January 2018 • Morehead City, NC
- Helped plan, host, and moderate a meeting attended by 130 scientists, students, and resource managers

North Carolina Seafood Festival • October 2017 • Morehead City, NC
- Presented ecological concepts and commercial/recreational importance of local fishes to middle school

NC Museum of Natural Sciences Shad in the Classroom • April 2017 • Winfall, NC
- Presented fish anatomy lecture material and led a hands-on comparative dissection for 100+ 8th grade students at Perquimans County Middle School

Marine Fisheries Tutor • August 2016 • Morehead City, NC
- Provided private tutoring for a middle school student interested pursuing a career in marine fisheries
- Reviewed fish anatomy and physiology through dissection, coastal community ecology through beach seining, and lectured on sampling techniques and career outlook

Cleveland Metroparks Fisheries Technician • November 2014–August 2015 • Cleveland, OH
- Collected, identified, and transferred fish using boat and land-based electrofishing units
- Assisted in holding fund raising and charity events
- Assisted in high school and college field education program

Assisted Research

NOAA NMFS Sawfish Species Distribution Model • 2024 • Florida
- Contributed aggregated Florida environmental monitoring dataset comprised of 40 years of data.

FAU HBOI / Bonefish & Tarpon Trust Bonefish Reproduction Study • 2018–2022 • The Bahamas
- Conducted field operations (sein, dart tag, blood and egg samples) for characterizing bonefish reproductive status/seasonality
- Assisted in husbandry operations: feeding, hormone injection, egg development assessment

FAU HBOI Elasmobranch Survey • 2018–2020 • Florida
- Used longlines, drumlines, and gillnets to survey elasmobranch populations in the Indian River Lagoon
- Collected lengths, weights, fin clips, and blood samples from elasmobranchs

FAU HBOI Artificial Reef Survey • 2018 • Florida
- Used vertical longlines to assess reef fish species assemblages on offshore artificial reefs
- Collected weights, lengths, otoliths, gonads, gut contents, liver, and fin clips

NOAA NMFS Southeast Fisheries Independent Survey • 2016 & 2017 • US Atlantic
- Conducted a two-week study aboard the NOAA Ship Pisces to estimate snapper/grouper abundances in the US South Atlantic
- Used chevron traps and GoPro cameras to collect fisheries independent catch data to be used in snapper/grouper and reef fish stock assessments
- Collected biological samples including otoliths, gonads, and stomach contents
- Performed cleaning and basic maintenance duties in deck, wetlab, and drylab areas

Big Rock Blue Marlin Tournament • 2016 & 2017 • North Carolina
- Collected organ, tissue, and stomach content samples from tournament caught blue marlin

NC State University Effects of Invasive Tilapia on Sportfish Study • 2015 • North Carolina
- Used hoop nets and electrofishing to assess sportfish assemblages in power plant impoundments

Media, Print, Interviews, and Contributed Pieces

Bonefish & Tarpon Trust Journal (self-authored): "Tracking the Next Generation" (10/2023) pp46–49.

Bonefish & Tarpon Trust Blog: "New bonefish research provides guidance for protected area network in The Bahamas" (10/2022)

Silver Kings S7E3 Conservation Minute: "JILL BIRD" (2/2022)

Hatch Magazine: "The long list of things we don't know about bonefish just got shorter" (9/2021)

Academic Times: “Rare deep-water spawning discovered in shallow-water bonefish” (1/2021)

National Geographic: “This fish lives by the shore but dives deep to spawn, breaking records” (12/2020)

The Palm Beach Post: “Bonefish spawning secrets unlocked by researchers to conserve near-threatened species” (12/2020)

Science Daily, EurkaAlert!, & 9 outlets via FAU (self-authored): “Stunning discovery reveals bonefish dive 450 feet ‘deep’ into the abyss to spawn” (12/2020)

Bonefish & Tarpon Trust Journal: "Bonefish Spawning Research Posts New Discoveries" (10/2020) pp36–41.

Bonefish & Tarpon Trust Journal: "Restoring the Florida Keys Bonefish Fishery" (10/2019) pp16–18.

All Points Fly Shop & Outfitter: "Live Q+A with Steven Lombardo - Bonefish spawning, food sources, Biscayne Bay, Bahamas, Tarpon, and more!" (8/2020)

Bonefish & Tarpon Trust Blog: "Conservation of South Florida's Bonefish Nurseries" (4/2019)

AFS Estuaries Section News Letter: “Evidence for Temperature-dependent Shifts in Spawning Times of Anadromous Alewife and Blueback Herring” (12/2018) pp5–7.

Journal Reviewer

Canadian Journal of Fisheries and Aquatic Sciences, Environmental Biology of Fishes, Fisheries Bulletin, Marine Ecology Progress Series, Transactions of the American Fisheries Society

Professional Affiliations and Positions

- Gulf and Caribbean Fisheries Institute: Member 2023–Present
- American Fisheries Society: Member 2016–Present
- Estuaries Section: Member 2016–Present
- Marine Fisheries Section: Member 2016–Present
- Fisheries Information & Technology Section: Member and Volunteer 2021–Present
- Florida Chapter of the American Fisheries Society: Member 2018–Present
- FAU Graduate Ecology and Conservation Organization: Member 2018–2022
- Harbor Branch Student Association: Member 2018–2022
- North Carolina Chapter of the American Fisheries Society: Member 2015–2018
- North Carolina State University Student Fisheries Society: Member 2015–2018

Relevant Coursework

- Fish Population Dynamics (UF)
- Marine Fisheries Ecology (NCSU)
- Population Ecology (NCSU)
- Conservation Biology (NCSU)
- Geospatial Modeling (NCSU)
- Geospatial Programming (NCSU)
- Introduction to Geographic Information Science (NCSU)
- Experimental Statistics for Biological Sciences I&II (NCSU)
- Biological & Chemical Oceanography (FAU)
- Physical & Geological Oceanography (FAU)
- Ichthyology (FAU)
- Marine Ecology (UA)
- Wetlands Ecology (UA)
- Comparative Animal Physiology (UA)
- Animal Physiology I (UA)
- Biology of Behavior (UA)
- Organic Chemistry II (UA)
- Organic Chemistry I (UA)
- Analytic Geometry—Calculus I (UA)