

# JAMES G. GARNER, Ph.D.

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## EDUCATION

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### University of Massachusetts, Amherst

Ph.D., Ecological Conservation, April 2025

### Boston University

M.A., Biology, April 2017

### University of Colorado at Boulder

B.A., Ecology & Evolutionary Biology, December 2010

## EMPLOYMENT

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Postdoctoral Researcher, Shortnose Sturgeon Conservation, Ct River Conservancy.....	2026 - Present
Independent Contractor, Norcross Wildlife Foundation.....	2025 - Present
Visiting Assistant Professor of Biological Sciences (Mount Holyoke College).....	2025 - 2026
USGS Student Contractor and UMass Research Assistant.....	2022 - 2025
NE CASC Fellow.....	2020 - 2025
Ecology Program Director, Jones River Watershed Association (JRWA).....	2019 - 2021
Watershed Ecologist, Jones River Watershed Association (JRWA).....	2019 - 2021
Diadromous Fisheries Technician, Massachusetts Division of Marine Fisheries.....	2019 - 2019
Applications Specialist, NIGHTSEA (Fluorescence Technology).....	2017 - 2018
Teaching Fellow, Boston University.....	2014 - 2017
Kayak Guide, L.L. Bean Outdoor Discovery School.....	2013
Sales Representative, Hudson Trails Outfitters LLC.....	2011 - 2013
Enrichment Intern/Animal Care Specialist, Smithsonian National Zoo.....	2011
Elephant trainer/keeper, Lowry Park Zoo, Tampa FL.....	2011
Manatee Handler, South Florida Museum.....	2011
Field Research Assistant, Orpheus Island Research Station.....	2010
Field Assistant, Yale Peabody Museum of Natural History.....	2009 - 2010
Collections Assistant, Yale Peabody Museum of Natural History Vertebrate Zoology Dept	2008 - 2010

### Current Projects:

#### Norcross Wildlife Foundation Watershed Scale eDNA monitoring

Supporting Norcross Wildlife's watershed-scale restoration (dam removals, culvert replacements, and road decommissioning), this project establishes a baseline biodiversity framework using eDNA. Water samples were collected at 35 sites and sediment samples at 10 wetland locations in summer–fall 2025. eDNA metabarcoding is being used to characterize vertebrate and invertebrate communities, while qPCR assays will target key species of conservation interest (spotted turtle, wood turtle, brook trout, beaver, and focal insect orders). Results will be synthesized in a report and presentation to Norcross Wildlife and Mass Audubon and used to guide a multi-year monitoring and study design throughout the restoration timeline.

#### Shortnose Sturgeon eDNA/Telemetry Integration (Connecticut River, MA–VT)

Building directly on eDNA detection work I conducted upstream of the Turners Falls and Vernon dams, this project applies eDNA scaling and proportional allocation methods developed during my PhD to estimate shortnose sturgeon population size in river reaches lacking traditional monitoring. By integrating high-resolution eDNA sampling with acoustic telemetry in a well-characterized downstream reach, we infer relative abundance, occupancy, and seasonal habitat use in upstream reaches that are otherwise inaccessible to standard assessment tools. I lead all eDNA components, from study design through analysis, generating management-relevant population estimates that directly inform conservation planning for this federally endangered species.

## **TRANSLATIONAL AND CO-PRODUCED SCIENCE**

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Almost all my work involves developing and leading translational, co-produced research that bridges academic inquiry and real-world decision-making by designing studies in partnership with local and regional stakeholders and end users so that scientific results are immediately usable in conservation practice. This work translates advanced molecular biodiversity monitoring (environmental DNA; eDNA) and ecological methods into decision-support tools that inform dam removals, fish passage design, endangered species conservation, and watershed-scale restoration planning. Projects are conducted collaboratively with state and federal agencies, Tribal nations, NGOs, academic institutions, and community organizations, including: Norcross Wildlife Foundation, Connecticut River Conservancy, Mass Audubon, the Connecticut River Migratory Fish Restoration Cooperative, Massachusetts Division of Marine Fisheries, Jones River Watershed Association, North and South Rivers Watershed Association, the Town of Plymouth, the Wampanoag Tribe of Gay Head (Aquinnah), the Herring Pond Wampanoag Tribe, Native Land Conservancy, UMass Amherst, the Five College Consortium, the U.S. Geological Survey, NOAA, the Boston Harbor Islands National Recreation Area Partnership, and local stakeholder groups.

## **PUBLISHED MANUSCRIPTS**

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**Garner, J.G.** (2025). Advancing aquatic biodiversity and relative abundance monitoring: Employing environmental DNA (eDNA) to assess diadromous fish populations and ecosystem health (Doctoral dissertation, University of Massachusetts Amherst). *ScholarWorks@UMass Amherst*.  
<http://creativecommons.org/licenses/by-nc-nd/4.0/>

**Garner, J.G.**, Jones, A.R., Putnam, A.B., Lockwood, L.A.D., and Staudinger, M.D., 2025, 2023 Environmental DNA (eDNA) Baseline to Monitor Intertidal Biodiversity in Waters Adjacent to Mixed Coarse Substrate Habitats Across the Boston Harbor Islands: U.S. Geological Survey data release, <https://doi.org/10.5066/P1TNR6Z>.

Branconi, R, **Garner J.G.**, Buston PM, Wong ML. (2019) A New Non-Invasive Technique for Temporarily Tagging Coral Reef Fishes. *Copeia*, 107(1), 85 – 91.

Lobel P, **Garner J.G.**, Kaatz I, Rice A (2021) Sonic Behavior of Cichlid Fishes. *The Behavior, Ecology and Evolution of Cichlid Fishes: A Contemporary Modern Synthesis*. Springer Academic.

## **SUBMITTED MANUSCRIPTS**

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**Garner J.G.**, Staudinger, M, Jordaan, A, Chase, B, Sheppard, J, Kozol, E., Roy, A. (2026) Greater Than the Sum of Their Parts: Mechanistically Scaled eDNA Enhances Traditional Monitoring by Predicting Site-Specific Relative Abundances in Connected Watersheds. *Submitted: Environmental DNA*.

## **MANUSCRIPTS IN PREP**

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**Garner J.G.**, Staudinger, M, Jordaan, A, Chase, B, Sheppard, J, Church, G., Roy, A. (In Prep, 2026) The Good, the Bad, the Ugly: Navigating Bias in Fisheries Science: Lessons from eDNA and Traditional Methods for Monitoring American Shad, River Herring, Rainbow Smelt, and Shortnose Sturgeon. Target Journal: *Fish and Fisheries*.

**Garner J.G.**, Staudinger, M, Jordaan, A, Chase, B, Sheppard, J, Kozol, E. (In Prep, 2026) Aquatic community composition response to dam removal using environmental DNA metabarcoding techniques. Target Journal: *Environmental DNA*.

**Garner J.G.**, Buckman, K, A, Kieffer, M. (In Prep, 2026) Using Environmental DNA to Detect Rare and Endangered Species in Large Rivers. Target Journal: *Nature Conservation*.

**Garner J.G.**, Buckman, K, A, Kieffer, M, Farrington, S, Heisey, A. (In Prep, 2026) Using Environmental DNA and Side Scanning Sonar to Predict Occupancy for Rare and Endangered Species in Large Rivers. Target Journal: *Nature Conservation*.

Church, G., **Garner J.G.**, Staudinger, M, Jordaan, A, Chase, B, Sheppard, J, Roy, A. (In Prep, 2026) Using Year-Round Environmental DNA Metabarcoding Sampling to Establish Aquatic Community Baseline Before Nature Like Fishway Installment. Target Journal: *Ecological Indicators*.

**Garner J.G.**, (In Prep, 2026) Evidence of Cooperative Hunting Between American Eels and Smallmouth Bass in a Temperate Freshwater System. Target Journal: *Ecology*.

**Garner, J.G.** (In Prep, 2027) EcoCASH: A unifying framework for quantifying ecosystem condition using molecular, ecological, and physical system indicators. Target Journal: *Science*.

## **PRESENTATIONS AND TALKS**

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### ***Planned***

May, 2026 Western Legion Licensed Site Professionals Association (LSPA) Invited Talk: “Two Sides of the Same System: Linking Contaminant Detection and Biodiversity Signals to Understanding Ecosystem Health”

March 28th, 2026 Norcross Wildlife Foundation Community Seminar: “Environmental DNA (eDNA) Biodiversity Monitoring Informing Dam and Culvert Removals in the Vinica Brook Watershed”

### ***Delivered***

May 14<sup>th</sup>, 2025 Connecticut River Conservancy Webinar Series: “New Tools for Old Questions: Using eDNA to Enhance Ecological Understanding”

April 21<sup>st</sup>, 2025 Western MA Fly Fishing Club Annual Meeting Keynote Speaker - “Endangered Shortnose Sturgeon (*Acipenser brevirostrum*) in Your Backyard”

April 11<sup>th</sup>, 2025 UMass Amherst Dissertation Defense: “Advancing Aquatic Biodiversity and Relative Abundance Monitoring: Employing Environmental DNA (eDNA) to Assess Diadromous Fish Populations and Ecosystem Health.”

February 25<sup>th</sup>, 2025 Connecticut River Migratory Fish Restoration Cooperative: Technical Committee’s Connecticut River Research Forum: “Environmental DNA (eDNA) Calibrations for Fisheries Management: Enhancing Diadromous Fish Abundance Monitoring with Spatial, Temporal, and Environmental Insights.”

November 8<sup>th</sup>, 2024 Science on Tap: A Low-Stakes Leisure Lecture Series – “Endangered Shortnose Sturgeon (*Acipenser brevirostrum*) in Your Backyard”

November 6<sup>th</sup>, 2024 Connecticut River Migratory Fish Restoration Cooperative Executive Committee Meeting: “Using Environmental DNA (eDNA) to Detect the Presence of Endangered Shortnose Sturgeon (*Acipenser brevirostrum*) in the Connecticut River Upstream of the Turners Falls and Vernon Dams”

October 22<sup>nd</sup>, 2024 Connecticut River Migratory Fish Restoration Cooperative Meeting Technical Committee Meeting: “Using Environmental DNA (eDNA) to Detect the Presence of Endangered Shortnose Sturgeon (*Acipenser brevirostrum*) in the Connecticut River Upstream of the Turners Falls and Vernon Dams”

April 23 <sup>rd</sup> , 2024	Northeast Fish and Wildlife (NEAFWA) conference talk: “It’s About Time: Seasonal eDNA Abundance Calibration for Anadromous River Herring ( <i>Alosa pseudoharengus</i> and <i>Alosa aestivalis</i> )”
January 31 <sup>st</sup> , 2024	Mass Audubon and the North and South Rivers Watershed Associations (NSRWA) WaterWatch Lecture Series Presents: Shad: America’s ‘Founding Fish’
May 9, 2023	UMass Amherst Core Facility Seminar Series seminar talk: “Using Passive Genetic Tools - Environmental DNA (eDNA) - to Estimate the Seasonal Abundance of Three Migratory (Diadromous) Fish Species”
March 30, 2023	Invited Expert Panelist for the North and South Rivers Watershed Association (NSRWA) Public Information Session: “Learn More About the Indian Head River Restoration”
January 9, 2023	American Fisheries Society talk: “It’s about time – seasonal eDNA abundance calibration for three diadromous species”
March 14, 2022	Woods Hole Sea Grant Webinar Series: “What eDNA can do for you, and how you can begin utilizing this powerful tool within your watershed”
March 9, 2022	Boston Harbor Island NRPP Project Winter Workshop 2022: “Fieldwork Summary and Future Plans”
November 2021	Invited talk for the Town of Plymouth: “What is environmental DNA and how it can support your restoration plans”

### **GRANT FUNDING AWARDED**

MA DFG Community Biodiversity Grants FY2026 (co-author)	\$156,800.00	Pending
Mass Audubon: Aquatic Biodiversity in the Vinica Brook Watershed	\$35,000.00	2025
MIT Sea Grant - Counting River Herring: Bringing High-Tech and New Tech to Fish Assessment and Monitoring (co-author)	\$350,000.00	2024
Town of Plymouth Environmental DNA Monitoring Grant:	\$10,000.00	2021
Central Plymouth County Water District Commission Grant:	\$100,000.00	2021
National Fish Passage Program Grant:	\$50,000.00	2021
Massachusetts Seaport Economic Council Grant:	\$200,000.00	2020
Patagonia Action Grant:	\$25,000.00	2020

### **RESTORATION PROJECTS**

**Norcross Wildlife Foundation Watershed Restoration, MA:** Contributor In Progress \$10,000,000+  
 Designed and implemented a watershed-scale eDNA monitoring program to support and justify dam removals, culvert replacements, and road decommissioning across Norcross Wildlife Sanctuary. Conducted high-density water and sediment sampling to establish baseline biodiversity conditions using eDNA metabarcoding and targeted qPCR assays for species of conservation concern.

**Nature Like Bypass Installment, Plymouth, MA:** Contributor                      In Progress                      \$10,000,000  
Designed, implemented, and carried out year-round pre-restoration eDNA metabarcoding project that significantly contributed to the awarded sum by detecting rare and endangered species at multiple localities within the Town Brook watershed.

**Hydro-Dredging of Forge Pond, Kingston, MA:** Project Lead                      Completed                      \$100,000  
Hydro-dredge purchased with funds awarded by the Central Plymouth County Water District Commission (CPCWDC) and the work contract has been assigned to the Massachusetts Division of Marine Fisheries.

**Stony Brook Dam Removal, Kingston, MA:** Project Lead                      In Progress                      \$250,000  
Worked with JRWA engaging stakeholders and fundraising for design, engineering, permitting, and construction.

**Permanent Fishway Installation, Kingston, MA:** Project Lead                      Funded                      \$100,000  
Project replaces the temporary wooden fish ladder at Forge Pond dam with a permanent, concrete and aluminum fishway of novel design. Engineering/design work funded and in progress. Funds for construction raised, but construction has not yet commenced.

**Elm Street Dam Removal, Kingston, MA:** Contributor/Project Lead                      Completed                      \$2.2 million  
Removal of the head of tide dam in the Jones River. Assisted with management, coordination, and provided biological and ecological monitoring services for the project. Wrote and submitted reports for NOAA. Project is complete.

## **MEDIA**

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**NPR:**                      [Under Trump, job prospects look 'bleak' for Mass. grads in environmental science](#)

**WHMP:**                      [Panorama – Episode 98 – Sturgeon \(Radio Interview and Podcast\)](#)

**Daily Hampshire Gazette:** [UMass climate scientists reeling as Trump administration slashes funding for research](#)

**Fox News:**                      [Researchers detect evidence of prehistoric fish in Connecticut River](#)

**WBUR:**                      [Shortnose sturgeon confirmed in Vermont for first time in decades](#)

**Vermont Public:**                      [Shortnose sturgeon confirmed in Vermont for first time in decades](#)

**NHPR:**                      [Scientists discover endangered fish in waters running along the Monadnock Region](#)

**Greenfield Recorder:**                      [Evidence of shortnose sturgeon found north of Connecticut River dams](#)

**UMass Amherst News:**                      [Team Including Doctoral Student James Garner Confirms Presence of Shortnose Sturgeon in Unexpected Stretch of Connecticut River](#)

**UMass CNS News:**                      [James Garner and Team Use eDNA Analysis to Confirm Presence of Shortnose Sturgeon in Unexpected Stretch of Connecticut River](#)

For more, see [comprehensive list of popular media](#) about my work

## TEACHING EXPERIENCE

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### **Mount Holyoke College, *Teacher of Record (Assistant Professor)***

<u>Yr./Sem</u>	<u>Course Title</u>	<u># of Students</u>
2025 Fall	BIOL-350 Stream Ecology w/ Lab	23

### **University of Massachusetts, Amherst, *Teaching Fellow***

<u>Yr./Sem</u>	<u>Course Title</u>	<u># of Students</u>
2024 Fall	NRC 560 Aquatic Ecology	18
2024 Fall	NRC 185 Sustainable Living: Solutions for the 21 <sup>st</sup> Century	160
2024 Spring	NRC 185 Sustainable Living: Solutions for the 21 <sup>st</sup> Century	132
2023 Fall	NRC 100 Environment and Society	180
2023 Spring	NRC 185 Sustainable Living: Solutions for the 21 <sup>st</sup> Century	132
2022 Fall	NRC 100 Environment and Society	180
2022 Spring	NRC 185 Sustainable Living: Solutions for the 21 <sup>st</sup> Century	132
2021 Fall	NRC260 Fish Conservation and Management	153

### **Boston University, *Teacher of Record (Lead Instructor)***

<u>Yr./Sem</u>	<u>Course Title</u>	<u># of Students</u>
2016 Fall	NSF GK-12: 6 <sup>th</sup> and 7 <sup>th</sup> Grade Science	82
2015 Fall	CAS MR 533 Scientific Diving	9

### **Boston University, *Teaching Fellow***

<u>Yr./Sem</u>	<u>Course Title</u>	<u># of Students</u>
2015 Summer	BI 303 Ecology	6
2015 Spring	BI 108 Intro Bio	55
2014 Fall	CAS BI 531 Ichthyology	12

## MENTORING

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### **Tribal Land Conservancy:**

**Baahozhonii Largo** Project Title: Pilot evaluation of sediment composition effects on eDNA detection and yield in coastal/anoxic shoreline systems (qPCR vs. metabarcoding study design)

Skills developed: Experimental design and feasibility scoping (aDNA vs eDNA), literature review and marker selection, target-taxa selection (plants vs fish/invertebrates), qPCR primer/probe identification, sampling design tailored to organism ecology, field collection and sample handling logistics, filtration workflow planning and supply/budget development, and lab coordination for filtering/extraction support (with UMass/IALS pathways as appropriate).

### **Five College Coastal Marine Science Internship Program:**

**Gwen Church** Project Title: Pre-Dam Bypass Environmental DNA Metabarcoding Assessment of the Town Brook Watershed to Assess Pre-Restoration Action Ecosystem Condition.

Skills developed: eDNA field techniques, eDNA lab techniques (sample filtration), DNA extractions, scientific poster creation, scientific poster presentation.

**Endorsement:** “While I was an undergraduate at UMass, James served as my mentor for my senior project through the Five College Coastal and Marine Sciences program. He truly went above and beyond providing me with resources, advice, and support for my project and my career after graduation. No matter what we were working on, he always pushed me to review literature and think about the bigger picture which allowed me to put everything I learned as an undergraduate into practice. He provided me with countless opportunities to learn new lab, field, and data skills and always provided constructive feedback to help me improve. He encouraged me to pursue higher education and research, and his mentorship is a large part of the reason I am a graduate student at Illinois State University. He has been an invaluable resource both during my undergrad degree and during my post-grad years. I am extremely grateful for his support, and I know that whoever he mentors in the future will be set up for success.”

**Eva Kozol** Project Title: Environmental DNA’s Usage and Accessibility in Southeastern Massachusetts Monitoring Agencies.

**Skills developed:** eDNA field techniques, eDNA lab techniques (sample filtration), DNA extractions, scientific poster creation, scientific poster presentation.

**Gwynne Hayes** Project Title: Environmental DNA Metabarcoding Biodiversity Assessment Techniques Compared to Historical Biodiversity Assessments in the Jones River Watershed

**Skills developed:** eDNA field techniques, eDNA lab techniques (sample filtration), statistical analyses, scientific poster creation, scientific poster presentation.

## **FIELD EXPERIENCE**

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### **Norcross Wildlife Foundation Watershed-Scale eDNA Monitoring, June – October 2025**

Designed and executed watershed-scale eDNA field surveys to support ecological restoration planning at Norcross Wildlife Sanctuary, including dam removals, culvert replacements, and road decommissioning. Conducted high-density water sampling at 35 stream sites and sediment sampling at 10 wetland locations to establish baseline biodiversity conditions. Samples were collected for eDNA metabarcoding and targeted qPCR analyses focused on vertebrate and invertebrate taxa of conservation concern.

### **Connecticut River Shortnose Sturgeon eDNA Survey, June – September 2024**

Designed and executed eDNA surveys in conjunction with the Connecticut River Conservancy (CRC) to detect the presence of endangered shortnose sturgeon (*Acipenser brevirostrum*) upstream on the Turners Falls and Vernon dams in the Connecticut River. Benthic samples were collected via freediving. DNA from Shortnose sturgeon was detected at five locations within the target reaches.

### **UMass Amherst Regional Environmental DNA (eDNA) Surveys, February 2021 – June 2023**

Designed and executed eDNA surveys to address four areas of conservation/management interest that can be applied broadly across the United States: 1) Utilize eDNA metabarcoding (biodiversity monitoring) methods to measure restoration/adaptation action efficacy in focal urban and tribal watersheds. 2) Utilize eDNA techniques to detect non-native invasive species, species on the move in response to climate change through range expansions and shifts, as well as local species extinctions. 3) Calibrate eDNA monitoring methods to established monitoring techniques to better inform management practices. 4) Utilize eDNA techniques to assess population level DNA signals for species of interest to inform subsistence, recreational and commercial fisheries management decisions.

### **Jones River Watershed Association, November 2019 - 2021**

Designed and executed post head of tide dam removal eDNA monitoring survey for the entirety of the Jones River watershed. Work is still underway, and project will continue through the end of 2021. Conducted post head of tide dam removal sediment release tracking in conjunction with MA DER. Sediment monitoring began in November 2019 and continued through November 2020.

**Massachusetts Division of Marine Fisheries, March 2019 – October 2019**

Assisted MA DMF biologists with monitoring diadromous fishes in the state of Massachusetts. Field monitoring techniques included: Fyke net surveys; electronic herring count installation and monitoring; video herring count installation, monitoring, and video analysis; Installation of PIT tagging arrays, and physical herring PIT tagging; Electrofishing surveys; HOBO data logger deployment; HQ30d multiple parameter portable meter WQ monitoring.

**South Water Caye IZE Research Station, July 2017 – August 2017**

Assisted PhD candidates in Dr. Peter Buston's lab with data collection while diving for choice arena experiments with the tube-sponge dwelling goby *Elacatinus lori* as well as collect sponge/mating pair data along transects on the outer reefs for a courtship/reproductive success study.

**Lizard Island Research Station, January 2016 – April 2016**

Project co-leader. Project focused on sound production in the damselfish *Dascyllus aruanus* in varying social and environmental contexts in collaboration with Dr. Peter Buston's lab. Research being analyzed and prepared for publication.

**Calabash Caye Research Station, September 2014**

Project lead. Designed and implemented a field study focused on the role lion fish (*Pterois volitans*) have on reef parasite cleaner organism populations. Research focused on lionfish prey discrimination and feeding habits.

**Yale Peabody Museum of Natural History Collection Expedition, August 2009**

Assisted with targeted fish seining and DNA tissue sampling in Kentucky and Tennessee rivers. Samples were collected for fish molecular phylogenetics research in Dr. Thomas Near's laboratory and deposited at the Yale Peabody Museum.

**MANAGEMENT**

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**Norcross Wildlife Foundation, 2025 – Present**

Manage and train a multidisciplinary field and laboratory team consisting of nine undergraduate researchers, six volunteers, and Norcross Wildlife staff in eDNA-based monitoring workflows. Responsibilities include training in field safety and sterile sampling techniques, water and sediment eDNA collection, sample filtration, DNA extraction, and post-extraction cleanup using inhibition removal kits, as well as data organization and quality control. This training supports long-term, staff-integrated biodiversity monitoring capacity within Norcross restoration and conservation programs.

**UMass Amherst, Staudinger Lab, 2021 - 2025**

Managed and trained undergraduate researchers and interns in safety and field sampling techniques, laboratory techniques, and genomic techniques. Lab and sampling techniques interns were trained for include: environmental DNA surveys, purse seine surveys, electrofishing surveys, beach seine surveys, sediment tracking surveys, PIT tagging, data management, sterile technique, eDNA sample filtration, Microsoft Access, R, and excel.

**BU, Lobel Lab, 2014 - 2017**

Managed and trained volunteers in fish husbandry/aquaculture, coral/zoanthid care and maintenance, aquarium maintenance, plumbing, water quality, and research. Managed up to 10 volunteer/student researchers per semester. Mentored several UROP students, independent research projects and work study projects. Projects ranged from recording, isolating and analyzing acoustic data from previously collected field data to data collected from lab aquaria, setting up and utilizing an otolith lab, pharyngeal mill dissection and analysis, and the cataloging and identification of Cambodian fishes collected from the field in collaboration with the Kaufman lab.

## **AWARDS**

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UMass Amherst ECO Fellowship – Winner	2023
Steven Berkeley Marine Conservation Fellowship – Runner Up	2023
John Moring Student Travel Award – American Fisheries Society Northeastern Division (NED)	2023
Richard Cronin Fisheries Research Award – UMass Amherst ECO Department	2022
Best Student Paper, Ichthyology – American Society of Ichthyologists and Herpetologists	2019
NSF GK-12 Teaching Fellow:	2017
Dana Wright Scholarship: Boston University	2016
Director's Award for Outstanding Performance by a Teaching Fellow: Boston University	2016

## **VOLUNTEER ROLES**

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President – Environmental Conservation Department Graduate Student Council	2022 – 2023
UMass Amherst Graduate Student Happy Hour Coordinator	2022 – 2025
UMass Amherst Graduate Employee Organization Department Steward	2021 – 2025
Boston University Graduate Student Representative for the Dive Control Board	2015 – 2016

## **SKILLS**

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Field Techniques: eDNA (qPCR and metabarcoding) monitoring, PIT tag deployment and monitoring, electrofishing, sediment core collection, HOBO data logger deployment, HQ30d multiple parameter portable meter use, Nutrient/chlorophyll sample collection, flame ionization gas detection, hydrophone and camera deployment, beach seine netting, purse seine netting, spear fishing, hand netting, line fishing, clove oil anesthetic delivery, MS-222 anesthetic delivery, underwater photography, fluorescence photography

Diving: Dive Master (NAUI), Master Diver (NAUI), Scientific Diver (AAUS), Advanced Rescue and CPR (NAUI), Open water (NAUI), Advanced (SSI), Nitrox (NAUI), and Freediver (SSI) certifications

Genomic Techniques: Metabarcoding bioinformatic approaches, qPCR, transcriptomic analysis, DNA/RNA sequencing, tissue sampling, molecular phylogenetic specimen preparation

Microscopy: Fluorescence microscopy, light field, dark field, focus stacking, stereo microscopy, compound microscopy, digital microscopy, live specimen imaging, microscopic imaging

Software: Microsoft Access, Raven Bioacoustic Analysis software, R Statistics Software, GIS, ImageJ, CAD/3D imagery software, Excel, PowerPoint

## **REFERENCES**

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UMass Amherst, Academic Advisor, Associate Professor

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### **Dr. Michelle Staudinger**

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**Brad Chase, M.Sc.**

Massachusetts Division of Marine Fisheries, Diadromous Fisheries Project Leader

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