

MICHELINE S. LABRIE

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706 South Rodney French Blvd. New Bedford, MA 02744-1221

1. EDUCATION

- PhD** University of Massachusetts Dartmouth, Marine Science May 2021
Dissertation: “Quantifying Impacts of Suspended Oyster Aquaculture on Nitrogen Cycling in a Southeastern Massachusetts Coastal Embayment”
Committee: Brian Howes (co-chair), Miles Sundermeyer (co-chair), David Schlezinger, Mark Altabet, and Raymond Grizzle
- BS** University of New Hampshire, Biology September 2011

2. RESEARCH EXPERIENCE

School for Marine Science and Technology, University of Massachusetts Dartmouth, New Bedford, MA

Research Assistant Professor, School for Marine Science and Technology (January 2024 - Present)

Research Assistant Professor, January 8, 2024 to present

- Principal Environmental Scientist – Coastal Systems Program
- Science Lead – Biodegradability Laboratory

Research Assistant Professor, February 13, 2022 to January 7, 2024

- Science Lead – Biodegradability Laboratory
- Project Manager – Coastal Systems Program

Post-Doctoral Fellow to Prof. Brian Howes, July 23, 2021 to February 12, 2022

Research Assistant to Prof. Miles Sundermeyer and Brian Howes, June 2014 to June 2021

Teaching Assistant for Physical Oceanography, 2014-2016 Fall Semesters

Research Assistant to Prof. Dianne Quigley, December 2014 to May 2015

Department of Molecular, Cellular, and Biomedical Sciences, University of New Hampshire, Durham, NH

Research Assistant to Prof. Michael P. Lesser, May 2011 to September 2013

3. INTERNSHIPS

Institute of Marine Mammal Studies, Gulfport, MS, August 2012 to November 2012
Research Intern

Marine Animal Rehabilitation Center, Biddeford, ME, January 2012 to August 2012
Animal Care Intern

4. RESEARCH GRANTS

Pending and Proposed Projects:

- “Town of Plymouth Great Herring Pond and Little Herring Pond Monitoring” **M.S. Labrie**, \$28,422. Town of Plymouth, MA. 3/1/24 to 3/30/25.
- “Technical Support Barnstable Water Quality Monitoring Long Pond Floating Wetland” **M.S. Labrie**, \$33,840. Town of Barnstable, MA 3/1/24 to 1/30/25.
- “Town of Harwich Bank Street Bogs Post Community Creation Monitoring Plan” **M.S. Labrie**, \$248,403. Town of Harwich, MA 3/1/24 to 6/30/27.
- “Town of Orleans Pilgrim Lake Alum Treatment Monitoring” **M.S. Labrie**, \$232,438. Town of Orleans, MA 3/1/24 to 6/30/25.
- “Nutrient Loading and Groundwater Mapping of Nantucket Harbor Watershed” **M.S. Labrie**, \$119,014. Town of Nantucket, MA and Geosyntec Inc. 6/1/24 to 10/30/25.
- “Biocorrosion and Degradation of Marine Materials” P.H. Moisander, **M.S. Labrie**, and M.L. Mayes, National Science Foundation Research Traineeship Program. *Core theme description submitted 12/21/24 to Dr. Chalivendra. Full proposal will be submitted by 9/6/24.*
- “Combating Marine Plastic Debris from Fisheries: New Technologies for Mapping Derelict Fishing Gear and Development of Biodegradable Materials for Future Fishing Gears” P. He, **M.S. Labrie**, and N. Calabrese, \$2,000,000. National Sea Grant. Proposed project period: 9/1/24 to 8/31/27. *Full proposal will be submitted 3/27/24.*
- “Characterization of Coastal Environments using Airborne and Underwater Sensors” **M.S. Labrie**, D.R. Schlezinger, and M.A. Sundermeyer, \$200,000. Defense University Research Instrumentation Program (DURIP). *Full proposal submitted 2/16/24.*
- “Aerobic Biodegradation Rates of SRS®-NR for Longevity Study,” **M.S. Labrie**, \$20,000, Terra Systems, Inc. Proposed project period: 4/1/2024 to 8/31/2024. *Submitted 12/13/2023.*
- “Microbially Influenced Corrosion of Materials in Marine Application,” P.H. Moisander, **M.S. Labrie**, and M.L. Mayes, \$368,522. Marine and UnderSea Technology (MUST) Research Program. Proposed project period: Fall 2024 to Spring 2027. *Proposed project submitted to the Office of Naval Research 1/8/24.*

Funded Projects:

Active Grants:

- “Biodegradability Assessments of New Materials,” Project manager, S. Lohrenz; Biodegradability laboratory science lead, **M.S. Labrie**, \$739,936, Innovation Institute at the Massachusetts Technology Collaborative, 2021 to 2024.

Completed Grants:

- “Effects of Microbe Lift Treatment on Freshwater Pond Sediment Core Incubations,” R. Samimy, **M.S. Labrie**, and B.L. Howes. \$56,655.00, AMT BioProducts Corp.
- “Quantifying Potential for Oyster Aquaculture and Impacts on Estuarine Nitrogen Related Water Quality: Cockeast Pond,” B.L. Howes, R. Samimy, and **M.S. Labrie**. \$525,967, U.S. Environmental Protection Agency; 2017 to 2020.
- “Quantifying Impacts of Oyster Aquaculture on Estuarine Nitrogen Related Water Quality,” L. Counsell (Three Bays Preservation Inc.), **M.S. Labrie**, M.A. Sundermeyer, B. Howes, and D. Schlezinger (UMassD). UMass portion: \$25,481, Massachusetts Environmental Trust; 6/1/15 to 5/31/17.
- “Quantifying Impacts of Suspended Oyster Aquaculture on Nitrogen Cycling in Southeastern Massachusetts Embayments,” **M.S. Labrie** and D.R. Schlezinger. Signature 1000 & HR Aquadopp Profiler, Nortek USA Student Equipment Grant; 9/1/15 to 9/18/15.
- “Quantifying Impacts of Suspended Oyster Aquaculture on Nitrogen Cycling in Southeastern Massachusetts Embayments,” **M.S. Labrie**. \$500, The Sounds Conservancy; 6/10/15.

5. PUBLICATIONS

- Labrie, M.S.**, M.A. Sundermeyer and B.L. Howes, 2023. Quantifying the Potential for Nitrogen Removal through Growth and Harvest of Aquaculture Oysters in Temperate Coastal Embayments. *Journal of Shellfish Research*. Under Review.
- Labrie, M.S.**, M.A. Sundermeyer and B.L. Howes, 2022. Quantifying the Effects of Floating Oyster Aquaculture on Nitrogen Cycling in a Temperate Coastal Embayment. *Estuaries and Coasts*, pp. 1-18, doi: 10.1007/s12237-022-01133-2
- Labrie, M.S.**, M.A. Sundermeyer and B.L. Howes, 2022. Modelling the spatial distribution of oyster (*Crassostrea virginica*) biodeposits settling from suspended aquaculture. *Estuaries and Coasts*, 45(8), pp. 2690-2709, doi: 10.1007/s12237-022-01096-4
- Ray, N., B. Hancock, M. Brush, A. Colden, J. Cornwell, **M.S. Labrie**, T. Maguire, T. Maxwell, D. Rogers, R. Stevick, A. Unruh, M. Kellogg, A. Smyth, and R. Fulweiler., 2021. A review of how we assess denitrification in oyster habitats and proposed guidelines for future studies. *Limno. Oceanogr-Meth.* 19:10. doi: 10.1002/lom3.10456
- Fiore C.L., **M.S. Labrie**, J.K. Jarett, and M.P. Lesser, 2015. Transcriptional activity of the giant barrel sponge, *Xestospongia muta* Holobiont: molecular evidence for metabolic interchange. *Front. Microbiol.* 6:364. doi: 10.3389/fmicb.2015.00364

6. UNPUBLISHED WORK

Work in progress for refereed publication:

Draft Manuscripts:

Labrie, M.S. and J. VanderGhenyst, 2024. Methods for Biodegradation Testing of Possibly Biodegradable Substrates using a Natural Marine Seawater Inoculum and Closed-loop Respirometer. To be submitted to the *Journal of Visualized Experiments*.

Ells, E., **M.S. Labrie**, and M.A. Sundermeyer, 2024. Nutrient Remediation through Shellfish Aquaculture: Oysters as a source of denitrification. To be submitted to *Estuaries and Coasts*.

7. TECHNICAL REPORTS

Labrie, M.S., D.S. Schlezinger, J.A. Benson. Lonnie's Pond Aquaculture/TMDL: 2023 Semi-Annual Status Update. August 22, 2023. Prepared for the Town of Orleans.

Labrie, M.S., D.S. Schlezinger, J.A. Benson, S.J. Horvet. Effects of Microbe-Lift Treatment on Freshwater Pond Sediment Core Incubations. May 25, 2023. Prepared for Jeff Young, Director of AMT BioProducts Corp., and Doug Dent, Chief Technical Officer of Ecological Laboratories, Inc.

Labrie, M.S., D.S. Schlezinger, J.A. Benson. Lonnie's Pond Aquaculture/TMDL 2022 Annual N Removal/Harvest Report. February 28, 2023. Prepared for the Town of Orleans.

Howes, B.L., N.M. Uline, **M.S. Labrie**, D.S. Schlezinger, J.A. Benson. Lonnie's Pond Aquaculture/TMDL 2021 Annual N Removal/Harvest Report. February 26, 2022. Prepared for the Town of Orleans.

Howes, B.L., N.M. Uline, **M.S. Labrie**, D.S. Schlezinger, J.A. Benson. Lonnie's Pond Aquaculture/TMDL Semi-Annual Status Update. October 20, 2021. Prepared for the Town of Orleans.

Howes, B.L., R.I. Samimy, D.R. Schlezinger, **M.S. Labrie**. October 20, 2021. Quantifying Potential for Oyster Aquaculture and Impacts on Estuarine Nitrogen Related Water Quality: Cockeast Pond (Westport, MA) And Lonnie's Pond (Orleans, MA). Semi-Annual Performance Report to the SNEP EPA Project Officer, 11th report.

Howes, B.L., R.I. Samimy, D.R. Schlezinger, **M.S. Labrie**. May 10, 2021. Quantifying Potential for Oyster Aquaculture and Impacts on Estuarine Nitrogen Related Water Quality: Cockeast Pond (Westport, MA) And Lonnie's Pond (Orleans, MA). Semi-Annual Performance Report to the SNEP EPA Project Officer, 10th report.

Carvalho, R., B.L. Howes, **M.S. Labrie**, D.R. Schlezinger, and R.I. Samimy. November 2020. Cockeast Pond as a Living Laboratory: Nitrogen and Oyster Aquaculture, a Report on Quantifying Potential for Oyster Aquaculture and Impacts on Estuarine Nitrogen Related Water Quality. Westport River Watershed Alliance.
<https://westportwatershed.org/whats-being-done/oyster-experiment-in-cockeast-pond/>

Howes, B.L., N.M. Uline, A.D. Unruh, D.R. Schlezinger, **M.S. Labrie**, J. Benson, and S.J. Sampieri. October 21, 2020. Assessment of Bourne's Pond Oyster Aquaculture Effects on Water Quality and Nutrient Cycling. CSP-SMAST Technical Report to the Falmouth Water Quality Management Committee.

- Howes, B.L., R.I. Samimy, D.R. Schlezinger, **M.S. Labrie**. October 5, 2020. Quantifying Potential for Oyster Aquaculture and Impacts on Estuarine Nitrogen Related Water Quality: Cockeast Pond (Westport, MA) And Lonnie's Pond (Orleans, MA). Semi-Annual Performance Report to the SNEP EPA Project Officer, 9th report.
- Howes, B., E. Eichner, A. Unruh, D. Schlezinger, **M.S. Labrie**, N. Uline, R. Samimy. February 1, 2020. Lonnie's Pond Aquaculture/TMDL 2020 Annual Report (Parts 1 & 2). CSP-SMAST Technical Report to the Town of Orleans.
- Howes, B.L., R.I. Samimy, D.R. Schlezinger, J. Benson, **M.S. Labrie**, A.D. Unruh, and S. Sampieri, June 1, 2020. Water Quality Improvements Associated with Mashpee Shellfish Aquaculture: Effectiveness in Reducing Water Column Nutrient Concentrations in Popponeset and Waquoit Bays. CSP-SMAST Technical Report to the Town of Mashpee.
- Howes, B., E. Eichner, A. Unruh, D. Schlezinger, **M.S. Labrie**, R. Samimy. January 26, 2020. Lonnie's Pond Aquaculture/TMDL Annual Report (Parts 1 & 2). CSP-SMAST Technical Report to the Town of Orleans.
- Howes, B.L., D.R. Schlezinger, R.I. Samimy, **M.S. Labrie**, J. Benson, S. Sampieri, A.D. Unruh, and P.J. Mancuso, May 12, 2019. Lonnie's Pond Shellfish Demonstration Project Three Year Synthesis Report. CSP-SMAST Technical Report to Town of Orleans, MA Water Quality and Wastewater Planning.
- Howes, B.L., A.D. Unruh, D.R. Schlezinger, J. Benson, and **M.S. Labrie**. February 28, 2019. Preliminary Assessment of Bourne's Pond Oyster Aquaculture Effects on Water Quality and Nutrient Cycling. CSP-SMAST Technical Report to the Falmouth Water Quality Management Committee.
- Howes, B. L., D.R. Schlezinger, and **M.S. Labrie**, October 20, 2017. Quantifying Nitrogen Removal by Seed Oysters in Upwellers in West Bay. CSP-SMAST Technical Report to Three Bays Preservation, Barnstable Clean Water Coalition Director, Zenas Crocker.
- Howes, B.L., R.I. Samimy, D.R. Schlezinger, **M.S. Labrie**, and S. Sampieri, October 19, 2017. Detailed Assessment of Water and Nutrient Exchange within the Quashnet River / Moonakis River Sub-embayment to Waquoit Bay. CSP-SMAST Technical Report to Town of Falmouth, MA Water Quality Management Committee Chair, Eric Turkington and Town of Mashpee, MA Mashpee Sewer Commission Chair, Tom Fudala.
- Howes, B.L., D.R. Schlezinger, R.I. Samimy, J. Benson, S. Sampieri, **M.S. Labrie**, A.D. Unruh, and P.J. Mancuso, 2017. Lonnie's Pond Shellfish Demonstration Project Year 1 Monitoring Summer/Fall 2016 Oyster Deployment. CSP-SMAST Technical Report to Town of Orleans, MA Water Quality and Wastewater Planning.
- Howes, B. L., D.R. Schlezinger, R.I. Samimy, **M.S. Labrie**, 2016. Shellfish Aquaculture Demonstration Project Little Pond Monitoring 2012-2015: Impact on water quality and nitrogen removal, Town of Falmouth, MA. CSP-SMAST Technical Report to Town of Falmouth.

Howes, B.L., D.R. Schlezinger, R.I. Samimy, and **M.S. Labrie**, 2015. Shellfish Aquaculture Demonstration Project Little Pond Monitoring 2012-2014: Impact on water quality and nitrogen removal, Town of Falmouth, MA. CSP-SMAST Technical Report to Town of Falmouth, 167 pp.

8. PRESENTATIONS AND ABSTRACTS

Labrie, M.S. Biodegradation Studies and Experiments for Materials in the Marine Environment Series. Part 3: New State of the Art Laboratory / Facility for Investigation of Materials in the Marine Environment. Three-part Plastics Society (SPE) webinar series on behalf of Columbus Instruments, LLC. August 16, 2023. Oral Presentation.

Labrie, M.S. Quantifying Impacts of Floating Oyster Aquaculture on Nitrogen Cycling in Southeastern Massachusetts Embayments. USEPA-SNEP Virtual Symposium, March 18, 2022. Oral Presentation.

Labrie, M.S., M.A. Sundermeyer, and B.L. Howes. Quantifying Impacts of Floating Oyster Aquaculture on Nitrogen Cycling in a Southeastern Massachusetts Coastal Embayment. Aquaculture 2022. February 28-March 4, 2022. San Diego, California. Abstract Accepted Oral Presentation.

Labrie, M.S., D.R. Schlezinger, M.A. Sundermeyer, and B.L. Howes. Evaluation of the Potential for Oyster Mediated Nitrogen Reduction in A Coastal Salt Pond: Year Three Findings Focusing on our Comparison Project in Lonnie's Pond (Orleans, MA). 112th meeting of the National Shellfisheries Association. March 30-April 2, 2020. Baltimore, Maryland. Abstract Submitted Oral Presentation.

Labrie, M.S., R. Samimy, and B. Howes. Oyster Aquaculture for Restoration of Water Quality in Two Southeastern MA Salt Ponds: Environmental Controls on Growth Rates and Nitrogen Removal. SNEP EPA Share-A-Thon. October 25, 2019. Providence, Rhode Island. Poster Presentation.

Labrie, M.S., D.R. Schlezinger, M.A. Sundermeyer, and B.L. Howes. Quantifying The Potential for Nitrogen Removal Through the Harvest of Aquaculture Oysters from Southeastern Massachusetts Embayments. Poster presentation. Sigma Xi Annual Research Exhibit, April 17 & 18, 2019, Dartmouth, MA.

Labrie, M.S., D.R. Schlezinger, M.A. Sundermeyer, and B.L. Howes. Quantifying The Potential for Nitrogen Removal Through the Harvest of Aquaculture Oysters From Southeastern Massachusetts Embayments. Poster presentation. UMass Intercampus Marine Science Program Research Symposium, April 4, 2019. New Bedford, MA.

Labrie, M.S., D.R. Schlezinger, M.A. Sundermeyer, and B.L. Howes. Evaluation of the Potential for Oyster Mediated Nitrogen Reduction in a Coastal Salt Pond: Year Two Findings. Oral presentation. New England Estuarine Research Society Spring Meeting, April 27, 2018. Portsmouth, NH.

Labrie, M.S., D.R. Schlezinger, M.A. Sundermeyer, and B.L. Howes. Quantifying Impacts of Suspended Oyster Aquaculture on Nitrogen Cycling in Southeastern

- Massachusetts Coastal Embayments. Poster presentation. Sigma Xi Annual Research Exhibit, April 17 & 18, 2018, Dartmouth, MA.
- Labrie, M.S.**, D.R. Schlezinger, M.A. Sundermeyer, and B.L. Howes. Quantifying the Potential for Nitrogen Removal Through the Harvest of Oysters from Southeastern Massachusetts Embayments. Coastal and Estuarine Research Federation Biennial Conference, November 2017, Providence, RI (accepted abstract).
- Labrie, M.S.**, D.R. Schlezinger, B.L. Howes, and M.A. Sundermeyer. Evaluation of the Potential for Oyster Mediated Nitrogen Reduction in a Coastal Salt Pond. Oral presentation. New England Estuarine Research Society Spring Meeting, March 17, 2017. Groton, CT.
- Howes, B.L., D.R. Schlezinger, **M.S. Labrie**, R.I. Samimy, J. Benson, S.J. Sampieri, A.D. Unruh, and P.J. Mancuso. Oyster Demonstration Project: Lonnie's Pond Effect on Water Quality and Nitrogen Cycling. Oral Presentation. Town of Orleans Shellfish Working Group, February 6, 2017.
- Labrie, M.S.**, D.R. Schlezinger, B.L. Howes, and M.A. Sundermeyer. Quantifying Impacts of Suspended Oyster Aquaculture on Nitrogen Cycling in Southeastern Massachusetts Embayments. Poster presentation. New England Estuarine Research Society Fall Meeting, October 21, 2016. Block Island, RI.
- Unruh, A.D., **M.S. Labrie**, P.J. Mancuso, A. Austin, B.L. Howes, and M.A. Sundermeyer. Case Study for Potential Soft Infrastructure Solutions Versus Traditional Infrastructure Solutions in Cockeyeast Pond, Westport, Massachusetts, USA. Poster Presentation. New England Estuarine Research Society Fall Meeting, October 21, 2016. Block Island, RI.
- Labrie, M.S.**, D.R. Schlezinger, M.A. Sundermeyer, and B.L. Howes. Quantifying Impacts of Suspended Oyster Aquaculture on Nitrogen Cycling in Southeastern Massachusetts Embayments. Poster presentation. New England Estuarine Research Society Spring Meeting, April 15, 2016. York, ME.
- Labrie, M.S.**, D.R. Schlezinger, M.A. Sundermeyer, and B.L. Howes. Quantifying Impacts of Suspended Oyster Aquaculture on Nitrogen Cycling in Southeastern Massachusetts Embayments. Poster presentation. UMass Intercampus Marine Science Program Research Symposium, March 25, 2016. Dartmouth, MA.
- Howes, B.L., R.I. Samimy, E. White, S.J. Sampieri, D.R. Schlezinger, J. Benson, A.D. Unruh, M. Bartlett, **M.S. Labrie**, and P.J. Mancuso. Assessment for Restoration of Cockeyeast Pond. Oral presentation. Coastal Systems Program / WRWA Collaboration Update Presentation. October 25, 2015. Westport, MA.
- Labrie, M.S.**, D.R. Schlezinger, M.A. Sundermeyer, and B.L. Howes. Quantifying Impacts of Suspended Oyster Aquaculture on Nitrogen Cycling in Southeastern Massachusetts Embayments. Poster presentation. International Oyster Symposium, October 2015, Cape Cod, MA.
- Howes, B.L., D.R. Schlezinger, and **M.S. Labrie**. Monitoring Water Quality Associated with Oyster Aquaculture in Little Pond, Falmouth, MA, USA, and its effectiveness in

reducing ambient nutrient concentrations. Oral presentation. International Oyster Symposium, October 2015, Cape Cod, MA.

Labrie, M.S., D.R. Schlezinger, M.A. Sundermeyer, and B.L. Howes 2015. Quantifying Impacts of Suspended Oyster Aquaculture on Nitrogen Cycling in Southeastern Massachusetts Embayments. Coastal and Estuarine Research Federation Biennial Conference, November 2015, Portland, OR (accepted abstract).

Fiore C.L., **M.S. Labrie**, and M.P. Lesser. Pumping Activity and Nitrogen Cycling in the Giant Barrel Sponge, *Xestospongia muta*. Poster presentation. Society of Integrative and Comparative Biology Annual Meeting, January 2012, Charleston, SC.

9. GRADUATE STUDENTS AND INTERNS ADVISED

Current Students:

Ph.D.

Elizabeth Ells (Sept 2018-present; Co-Advised w/ M. Sundermeyer) Note: M. Labrie became co-advisor following passing of B. Howes in December 2022.

M.S.

John Clark (August 2023-present; Co-Advised w/ M. Sundermeyer)

P.S.M.

Erica Roche (December 2023-present)

Interns

Erica Roche (December 2023-present), Isabel Penales (February 2023-December 2023), Haley Synan (summer 2022)

Academic/Thesis Committee Member for the Following Students:

SMAST/SMS Ph.D. student Jessica C. Thomas; Principal advisor: Prof. M. Sundermeyer (Ph.D. expected December 2024)

SMAST/SMS Sc.M student Sessa A. Manning; Principal advisor: Prof. Mark Altabet (Sc.M. expected August 2024)

SMAST/SMS Sc.M student Nicholas Uline; Principal advisor: Prof. B. Howes (Sc.M. 2022)

10. PROFESSIONAL AWARDS AND SCHOLARSHIPS

School for Marine Science and Technology Student Excellence Scholarship, 2017.

11. PROFESSIONAL MEMBERSHIPS

- ASTM International Participating Member (April 2023 – present)
- Member Southeast New England Program (SNEP) Ecosystem Services Subcommittee, Environmental Protection Agency (May 2019 – present)

- Biodegradability Laboratory Advisory Board, UMass Dartmouth (July 2022 – present)

12. ACADEMIC & PROFESSIONAL SERVICE

New Bedford Science Café, New Bedford, MA.

Presented, "Testing New Materials for Ocean-Safe Biodegradable Plastics." October 3, 2023.

Shoals Marine Laboratory, Appledore Island, NH.

Guest lectured Marine Environmental Science High School Course. August 1, 2023.

Co-organized Dept. of Estuarine and Ocean Sciences weekly seminar series (Fall 2022, Spring 2023), New Bedford, MA.

Healey-Driscoll Administration UMassD Event, Dartmouth, MA.

Participated in a roundtable discussion on education, the environment and sustainability in MA at UMass Dartmouth on January 10, 2023

Biodegradability Laboratory Outreach Events (2022-current), New Bedford, MA.

Lead tours of Biodegradability facilities for various groups including numerous state legislators and Lt. Governor Karyn Polito, Blue Innovation Symposium, Global Learning Charter Public School Field trip, Sealab 5th graders, UMassD Bioengineering undergraduate interns.

UMass Intercampus Marine Science Symposium, March 21, 2023. Dartmouth, MA.

Judged graduate student presentations.

Citizens Monitoring Program, Summers 2014 to 2018. Falmouth, MA.

Water quality sampling, sample processing and data analysis.

High School Marine Science Symposium at Northeastern University, March 9, 2017. Boston, MA.

Presented workshop on the use of oyster aquaculture as a nitrogen remediation technique.

Ocean Literacy Summit hosted by the New England Ocean Science Education Collaborative, November 3-4, 2016. Portland, ME.

Attended as a SMAST student representative and exhibitor.

Shoals Marine Laboratory Fundraiser, October 20, 2016. Rye, NH.

Presented to potential donors.

UMass Intercampus Marine Science Symposium, March 25, 2016. Dartmouth, MA.

Assisted with set-up and break-down of the symposium.

New Bedford Working Waterfront, September 27, 2015. New Bedford, MA.

Conducted demonstrations of ocean acidification for the visiting public.

Party for the Planet at Buttonwood Park Zoo, April 18, 2015. New Bedford, MA.

Conducted demonstrations of the effects of overfishing for the visiting public.