

Elaine Wang Shen

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EDUCATION

University of Rhode Island (URI) | Kingston, RI **August 2018 – May 2023**

PhD: Biological and Environmental Sciences (Ecology and Ecosystem Sciences)

Dissertation: The social and ecological dimensions of coral reef biomonitoring.

Rice University | Houston, TX **August 2014 – May 2018**

BSc: Ecology and Evolutionary Biology, *Minor:* Environmental Studies

Thesis: Using environmental DNA to examine patterns of fish and invertebrate diversity across a heterogeneous tropical seascape.

School of International Training (SIT) | Panama City, Panama **Fall 2016**

Program: Tropical Ecology, Marine Ecosystems, and Biodiversity Conservation

PROFESSIONAL EXPERIENCE & RESEARCH

National Science Foundation Division of Ocean Sciences | Alexandria, VA **February 2024 – January 2025**

2024 Knauss Fellow; Ocean Science Policy Fellow

- Foster interagency collaboration and high-level ocean science and technology priority-setting in Federal committees, subcommittees, and working groups, including the White House Ocean Policy Committee.
- Support NSF's international ocean science policy portfolio through coordination with the U.S. National Focal Point for the G7 Future of the Ocean and Seas Initiative and engagement with the UN Ocean Decade.
- Enhance agency and interagency policies in environmental justice, community engagement, and diversity, equity, and inclusion through guidance provided during strategy and implementation planning activities.

Metcalf Institute | Kingston, RI **May 2023 – November 2023**

Program Associate

- Produced the multi-day virtual 2023 Inclusive SciComm Symposium for 350+ attendees and speakers on Zoom Events. Coordinated with Metcalf staff, planning committee members, and corporate donors.
- Led program evaluation for the 2023 Annual Science Immersion Workshop for Journalists.

University of Rhode Island | Kingston, RI **August 2018 – May 2023**

Graduate Researcher & Teaching Assistant, College of Environment and Life Sciences

- Evaluated ecological and management outcomes of coral reef fisheries using structural equation modeling, environmental DNA metabarcoding, and critical discourse analysis.
- Assisted in course instruction & field excursions of four introductory and upper-level undergraduate courses (20 hours/week for three semesters, 15 - 200 students per class).
- Propelled DEIJA initiatives as the graduate assistant for the Office of Diversity, Retention and Student Success Initiatives in the College of Environment and Life Sciences.

Smithsonian Tropical Research Institute | Bocas del Toro, Panama **May – August 2017**

Research Intern & Wagoner Fellow

- Spearheaded undergraduate thesis project to enumerate biodiversity in nearshore tropical ecosystems using environmental DNA, which resulted in a first-authored peer-reviewed publication. Assisted on field collections of cryptic biodiversity in mangrove stands.

School of International Training | Panama City, Panama **August – December 2016**

Student Researcher & Rice/SIT Merit Scholar

- Led independent research project quantifying benthic and fish diversity across a gradient of human use using visual surveys in Bocas del Toro, Panama.

Undergraduate Researcher

- Executed independent research project comparing the benthic diversity of an oil platform to adjacent federally-protected natural reef ecosystems in the northwest Gulf of Mexico using image analysis.

PUBLICATIONS*corresponding author, ¹co-first authors**IN OCEAN SCIENCE POLICY**Ocean Policy Committee. (2024). [National Strategy for a Sustainable Ocean Economy](#).Interagency Working Group on Biodiversity. (2024). [National Ocean Biodiversity Strategy](#).**IN PEER-REVIEWED JOURNALS**Shen, E.W^{*}, et al. (2024). Preliminary characterization of coral reef diversity using environmental DNA in a hyper-diverse context. [Regional Studies in Marine Science](#), 103432.Shen, E.W^{*}, Vandenberg, J.M. & Moore, A. Sensing inequity: technological solutionism, biodiversity conservation, and environmental DNA. (2023) [BioSocieties](#). Read-only: <https://rdcu.be/drNrS>Nguyen, B.N.[^], Shen, E.W.^{*^}, et al. Environmental DNA survey captures patterns of fish and invertebrate diversity across a tropical seascape. (2020) [Scientific Reports](#) 10, 6729. In: Top 100 in Ecology Collection (2020). Press: [en](#), [es](#)Reviewer for: *Environmental DNA, Ecology and Evolution, Scientific Reports* and *Biological Journal of the Linnean Society***FELLOWSHIPS, HONORS, AND AWARDS**[^] Forfeited due to COVID-19

John A. Knauss Marine Policy Fellowship (\$73,000)	2024
URI Graduate Student Excellence Award for Diversity and Inclusion	2021
National Science Foundation Graduate Research Fellowship Program (\$134,000)	2020
URI/The Nature Conservancy Global Marine Initiative Student Research Award Program (\$18,300) [^]	2020
URI William H. Krueger Graduate Studies Fund (\$1,500)	2019
Texas Gulf Coast Council of Diving Clubs Merit College Scholarship (\$500)	2018
Rice University Distinction in Research and Creative Works	2018
Rice University Julian Huxley Award for Excellence (\$250)	2018
Rice University President's Honor Roll	2017, 2018
Best Eco/Evo Biology Poster at the Rice Undergraduate Research Symposium (\$300/each)	2016, 2018
Rice University Scholars Program (\$1,000)	2017
Smithsonian Tropical Research Institute Internship Award (\$2,300)	2017
Wagoner Foreign Study Fellowship (\$6,000)	2017
Rice University Greene Prize for Environmental Writing (\$1,000)	2017
School of International Training/Rice Merit Scholarship (\$4,000)	2016
Rice University Shell Center for Sustainability Award (\$250)	2016
Chinese Professional Club of Houston Merit Scholarship (\$4,000)	2014

RESEARCH PRESENTATIONSShen, E.W., Vandenberg, J., Moore, A. (2023). *Sensing Inequality: Technological Solutionism, Biodiversity Conservation, and Environmental DNA*. Talk presented at the Association for the Study of Literature and Environment Conference, Portland, OR.Shen, E.W., Borbee, E., Carvalho, P.G., Setiawan, F., Subhan, B., Madduppa, H., Lane, C.E., Humphries, A.T. (2022). *Utilizing environmental DNA with visual surveys of marine biodiversity in a hyper-diverse and data-poor tropical context*. Talk presented at the Ecological Society of America Conference, Montreal, QC.

Shen, E.W., Nguyen, B., Seemann, J., Altieri, A., Egan, S., Leray, M., Correa, A. (2018). *Fishing for Genes: Surveying fish biodiversity in nearshore caribbean marine ecosystems using environmental DNA*. Poster presented at the Houston Regional Ecology and Evolution Student Symposium (April) & Rice Undergraduate Research Symposium (May) , Houston, TX. (Awarded Best Ecology and Evolutionary Biology Poster at RURS)

Shen, E.W., Knochel, A., Saucedo M., Embesi, J., Nuttall, M., Correa, A.M.S. (2016). *Comparing benthic diversity on oil platforms and natural reefs in the northwest Gulf of Mexico*. Poster presented at the Rice Undergraduate Research Symposium, Houston, TX. (Awarded 2016 Best Ecology and Evolutionary Biology Poster at RURS & 2nd place for the Shell Center for Sustainability Award)

PUBLIC ENGAGEMENT AND ACADEMIC SERVICE

URI Voices Of Inclusion in Communities of Education and Science, <i>Founding member</i>	2018 – 2023
URI CELS Diversity Committee, <i>Graduate student representative</i>	2018 – 2022
URI CELS Seeds of Success & Office of Recruitment and Retention, <i>Graduate student advisor</i>	2020-2021
URI Office of Student Affairs, <i>Student advisory board member</i>	2021
Inclusive SciComm Symposium, <i>Planning committee member</i>	2021
75th Phycological Society of America Conference, <i>Lead on bioinformatics workshop</i>	2021
EEB Mentor Match, <i>Peer mentor</i>	2020, 2021
IPB Department of Marine Science & Technology, <i>Lead on metabarcoding workshop</i>	2019
Letters to a Pre-Scientist, <i>Scientist pen pal</i>	2019
Rice Oceans Club, <i>Founding member, President</i>	2014 – 2018
Rice University, <i>Student lecturer</i>	2017

Invited speaker for: The Coastal Society and National Center for Atmospheric Research, URI Board of Trustees, the NSF-OCE REU program, Metcalf Institute Annual Science Immersion Workshop for Journalists, Skype a Scientist, AAAS Classroom Science Days, Society for Women in Marine Science, and various K-12 schools across the country.

SELECTED SCIENCE COMMUNICATION

Shen, E.W. (2023). *Changing the Conversation: The importance and practice of inclusive science communication*. [STEM Magazine](#), 16-20.

Shen, E.W. (2022). *Meander Belt: Native Houstonian reflects on water*. In Lacy M. Johnson & Cheryl Beckett (Eds.), [More City Than Water: A Houston Flood Atlas](#). University of Texas Press.

Shen, E. W. (2019). *Crypt-keeper Wasp Manipulates the Behavior of its Parasite Host*. [Enquiry Magazine](#), Vol. (III), 22-25.

Shen, E.W. (2018). *Seagulls can be annoying. But so can we*. [The Houston Chronicle](#). Web.

Shen, E. W. (2018). *Biodiversity in a Drop of Water: A Glance into Marine Forensics*. [Rice Catalyst](#). Vol. (XI), 40-43.

Shen, E.W. (2018). *Will the Gulf of Mexico protect its coral? [Opinion.]* [The Houston Chronicle](#). Web.

Shen, E.W. (2016). *A Cautionary Tale: Protecting the world's tropical wildlife*. [Enquiry Magazine](#), Vol. (I), 12-15.

PRESS AND MEDIA FEATURES

MacDonald, H. (2021). *CELS PhD Student at the Forefront of Biodiversity Research and International Collaboration*. Nominated Profile for the [College of Environment and Life Sciences](#). Web.

Nguyen, C. (2019) *For the Love of our Oceans*. Profile for the [Ocean Conservancy](#). Web.

Costanzo, J. (2018) *Elaine Shen '18: A Whole Different World*. Profile for [Rice Magazine](#). Web & Print.

Bennett, L. (2018) *On the Trail of DNA in the Ocean*. Research Spotlight for [Smithsonian Ocean](#). Web.

Lin, M. (2017). *Students teach students*. Teaching Feature for [Rice Thresher](#). Print.

PROFESSIONAL DEVELOPMENT AND SKILLS

MARINE ECOLOGY: AAUS Scientific Diver; coral reef monitoring methods; Caribbean and Indo-Pacific fish and coral identification; CPR/First Aid/Oxygen Administration (certified); Institutional Animal Care and Use Committee (IACUC) certification

MOLECULAR BIOLOGY: DNA extraction; PCR; Gel-electrophoresis; Illumina Mi-seq library preparation

COMPUTER SKILLS: R; Github; shell scripting in BASH; ImageJ; Qiime2; CPCe; Adobe Suite; Microsoft Office Suite

DIVERSITY, EQUITY, INCLUSION: Diversity and Inclusion Badge (URI micro-credential); co-creating community norms and brave spaces in virtual and in-person settings

OTHER SELECTED SKILLS: English (native); Chinese (conversational); Spanish and French (basic); public speaking and performance (Principal Dancer in Hocus Pocus 2 and Season 8 of America's Got Talent); photography and videography