

Elaine Wang Shen

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EDUCATION

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

Doctor of Philosophy: Biological and Environmental Sciences (Ecology and Ecosystem Sciences)

Dissertation: The social and ecological dimensions of coral reef biomonitoring. *Co-advisors:* Dr. Austin Humphries, Dr. Chris Lane

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

Bachelor of Science: Ecology and Evolutionary Biology, *Minor:* Environmental Studies

Thesis: Using environmental DNA to examine patterns of fish and invertebrate diversity across a heterogeneous tropical seascape. *Co-advisors:* Dr. Matthieu Leray, Dr. Adrienne Correa

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

- Providing ocean policy, governance, and operational support to the NSF Division of Ocean Sciences, interagency committees within the Executive Office of the President, and community advisory entities.

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

- Evaluated coral reef fisheries ecology and management outcomes in Indonesia 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).
- Served as the graduate assistant for the Office of Diversity, Retention and Student Success Initiatives.

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.

Flower Garden Banks National Marine Sanctuary (FGBNMS) | Galveston, TX **January – May 2016**

Undergraduate Researcher

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

PUBLICATIONS

*corresponding author, ¹co-first authors

PEER-REVIEWED

- 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	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 PRESENTATIONS

- 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, *Founding member* 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 & videography