

Taylor Ely
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Education

University of Hawai‘i at Mānoa Expected January 2027
PhD Candidate in Zoology current GPA: 4.0
Thesis: *Connectivity of Marine Communities in the North Central Pacific*
Advisor: Dr. Peter Marko

University of California, Los Angeles June 2018
Bachelors of Science Marine Biology GPA: 3.957
Minor in Environmental Systems and Society
Senior Honors Thesis: *Investigating Temporal Variation of eDNA in a Marine Environment*
Advisor: Dr. Paul Barber

Publications

* = equal authorship

Ely TD, Marko PB. *In Review*. Resolving emergent patterns in community genetics with environmental DNA.

Nichols PK, Sherwood AR, Fraiola KM, **Ely TD**, Hauk BB, Counsell CW, Porter ML, Marko PB. (2025). Detection of a Non-Indigenous Marine Macroalga (*Acanthophora spicifera*) With Environmental DNA From Surface Seawater. *Aquaculture, Fish and Fisheries* 5, no. 6: e70135.

Fumo JT, Nichols PK, **Ely T**, Marko PB, Moran AL, Powell BS, Williams TM, Kosaki RK, Smith CM, Lopes Jr KH, Smith JE. (2025). A predictive framework for identifying source populations of non-native marine macroalgae: *Chondria tumulosa* in the Pacific Ocean. *PeerJ*, 13: p.e19610.

Ely TD*, Mukai GNM*, Kobayashi DR, Marko PB, Moran AL, Wren JLK. (2024). Characterizing key sensitivities for modeling long-distance dispersal in the North Central Pacific Ocean. NOAA Technical Report.

Ely T, Patten N, Naisbett-Jones LC, Spencer ET, Willette DA, Marko PB. (2023). Molecular identification of critically endangered European eels (*Anguilla anguilla*) in U.S. retail outlets. *PEERJ*. 11: e14531

Moran AL, Toh M-WA, Lobert GT, **Ely T**, Marko PB. (2021). Egg masses and larval development of the Antarctic cephalaspidean slug *Waegelea antarctica*, with notes on egg masses of the related *Antarctophiline alata*. *Journal of Molluscan Studies*. 87(3).

Ely T, Barber PH, Man L, Gold Z. (2021). Short-lived detection of an introduced vertebrate eDNA signal in a nearshore rocky reef environment. *PLOS ONE* 16(6): e0245314.

Blanchette A*, **Ely T***, Zeko A*, Sura S, Turba R, Fong P. (2019). Damselfish *Stegastes nigricans* increase algal growth within their territories on shallow coral reefs likely via enhanced nutrient supplies. *Journal of Experimental Marine Biology and Ecology*. 513: 21-26

Grants

- 2024 - 2026 **Jessie D. Kay Memorial Award in Zoology** (\$10,000)
What are the dispersal pathways for marine species to the Hawaiian Archipelago?
- 2023 - 2024 **Elizabeth Alison Kay Endowed Award** (\$2500)
Dispersal patterns of marine organisms in the Hawaiian Archipelago
- 2020 - 2021 **The Charles H. And Margaret B. Edmondson Research Fund** (\$2000)
Community-wide genetic patterns revealed through eDNA
- 2019 - 2024 **NSF Graduate Research Fellowship Program** (\$118,500)
Using eDNA to examine the impact of warming oceans on marine fish communities

Honors & Awards

- 2025 - 2026 UHM Zoology Graduate Program Achievement Scholarship (\$1000)
- 2024 - 2025 Honolulu ARCS Scholar (\$6,000)
- 2024 - 2025 Environmental DNA (eDNA) Conference Bursary (\$1500)
- 2017 - 2018 Graduated Summa Cum Laude and Departmental Highest Honors from UCLA
- 2017 - 2018 UCLA Undergraduate Research Scholarship Program award (\$5000)
- 2017 - 2018 Whitcome Research Undergraduate Summer Fellowship at UCLA (\$3000)
- 2015 - 2016 UCLA Promise Award Scholarship (\$2000)
- 2014 - 2018 Dean's Honors List at UCLA
- 2013 - 2014 California State PTA Scholarship (\$500)

Presentations

Talks

- Apr 2025 "Population Genetics of Marine Species in Hawai'i using eDNA". Albert L. Tester Memorial Symposium. Honolulu, HI. *Honorable Mention, Best Graduate Student Talks*
- Feb 2025 "Analysis of eDNA as a community genetics tool". 2nd Australian & New Zealand Environmental DNA (eDNA) Conference. Wellington, New Zealand.
- Apr 2024 "eDNA: a promising tool for population genetics". Albert L. Tester Memorial Symposium. Honolulu, HI.
- Apr 2022 "Testing eDNA as a fine-scale population genetics tool in marine ecosystems". Albert L. Tester Memorial Symposium. Honolulu, HI.
- May 2017 "Territorial damselfish enhance nutrient supplies to algal turf in shallow coral reefs". Marine Biology Quarter Symposium. Los Angeles, CA.

Posters

- Dec 2025 "Marine Community Genetics: A Test in the Hawaiian Islands". 8th Annual Meeting of the eDNA Society. Yamaguchi, Japan.
- Aug 2018 "Monitoring Sea Star Wasting in Oregon's Marine Reserves". Oregon Sea Grant Final Symposium. Newport, OR.
- May 2018 "Investigating Temporal Variation of eDNA in a Marine Environment". UCLA's Annual Biology Research Symposium. Los Angeles, CA. *3rd place Undergraduate Poster*

Experience

- Aug 2019 - current **Graduate Research Assistant**
Marko Lab, University of Hawai'i at Mānoa, Honolulu, Hawai'i
- Collected and processed ~2,000 eDNA samples for biogeography and population genetics analyses
 - Wrote a population genetics pipeline in R for eDNA samples
 - Simulated larval dispersal into the Hawaiian Archipelago using python and OceanParcels
 - Ran population genomic analyses on urchin tissue samples
 - Used restriction enzymes to identify illegal eel species in markets
- Feb 2018 - Jun 2018 **Research Technician**
Carlson Lab, Bowdoin College, Brunswick, Maine
- Processed parrotfish gut samples for MiSeq and qPCR
 - Created a protocol for laboratory and bioinformatics analysis designed for undergraduate students
 - Managed lab upkeep including ordering supplies
- Jun 2018 - Aug 2018 **Oregon Sea Grant Summer Scholar**
Department of Fish and Wildlife, Marine Resources Program, Newport, OR
- Monitored sea star wasting syndrome (SSWS), analyzed data, and wrote a report about temporal changes in SSWS and biodiversity patterns
 - Expanded the monitoring program through successful collaborations
 - Led a team of 3-7 staff and volunteers during intertidal field sampling
- Oct 2015 - Jun 2018 **Undergraduate Research Assistant**
Barber Lab, University of California Los Angeles, Los Angeles, California
- Collected, processed, and analyzed eDNA samples
 - Extracted seagrass DNA for genomic analyzes
- Jun 2017 - Aug 2017 **Invertebrate Zoology Intern**
Meyer Lab, Smithsonian National Museum of Natural History, Washington D.C
- Extracted tissue samples from ARMS across Indonesia
 - Prepped samples for Sanger sequencing
 - Assembled and analyzed sequence chromatograms using Geneious
- May 2015 - May 2016 **Public Programs Intern**
Santa Monica Pier Aquarium, Santa Monica, CA
- Organized monthly scientific talks
 - Created advertisements, social media posts, and displays using Canva
 - Helped found the seabirds program

Teaching

- Apr 2025 - current **Undergraduate Mentoring**, University of Hawai'i at Mānoa
Advise a student working with eDNA data in R to investigate life history's influence on detections
- July 2024 **Environmental DNA team leader**, *R/V Thompson*
Trained and supervised a team of undergraduates and post-baccs to process eDNA samples
- Aug 2019 - May 2020 **Teaching Assistant**, University of Hawai'i at Mānoa
Ecology and Evolutionary Biology Lab and Invertebrate Biology

Service

Professional

- 2023 - 2026 **Reviewer** for manuscripts submitted to *Marine Ecology Progress Series*, *Molecular Ecology Resources*, *Proceedings of the Royal Society B: Biological Sciences*, *Aquatic Conservation: Marine and Freshwater Ecosystems*
- 2025 - 2026 **Student Social Chair**, School of Life Sciences, University of Hawai'i at Mānoa
Co-led weekly *pau hana* events to foster community and informal engagement among graduate students and faculty
- Oct 2024 **Panelist**, Navigating the Publishing Landscape Workshop, University of Hawai'i at Mānoa, Provided a graduate student perspective on academic publishing

Community

- 2024 - 2026 Various workdays on O'ahu: Paepae o He'eia, Ka Popo Lo'i o Kānewai, Waiale'e Lake Pono, 808 cleanups, Kaiāulu 'O Kahalu'u,...
- 2024 - 2025 International Save the Vaquita Day at the Waikīkī Aquarium
Lead volunteer, ran an educational booth
- 2020 - 2023 Various STEM outreach for kids: Kupu Hawai'i STEM outreach; Career Day at Dreamhouse HS; The Science of the Seuss Library Event
- 2020 - 2021 Science Fair Judge, Leeward Science and Engineering Fair
Volunteer judge for environmental science and biological sciences categories
- 2013 - 2014 Environmental Message of the Month at Palos Verdes Intermediate School
Founded and ran this program to educate students and parents about various topics and provide workdays for the students to engage with the community,
<http://monthlyenvironmentalmessgae.weebly.com/>

News & Media

- Sep 2024 UH News Article
<https://www.hawaii.edu/news/2024/09/08/research-voyage-marine-links-north-pacific/>

Graduate Courses

An Introduction to place-based methodologies in Hawai'i; People and the Sea; Population Genetics; Systematics and Phylogenetics; Biological and Physical Oceanography; Advanced Statistics in R

Certifications

- Scientific Diving certified since 2016: 112 scientific dives
- CPR, AED, and First Aid certified