

Taylor Ely
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Education

University of Hawai'i at Mānoa
PhD Candidate in Zoology
Advisor: Dr. Peter Marko

started August 2019
current GPA: 4.0

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

June 2018
GPA: 3.957

Experience

Graduate Research Assistant
University of Hawai'i at Mānoa
Dr. Peter Marko's Lab

September 2024 to current
NSF grant # 2049672

Investigating marine biogeography and population structure in North Central Pacific

- Collected eDNA samples on a 3-week long research cruise
- Trained and supervised undergraduates and post-bacs for eDNA sample processing

NSF Graduate Research Fellow
University of Hawai'i at Mānoa

August 2019 to September 2024

Testing environmental DNA as a population genetics tool in the Main Hawaiian Islands

- DNA extractions, quantification, amplification, purification, and library prep for MiSeq
- Bioinformatics and analysis in R and wrote functions for population genetics analysis

Lab Technician
Bowdoin College, Brunswick, Maine

February to June 2019

Sequenced and ran preliminary analysis on parrotfish gut samples

- DNA extractions, quantification, amplification, purification, and library prep
- Bioinformatics on cluster and analysis in R Studio and wrote protocol for future students
- In charge of upkeep of the lab which included ordering supplies

Oregon Sea Grant Summer Scholar
Department of Fish and Wildlife (ODFW)
Marine Resources Program, Newport, OR

June to August 2018

Assisted in the ecological monitoring of the intertidal communities within Oregon's marine reserves.

- Monitored sea star wasting syndrome (SSWS) and analyzed data from SSWS and biodiversity surveys in Oregon's MR with both univariate and multivariate statistics
- Expanded the monitoring program through successful collaborations
- Led a team of 3-7 staff and volunteers during intertidal field sampling

Undergraduate Research Assistant

October 2015 to June 2018

UCLA, Department of Ecology and Evolutionary Biology, Los Angeles
Undergraduate in Dr. Paul Barber's Lab

Senior Honors Thesis: Investigating Temporal Variation in a Marine Environment

- Designed experiment, collected samples, ran lab work, ran analysis, and wrote the paper

Invertebrate Zoology Intern

June to August 2017

Smithsonian Institute, National Museum of Natural History
Dr. Chris Meyer's Lab, Washington D.C.

Sequenced samples from the ARMS project across Indonesia using Sanger sequencing

Public Programs Intern

May 2015 to May 2016

Santa Monica Pier Aquarium, Santa Monica, CA

Assisted with outreach and events about aquarium animals and conservation issues

- Presented and hosted scientific talks including a talk with NASA JPL
- Created advertisements for events and talks for social media and newsletters
- Created hands on activities and displays
- Helped found the seabirds program at the aquarium

Certifications

- Certified Open Water Scuba Diver and Underwater Naturalist since 2008
- Scientific Diving certified since 2016: 112 scientific dives
- CPR, AED, and First Aid certified

Honors & Awards

2018	Graduated Summa Cum Laude and Departmental Highest Honors
2018	3 rd place Undergraduate Poster at UCLA's Biology Research Symposium
2014-2018	Dean's Honors List
2017	UCLA Undergraduate Research Scholarship Program award (\$5000)
2017	Whitcome Research Undergraduate Summer Fellowship (\$3000)
2016	Promise Award Scholarship (\$2000)
2015	Honor Society: Alpha Lambda Delta and Phi Eta Sigma
2014	California State PTA Scholarship (\$500)

Grants

2024 to current - **Jessie D. Kay Memorial Award in Zoology** (\$10,000)

What are the dispersal pathways for marine species to the Hawaiian Archipelago?

2023 - **Elizabeth Alison Kay Endowed Awards** for students in Biology/Zoology at the University of Hawai'i at Mānoa (\$2500)

Dispersal patterns of marine organisms in the Hawaiian Archipelago

2020 - **The Charles H. And Margaret B. Edmondson Research Fund** (\$2000)

Community-wide genetic patterns revealed through eDNA

2019 to 2024 - **NSF Graduate Research Fellowship Program** (\$118,500 over 3 years)

Using eDNA to examine the impact of warming oceans on marine fish communities

Publications

Ely TD*, Mukai GNM*, Kobayashi DR, Marko PB, Moran AL, Wren JLK. *In Review*. Characterizing key sensitivities for modeling long-distance dispersal in the North Central Pacific Ocean. NOAA Technical Report. * = co-first authors

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*.

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 *Antarctophilina 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*. * = co-first authors

Presentations

Oral Presentations

Ely T (2024) “eDNA: a promising tool for population genetics” Albert L. Tester Memorial Symposium. Honolulu, HI.

Ely T (2023) “Can eDNA be used as a population genetics tool for marine communities?” Albert L. Tester Memorial Symposium. Honolulu, HI.

Ely T (2022) “Testing eDNA as a fine-scale population genetics tool in marine ecosystems” Albert L. Tester Memorial Symposium. Honolulu, HI.

Ely T (2021) “Community-wide genetic patterns revealed through eDNA” Albert L. Tester Memorial Symposium. Honolulu, HI.

Ely T (2018). “Monitoring Sea Star Wasting in Oregon’s Marine Reserves”. Oregon Sea Grant Final Symposium. Newport, OR.

Ely T, Blanchette A, Zeko A (2017). “Territorial damselfish enhance nutrient supplies to algal turf in shallow coral reefs”. Marine Biology Quarter Symposium. Los Angeles, CA.

Ely T, Delgadillo A, Dimaano A, Gdara O, Roth J (2017). “Live and dead infaunal molluscan assemblages across a varying landscape of a tropical reef ecosystem”. Marine Biology Quarter Symposium. Los Angeles, CA.

Poster Presentations

Ely T (2018). “Monitoring Sea Star Wasting in Oregon’s Marine Reserves”. Oregon Sea Grant Final Symposium. Newport, OR.

Ely T (2018). “Investigating Temporal Variation of eDNA in a Marine Environment”. UCLA’s Annual Biology Research Symposium. Los Angeles, CA.

Ely T (2018). “Investigating Temporal Variation of eDNA in a Marine Environment”. UCLA Research Poster Day. Los Angeles, CA.

Teaching

Environmental DNA team leader	July 2024
Larvae Across the Pacific Research Cruise	<i>R/V Thompson</i>
Trained and supervised a team of undergraduates and post-baccs to process environmental DNA samples	
Teaching Assistant	January 2020 to May 2020
Invertebrate Biology (BIOL 485L)	University of Hawai'i at Mānoa
Teaching Assistant	August 2019 to December 2019
Ecology and Evolutionary Biology Lab (BIOL 265L)	University of Hawai'i at Mānoa

Public Outreach

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

Community Service

International Save the Vaquita Day	September 2024
Lead volunteer, ran an educational booth (reached 85 visitors)	Waikīkī Aquarium
48th Annual Albert L. Tester Memorial Symposium Workday with Paepae o He'eia	April 2024
Working towards the restoration of He'eia Fishpond	He'eia Fishpond
Career Day	February 2023
STEM research career education for high school students	Dreamhouse High School
Kupu Hawai'i STEM outreach	October 2022
STEM research career education for high school students	University of Hawai'i at Mānoa
Leeward Science and Engineering Fair	February 2020 and 2021
Volunteer judge for environmental science and biological sciences categories	online
The Science of the Seuss Library Event	March 2020
Educating young children about basic principles of science and engineering	Kapolei Public Library
Environmental Message of the Month	September 2013 to June 2014
Founded and ran this program to educate students and parents	Palos Verdes Intermediate School
http://monthlyenvironmentalmessage.weebly.com/	

Professional Service

Navigating the Publishing Landscape Workshop	October 2024
Discussion panelist for graduate student perspective	University of Hawai'i at Mānoa
Student Social Chair	Spring 2025 to current
Co-lead of weekly Pau Hana event for graduate students and faculty	University of Hawai'i at Mānoa

Reviewer for Journals

Aquatic Conservation: Marine and Freshwater Ecosystems,
Proceedings of the Royal Society B: Biological Sciences