Sophia Samus

ssamus1@my.hpu.edu
940-613-7033 (Cell)

RESEARCH INTERESTS

Identifying genetic signatures of climate change in marine intertidal invertebrates, marine ecology, evolutionary ecology

EDUCATION

Hawai'i Pacific University Honolulu, HI *Aug 2018 – Dec 2021*
B.S. in Marine Biology, Magna Cum Laude

Hawai'i Pacific University Honolulu, HI *Aug 2022 – present*
M.S. in Marine Science, in progress

HONORS / AWARDS

Academic and Research Excellence Award *2021*
Awarded to the top two seniors who excel in both academics and research

NOAA Hollings Scholarship *2020*

Dean's List *2019, 2020, and 2021 (all semesters)*

RESEARCH / FIELD WORK EXPERIENCE

Data Curator

Genomic Observatories Diversity Explorer (GEODE), Feb 2023 – Sep 2023, Supervisor: Eric Crandall, Ph.D.

- Curation of metadata associated with BioSamples from natural eukaryotic populations in the Sequence Read Archive (SRA). Metadata collected are made available on the Genomic Observatories MetaDatabase (GEOME) website and will be used to create an interface to view population genetic data

Fisheries Research Technician

Cooperative Institute for Marine and Atmospheric Research (CIMAR), May 2022 – Sep 2022, PI: Jonathan Whitney, Ph.D., supervisor: Nan Himmelsbach

- Identification of Coryphaena sp. (Mahi) prey items using DNA barcoding

- DNA extraction (Qiagen DNeasy B&T), PCR, gel electrophoresis, sequence annotation

Undergraduate Researcher – Fish Recruitment

Iacchei Lab, April 2021-2022, Supervisor: Savannah Laliberte

- Main goal: to determine patterns of recruitment of native mullet, *Mugil cephalus*, and invasive mullet, *Osteomugil engeli* in Kāneʻohe Bay
- Collect, measure, and fin clip mullet recruits in Kāneʻohe Bay

NOAA Hollings Intern

Southwest Fisheries Science Center, Remote, Summer 2021, Mentor: Steve Munch, Ph.D.

- Research the effect of climate change on metapopulation synchrony of market squid in California
- Experience using R for data analysis and visualization

Undergraduate Researcher - Barcoding and Genetic Sequence Analysis

Iacchei Lab, Oct 2020-Dec 2021

- Main goal: to identify lobster phyllosoma samples to species
- Experience with standard molecular laboratory techniques including DNA extraction using the hotshot technique and Omega kits, amplification of DNA region with PCR, gel electrophoresis, PCR cleanup, genetic sequence analysis using Geneious, and identification using BLAST. Further experience with next generation sequencing of eDNA samples

Undergraduate Researcher – Fish Morphology

Iacchei Lab, Nov 2019-Dec 2020, Supervisor: Nan Himmelsbach

- Main goal: to determine whether morphological character traits may inform differentiation among foraging habitats in two crpytic opah species, (*Lampris ingognitus* and *Lampris megalopsis*)
- Use ImageJ to measure area of the iris and pupil of Opah eyes

Poseidon Fisheries Lab Assistant

Poseidon Fisheries, Oct 2019-Mar 2020, Supervisors: Cassie Pardee and John Wiley

- Main goal: to obtain life history information of Hawai'ian reef fish to help fisheries become more sustainable

- Lab work: fish dissections, grinding and aging otolith
- Community work: local fishing tournaments, data collection (fish weight, length, sex), fish dissections, connecting with local fishermen

Undergraduate 3000-Level Oceanography Labs

Hawai'i Pacific University, Aug 2018-May 2020

- Experience in the laboratory as well as on a 42-foot research-vessel inside and just outside Kāne'ohe Bay
- Field labs on the RV Kaholo were 4 hours and included performing CTD casts, Niskin bottle deployments, Van Veen sediment grabs, Lagrangian drogue tracking, ADCP deployment, and plankton tows
- Lab aspects included sediment particle size classification, Winkler titrations, Spectrophotometric measurement of total phosphate, plankton identification and counting, and basic data visualization in MATLAB

TEACHING EXPERIENCE

Teaching Assistant

Hawaii Pacific University

- Biometry (BIOL 3090*), Aug 2022 – Dec 2022, Supervisor: David Hyrenbach, Ph.D.*
  - graded quizzes, taught short R lessons in class, held weekly office hours, assisted students with R assignments, and provided quiz review sessions every two weeks.
- Earth Systems & Global Change (ENVS 3030), *Aug 2023 – Dec 2023, Supervisor: David Field, Ph.D.*
  - Wrote/revised weekly reading assignments, gave lectures on paleoclimate, the Holocene, and global warming, held weekly office hours.

PRESENTATIONS

Group on Earth Observations: Biodiversity Observation Network (GEOBON) – poster presentation by Eric Crandall, Ph.D.

GEODE: A Genomic Observatories Diversity Explorer. October 2023

Crandall, E.D., Toczydlowski, R., Liggins L., Gaither, M.R., Pritt, A., Wham, B. Morr, D., Dudas, P. …Sophia Samus... Riginos, C., Toonen, R.J.(36 total co-authors) "GEODE: A Global Genomic Observatories Diversity Explorer". October 2023. Poster at Group on Earth Observations Biodiversity Observation Network 2023 Meeting. Montreal, Canada.

Indonesian-American Kavli Frontiers of Science symposium – poster presentation by Matthew Iacchei, Ph.D.

Kids characterizing coastal communities: A collaborative approach to monitoring nearshore fish diversity on Hawai'i Island using environmental DNA, Aug 2022

Iacchei M.J., Stiverson S., Renshaw M.A., Kua O La New Century Public Charter School Students, Traub P., Jumalon S., Samus S. Olds B.P., Karr G. "Kids characterizing coastal communities: A collaborative approach to monitoring nearshore fish diversity on Hawai'i Island using environmental DNA". August 2022. Poster at Indonesian-American Kavli Frontiers of Science symposium 2022 meeting. Indonesia.

Western Society of Naturalists – oral presentation, virtual

Climate change, environmental gradients, and population synchrony. November 2021

Samus, S., Dolan, T., Rogers, T., Munch, S. "Climate Change, Environmental Gradients, and Population Synchrony". November 2021. Oral presentation at Western Society of Naturalists 2021. Virtual.

OTHER SKILLS / CERTIFICATIONS

- Open water scuba certification
- Microsoft Excel, Word, and PowerPoint
- Basic knowledge of Python
- Fair amount of experience with R
- Familiarity working on a small research vessel
    - Boating safety, charting, navigation, operation of a hydraulic winch
- Field experience
    - Setting up and working along transects, using quadrats
- Experience driving students to field labs in 15 passenger van