

Zoë Zilz

Ecology, Evolution, and Marine Biology • University of California Santa Barbara
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EDUCATION

- Present PhD Candidate. University of California Santa Barbara (UCSB). Ecology, Evolution, and Marine Biology.
Dissertation: *Species interactions in the California Rocky Intertidal*
Committee: Dr. Armand Kuris (co-chair), Dr. Hillary Young (co-chair), and Dr. Chelsea Wood
- 2018 Master of Science, Biology. Western Washington University (WWU). College of Science and Engineering, Department of Biology.
Thesis: *Wasted and Castrated: Two diseases affecting the ochre star, Pisaster ochraceus, in North America*
Committee: Dr. Benjamin Miner (chair), Dr. Brian Bingham, Dr. Craig Moyer
- 2012 Bachelor of Arts, Biology. University of California, Santa Barbara. College of Creative Studies.
Advisor: Dr. Armand Kuris

TEACHING

Instructor of Record

- 2023 University of California Santa Barbara, Parasitology (EEMB 111)
- 2022 University of Washington, Parasite Ecology (FISH 406)

Head Teaching Assistant*

- 2020 – 2023 University of California Santa Barbara, Invertebrate Zoology, Lower Invertebrates (EEMB 112)
- University of California Santa Barbara, Invertebrate Zoology, Upper Invertebrates (EEMB 116)
- University of California Santa Barbara, Parasitology (EEMB 111)

**Coordinated instruction of the Invertebrate Zoology and Parasitology series, including managing a staff of 5-7 teaching assistants, 3-4 undergraduate teaching assistants, and 2-3 lab culturists. Overhauled curriculum for online learning during the COVID-19 pandemic.*

Teaching Assistant

- 2019 – 2020 UCSB, Invertebrate Zoology, Lower Invertebrates (EEMB 112) – one quarter
- UCSB, Parasitology (EEMB 111) – two quarters
- 2020 – 2021 UCSB, Biology for Brain Science Majors (EEMB 7) – two quarters
- 2019 UCSB, Introduction to Ecology (EEMB 120) – one quarter

- 2018 UCSB, Ecology and Evolution of Vertebrates (113) – one quarter
- 2018 WWU, Human Physiology (BIOL 349) – one quarter
- 2015 – 2018 WWU, Introduction to Ecology, Evolution and Biodiversity Lab (BIOL 204) – 4 quarters
- 2016 – 2017 WWU, Ecology (BIOL 326) – two quarters
- 2017 WWU, Invertebrate Zoology (BIOL 460) – one quarter

Instructional Assistant

- 2020 – 2022 UCSB, Departmental Seminar Organizer (3 quarters)
- 2021 UCSB, Departmental Remote Instructional Assistant (1 quarter)

Workshops

- 2023 UCSB R Seminar. Created and lead a workshop on “Data Wrangling” as part of a series of data science workshops curated by graduate students.
- 2021 Summer Intro R Workshop Series for EEMB Ocean Outreach Materials. Created and lead 1.5 hour workshop on “Data Management” for undergraduate beginners in R.
- 2020 UCSB Generalized Linear and Mixed Models (GLAMM) Workshop. Led workshop on “Generalized linear mixed models” as part of a graduate student-curated series covering theory and code on advanced statistical methods.

Other Teaching

- 2013 – present Hollister Ranch Tide Pool School Docent
Instructed students from 3rd-12th grade on the species and ecology of intertidal ecosystems by allowing them to explore and ask questions in Hollister Ranch’s pristine tide pools.
- 2014 – 2015 Santa Barbara Museum of Natural History Naturalist
Developed hands-on learning exhibits and educated the public about biology, geology, and anthropology relevant to the Santa Barbara area.
- 2014 Pacific Marine Research Marine Science Afloat Instructor
Taught hands on lessons in marine biology, oceanography, and conservation to field-trip groups of K-12 students aboard the Marine Science Afloat boat in Seattle, WA.

MENTORSHIP

* student has presented mentored research at a formal symposium or conference

Post-Graduate Mentees

- 2022 – 2023 Athena DiBartolo* and Delén Flores*, research technicians funded by the Coastal Fund Major Grant

Undergraduate Mentees

- 2022 – 2023 “Project ECOTONE” Research Interns:

Max Crawford, Lizzie Wu, Maddie Elkin, Makena Hanson, Avery Morgan, Ethan Blacher, Fiona Jeweler, Rebecca Lantier, Olivia Turner

- 2021 – 2023 “Rocky Intertidal Zone” Research Interns:
Kate Nickel and Elle DeAlessandrini
- 2021 – 2023 “Nicothoid Project” Research Interns:
Jaden Orli* and Sophia Leucona*
- 2021 Alejandra Valdez via UCSB EEMB Ocean Outreach Materials (co-advised by Jannine Chamorro)
- 2021 Emily Hascall via the Worster Award
- 2019 Jade Morris via the Worster Award
- 2016 – 2018 M.S. Research Interns:
Lindsey Hanson, Robert Scott, Siobhan Daly

High School Student Mentees

- 2019 Jaden Orli and Anna-Marie Gunther via the University of California Research Mentorship Program

SERVICE

- 2021 – 2023 UCSB EEMB Undergraduate Research Symposium Planning Committee. Organizer and Treasurer.
- 2020 – 2022 UCSB EEMB Graduate Student Association Committee. Vice President.
- 2019 – 2020 UCSB EEMB Graduate Student Association Committee. Social Chair.

RESEARCH

- 2018 – present Development of a food web representing species interactions, including parasitism, concomitant predation, and cross-ecosystem processes for the California rocky intertidal.
- 2021 – present Deployment of camera traps to understand the use of and foraging in intertidal habitats by terrestrial consumers in remote areas of the California coast.
- 2021 – present Description of the ecology and life cycle of a newly-discovered species of nicothoid copepod egg predator infesting the egg masses of yellow rock crabs in Santa Barbara.
- 2015 – 2018 Studied parasitism by the sperm-feeding ciliate, *Orchitophyra stellarum*, in ochre stars (*Pisaster ochraceus*), and its consequences for the recovery of sea star populations from sea star wasting disease.
- 2016 – 2018 Researched the effects of surgical autotomy (arm removal) in sea stars and its potential to increase the risk of developing Sea Star Wasting Syndrome (SSWS).

- 2014 Assisted with field work for research on off-host tick ecology and climate change across the isthmus of Panama as a Smithsonian Tropical Research Institute Intern.
- 2012 Studied seasonal variation in the trematode parasite, *Euhaplorchis californiensis*, in the California killifish in the Carpinteria Salt Marsh, CA.

AWARDS AND GRANTS

- 2023 Rafe Sagarin Fund for Innovative Ecology (\$2500)
- 2023 UCSB GSA Travel Grant (\$395)
- 2022 UCSB EEMB Block Grant (\$2500)
- 2022 UCSB EEMB Block Grant (one quarter of tuition and stipend)
- 2021 UCSB Coastal Fund Major Grant (\$13,671)
- 2021 Worster Fellowship (\$7500)
- 2020 UCSB Coastal Fund Minor Grant (\$961)
- 2019 Worster Fellowship (\$5000)
- 2019 UCSB EEMB Block Grant (one quarter of tuition and stipend)
- 2016 WWU Research and Sponsored Programs - Enhancement of Graduate Research Award (\$1500)
- 2017 WWU Research and Sponsored Programs - Enhancement of Graduate Research Award (\$1000)
- 2016 North Cascades Audubon Society Graduate Research Fellowship (\$450)

INVITED ENGAGEMENTS

Invited Panelist. *Diving into what makes the Dangermond Preserve Unique*. The 2023 Point Conception Institute Science Symposium.

Session Chair. *Applied Ecology*. The 2022 Western Society of Naturalists Meeting

Young, H. S. & **Zilz, Z. L.** (2022). *A Connected Coastline: Knowledge and gaps about marine to terrestrial subsidy movement on California's coasts*. Annual Multi-Agency Rocky Intertidal Network (MARINe) Workshop. **Invited talk.**

Invited lecture. *The Ecology of Parasites*. (2019). UCSB Introduction to Ecology (EEMB 120).

PUBLICATIONS AND PRESENTATIONS

Zilz, Z. L.; Copeland, S.; Young, H. S. *The role of coyotes in the movement of marine to terrestrial resource subsidies in remote California*. **In Review**. *Food Webs Special Issue: Camera Traps and Food Web Ecology*.

Zilz, Z. L.; DiBartolo, A.; Flores, D.; Kuris, A. K. (2022). *A parasite-inclusive food web for the California Rocky Intertidal*. Western Society of Naturalists Meeting. **Poster.**

Zilz, Z. L.; Copeland, S.; Young, H. S. (2022). *Beach Lions, Coyotes, and Bears, Oh My! The role of mammalian consumers in the movement of marine to terrestrial resource subsidies*. Western Society of Naturalists Meeting. **Talk.**

Zilz, Z. L. & Young, H. S. (2022). *Conservation of Marine to Terrestrial Subsidies on the Gaviota Coast*. **Report** for the Coastal Ranches Commission.

Zilz, Z. L.; Orli, J.; Morris, J. (2022). *A novel copepod egg predator infesting commercially important rock crabs in Santa Barbara, CA*. UCSB Ecology, Evolution, and Marine Biology Graduate Student Symposium. **Talk**.

Zilz, Z. L.; Orli, J.; Morris, J. (2021). *A novel copepod egg predator infesting commercially important rock crabs in Santa Barbara, CA*. Western Society of Naturalists Virtual Meeting. **Best Student Poster Honorable Mention**.

Young, H. S., & **Zilz, Z. L.** (2021). *Marine to Terrestrial Subsidies on the Gaviota Coast*. **Report** for the Coastal Ranches Commission.

Orr, D.A., **Zilz, Z. L.**, Duge, E., Copeland, S., Bui, A., Motta, C. Swei, A., Young, H. S. (2020) *Throwing shade: large mammalian herbivores alter survival of arthropod disease vectors through changes in understory vegetation, but effects are density and climate dependent*. Ecological Society of America Annual Meeting: Effects of Multiple Global Changes on Communities and Ecosystems. **Talk**.

Zilz, Z. L. (2018). *The sperm-feeding ciliate, *Orchitophyra stellarum*, in Ochre star populations on the west coast of the United States*. Society for Integrative and Comparative Biology. **Talk**.

Zilz, Z. L. (2017). *Has the relationship between a sperm-eating ciliate and its sea star host changed post Sea Star Wasting Disease?* Ecology and Evolution of Infectious Diseases. **Poster**.

Zilz, Z. L., Kuris, A. M.; & Hechinger, R. (2016). *Monthly variation in metacercariae abundance and density in a behavior-manipulating trematode in the California killifish, *Fundulus parvipinnis*, in Carpinteria Salt Marsh*. American Society of Parasitologists in Edmonton, Alberta, Canada. **Talk**.

In Preparation

Heard, M.P.; Jones, V.A.; McKinley, C.; Nordheim, C.L.; Vincent, B.A.; **Zilz, Z. L.**; and Caves, E. EEMB URS: Stoking the flames of undergraduate involvement in research. **Invited publication** for *Oceanography Special Issue: Building Diversity, Equity, and Inclusion in the Ocean Sciences*.

Orli, J. E.; Leucona, S. M.; Plewe, G. O.; **Zilz, Z. L.**; Kuris, A. K. Localized infestation of yellow rock crabs (*Cancer anthonyi*) by a novel symbiotic copepod egg predator (*Choniosphaera* sp.) in Santa Barbara, CA. In preparation for the Journal of Invertebrate Pathology.

Orr, D. A.; **Zilz, Z. L.**; Duge, Emma; Copeland, Stephanie; Bui, An; Motta, Carina; Swei, Andrea; Young, Hillary. *Climate-dependent effects of wildlife and cattle on tick survivorship in California*. In preparation for Journal of Applied Ecology.