

AMELIA L. RITGER

Ecology Evolution and Marine Biology, UC Santa Barbara, Santa Barbara, CA 93106

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EDUCATION

University of California, Santa Barbara

2021 – present Ph.D., Ecology Evolution and Marine Biology (anticipated June 2025)

2018 – 2021 M.A., Ecology Evolution and Marine Biology

Dartmouth College

2011 – 2015 B.A., Biology; Anthropology modified with Environmental Studies, GPA: 3.66, *cum laude*

RESEARCH

2018 – 2024 PhD Student

Dr. Gretchen Hofmann – UC Santa Barbara (Santa Barbara, CA)

2021 – 2024 Santa Barbara Coastal LTER Graduate Student Researcher (*seasonal*)

Dr. Robert Miller – UC Santa Barbara (Santa Barbara, CA)

2016 – 2018 Research Assistant

Dr. Daniel Kronauer – Rockefeller University (New York, NY)

2015 – 2016 James B. Reynolds Scholar

Caribbean Marine Biological Institute (Curaçao)

2014 Junior Research Scholar

Graduate student mentor: Jessica V. Trout-Haney

Dr. Kathryn L. Cottingham – Dartmouth College (Hanover, NH)

2014 NSF Research Experience for Undergraduates (REU) Intern

Dr. Thomas K. Frazer – Central Caribbean Marine Institute (Little Cayman Island)

2014 Dartmouth Biology Foreign Study Program student

Dr. Ryan Calsbeek, Dr. Matthew Ayres, and Dr. Celia Chen (Costa Rica & Little Cayman Island)

2013 Lab and Field Assistant

Dr. Seth D. Dobson – Caribbean Primate Research Center (Cayo Santiago, PR)

2012 – 2013 Sophomore Science Scholar

Graduate student mentor: Samuel B. Fey

Dr. Kathryn L. Cottingham – Dartmouth College (Hanover, NH)

MENTORSHIP

2023 – 2024 **Sanjana Sujeet** (UC Santa Barbara)

2024 **Lili O'Donnell** (UC Santa Barbara): UCSB Faculty Research Assistance Program (FRAP)

2024 **Brock Larrick** (UC Santa Barbara): UCSB FRAP

2024 **Leila Schorno** (UC Santa Barbara): UCSB FRAP

2024 **Saanvi Tiwary** (UC Santa Barbara): UCSB FRAP

2022	Ricardo Hernandez (Georgia State University): UCSB Ocean Global Change Biology REU
2022	Ryan Wang (UC Santa Barbara)
2022	Michelle Sun (Basis Independent Silicon Valley): UCSB Research Mentorship Program (RMP)
2022	Cody Busch-Weiss (Laguna Blanca School): UCSB RMP
2021 – 2022	Zoe Fung (UC Santa Barbara): UCSB FRAP
2021 – 2022	Doris Lius (UC Santa Barbara)
2021	Aanchal Garg (UC Santa Barbara)
2021	Kayla Caplin (Paul D Schreiber High School): UCSB RMP
2020 – 2021	Ellyse Anderson (UC Santa Barbara): UCSB EEMB Senior Honors Program; UCSB FRAP
2020	Carlyn Hamel (Pacific Ridge High School): UCSB FRAP
2019	Xavius Boone (UC Davis): UCSB Ocean Global Change Biology REU

TEACHING

2022	Graduate teaching assistant ENVS 60: Applied Ecology (UC Santa Barbara)
2014	Undergraduate teaching assistant BIOL 27: Animal Behavior (Dartmouth College)

RESEARCH GRANTS

2024	Schmidt Family Foundation Research Mentorship Award (\$9,000)
2024	Sigma Xi Grants in Aid of Research (\$1,000)
2024	UCSB Helen Hansma Research Accelerator Award (\$10,000)
2019 – 2024	UCSB Graduate Students Association Travel Grant (\$1,350)
2023	UCSB Associated Students Coastal Fund Minor Grant (\$2,000)
2023	Benioff Scholars Program in Applied Environmental Science (\$6,000)
2021	Schmidt Family Foundation Research Accelerator Award (\$8,000)
2020	UCSB Associated Students Coastal Fund Major Grant (\$15,740)
2015	James B. Reynolds Scholarship for Foreign Study (\$20,000)
2014	Dartmouth Undergraduate Research Grant (\$2,500)

FELLOWSHIPS & AWARDS

2023	IEEE OCEANS 2023 Limerick Student Poster Competition – First Place
2023	Olympic Coast National Marine Sanctuary Special Recognition Award
2023	P.E.O. Scholars Award
2022	NSF Non-Academic Research Internships for Graduate Students: <i>Olympic National Park (National Park Service)</i>
2022	NSF Non-Academic Research Internships for Graduate Students: <i>Olympic Coast National Marine Sanctuary (National Oceanic and Atmospheric Administration)</i>
2021	UCSB Ecology, Evolution, and Marine Biology Storke Award
2018	NSF Graduate Research Fellowship Program
2014	NSF Central Caribbean Marine Institute Research Experience for Undergraduates
2012	Dartmouth Sophomore Science Scholarship

PUBLICATIONS

In prep

Ritger, A.L., Blanchette, C.A., Jerde, C.L. Kraskura, K., Sambado, S., and Hofmann, G.E. Intraspecific fitness and performance responses of a temperate corallimorph to realistic, simulated marine heatwaves. *Target journal: Global Change Biology. Anticipated submission date: March 2024.*

In press

Ritger, A.L., and Hofmann, G.E. Bringing Heatwaves into the Lab: A low-cost, open-source, and automated system to simulate realistic heating events in an experimental setting. *Limnology and Oceanography: Methods.*

Chan, K.Y.K., Kui, L., McDonald, A.M., **Ritger, A.L.**, and Hofmann, G.E. Coastal marine heatwaves in the Santa Barbara Channel: decadal trends and ecological implications. *Frontiers in Marine Science.*

Published

Ritger, A.L., and Burnett, D.C. 2024. A Wirelessly-Enabled, Power-Optimized, Low-Cost, and Open-Source Durafet-based pH Instrument for Continuous, Long Term Environmental Monitoring. *OCEANS 2024 - Singapore.* 1-6.

Ritger, A.L., and Burnett, D.C. 2023. Developing Low-Cost, Simplified, and Open Source Durafet-based pH Instrument Electronics. *OCEANS 2023 - Limerick.* 1-7.

Hart, T., Frank, D., Lopes, L.E., Olivos-Cisneros, L., Lacy, K.D., Tribble, W., **Ritger, A.**, Valdés-Rodríguez, S., and Kronauer, D.J.C. 2023. Sparse and stereotyped encoding implicates a core glomerulus for ant alarm behavior. *Cell* 186: 1-16.

Ingeman, K.E., Zhao, L.Z., Wolf, C., Williams, D.R., **Ritger, A.L.**, Ripple, W.J., *et al.* 2022. Glimmers of hope in large carnivore recoveries. *Scientific Reports* 12(1): 1-13.

Trout-Haney, J.V., **Ritger, A.L.**, Cottingham, K.L. 2021. Benthic cyanobacteria of the genus *Nostoc* are a source of microcystins in Greenlandic lakes and ponds. *Freshwater Biology* 66: 266-277.

Ritger, A.L., Fountain, T.C., Bourne, K., Martín-Fernández, J.A., and Pierotti, M.E.R. 2020. Diet choice in a generalist predator, the invasive lionfish (*Pterois volitans/miles*). *Journal of Experimental Marine Biology and Ecology* 524: 151311.

Chandra, V., Fetter-Pruneda, I., Oxley, P.R., **Ritger, A.L.**, McKenzie, S.K., Libbrecht, R., Kronauer, D.J.C. 2018. Social regulation of insulin signaling and the evolution of eusociality in ants. *Science* 361(6400): 398-402.

Ritger, A.L., Curtis, A., and Chen, C.Y. 2018. Bioaccumulation of mercury and other metal contaminants in invasive lionfish (*Pterois volitans/miles*) from Curaçao. *Marine Pollution Bulletin* 131: 38-44.

PRODUCTS

Open-source marine heatwave simulator – Raspberry Pi (<https://github.com/ameliaritger/MHWsim/>)

Open-source pH sensor – Arduino (<https://github.com/ameliaritger/arduino-ph-sensor>)

Shiny app – Marine Biodiversity Observation Network (<https://ameliaritger.shinyapps.io/mbon-shiny-app/>)

Shiny app – Ocean Acidification Classroom Resource (<https://ameliaritger.shinyapps.io/intertidal-oa-module/>)

MEETING PRESENTATIONS

- 2024 *Does variation matter? Intraspecific response and recovery of *Corynactis californica* to realistic, simulated marine heatwaves.*
105th Annual Meeting of the Western Society of Naturalists (Portland, OR). Talk.
- 2024 *A Wirelessly-Enabled, Power-Optimized, Low-Cost, and Open-Source Durafet-based pH Instrument for Continuous, Long Term Environmental Monitoring.*
OCEANS 2024 (Singapore). Talk.
- 2024 *Resource Walk: Low-cost, open-source pH instrumentation.*
Olympic Coast Ocean Acidification Site Symposium (Forks, WA). Talk.
- 2023 *Bringing Marine Heatwaves into the Lab: How to engineer heating events in an experimental setting.* 104th Annual Meeting of the Western Society of Naturalists (Monterey, CA). Talk.
- 2023 *Developing Low-Cost, Simplified, and Open Source Durafet-based pH Instrument Electronics.*
New Zealand Ocean Acidification Conference (Virtual). Talk.
- 2023 *Developing Low-Cost, Simplified, and Open Source Durafet-based pH Instrument Electronics.*
Washington Ocean Acidification Center Symposium (Seattle, WA). Poster.
- 2023 *Developing Low-Cost, Simplified, and Open Source Durafet-based pH Instrument Electronics.*
OCEANS 2023 (Limerick, Ireland). Poster.
- 2022 *A Decade of Data: pH and temperature trends in the Santa Barbara Coastal LTER.*
Long Term Ecological Research All Scientists' Meeting (Asilomar, CA). Poster.
- 2021 *Monitoring ocean acidification in California rocky intertidal habitats.*
102nd Annual Meeting of the Western Society of Naturalists (Virtual). Poster.
- 2019 *Intraspecific variation in a clonal corallimorph alters purple urchin foraging behavior.*
100th Annual Meeting of the Western Society of Naturalists (Ensenada, Mexico). Poster.
- 2017 *Patterns of Mercury bioaccumulation in invasive lionfish (*Pterois volitans/miles*) from Curacao.*
13th International Conference on Mercury as a Global Pollutant (Providence, RI). Talk.
- 2015 *Friend or foe? Prey fish perception of predatory lionfish.*
Karen E. Wetterhahn Science Symposium (Hanover, NH). Poster.

PUBLIC EDUCATION & OUTREACH

- 2024 Interview, Catalina Marine Society video project on ocean acidification (virtual)
- 2024 *The Olympic Coast as a Sentinel Site: Monitoring climate change impacts on purple olive snails and Pacific razor clams.* Makah Tribe community lunch (Neah Bay, WA).
- 2024 Guest scientist, Quileute Tribal School high school class (La Push, WA)
- 2024 *Unifying traditional knowledge and climate science to monitor climate change impacts on purple olive snails and Pacific razor clams.* Makah Tribe Ocean Policy Work Group (Neah Bay, WA).
- 2023 Guest scientist, Olympic Peninsula Academy middle school class (Sequim, WA)
- 2020 Interview a Scientist, Sci-Section Radio Show (radio/streaming/online)
- 2020 Guest scientist, Hollister Elementary School Pre-Kindergarten class (Goleta, CA)
- 2019 Science communicator, World Oceans Day Festival. Santa Barbara Museum of Natural History Sea Center (Santa Barbara, CA)
- 2016 *To Eat or Not to Eat? The diet of the Curacao lionfish and the woes of field research.* Caribbean Marine Biological Institute (Curacao, Dutch Antilles)
- 2014 *Friend or foe? Prey fish perception of predatory lionfish.* Central Caribbean Marine Institute (Little Cayman Island, BWI)

SERVICE & PROFESSIONAL DEVELOPMENT

2016 – 2024	Alumni Interviewer, Dartmouth Admissions Ambassador Program
2019 – 2022	UCSB EEMB Diversity, Equity, Inclusion and Wellness Committee
2019 – 2022	UCSB EEMB Graduate Student Symposium Committee
2019 – 2022	UCSB EEMB Diversity, Equity, Inclusion Working Group #2: Teaching & Curriculum
2019 – 2022	Judge, Santa Barbara County Science and Engineering Fair
2022	UCSB EEMB Diversity, Equity, Inclusion Working Group #3: Climate & Anti-Racist Policies
2020 – 2021	Reviewer for <i>Ecology</i>
2020 – 2021	UCSB American Association of University Women (AAUW) Mentorship Program
2020 – 2021	UCSB Associated Students Bike Shop Building Committee
2019	Reviewer for <i>Ethology</i>
2015 – 2016	Grant proposal reviewer for NOAA Marine Fisheries Initiative (MARFIN)

PROFESSIONAL ASSOCIATIONS

2018 – 2024	Santa Barbara Coastal Long Term Ecological Research Network (SBC LTER)
2023 – 2024	Institute of Electrical and Electronics Engineers (IEEE)
2023 – 2024	Institute of Electrical and Electronics Engineers Oceanic Engineering Society (OES)
2023 – 2024	Institute of Electrical and Electronics Engineers Young Professionals (YP)
2024	Association for the Sciences of Limnology and Oceanography (ASLO)