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 – present **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**

2025 **Taryn Hozdic** (UC Santa Barbara): Schmidt Family Foundation Research 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**

2025 **Graduate teaching assistant**

ENVS 130C: Aquatic Food and Resource Management (UC Santa Barbara)

2022 **Graduate teaching assistant**

ENVS 60: Applied Ecology (UC Santa Barbara)

2014 **Undergraduate teaching assistant**

BIOL 27: Animal Behavior (Dartmouth College)

**Research Grants**

2025 UCSB Academic Senate Doctoral Student Travel Grant ($900)

2025 Association for the Sciences of Limnology and Oceanography Student Travel Grant ($700)

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:

*Olympic National Park (National Park Service)*

2022 NSF Non-Academic Research Internships for Graduate Students: *Olympic Coast National Marine Sanctuary (National Oceanic and Atmospheric Administration)*

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., Bogan, 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.

***Published***

**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*: 1-10.

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* 11: 1476542.

**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., Trible, 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 *Ecology*

2020 – 2021 UCSB American Association of University Women (AAUW) Mentorship Program

2020 – 2021 UCSB Associated Students Bike Shop Building Committee

2019 Reviewer for *Ethology*

2015 – 2016 Grant proposal reviewer for NOAA Marine Fisheries Initiative (MARFIN)

**Professional Associations**

2018 – 2025 Santa Barbara Coastal Long Term Ecological Research Network (SBC LTER)

2023 – 2025 Institute of Electrical and Electronics Engineers (IEEE)

2023 – 2025 Institute of Electrical and Electronics Engineers Oceanic Engineering Society (OES)

2023 – 2025 Institute of Electrical and Electronics Engineers Young Professionals (YP)

2024 – 2025 Association for the Sciences of Limnology and Oceanography (ASLO)