

Samuel A. Bedgood

Division of Natural Sciences
New College of Florida
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Employment

- 2024-present Assistant Professor of Biology, *New College of Florida*
2023-2024 Director of Microalgae and Research Development, *Bay Shellfish Co.*
2022-2023 Postdoctoral Scholar, Integrative Biology, *Oregon State University*.
Advisor: Virginia Weis

Education

- 2016-2021 *University of California Irvine, Irvine, CA*
Department of Ecology and Evolutionary Biology, Ph.D.
Ph.D. Thesis advised by Dr. Matthew Bracken
2013-2016 *Florida State University, Tallahassee, FL*
B. S. in Biological Sciences, with Honors in the Major, Minor in Chemistry
Senior thesis advised by Dr. Janie Wulff
2010-2013 *Tallahassee Community College, Tallahassee, FL*
Associate in Arts Degree, focus in sciences

Publications *All manuscripts are available upon request.*

Bedgood, S.A., K. Plichon, and V.M. Weis. *In Review*. Homeostasis collapses during asexual development without heterotrophic feeding in a model cnidarian-algal symbiosis. *Scientific Reports*.

Cai, J., **S.A. Bedgood**, V.M. Weis, L. Pita. *Submitted*. Aiptasia oral regeneration is host-controlled but supported by symbiont-derived photosynthates. *Symbiosis*.

McCauley, M., F. Montesanto, **S.A. Bedgood**, C. Miner, K. Plichon, M.Q. Martindale, V. Weis, S. Loesgen. *Submitted*. Manipulation of the Symbiodiniaceae microbiome influences symbioses and reproductive ecology in the host, *Exaiptasia diaphana*, over generations. *ISME Journal*.

Bedgood, S.A., S.T. Levell, and M.E.S. Bracken. 2023. Microhabitats associated with sea anemone-algae mutualisms enhance diversity and biomass of mobile invertebrates on temperate rocky shores. *Marine Ecology Progress Series*.

Levell, S.T., **S.A. Bedgood**, J. Travis. 2023. Maternal Effects of Social Density on Reproduction and Fitness in the Least Killifish, *Heterandria formosa*. *Ecology and Evolution*.

Bedgood, S.A., S.E. Mastroni, and M.E.S. Bracken. 2020. Flexibility of nutritional strategies within a mutualism: food availability affects algal symbiont productivity in two congeneric sea anemone species. *Proceedings of the Royal Society B*.

Bedgood, S.A., M.E.S. Bracken, W.H. Ryan, S.T. Levell, and J.L. Wulff. 2020. Nutritional drivers of adult locomotion and asexual reproduction in a symbiont-hosting sea anemone *Exaiptasia diaphana*. *Marine Biology*.

Wallingford, P.D., L.L.M. Pandori, **S.A. Bedgood**, M.E.S. Bracken, L.A. Elsberry, A.K. Henry, S.A. Mahanes, and C.J.B. Sorte. 2018. A guide to the relationships between marine spatial patterns and ecological processes. *Frontiers of Biogeography*.

Book Chapters

Reznick, D.N., **S.A. Bedgood**, S.T. Levell, K.M. Edwards, R.M. Conway, M.D. Green, J.G. Randall. 2019. Biology Laboratory 101 Series. *Journal of Visualized Experiments*.
First author chapter: Physiology and the Circulatory System

Reznick, D.N., **S.A. Bedgood**, S.T. Levell, K.M. Edwards, and R.M. Conway. 2019. Biology Laboratory 102 Series. *Journal of Visualized Experiments*.
First author chapters: Measuring Biodiversity, Plant Diversity & Evolution, Animal Diversity & Evolution, Eusociality & Division of Labor, and Community Diversity & Ecosystem Health

Invited Seminars

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| Oct 2022 | Rosenberg Institute Seminar Series, San Francisco State University
Title: <i>Symbiosis in flux: Algal endosymbiont contributions are shaped by sea anemone diet and size</i> |
| May 2022 | Hatfield Marine Science Center Research Seminar, Oregon State University
Title: <i>Finding a place for sea anemones and their algal symbionts in the rocky intertidal food web: trophic and non-trophic interactions</i> |
| Apr 2022 | Academy for Lifelong Learning, Corvallis Oregon
Title: <i>Finding a place for sea anemones and their algal symbionts in the rocky intertidal food web: trophic and non-trophic interactions</i> |
| Jul 2018 | California Ecology Course, University of California Natural Reserve System
Title: <i>The ecology of Anthopleura sea anemones</i> |

Contributed Talks

Bedgood S.A., K. Plichon, V. Weis. 2025. Nutritional stress disrupts symbiosis between an anemone and its symbiotic algae during development. Society for Integrative and Comparative Biology, Atlanta, Georgia.

Bedgoods S.A., K. Plichon, V. Weis. 2022. Algal symbiont presence and not photosynthetic contribution affects the development of *Exaiptasia pallida* asexual offspring. Cnidofest Model System Meeting, Davis, California.

Bedgood S.A., S.T. Levell, M.E.S. Bracken. 2021. Sea anemone symbiosis enhances intertidal biodiversity by ameliorating abiotic stress. Ecological Society of America Annual Meeting, virtual meeting.

Bedgood S.A. and M.E.S. Bracken. 2020. Fire nematocysts first and ask questions later: sea anemones choose prey after ingestion. Western Society of Naturalists Annual Meeting, virtual meeting.

Bedgood S.A. and M.E.S. Bracken. 2020. Making it big and losing friends: algal symbiont contributions are shaped by sea anemone life history. Society for Integrative and Comparative Biology Annual Meeting, Austin, Texas.

Awarded Mary Rice Best Oral Student Presentation for the Division of Invertebrate Zoology

Bedgood S.A. and M.E.S. Bracken. 2019. Sea anemone mutualism leads to facilitation: complex interactions increase biodiversity in the rocky intertidal zone. Western Society of Naturalists Annual Meeting, Ensenada, Mexico.

Bedgood S.A. and M.E.S. Bracken. 2019. Spatial subsidies change the interaction between host sea anemones and their algal symbionts. Yosemite Symbiosis Workshop Annual Meeting, Wawona, California.

Bedgood S.A. and M.E.S. Bracken. 2019. Rare spatial subsidies and close friends: interactions between sea anemones and their algal symbionts. Society for Integrative and Comparative Biology Annual Meeting, Tampa, Florida.

Bedgood S.A. and M.E.S. Bracken. 2018. Rare spatial subsidies and close friends: interactions between sea anemones and their algal symbionts. Western Society of Naturalists Annual Meeting, Tacoma, Washington.

Bedgood S.A. and M.E.S. Bracken. 2018. Niche partitioning in three congeneric sea anemones. Winter Ecology and Evolutionary Biology Graduate Student Symposium, Irvine, California.

Bedgood S.A. and M.E.S. Bracken. 2018. Algal symbionts and niche partitioning in the sea anemone genus *Anthopleura*. University of California Natural Reserve System California Ecology Course, Cambria, California.

Invited course talk

Bedgood S.A. 2016. Context dependent benefits of symbiotic algae to their host anemone and associated modification of anemone behavior. Western Society of Naturalists Annual Meeting, Monterey, California.

Bedgood S.A. 2016. Why do anemones move? Context dependent benefits of symbiotic algae to their host anemones. Southeastern Ecology and Evolutionary Biology Conference Annual Meeting, Tallahassee, Florida.

Poster presentations

Bedgood S.A. and M.E.S. Bracken. 2018. Algal symbionts and niche partitioning in the sea anemone genus *Anthopleura*. Yosemite Symbiosis Workshop Annual Meeting, Wawona, California.

Bedgood S.A. and M.E.S. Bracken. 2017. Evidence for niche partitioning in three congeneric sea anemones. Western Society of Naturalists Annual Meeting, Pasadena, California.

Bedgood S.A. 2016. Why do anemones move? trade-offs between symbiotic algae and their host anemones. Florida State University Undergraduate Research Symposium, Tallahassee, Florida.

Bedgood S.A. 2015. Trade-offs between friends and food? phototactic response of the anemone *Aiptasia pallida*. President's Showcase of Undergraduate Research Excellence, Tallahassee, Florida.

Fellowships, scholarships, and Grants

2025	Environmental Discovery Awards Program Title: <i>Channels of Change: Tracking Seagrass and Biodiversity Recovery in Midnight Pass</i>
2024	Florida Sea Grant – Pilot Study Research Title: <i>Can Newly Isolated Local Algae Strains Enhance the Health and Efficiency of Shellfish Hatcheries and Nurseries</i>
2023	Supporting Oyster Aquaculture and Restoration Title: <i>Selective Breeding of Heat-tolerant Oysters for Climate-resilient Gulf Aquaculture</i>
2020	Mary Rice Best Oral Student Presentation Award
2019	Coal Oil Point Graduate Student Research Award
2018-2019	Mathias Graduate Student Research Fellowship
2018-present	National Science Foundation Graduate Research Fellowship
2017-2018	UCI OCEANS Fellowship
2016-2017	Voth Fellowship
2016	UCI Biological Sciences Graduate Fellowship
2016	UCI Diversity Graduate Recruitment Fellowship
2015	FSU Mentored Research and Creative Endeavors Award
2015	John Mark Caffrey Endowed Scholarship
2015	Bess H. Ward Thesis Award
2012-2013	TCC STEM Star Scholarship

Teaching Experience

Instructor (New College of Florida)

Spring 2025	Symbiosis
Spring 2025	Introduction to Microbiology Laboratory
Fall 2024	Introduction to Microbiology
Fall 2024	Foundations of Biology I
Spring 2024	Introduction to Microbiology Laboratory

Co-instructor

Summer 2022	Marine and Estuarine Invertebrates (Z461), Oregon State University; lectured, designed laboratory methods, mentored students through independent research projects, and led collecting trips in the rocky intertidal zone.
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Guest Lecture

Spring 2023	Marine Ecology (Bi361), Western Oregon University; one lecture given and two field trips led involving sea anemones and symbiotic algae
Spring 2022	Symbiosis and the Environment (Bi373), Oregon State University; two lectures given, lichen and legume-rhizobia symbioses

Teaching assistant

Fall 2021	Ecology and Evolution (E106), UC Irvine
Winter 2018	Organisms to Ecosystems Biology (Bio Sci 94), UC Irvine
Winter 2017	Philosophy of Biology (Bio Sci E142W), UC Irvine
Fall 2016	Introduction to Life (Bio Sci 1a), UC Irvine

Spring 2016	General Biology Laboratory, Florida State University
Fall 2015	General Biology Laboratory, Florida State University
Spring 2015	Biological Science II, Florida State University
Fall 2014	Biological Science II, Florida State University

Outreach

2023	Gave a lecture on coral reef symbiosis and conservation, Corvallis High School's Science Club
2022	Featured on Ask the Scientist Podcast, Estuary and Ocean Science Center, San Francisco State University
2020	Featured on UCI School of Biological Sciences News, article titled: <i>Sea Anemones Find Sweet Arrangement with Under-skin Algae for Emergency Food</i>
2019	Interviewed on the NudiBrains Podcast by Emily Pierce focusing on my thesis research, episode titled: <i>40 Fish Tanks, Symbionts, and Anemone Diets</i>
2019	Worked at the UCI Reef Relief Earth Day Booth with approximately 150 visitors
2019	Worked at the Communicating the Impacts of Plastic on Marine Ecosystems Booth at UCI Homecoming event with approximately 1,000 visitors
2018, 2019	Gave presentation and lab tour to Mt SAC students in the STEM TP2 program who were searching for summer research opportunities
2017, 2018	Lead lessons and activities focusing on greenhouse gases at a local K-12 school as a member of the group Climate Literacy Empowerment and iNquiry
2016	Lead lab tours and educational sessions on ecosystem ecology in the Bracken Lab for local high school students
2015	Worked at the Coral Reef Exhibit at the FSU Coastal Marine Laboratory for an event with approximately 300 visitors
2015	Worked at the Wulff Laboratory invertebrate and research awareness exhibit at Gulf Specimen Marine Laboratory for an event with approximately 200 visitors

Mentorship

Alexa Millan-Rodenas. 2024-2025. New College of Florida thesis student working on contaminants in shellfish aquaculture feeds.

Sahithi Kadari. 2025. New College of Florida tutorial student working on *E. coli* bacteria survival in environmental substrates.

Claire Compton. 2024. New College of Florida tutorial student who worked on microalgae isolations for aquaculture shellfish feeds.

Ryan Glennon. 2022. Oregon State University honors college student who worked on *Aiptasia* size and offspring development for an honors thesis.

Sofia Blaire. 2022. Whitman Internship Grantee from Whitman College who worked on visualization of algal symbiont proliferation in *Aiptasia*.

Keyla Plichon. 2022. Visiting graduate student from Université Côte d'Azur who completed her master's thesis project under my supervision. Thesis titled: Role of symbiotic dinoflagellates during development in the model cnidarian *Exaiptasia diaphana*.

James Alex Caramagno. 2019-2021. BIO SCI 199 undergraduate researcher. Independent research project focus: laboratory feeding choice of sea anemones in the genus *Anthopleura*.

Calvin Huang. 2019-2021 Undergraduate volunteer. Research project: laboratory feeding choice of sea anemones in the genus *Anthopleura*.

Misha Wahie. 2019-2021. BIO SCI 199 undergraduate researcher. Independent research project focus: asexual reproduction by fission in the sea anemone *Anthopleura elegantissima*.

Courtney Moulton. 2020. University of California Riverside undergraduate student. Independent research project focus: Seasonal impacts on the fat and population cycles of invasive western mosquitofish, *Gambusia affinis*.

Presented research as a poster at Society for Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS) Annual Meeting 2020 and at the Western Society of Naturalists (WSN) Annual Meeting 2020

Abe Razzak. 2019-2020. Undergraduate volunteer. Research project: asexual reproduction by fission in the sea anemone *Anthopleura elegantissima*.

Alan Yue. 2017-2020. Mt. San Antonio College STEM TP2 participant and volunteer. Independent research project focus: attachment of debris by sea anemones protects against photo-oxidative stress.

Presented research as a poster at the 2017 UCI Environmental Research Poster Symposium

Queenie Baetiong. 2018-2019. BIO SCI 199 undergraduate researcher. Independent research project focus: diet preference and selectivity of two sea anemone species in the rocky intertidal using time lapse videos in the field and laboratory.

Matthew Barna. 2018. BIO SCI 199 undergraduate researcher. Independent research project focus: sea anemones serve as protective microhabitat for mobile invertebrates in the rocky intertidal zone.

Ung Seop Jeon. Fall 2018. Science Writing Integrated Mentoring (SWIM) student mentee. Project title: broad-scale distribution and abundance patterns of the three species of *Anthopleura* across the Pacific intertidal coast of California.

Final project awarded 2019 UCI Writing Awards best essay for Excellent Academic Writing in Science and Technology

Annalie Ramos. Fall 2018. SWIM student mentee. Project title: photosynthesis by the symbionts in the *Anthopleura* species determines the intertidal location of this anemone.

Mai Le. Fall 2018. SWIM student mentee. Project title: positive trends in tidal and latitudinal gradient on the sea anemone *Anthopleura elegantissima* colonies in California.

Krishan Ferrer. Fall 2018. SWIM student mentee. Project title: niche overlap among three sea anemone species (*Anthopleura*) found along the rocky intertidal zone of the Pacific coast of California.

Workshops, training, skill development

2022	Designed and built a filtered seawater system for research, Oregon State University
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2020-2021	Designed and created four marine aquarium systems for sea anemone research and teaching, Soka University of America
2021	Completed the UCI Graduate Division Mentoring Excellence Certificate Program
2018-2020	Served as a committee member and leader for UC Irvine Ecology and Evolutionary Biology graduate student recruitment
2019	Participated in Joshua Schimel Writing Workshop, UC Irvine
2016-2019	Participated in Ecology Group (career development and training)
2015-2016	Designed and created two marine aquarium systems (40 gallons each) for bryozoan research, Florida State University

Employment (excluding teaching and fellowships)

2018	Federal work study, UC Irvine (3 months)
2018	Graduate student researcher (GSR), UC Irvine (2 months)
2018	Contracted writer and actor for Journal of Visualized Experiments (6 months)
2016	Intern for the Guppy/Rivulus mark recapture project in Trinidad (3 months)