Collin Gross

Department of Biology
Gilbert Building, Room 109
371 Jane Stanford Way
Stanford, CA 94305-5020

cpgross@stanford.edu
collin-gross.weebly.com

Education

2017 – 2023 **Ph.D. in Population Biology**
University of California, Davis, CA
Major professor: John J. Stachowicz
Advanced to candidacy January 14, 2020
Graduated June 2023

2011 – 2015 **B.S. in Evolution, Ecology, and Conservation Biology**, *cum laude*
University of Washington, Seattle, WA
Minors in Marine Biology and Quantitative Science

Research Statement:

I am a marine ecologist primarily interested in patterns and processes of biodiversity and community assembly. I am curious about the functional, historical, and evolutionary processes that act to bring species together in space and allow them to coexist, which I primarily study in seagrass ecosystems.

Publications

Gross, C., Stachowicz, J.J. (2023). Extending trait dispersion across trophic levels: predator assemblages act as top-down filters on prey communities. In review at Ecology

Beatty, D.S., Deen, E., **Gross, C.,** Stachowicz, J.J. (2023). Northeast Pacific eelgrass fish communities characterized by environmental DNA represent local diversity and show habitat specificity. Environmental DNA. 00:1-17. doi: 10.1002/edn3.431

Gross, C. et al. (2022). The biogeography of community assembly: latitude and predation drive variation in community trait distribution in a guild of epifaunal crustaceans. Proceedings of the Royal Society B. 289: 20211762. doi: 10.1098/rspb.2021.1762

Ruesink, J.L., **Gross, C.,** Pruitt, C., Trimble, A.C., Donoghue, C. (2019). Habitat structure influences the seasonality of nekton in seagrass. Marine Biology 166:75. doi: 10.1007/s00227-019-3519-z

Gross, C., Ruesink, J., Pruitt, C., Trimble, A., Donoghue, C. (2019). Temporal variation in intertidal habitat use by nekton at seasonal and diel scales. Journal of Experimental Marine Biology and Ecology 516:25-34. doi: 10.1016/j.jembe.2019.04.009

Gross, C., Donoghue, C., Pruitt, C., Trimble, A., Ruesink, J. (2019). Nekton community responses to seagrass differ with shoreline slope. Estuaries and Coasts 42:1156-1168. doi: 10.1007/s12237-019-00556-8

Gross, C., Donoghue, C., Pruitt, C., A., Ruesink, J. (2018). Habitat use patterns and edge effects across a seagrass-mudflat ecotone depend on species-specific behaviors and sampling methods. Marine Ecology Progress Series 598:21-33. doi: 10.3354/meps12609

Gross, C., Donoghue, C., Pruitt, C., Trimble, A., Ruesink, J. (2017). Taxonomic and functional assessment of mesopredator diversity across an estuarine habitat mosaic. Ecosphere 8(4):e01792. doi: 10.1002/ecs2.1792

Research and Professional Experience

2023 – Pres. **Postdoctoral scholar** – *Computational infrastructure for biogeographic regionalization and macroecology in the R computing environment.* Advised by Barnabas Daru.

2017 – 2023 **PhD research** – *Trait-based and phylogenetic approaches to understanding community assembly in a food web context*. Advised by John J. Stachowicz.

2015 –2017 **Research Technologist** – *Higher trophic-level function of seagrass-vegetated and unvegetated tideflats in Washington State*. Advised by Jennifer Ruesink and Cinde Donoghue.

2014 **Lab & Field Assistant** – *Benthic organism biofeedbacks: assessing the role of eelgrass carbon uptake in mitigating ocean acidification*. Advised by Cinde Donoghue and Jennifer Ruesink.

2013 –2014 **Research Assistant** – *Historical patterns of Pacific oyster recruitment in Pendrell Sound, BC.* Advised by Jennifer Ruesink.

2013 **Laboratory Assistant** – *Influence of early life growth and precipitation zone on survival to adulthood in wild steelhead trout (*Oncorhynchus mykiss*) in the Skagit River basin, WA*. Advised by Jamie Thompson.

2012 –2013 **Laboratory Assistant** – *Spatial–temporal patterns in distribution and feeding of juvenile salmon and herring in Puget Sound, WA*. Advised by Iris Kemp.

Presentations

Gross, C., Stachowicz, J.J. (2023) The role of predation in structuring grazer communities across spatial scales. Presented at the Society for Integrative and Comparative Biology Conference, Austin, TX.

Gross, C., Stachowicz, J.J. (2022) Predicting the impact of diverse predator assemblages on prey community composition using a functional trait approach. Presented at the Western Society of Naturalists Conference, Oxnard, CA.

Gross, C., Murphy, C. (2022). Why peracarid crustaceans are better than molluscs. Presented jointly with C. Murphy as part of the Bodega Marine Laboratory Friday Forum seminar series.

Gross, C., Stachowicz, J.J. (2020). Predation drives community assembly in eelgrass-associated peracarid crustaceans across latitudes. Presented at the Western Society of Naturalists Conference, online.

Gross, C., Stachowicz, J.J. (2020). Predation and competition drive community assembly in eelgrass-associated peracarid crustaceans. Presented as a poster at the American Society of Naturalists Meeting, Pacific Grove, CA.

Gross, C., Donoghue, C., Pruitt, C., Trimble, A., Ruesink, J. (2017). Taxonomic and functional assessment of nekton diversity across a gradient of structural complexity. Presented at the Western Society of Naturalists Conference, Pasadena, CA.

Gross, C., Ruesink, J., Donoghue, C. (2015). Community structure and predation rates within, on edges, and outside eelgrass beds in Washington estuaries. Presented as a poster at the Coastal and Estuarine Research Federation Conference, Portland, OR.

Valdez, S., **Gross, C.,** & Ruesink, J. (2014). Oyster recruitment and climate change: do higher summer temperatures mean earlier and greater settlement in Pacific oysters? Presented jointly with S. Valdez at the Salish Sea Ecosystem Conference, Seattle, WA.

Invited Talks and Lectures

2023 UC Davis Center for Population Biology seminar series: "Functional and phylogenetic approaches to understanding community assembly across taxa, trophic levels, and spatial scales"

2020, 2022 UC Davis EVE 112 (Biology of Invertebrates) guest lecture: "Crustaceans and Deep Arthropod Phylogeny"

2020 UC Davis Center for Population Biology seminar series: "Functional and phylogenetic approaches to understanding community assembly in a food web context"

Fellowships, Grants, and Awards

2022 Center for Population Biology Affiliate Funding Award – *The role of predator traits in prey community assembly and trophic cascades: an experimental test in a temperate seagrass system.* $1,621.82

2022 UW-Friday Harbor Laboratories Pamela Roe Graduate Student Endowed Fund – *The evolution of body shape in corophiidean amphipods.* $1,000

2021 Center for Population Biology Affiliate Funding Award – *The role of predator traits in prey community assembly in a temperate seagrass system.* $571.73

2020 Center for Population Biology Affiliate Funding Award – *Interactive effects of predator and prey functional traits and phylogenetic structure on community assembly.* $840.92

2019 Center for Population Biology Affiliate Funding Award - *Predation and habitat structure drive community assembly in eelgrass-associated peracarid crustaceans.* $800

2019 Lewis and Clark Fund for Exploration and Field Research – *Interactive effects of predator and prey functional traits and phylogenetic structure on assembly of faunal communities associated with Central California eelgrass beds.* $3,000

2018 Mildred E. Mathias Graduate Student Research Grant – *Interactive effects of predator and prey functional traits and phylogenetic structure on assembly of faunal communities associated with Central California eelgrass beds.* $1,000

2018 Honorable mention, NSF Graduate Research Fellowship Program – *Interactive effects of predator and prey trait diversity in community assembly*

2017 Honorable mention, NSF Graduate Research Fellowship Program – *Integrating diversity across taxonomic and trophic levels along a latitudinal gradient*

Professional Membership

Coastal and Estuarine Research Federation
Ecological Society of America
Society for Integrative and Comparative Biology
The Crustacean Society
Western Society of Naturalists

Teaching Experience

University of California, Davis

EVE 112L: Invertebrate Zoology Laboratory. Teaching Assistant; in person. Taught Winter 2020, Winter 2022
EVE 115: Marine Ecology. Teaching Assistant; in person and online. Taught Winter 2019, Winter 2021
BIS 2B: Introductory Biology – Ecology and Evolution. Teaching Assistant; in person and online. Taught Fall 2018, Spring 2020, Fall 2020, Fall 2021, Winter 2023, Spring 2023

Service and Outreach

2018 – 2023 UC Davis Picnic Day "Explore the Tree of Life" exhibit; exhibit organizer, facilitator
2018 – 2022 UC Davis ESTEME after school STEM Squad Club; instructor and teaching assistant
2019 – 2023 UC Davis Biodiversity Museum Day, Museum of Wildlife and Fish Biology and Marine Invertebrate Collection exhibits; facilitator
2013 –2017 Seattle Aquarium; docent and interpreter

Reviews

Hydrobiologia
Marine Biology (2)
Ecological Research
Oregon Sea Grant