Curriculum Vitae

Jordana K. Sevigny

Education

University of California, Santa Cruz
Ph.D. Candidate, Ocean Sciences Department, 2023-Present
Committee: Alexa Fredston, Christopher Edwards, Peter Raimondi, Zachary Gold

University of Washington
B.S. in Biology: Ecology, Evolution, and Conservation, 2021

Research Experience

2024 - Present. *Graduate Student Researcher*. Edwards Lab. Conduct oceanographic research using high-performance computing to simulate Lagrangian particle trajectories with OceanParcels and OpenDrift forced by ROMS output. Build large-scale pipelines for processing NetCDF datasets for particle-tracking analyses. Create reproducible scientific software, mentor undergraduate researchers in computational oceanography, and present results to interdisciplinary research groups.

2023 - Present. *Graduate Student Researcher*. Fredston Lab. Conduct research to understand the community structure, biogeography, and movement of marine invertebrates using biodiversity surveys, long-term visual monitoring programs, and bioinformatic pipelines for environmental DNA (eDNA) metabarcoding. Develop and apply statistical and mechanistic models to link observed biodiversity patterns with oceanographic processes. Integrate ecological theory with high-resolution dispersal modeling to reveal mechanisms underlying community turnover, poleward expansions, and spatial heterogeneity in intertidal communities. Mentor undergraduate researchers, maintain reproducible computational workflows, and communicate findings through manuscripts, presentations, and interdisciplinary collaborations.

2021 – 2023. *Research Associate.* Pacific Northwest Research Institute. Led research identifying multiple lineages of transmissible cancer in marine bivalves through coordinated field sampling, molecular assays, and bioinformatic analyses. Developed eDNA-based detection methods, supervised technicians and REU students, managed animal care operations, and contributed to institute-wide environmental health and safety policy development.

2020 – 2021. *Environmental Intern.* King County. Performed an environmental policy analysis using ArcGIS Pro and R to statistically summarize the Snoqualmie River riparian area land usage

and recommend regions for salmon habitat restoration while minimizing agricultural impacts. Presented findings to the Department of Natural Resources and Parks and stakeholders.

2019 – 2021. *MeadoWatch Volunteer Coordinator & Work Study Student.* HRL lab. Collaborated with National Park staff and coordinated citizen scientists to collect field data on the effects of climate change on Mt. Rainier's wildflower phenology. Collected and analyzed climate, flower, and population data to relate the park's annual visitor experience to the changing flowering seasons.

2018 – 2021. *Undergraduate Researcher.* Kerr Lab. Conducted experiments to observe bacterial cell morphology during various growth phases and explore evolutionary reversion dynamics. Assisted in general wet lab maintenance, managed the chemical inventory, and filled in as interim lab manager as needed.

Notable skills

Computational

Data processing, statistical modeling, and visualization in R and Python; high-performance, parallelized Lagrangian particle tracking using OceanParcels and OpenDrift; sequence analysis and plasmid design (BioEdit, ApE); microsatellite analysis (PeakScanner); version control with GitHub; geospatial analysis with ArcGIS Pro; proficient with Microsoft Office.

Wet Lab

PCR, qPCR, nanodrop and Qubit, coulter counter, microscope, DNA extraction, BSL2 protocols, sterile technique, agar plate preparation, agarose gel, restriction digest, cloning, minipreps, sequencing, bacteria propagation and transformation, autoclaving, animal care and husbandry, blood extractions and dissections of bivalves.

Awards and Grants

Mary Silvers Award, University of California Santa Cruz 2026 ($3,000)
NSF GRFP Honorable Mention 2023
Aquatic Ecology Travel Grant, Ecological Society of America 2022 ($250)
Jerry M. Sudarsky Memorial Internship Award, University of Washington 2020 ($5,000)
Excellence in Biology Department Award, University of Washington 2020 ($4,700)
Mary Gates Endowment Research Scholarship, University of Washington 2019 ($4,000)
Washington State Opportunity Scholarship 2017-2021 ($20,000)
Dean's List 2017-2021

Publications

Published:

Janneke Hille Ris Lambers, Anthony F. Cannistra, Aji John, Emmi Lia, Rubén D. Manzanedo, Meera Sethi, **Jordana Sevigny**, Elli J. Theobald, and Jazzmine K. Waugh. (2021). "Climate change impacts on natural icons: Do phenological shifts threaten the relationship between peak wildflowers and visitor satisfaction?" *Climate Change Ecology*, *vol. 2*, p. 100008., https://doi.org/10.1016/j.ecochg.2021.100008.

Rubén D. Manzanedo, Aji John, Meera L. Sethi, Elli J. Theobald, Berry Brosi, Joshua Jenkins, Ava Kloss-Schmidt, Emilia Lia, Annie Schiffer, **Jordana Sevigny**, Anna Wilson, Yonit Yogev, and Janneke Hille Ris Lambers. (2022). "MeadoWatch long-term community-science database of wildflower phenology in Mount Rainier National Park." *Sci Data* 9, 151. https://doi.org/10.1038/s41597-022-01206-8.

Marisa A. Yonemitsu* & **Jordana K. Sevigny*,** Lauren Vandepas, Rachael M. Giersch, Ryan Crim, James Dimond, Elizabeth Unsell, Jodie Toft, and Michael J. Metzger. (2025). "Multiple Lineages of Transmissible Neoplasia in the Basket Cockle (*C. nuttallii*) With Repeated Horizontal Transfer of Mitochondrial DNA." *Molecular Ecology.* https://doi.org/10.1111/mec.17682

*** equal contributors**

Rachael M. Giersch* , **Jordana K. Sevigny*** & Sydney A. Weinandt* , Carissa Mayo, Fiona E. S. Garrett , Karyn Tindbaek , Marisa A. Yonemitsu, Samuel F. M. Hart, Michael J. Metzger. (2025) "Variation in Natural Infection Outcomes and Cancer Release in Soft-Shell Clams (Mya arenaria) with Bivalve Transmissible Neoplasia." *Plos Pathogens.* https://doi.org/10.1371/journal.ppat.1013537

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Preprinted:

Jordana K. Sevigny, Bella G. Lipsey, Theodore T. Tran, Alexa L. Fredston. "A century of invertebrate range extensions in the eastern North Pacific." *EcoEvoRxiv*. https://doi.org/10.32942/X2T94P. *Under revision.*

Sydney A. Weinandt, Zachary J. Child, Dorothy Lartey, Angel Santos, Holden Maxfield, **Jordana K. Sevigny**, Fiona E. S. Garrett, Peter D. Smith, Rachael M. Giersch, Samuel F. M. Hart, Franchesca Perez, Lucas Rabins, Samuel Kaiser, Anna Boyar, Jan Newton, Jesse Kerr, James L. Dimond, Michael J. Metzger. "Identification of an Outbreak of Bivalve Transmissible

Neoplasia in Soft-Shell Clams (*Mya arenaria*) in the Puget Sound Using Hemolymph and eDNA Surveys." bioRxiv. doi**:** https://doi.org/10.1101/2024.12.03.626659. *Pending review.*

Katrina van Raay, Sergey Stolyar, **Jordana Sevigny**, Adamaris Muniz Tirado, Jeremy A. Draghi, Richard E. Lenski, Christopher J. Marx, Benjamin Kerr, and Luis Zaman. "Evolution with private resources reverses some changes from long-term evolution with public resources." *bioRxiv.* doi: https://doi.org/10.1101/2021.07.11.451942. *Under revision*.

Teaching

2025 Fall. *Teaching Assistant*. ESCI 160: Data Analysis in the Environmental Sciences. University of California, Santa Cruz, California.

2024 Fall. *Student Lecturer.* "Fundamentals of Community Ecology." ESCI 30: Biological Principles of Environmental Science. University of California, Santa Cruz, California.

2024 Fall. *Teaching Assistant.* ESCI 30: Biological Principles of Environmental Science. University of California, Santa Cruz, California.

Presentations

2025. *Presenter.* "A century of invertebrate range extensions in the eastern North Pacific." Western Society of Naturalists, San Diego, California.

2025. *Presenter.* "Seasonal to Interdecadal Variability in Lagrangian Transport to the Southern California Bight in the 1950s and 2010s." Eastern Pacific Ocean Conference, Fallen Leaf Lake, California.

2023. *Presenter*. "Detection of transmissible cancer lineages in basket cockles (Clinocardium nuttallii) in Puget Sound, Washington, with multiple mitochondrial replacement events." Pacific Northwest Research Institute Monthly Meetup, Seattle, Washington.

2023. *Invited Trainee Speaker*. "Detection of transmissible cancer lineages in basket cockles (Clinocardium nuttallii) in Puget Sound, Washington, with multiple mitochondrial replacement events." Cancer Genetics and Evolution Seminar, Seattle, Washington.

2022. *Presenter*. "Detection of transmissible cancer lineages in basket cockles (Clinocardium nuttallii) in Puget Sound, Washington, with multiple mitochondrial replacement events." Pacific Northwest Research Institute Monthly Meetup, Seattle, Washington.

2022. *Poster presenter*. “Detection of transmissible cancer lineages in basket cockles (Clinocardium nuttallii) in Puget Sound, Washington, with multiple mitochondrial replacement events.” Ecological Society of America, Montréal, Quebec, Canada.

2021. *Presenter*. “Snoqualmie River salmon habitat restoration and land use analysis.” King County Department of Natural Resources, Seattle, Washington.

2019. *Presenter*. “Cell size during the growth cycle.” University of Washington Undergraduate Research Symposium, Seattle, Washington.

2018. *Poster presenter*. “Reversing rate-adaptation with water-in-oil emulsions.” BEACON 2018 Congress, Michigan State University, Lansing, Michigan.

Professional and Community Outreach

Peer facilitator of Introductory Biology (BIOL 180) Course-based Undergraduate Research Experience Laboratory.
Peer facilitator of Advanced Experimental Evolution & Ecology (BIOL 481).
Volunteer Coordinator of MeadoWatch Citizen Science Program.
Social Committee Member at Pacific Northwest Research Institute.
Undergraduate Research Mentor at Pacific Northwest Research Institute.
EH&S Officer at Pacific Northwest Research Institute.
Docent at Monterey Bay National Marine Sanctuary, Sanctuary Exploration Center.
Mentor for WSOS Scholars at Washington State Opportunity Scholarship.
Program Facilitator for Ocean Sciences Peer Mentor Program at UC Santa Cruz.
Graduate Representative for the Ocean Sciences Department at UC Santa Cruz.
Undergraduate Research Mentor in Fredston Lab at UC Santa Cruz.
Divisional Student Council Member for the Ocean Sciences Department at UC Santa Cruz.