

LAURINNE BALSTAD

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EDUCATION

09/2021- University of California, Davis
Present *Population Biology Graduate Group*
MS 2023, PhD expected 2025

2021 St. Olaf College, Bachelor of Arts
Mathematics and Biology

PUBLICATIONS

Peer-reviewed publications:

- [1] **Balstad, Laurinne**, Fedewa, Erin, and Szuwalski, Cody. **2024**. Drivers of Bitter Crab Disease occurrence in Eastern Bering Sea snow crab (*Chionoecetes opilio*). *ICES Journal of Marine Science* 81(6), pp. 1073–1083.
- [2] **Balstad, Laurinne**, Binning, Sandra, Craft, Meggan, Zuk, Marlene, and Shaw, Allison. **2021**. Parasite intensity and the evolution of migratory behavior. *Ecology*, e03229–e03229.

Research manuscripts in review/prep:

- [3] **Balstad, Laurinne**, Godwin, Sean, Krkosek, Martin, Lewis, Mark, and Baskett, Marissa. Discrete treatment of microparasite leads to evolutionary, ecological, and economic trade-offs. *In review at Theoretical Ecology*.
- [4] **Balstad, Laurinne**, Baskett, Marissa, Carlson, Stephanie, Cunningham, Curry and Westley, Peter. Revisiting evolutionary rescue: A decade of progress. *In prep for Trends in Ecology and Evolution*.
- [5] Szuwalski, Cody, Alglave, Baptiste, **Balstad, Laurinne**, Olmos, Maxime, Punt, Andre, Richar, Jon, and Veron, Matthieu. Density dependent population processes slow but do not stop climate-induced collapses. *In review at Nature Climate Change*.
- [6] **Balstad, Laurinne**, Godwin, Sean, Krkosek, Martin, Lewis, Mark, and Baskett, Marissa. Management strategies to mitigate the effect of production on sublethal virulence evolution in macroparasites. *In revision for resubmission at American Naturalist*.
- [7] **Balstad, Laurinne**, and Baskett, Marissa. Evolutionary rescue and extinction risk across host-pathogen systems. *In prep*.

Conference reports and white papers:

- [8] **Balstad, Laurinne**, Sullivan, Jane, and Monnahan, Cole. **2024**. A Plain Language Guide to Model Validation in REMA. *White paper, North Pacific Fisheries Management Council*.

- [9] Pinsky, Malin, ... **Balstad, Laurinne**, ... [17 authors]. **2024**. Evolutionary Resilience for Kelp: Prospects and Challenges. *Workshop Report, Monterey Bay Aquarium, University of California, Santa Cruz*. doi: 10.6084/m9.figshare.26882734

PRESENTATIONS

- 2024** **Balstad, Laurinne** and Baskett, Marissa. Talk: When will evolutionary rescue reverse disease-induced population declines? Western Society of Naturalists.
- Balstad, Laurinne**. Seminar: Understanding and responding to fisheries and aquaculture diseases. Center for Population Biology Seminar Series, University of California, Davis
- 2023** **Balstad, Laurinne** and Baskett, Marissa. Poster: Conserving sick populations: Demographic or evolutionary rescue? Western Society of Naturalists.
- Balstad, Laurinne** and Szuwalski, Cody. Talk: Size and density-dependent incidence of BCD suggests cod predation more important than fishery for disease control. Alaska Marine Science Symposium.
- 2021** **Balstad, Laurinne** and Clifton, Sara. Talk: Modeling racial bias and homophily in professional hierarchies. SIAM Dynamical Systems.
- 2020** **Balstad, Laurinne**, Binning, Sandra, Craft, Meggan, Zuk, Marlene, and Shaw, Allison. Poster: Parasite intensity influences evolution of migratory behavior via migratory escape. Society of Mathematical Biology Annual Meeting.

TEACHING

- 01/2025-** Instructor of Record, Population Ecology
04/2025 *University of California, Davis; Co-taught with Richard Szeligowski*
- 01/2024-** Teaching Assistant, Population Ecology
04/2024 *University of California, Davis*
Curriculum development: Fisheries dynamics and management lab
- 09/2024-** Teaching Assistant, Topics in Disease Ecology
12/2024 *University of California, Davis*
- 07/2023** Teaching Assistant, Margine Ecosystem Research and Management
University of New Hampshire, Shoals Marine Laboratory
Guest lectures: Data Management; Ecosystem indicators: Bering sea bitter crab disease case study

GRANTS & FUNDING

- 09/2024-** Professors for the Future, UC Davis
Present *University of California, Davis, \$3,000*
Professional development program, with service project "Chat with and editor: Understanding the hidden curriculum of publishing" (workshop series)

- 09/2024-Present** Jastro-Fields Small Grant: Assisted evolution approaches to managed genetic rescue in host-pathogen systems
University of California, Davis, \$3,000 for undergraduate researcher stipend
- 09/2023-09/2024** Jastro-Fields Small Grant: Virulence evolution in macroparasites in response to human-induced selection: a case study from salmon aquaculture
University of California, Davis, \$2,775 for fieldwork and conference travel
- 09/2021-Present** Graduate Research Fellowship
National Science Foundation, \$144,000
- 09/2021-06/2023** Graduate Research Traineeship
National Science Foundation, Sustainable Oceans NRT \$34,000
- 05/2022** CBSM Conference Student Travel Award
\$1,000
- 09/2021-06/2022** Dean's Distinguished Graduate Fellowship
University of California, Davis, \$27,000

OUTREACH & SERVICE

- 2024** Juneau Sea Week curriculum development: Modeling Science Bioenergetics for Grades 6-8
In collaboration with Alaska Fisheries Science Center, NOAA
Model Shinyapp, with lesson plan linked:
https://lauriebalstad.shinyapps.io/SAL_GROW/
- University of Minnesota Itasca Biological Station curriculum development:
Simulating selection on migration
In collaboration with Martha Solveig Torstenson and Allison K Shaw, University of Minnesota. Lesson plan: <https://qubeshub.org/publications/5103/2>
- 05/2022-Present** UC Davis Ecology & Evolution Preview Program
Co-chair, Mentorship co-coordinator, Workshop presenter, Mentor
Program encourages students from underrepresented backgrounds to consider and apply to graduate school in Ecology & Evolution by making application process transparent
- 09/2021-Present** Population Biology Student Diversity Committee
Member
University of California, Davis

WORKSHOPS

- 09/2022-Present** Pedagogy workshops, University of California, Davis
Including "Simplifying course design," "Creating successful Instructor/TA collaborations," "Seminar on College Teaching" (10 weeks), "Practicing Equity in syllabus design"

06/2024 Monterey Bay Aquarium, University of California, Santa Cruz
Evolutionary Resilience for Kelp: Prospects and Challenges

05/2022 CBMS Conference: Interface of Mathematical Biology and Linear Algebra
Applications of linear algebra to epidemiology and disease systems

VESSEL EXPERIENCE

07/2024 Eastern Bering Sea Bottom Trawl Survey, 22 days
R/V Alaska Knight, Alaska Fisheries Science Center, NOAA