

# EMILY K. LONGMAN

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## EDUCATION

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### Doctor of Philosophy Sep 2017–Dec 2023

- University of California Davis, Davis, California
- Population Biology Graduate Group
- Dissertation: *Local adaptation, eco-evolutionary dynamics, and historical changes in mussel bed communities*
- NSF Graduate Research Fellowship Honorable Mention (2017)
- Advisor: Dr. Eric Sanford

### Bachelor of Science Sep 2011–May 2015

- Brown University, Providence, Rhode Island
- Biology Major – Ecology and Evolutionary Biology Track (3.97 GPA)
- Honors in Biology for Thesis: *Non-native mammals are homogenizing island faunas worldwide*
- Academic Awards: Magna Cum Laude, Sigma XI Society, Senior Biology Prize for Academic Excellence in Biological Sciences
- Advisor: Dr. Dov Sax

## RESEARCH POSITIONS

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### Postdoctoral Associate Nov 2025–Present

- University of Vermont, Burlington, Vermont
- Research Focus: Genetic basis of adaptation in green urchins and fruit flies
- Mentor: Dr. Joaquin Nunez

### National Science Foundation Ocean Sciences Postdoctoral Research Fellow Nov 2023–Oct 2025

- University of Vermont, Burlington, Vermont
- Research Focus: Ecological genomics of adaptation in a rocky shore predator-prey interaction
- Mentor: Dr. Melissa Pespeni

### Research Technician June 2015–June 2017

- Northeastern University, Marine Science Center, Nahant, Massachusetts
- Research Focus: Intertidal community assembly and dynamics in the Gulf of Maine
- Mentor: Dr. Geoffrey Trussell

## FUNDING

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### Total = \$419, 780

University of Vermont Staff Council Professional Development Fund	\$500
National Science Foundation Ocean Sciences Postdoctoral Research Fellowship, 2023-2025	\$331,979
Russell J. and Dorothy S. Bilinski Bodega Marine Lab Fellowship, 2022-2023	\$25,000
Center for Population Biology Collaborative Seed Grant, 2021-2022	\$4,996
Mildred E. Mathias Graduate Student Research Grant, 2020-2021	\$3,000
Russell J. and Dorothy S. Bilinski Bodega Marine Lab Fellowship, 2018-2019	\$20,000
Center for Population Biology Research Award, 2018-2019	\$1,950
Rafe Sagarin Fund for Innovative Ecology, 2018-2019	\$2,000
Population Biology Graduate Group Fellowship, 2017-2018	\$25,355
Brown Society of Royce Fellows, 2014-2015	\$5,000

## PUBLICATIONS

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- Bergland, A.O., Proud, L.A., Liu, J., Beets, J., **Longman, E.K.**, Highland, D.K., Croitoru, A., Makowski, H., Tern, C., Coronado-Zamora, M., Gonzalez, J., Schmidt, P., Flatt, T., & Nunez, J.C.B. (in prep). The molecular axis of endemism is governed by the opposing forces of purifying and balancing selection.
- Longman, E.K.**, Nunez, J.C.B., & Pespeni, M. (in prep). Both biotic and abiotic forces drive adaptation to local conditions in a marine dogwhelk.
- Longman, E.K.**, Nunez, J.C.B., Sanford, E., & Pespeni, M. (2026). Geographic divergence in population genomics and shell morphology reveal history of glacial refugia in a coastal dogwhelk. *Proceedings B*, 293(2070), 20253148. DOI: 10.1098/rspb.2025.3148  
[Video Abstract](#); [UVM Q&A](#)
- Price, D.K., West, K., Cevallos-Zea, M., Helms Cahan, S., Nunez, J.C.B., **Longman, E.K.**, Yew, J.Y., & Mederios, M.J. (2025). Microbiome composition shapes temperature tolerance in a Hawaiian picture-winged *Drosophila*. *Journal of Experimental Biology*, jeb-250973. DOI: 10.1242/jeb.250973
- Longman, E.K.** & Sanford, E. (2025). Biogeographic variation in mussel shell thickness and drilling predation on rocky shores. *Oecologia*, 207(8), 126. DOI: 10.1007/s00442-025-05760-x  
[Video Abstract](#)
- Longman, E.K.** & Sanford, E. (2025). An experimental test of eco-evolutionary dynamics on rocky shores. *Ecology*, 106(1), e4505. DOI: 10.1002/ecy.4505  
[The Bulletin of the Ecological Society of America](#)
- Longman, E.K.**, Merolla, S., Talke, S.A., Trautman, N., Largier, J.L., Harris, L., & Sanford, E. (2025). Evaluating historical changes in a mussel bed community in northern California. *Scientific Reports*, 15(1), 1930. DOI: 10.1038/s41598-025-86105-9  
[Video Abstract](#); [UC Davis Press Release](#); [Bay Nature](#); [CBC Radio Interview](#); [Point Reyes Light](#)
- Neylan, I., **Longman, E.K.**, Sanford, E., Stachowicz, J.J. & Sih, A. (2024). Long-term anti-predator learning and memory differ across populations and sexes in an intertidal snail. *Proceedings B*, 291(2032), 20240944. DOI: 10.1098/rspb.2024.0944
- Longman, E.K.**, Rosenblad, K. & Sax D.F. (2018). Extreme homogenization: the past, present and future of mammal assemblages on islands. *Global Ecology and Biogeography*, 27(1), 77-95. DOI: 10.1111/geb.12677

## TEACHING EXPERIENCE

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### Instructor of Record:

- **Community Ecology** (Fall Semester 2025). University of Vermont. Upper-level undergraduate course. 28 students.
- **Scientific Filmmaking** (Fall Semester 2025). University of Vermont. Graduate student course. 10 students.
- **Scientific Filmmaking** (Fall Semester 2024). University of Vermont. Graduate student course. 5 students. [Science communication films](#).

### Co-Instructor:

- **Science Communication through Short Films** (Fall Quarter 2022). UC Davis. Graduate student course. 11 students. Co-Instructors: Dr. Eric Sanford & filmmaker [Grant Thompson](#). [Science communication films](#).
- **Science Communication through Short Films** (Fall Quarter 2019). UC Davis. Graduate student course. 12 students. Co-Instructor: Dr. Eric Sanford. [Science communication films](#).

### Teaching Assistant:

- **Experimental Invertebrate Biology** and **Coastal Marine Research** (Summer Quarter 2023). UC Davis. Upper-level undergraduate course held at Bodega Marine Laboratory. 16 students. Instructor: Dr Eric Sanford.
- **Experimental Invertebrate Biology** and **Coastal Marine Research** (Summer Quarter 2022). UC Davis. Upper-level undergraduate course held at Bodega Marine Laboratory. 16 students. Instructor: Dr Eric Sanford.

- **Experimental Invertebrate Biology** and **Coastal Marine Research** (Summer Quarter 2019). UC Davis. Upper-level undergraduate course held at Bodega Marine Laboratory. 16 students. Instructor: Dr Eric Sanford.
- **Experimental Invertebrate Biology** and **Coastal Marine Research** (Summer Quarter 2018). UC Davis. Upper-level undergraduate course held at Bodega Marine Laboratory. 16 students. Instructor: Dr Eric Sanford.
- **Introduction to Ecology** (Winter Quarter 2019). UC Davis. Undergraduate course. ~200 students. Instructor: Dr. Eric Sanford.
- **Statistical Analysis of Biological Data** (Spring Semester 2015). Brown University. Upper-level undergraduate course. ~40 students. Instructor: Dr. Sohini Ramachandran.
- **Conservation Biology** (Fall Semester 2014). Brown University. Upper-level undergraduate course. 19 students. Instructor: Dr. Colleen Hitchcock.

**Guest Lecture:**

- **Population Genetics** (April 16, 2026). University of Vermont. Upper-level undergraduate course. ~20 students. Instructor: Dr. Joaquin Nunez. Lecture title: Drilling into population genetic variation in a rocky shore system.
- **First-year Zoology Seminar** (March 24, 2025; February 2, 2026). University of Vermont. First-year undergraduate course. ~20 students. Instructor: Dr. Ellen Martinsen. Lecture title: Marine evolutionary ecology: drilling into patterns of adaptation on rocky shores.
- **Liberal Arts Scholars Program (LASP) CURE Lab** (February 24, 2025). University of Vermont. Undergraduate course. ~20 students. Instructor: Dr. Kristin Bishop. Lecture title: Drilling in local adaptation in marine ecosystems.
- **Experimental Invertebrate Biology** (July 16, 2023). UC Davis. Upper-level undergraduate course. 16 students. Instructor: Dr. Eric Sanford. Lecture title: Biological interactions: kelp forests and conservation.

**CONFERENCE PRESENTATIONS** (<sup>U</sup> Undergraduate mentee)

<sup>U</sup>Boutilier, S., <sup>U</sup>Hilzenrath, M., O., Pespeni, M., & **Longman, E.K.** (2026). Differences in snail utensils: drilling into intraspecific variation in rocky shore snail predatory ability. *Student Research Conference*, University of Vermont.

**Longman, E.K.** (2026). Evolution at a snail's pace. *Postdoctoral Research Showcase – Lighting Talk*, University of Vermont.

<sup>U</sup>Walker, W.G., <sup>U</sup>Boutilier, S., <sup>U</sup>Hilzenrath, M., <sup>U</sup>Ward, O., Pespeni, M., & **Longman, E.K.** (2025). Understanding the morphological basis of intraspecific variation in drilling ability on rocky shores. *Student Research Conference*, University of Vermont.

**Longman, E.K.**, & Sanford, E. (2024). An experimental test of eco-evolutionary dynamics on rocky shores. *Evolution*, Montreal, Canada.

Neylan, I., **Longman, E.K.**, Sanford, E., Stachowicz, J. & Sih, A. (2024). Antipredator behavior and morphology varies across populations and risk levels in a marine snails (*Nucella canaliculata*). *The Society for Integrative and Comparative Biology*, Seattle, Washington.

**Longman, E.K.** & Sanford E. (2022). Eco-evolutionary Dynamics in a Rocky Intertidal Species Interaction. *Western Society of Naturalists Annual Meeting*, Oxnard, California.

Neylan, E., **Longman, E.K.**, Sanford, E., Stachowicz, J. & Sih, A. (2022). Antipredator behavior and morphology varies across populations and risk levels in a marine snails (*Nucella canaliculata*). *Western Society of Naturalists Annual Meeting*, Oxnard, California.

Neylan, E., **Longman, E.K.**, Sanford, E., Stachowicz, J. & Sih, A. (2022). Antipredator behavior and morphology varies across populations and risk levels in a marine snails (*Nucella canaliculata*). *Gordon Research Conference: Predator-prey Interactions*, Lucca, Italy.

<sup>U</sup>Quan, J.R., **Longman, E.K.** & Sanford, E. (2021). Drilling deeper to explore geographic variation in prey selection. *Western Society of Naturalists Annual Meeting*, Virtual.

**Longman, E.K.** & Sanford, E. (2021). Biogeographic variation in a rocky shore predator-prey interaction. *Western Society of Naturalists Annual Meeting*, Virtual.

<sup>U</sup>Koneru, M. **Longman, E.K.**, Sanford, E. (2020). The adaptive significance of colour polymorphism in the brooding sea anemone *Epiactis prolifera*. *Undergraduate Research Conference*, UC Davis.

- Longman, E.K.**, Merolla, S. & Sanford E. (2019). Using historical data to test whether species diversity had declined in mussel bed communities in northern California. *Western Society of Naturalists Annual Meeting*, Ensenada, Mexico.
- <sup>U</sup>Quan, J.R. de Leon Sanchez, E. **Longman, E.K.**, Sones, J.L., Sanford, E. (2019). Effects of a record-breaking heatwave on mussel bed communities in northern California. *Western Society of Naturalists Annual Meeting*, Ensenada, Mexico.
- Longman, E.K.**, Matassa, C.M. & Trussell G.C. (2017). Spatial and temporal variation in mussel and barnacle recruitment within the Gulf of Maine. *Benthic Ecology Meeting Society*, Myrtle Beach, SC.
- Longman, E.K.**, Rosenblad, K. & Sax D.F. (2015). Non-native mammals are homogenizing island faunas worldwide. *Ecological Society of America Annual Meeting*, Baltimore, MD.

### INVITED TALKS

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- Longman, E.K. (2024). Drilling into patterns of adaptation on rocky shores. *Biology Department Seminar Series*, University of Vermont.
- Longman, E.K. (2024). Visual science communication workshop. *Society of Marine Mammalogy Northeast Student Chapter*, University of Vermont.
- Longman, E.K. (2024). Science communication through short films. *Biological Data Science (BILDS) Program Seminar Series*, University of Vermont.
- Longman, E.K. (2023). Drilling Deeper: Exploring Local Adaptation and Eco-evolutionary Dynamics in a Rocky Shore Community. *Center for Population Biology Seminar Series*, University of California, Davis.
- Longman, E.K. (2023). Drilling Deeper: Exploring Local Adaptation and Eco-evolutionary Dynamics in a Rocky Shore Community. *Exit Seminar*, Bodega Marine Laboratory.
- Longman, E.K. & Sanford, E. (2022). Spatial and Temporal Selection in a Rocky Intertidal Community: Mechanisms and Community Consequences. *Bodega Marine Laboratory Friday Forum*, Bodega Bay.
- Longman, E.K. (2020). Local Adaptation and Eco-evolutionary Dynamics in Marine Intertidal Invertebrates. *Center for Population Biology Seminar Series*, University of California, Davis.

### MENTORING/ADVISING (\*indicated advising on independent project)

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#### Technicians/Research Assistants:

- Sarah Merolla, UC Davis (2020-2021)
- Audrey Deutsch, UC Davis (2020-2021)

#### Undergraduate Students:

- \*Sam Boutilier, University of Vermont (2024-Present)
- Madeline Hilzenrath, University of Vermont (2024-Present)
- Olivia Ward, University of Vermont (2024-2025)
- \*Willow Walker, University of Vermont (2024-2025)
- Jacquie Rajerison, UC Davis (Summer 2022)
- Anna Lee, UC Davis (Summer 2021)
- Taylor Gouin, Santa Rosa Junior College (Summer 2021)
- \*Jenna Quan, UC Davis (2021-2022)
- Michael Brito, UC Davis (Summer 2020)
- Maddy Frey, UC Davis (Summer 2019)
- \*Manisha Koneru, UC Davis (2019-2020)
- Erin Sayre, Northeastern University (2016-2017)

### UNIVERSITY SERVICE AND COMMUNITY OUTREACH

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- Science and Society University of Vermont Working Group** 2025-Present
- Sole postdoctoral member of a working group at UVM focused on designing a graduate certificate titled "Science and Society: Science Communication, Policy and Ethics".
- Letters to a Pre-Scientist** 2025-Present
- Pen pal program that pairs middle schoolers with scientists.

- University of Vermont Community Outreach** 2023-Present
- **Reel Science** – Film festival for UVM Research Week in April 2026 (budget \$2,000).
  - **BioStories** – Video compilation about researchers at the UVM that was shown during the Biology Open House in September 2025.
  - **Science Communication Film Festival** held during the University of Vermont Biology Department Seminar Series in Spring 2025 and Spring 2026.
  - **Science Fair Judge** at South Burlington Tuttle Middle School in February 2025, March 2026.
- Bodega Marine Sciences Association (BMSA)** 2018-Present
- Member since summer 2018 of organization focused on creating community for those at Bodega Marine Laboratory via hosting social events, organizing a mentorship program between new and old members of the marine lab, raising funds for travel grants, and engaging with the local Bodega Bay community (farmers markets, outreach at schools, etc.).
  - Held position of Secretary from 2019-2021 and President from 2021-2023.
- Bodega Diversity Equity and Inclusion (DEI) Committee** 2021-2023
- Member of the second cohort of the Bodega DEI committee. Committee advises the Bodega Marine Lab and Bodega Marine Reserve’s leadership on DEI issues and strives to improve DEI across the marine lab and reserve.
- Ecology Film Festival** Winter 2023
- Organized community events in Davis and Bodega Bay to show a collection of science communication films created by graduate students at UC Davis. ~200 people attended.
- Costal Marine Sciences Institute Grad Student Affairs Committee** 2018-2022
- Graduate student representing the needs & concerns of costal and marine sciences graduate students and postdocs at UC Davis.
  - Co-organized two symposiums for graduate students in winter 2021 and spring 2022.
- Brown University Mentoring** 2011-2015
- **Women in Science and Engineering (WiSE)** – Mentor in program supporting women in science and engineering majors.
  - **Matched Advising Program (MAPs)** – Mentor in program advising sophomores.
  - **New Scientist Program Graduate to Undergraduate Mentoring Initiative (NSP:GUMI)** – Mentee in program for students interested in going to graduate school.
- Brown University Field Hockey** 2011-2015
- Walk-on player on Brown University’s Division I varsity field hockey team freshman year.
  - Member of club field hockey team. Elected to captain in spring 2013.

### **CERTIFICATES/WORKSHOPS**

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HHMI Community of Practice – Navigating the Friction of Content Coverage and Inclusive Excellence in Introductory STEM Courses (5 hrs)	Spring 2025
AGU LANDInG Postdoctoral Program (13 hrs)	Spring 2024-Spring 2025
Alan Alda Communicating Science Workshop (3 hrs)	January 9, 2025
DEI Gatekeeper Training Workshop (2 hrs)	April 12, 2022
UC Field Research Safety – Fieldwork Toolkit Leadership Training (10 hrs)	March 2021
Story Circles Narrative Training (11 hrs)	2018-2019

### **ADDITIONAL RESEARCH EXPERIENCES**

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- Summer College Student Fellowship** Summer 2014
- San Diego Zoo Institute for Conservation Research, Least Tern and Snowy Plover Program.
- Research Assistant** – Brown University 2013-2014
- Aeromechanics & Evolutionary Morphology Lab. Mentor: Dr. Sharon Swartz

### **SERVICE TO THE PROFESSION**

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**Scientific Reviewer:** Ecology (1); Ecology and Evolution (1); Journal of Evolutionary Biology (2); Limnology and Oceanography (1); Marine Ecology Progress Series (1); Molecular Ecology (1); Oecologia (1)

**Ad hoc Reviewer:** NSF Division of Ocean Sciences (2); Hawai’i Sea Grant (1)