

MADISON ARMSTRONG

mlarmstrong@ucdavis.edu
madisonarmstrong.me

EDUCATION

- Ph.D.** University of California, Davis, Population Biology Graduate Group
Cumulative GPA: 4.0
NRT Sustainable Oceans Cohort Member
Advisor: Dr. Rachael Bay
- B.S.** Washington State University Honor's College, Biology (Evolutionary Biology and Ecology focus) with a minor in Genetics and Cell Biology
Cumulative GPA: 3.75, Summa Cum Laude Graduate, Dean's list all semesters.
The Evolution of Plastic Expression as an Explanation of Invasion Success
Advisor: Dr. Mark Dybdahl

PUBLICATIONS

Finger, J., **Armstrong, M.**, Thomas, C., Levri, E., and Dybdahl, M. Invasive range expansion: environmental tolerance of widespread and restricted clonal lineages. *manuscript in revision*.

Armstrong, M., Smithson, M., and Dybdahl, M. Variation in shell morphology and upstream movement within and between clonal lineages of an invasive snail. *manuscript in prep*.

RESEARCH

- 2016-2019 Researcher, Laboratory of Dr. Mark Dybdahl**
- Conducted an independent research project on the evolution of plastic gene expression as an explanation of invasion success of the clonal New Zealand mudsnail, *Potamopyrgus antipodarum*.
 - Authored and received funding for multiple research proposals (see Honors/Grants section).
 - Managed laboratory space and specimen care.
 - Presented my research findings at the university, local and national level since 2015 (see Presentations section).
- 2019 Summer Fieldwork Assistant, Laboratory of Dr. David Crowder**
- Aided in a wide-range of research projects addressing plant-insect interactions in agricultural systems by assisting with greenhouse and laboratory experiments.
 - Assisted in data collection for the Community Science Project by transferring honeybee larvae into incubators for further study.
- 2016 Undergraduate Research Assistant, Laboratory of Dr. Paul Nabity**
- Conducted PCR analysis and gel electrophoresis to investigate species differentiation of plant species infected by Phylloxera
 - Collaboratively created and utilized a DNA isolation protocol.
- 2015-2016 Undergraduate Research Assistant, Laboratory of Dr. Mark Dybdahl**
- Measured protein differentiation to differentiate clonal types of the model organism, New Zealand freshwater snail, through allozyme electrophoresis.
 - Aided in data analysis for the Great Lakes Invasion Study.
- 2014 Research Assistant for Operation Wallacea in Ecuador**
- Traveled to Ecuador with a and a small group of students to work with Operation Wallacea, a conservation-focused company based out of the U.K.
 - Participated in lectures and specimen sampling in the cloud forest and lowlands of Ecuador for two weeks.

TEACHING / MENTORSHIP

2020 **Evolution and Ecology Graduate School Preview with UC Davis**

- Was a mentor for students interested in pursuing ecology/evolution graduate programs to increase access and transparency of the process to increase diversity in the field (<https://eegradpreview.weebly.com/mission.html>).
- Assisted mentees throughout the summer and into the fall with the process of applying to graduate school and acted as a soundboard for questions and ideas.

2019-PRESENT **Undergraduate Mentor with ESTEME**

- Connected with undergraduate students interested in graduate school and STEM through the UC Davis ESTEME program at UC Davis (<https://esteme.weebly.com/>).
- Helped various students with graduate school questions, application editing and mentorship advice as they navigated the process of applying to graduate school.

2016-2019 **Destination Washington State University School of Biological Sciences panel speaker**

- Participated in various panels for incoming undergraduate students to WSU in order to encourage participation in undergraduate research and answer questions about undergraduate degrees in the biological sciences.

2018 **Teaching Assistant with Operation Wallacea in Peru**

- Traveled to Peru with my past AP Biology Teacher as an assistant teacher to fifteen high school students.
- Worked collaboratively with scientists from around the world and other high school groups on a research boat on the Amazon for two weeks.
- Individually mentored a group of six students throughout the research excursion.
- Communicated with scientists to improve data collection techniques and increase student assistance during the daily transects.

2017 **Teaching Assistant for Mammalogy (Bio 428 at WSU) with Dr. Daniela Monk**

- Prepared lab materials each week with the proper specimen by communicating with the campus museum curator (Dr. Kelly Cassidy) to retrieve the necessary specimen from the research collection.
- Formatted worksheets and exams to accomplish learning outcomes and increase student success.

2016-2017 **WSU Orientation Counselor with New Student Programs**

- Selected from a large number of applicants to represent Washington State University as a leader and a role model for future students.
- Provided resources to students during the three-day orientation process

SCIENCE COMMUNICATION

2020 **CPB Workshop Organizer**

- Worked with a small team to organize a virtual workshop centered around environmental adaptation and invited two guest speakers to speak on the topic.
- Collaborated with Project Biodiversify to provide attendees with a workshop activity.

2020 **Internship with Skype a Scientist**

- Mediated live-stream events hosted by Skype a Scientist where the general public could connect with a scientist from a specific field of research and ask questions.
- Revamped the Skype a Scientist website and created fliers for events to help increase awareness of the non-profit organization among the scientific community.
- Co Hosted and wrote trivia questions for weekly trivia nights to help engage with the public and raise money for the organization.

2018-2019 **Science Museum Educator at the Palouse Discovery Science Center**

- Developed activities to enhance scientific understanding of visitors.
- Collaborated with parents and children to provide an enjoyable, educational experience and assisted in museum upkeep and care.

2018-2019 **WSU Biological Graduate Student Association (BGSA) Family Fun Day Volunteer**

- Led family-friendly science experiments at the biannual BGSA event to connect community members to university scientists.

TALKS

- 2020 **Armstrong, M.** *Stressful Cities: Genomic Variation Across *S. purpuratus* Populations Associated with Coastal Urban Stress.* Center for Population Biology Workshop Flashtalk
- 2019 **Armstrong, M.** *Phenotypic Plasticity as an Explanation of Invasion Success.* WSU Honor's College Thesis Defense, (Pass with Distinction)
- 2018 **Armstrong, M.** *At a Snail's Pace.* Gold and Diamond Alumni Speaker, School of Biological Sciences.
- 2017 **Armstrong, M.** *Phenotypic Plasticity.* Gold and Diamond Alumni Speaker, School of Biological Sciences.

POSTER PRESENTATIONS

- 2019 **Armstrong, M.,** Smithson, M., and Dybdahl, M. *Phenotypic Plasticity as an Explanation of Invasion Success.* National Evolution Conference in Providence, RI.
- 2019 **Armstrong, M.,** Smithson, M., and Dybdahl, M. *Phenotypic Plasticity as an Explanation of Invasion Success.* WSU Symposium for Undergraduate Research and Creative Activities (SURCA), gray award (2nd place) recipient
- 2018 **Armstrong, M.,** Smithson, M., Hudak, A., and Dybdahl, M. *Is Phenotypic Variation Within and Between Populations of a Parthenogenic Invasive Species Adaptive?* Evolution Washington, Idaho, British Columbia and Oregon Conference (EVO-WIBO).
undergraduate poster award
- 2018 **Armstrong, M.,** Smithson, M., Hudak, A., and Dybdahl, M. *Is Phenotypic Variation Within and Between Populations of a Parthenogenic Invasive Species Adaptive?* WSU SURCA.
crimson award (1st place) recipient
- 2017 **Armstrong, M.,** Smithson, M., and Dybdahl, M. *Phenotypic Differences in a Single Clonal Type in Newly Colonized and Established Populations.* WSU SURCA. gray award (2nd place) recipient
- 2017 **Armstrong, M.,** Smithson, M., and Dybdahl, M. *Phenotypic Differences in a Single Clonal Type in Newly Colonized and Established Populations.* National Evolution Conference in Portland, OR.
- 2016 Thomas, C., **Armstrong, M.,** Dybdahl, M., and Finger, J. *Genotype specific differences in the predicted and observed spread of an invasive species.* WSU SURCA

GRANTS / SCHOLARSHIPS

University of California, Davis (UC Davis)

- Graduate Research Award (2020)

Washington State University (WSU)

- George Van Vleet Jr. Memorial Scholarship recipient (2019)
- Honor's College Study Abroad Award (2018)
- School of Biological Sciences Summer Undergraduate research funding (2017, 2018)
- Emeritus Award (4 students selected, 2017)
- College of Arts and Sciences summer mini-grant for personal research (2016, 2017)
- Brelsford Housing Award due to research involvement (2016)
- Auvil Scholars Fellowship (2016)

HONORS

- 2019 Outstanding Senior in Biology at WSU
- 2019 Fulbright Semi-Finalist
- 2018 Certificate of Completion of Physalia Course in "Epigenomic Data Analysis" Taken in Berlin, Germany
- 2018 Phi Beta Kappa Honors Society Member
- 2017 WSU Presidential LEAD leadership award recipient
- 2017 WSU School of Biological Sciences monthly student spotlight

AFFILIATIONS

- The Research Coordinated Network for Evolution in Changing Seas Member (2018-Present)
- Society for Systemic Evolution Member (2017- Present)

University of California, Davis (UC Davis)

- Sustainable Oceans NRT (2019-Present)

Washington State University (WSU)

- President's Commission on the Status of Women member (2017-2018)
- Biology Club Member (2015), Vice President (2016-2017) and President (2017-2019)
- Social Media Chair of Scientista (2017-2018), and General Member (2018-2019)
- Environmental Sustainability Alliance Member (2016-2019)

SKILLS

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| • R programming | Experiment development and design |
| • Scientific writing | • Data collection and analysis |
| • Teaching/tutoring | • Aquatic/marine specimen handling |
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