

Madison Leigh Armstrong

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EDUCATION

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

PRIOR RESEARCH EXPERIENCE

- 08.2016-09.2020 **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 2017 (see Presentations section).
- 03.2019-09.2019 **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 Citizen Science Project by transferring honeybee larvae into incubators for further study.
- 02.2016-12.2016 **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.
- 08.2015-05.2016 **Undergraduate Research Assistant, Laboratory of Dr. Mark Dybdahl**
- Aided in data analysis for the Great Lakes Invasion Study.
 - Measured protein differentiation to differentiate clonal types of the model organism, New Zealand mudsnail, through allozyme electrophoresis.
 - Presented at the university level in 2016 (see Presentations section).
- 06.2014 **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.
 - Participated in lectures and specimen sampling in the cloud forest and lowlands of Ecuador for two weeks.

TEACHING/LEADERSHIP EXPERIENCE

- 07.2018-03.2019 **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.
- 06.2018 **Teaching Assistant with Operation Wallacea in Peru**
- Traveled to Peru with my past AP Biology Teacher as an assistant teacher to 15 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.
 - Mentored a group of 6 students throughout the research excursion.
 - Communicated with scientists to improve data collection techniques and increase student assistance during the daily transects.
- 08.2017-12.2017 **Teaching Assistant for Mammology (Bio 428) with Dr. Daniela Monk**
- Prepared lab materials each week with the correlating specimen by communicating with the campus museum curator (Dr. Kelly Cassidy) to retrieve the necessary specimen from the research collection.
 - Formatted worksheets and exams for learning outcomes and student success.
- 01.2017-08.2017 **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.

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. Widespread Variation in Shell Morphology and Rheotaxis in Non-Native Single Clonal Snail Lineage. *manuscript in prep*.

TALKS

- 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 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). *poster, 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. *poster, crimson award 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 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

- 2019 Washington State University (WSU) George Van Vleet Jr. Memorial Scholarship recipient
- 2018,17 WSU School of Biological Sciences Summer Undergraduate research funding
- 2017 WSU Emeritus Award (4 students selected)
- 2017,16 WSU College of Arts and Sciences summer mini-grant for personal research
- 2016 WSU Brelsford Housing Award due to research involvement
- 2016 WSU Auvil Scholars Fellowship

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 student spotlight

OTHER

Affiliations

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

Outreach

- 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)
- Destination WSU SBS panel speaker (2016-2019)

SKILLS

- R programming
- Grant/scientific writing
- Teaching/tutoring
- Experiment development and design
- Data collection and analysis
- Aquatic specimen handling