

HILARY A. HAYFORD

POSTDOCTORAL RESEARCH ASSOCIATE

DEPARTMENT OF BIOLOGY & FRIDAY HARBOR LABS, UNIVERSITY OF WASHINGTON

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EDUCATION

PhD, *Biology*, University of Washington, Seattle, 2016

BSc, *Marine Biology*, University of California, Santa Cruz, 2001

RESEARCH – 18 YEARS, COLLABORATION ON > 40 PROJECTS -

RESEARCH POSITIONS

POSTDOCTORAL RESEARCH ASSOCIATE, University of Washington 2016 - present
Ecophysiology, thermal biology, climate change, aquaculture, ocean acidification.

GRADUATE STUDENT RESEARCHER

University of Washington: Thermoregulation, tidal cycles, predation, performance 2009 - 2016

Moss Landing Marine Labs/San Jose State: Molecular ecology & invertebrate zool. 2005 - 2009

Hopkins Marine Station, PISCO: Biomechanics, ecophysiology & genetics July 2007

Universidad Católica del Norte, Coquimbo, Chile: Kelp forest community ecology Oct 2006

RESEARCH SPECIALIST, University of California, Santa Cruz 1999 - 2009

Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO). Lab Manager 2001-2005.

Experimental ecology, environmental monitoring, marine protected areas (MPAs); 700+ field days.

PEER-REVIEWED PUBLICATIONS

4. **HA Hayford**, MJ O'Donnell, E Carrington. (2018) Radio tracking detects behavioral thermoregulation at a snail's pace. *Journal of Experimental Marine Biology and Ecology*, 499:17-25
3. WB Stickle, E Carrington, **H Hayford** (2017) Seasonal changes in the thermal regime and gastropod tolerance to temperature and desiccation stress in the rocky intertidal zone at the southern end of the inside passage. *Journal of Experimental Marine Biology and Ecology*, 488:83-91
2. SE Gilman, **H Hayford**, C Craig, E Carrington (2015) Body temperatures of an intertidal barnacle and two whelk predators in relation to shore height, solar aspect, and microhabitat. *Marine Ecology Progress Series*, 536:77-88
1. **HA Hayford**, SE Gilman, E Carrington (2015) Foraging behavior minimizes heat exposure in a complex thermal landscape. *Marine Ecology Progress Series*, 518:165-175

PUBLICATIONS IN PREPARATION – Manuscripts available upon request

HA Hayford, E Carrington. Slow migratory behavior benefits performance in a predictably dynamic habitat.

HILARY A. HAYFORD

HA Hayford, MN George, E Carrington. Experimental ocean acidification inhibits growth of an intertidal snail.

PRESENTED PAPERS (*Presenting author = 11, Total = 15)

*Society for Integrative & Comparative Biology	TX, FL, LA, CA	2014, 2015, 2017, 2018
*Ecological Society of America	OR	2017
*Biology Graduate Student Symposium	WA	2011, 2015
*Western Society of Naturalists	WA, CA, WA	2011, 2012, 2014
*Graduate Climate Conference	WA	2014
World Congress of Malacology	Portugal	2013
U.S. Regional Assoc. of Int'l Assoc. for Landscape Ecology	RI	2012
Monterey Bay National Marine Sanctuary Symposium	CA	2007

INVITED RESEARCH SEMINARS

Pacific Lutheran University	Dept. of Biology	Nov 2017
University of Washington	Friday Harbor Labs	Jul 2017
Western Washington University	Biology Department	May 2016
University of California, Irvine	Marine Ecology Group	Aug 2015
University of Washington	Friday Harbor Labs	Nov 2014
University of Washington	Friday Harbor Labs	Nov 2012
Natural Bridges State Park (CA)	Docent Program	Jul 2008

GRANTS & AWARDS (\$78,000)

Rafe Sagarin Fund for Innovative Ecology Honorable Mention (Co-PI)	\$250	2017
Junior scientist on proposal in review, PI: Carrington, WA Sea Grant		Not funded
Friday Harbor Labs Fellowships, University of Washington	\$9,000	2011 - 2017
Achievement Rewards for College Scientists (ARCS), Seattle Chapter	\$17,500	2009-2012
Edmondson Award, Dept. of Biology, University of Washington	\$1,500	2012
Pacific Northwest Shell Club Scholarship	\$750	2011
Top Scholar, Dept. of Biology, University of Washington	\$11,400	2009
David & Lucille Packard Research & Travel Grant	\$1,000	2009
Moss Landing Marine Labs Fellowships	\$4,000	2008, 2009
San Jose State University Fellowships	\$1,425	2007 - 2009
Dr. Earl & Ethel Myers Oceanographic & Marine Biology Grant	\$1,000	2006
Regents Scholar, University of California, Santa Cruz	\$30,000	1998 - 2000
McHenry Scholar (4 university-wide), University of California, Santa Cruz	\$420	1999

RESEARCH MENTOR (6 undergraduates, University of Washington)

1. Maia Kreis (2014) "Measuring thermal performance of *Nucella ostrina*"; (2012) "Vertical migration patterns of two marine snails: *Nucella lamellosa* & *Nucella ostrina*"
2. Kat Barton (2013) "Effect of heat stress & starvation on snail behavior and recovery rate"
3. & 4. Erik Nash & Dan O'Connor (2013) "Effect of heat stress & starvation on the respiration rate of *Nucella ostrina*"
5. Kathleen Conery (2012) "Migration & feeding in intertidal whelks, *Nucella ostrina* & *N. lamellosa*"
6. Lauren Colpo (2010-2011) "Metabolic response of *Nucella ostrina* & *Nucella lamellosa* to increased temperatures in aerial environments"

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SPECIALIZED SKILLS

Field biology: marine algal & invertebrate natural history, plankton identification, installation of equipment in rock, temperature measurement, deployment of oceanographic equipment, experience at >110 field sites across 3 countries, WA State Boaters License

General lab & shop: microscopy, respirometry, fluorometry, spectrophotometry, soldering, wiring, flume, wind tunnel, plumbing, construction with power tools

Molecular lab: cell culture, transformation & cloning, DNA & protein extraction, PCR, restriction digestion, electrophoresis, SDS-PAGE, Western blotting

Statistical software: R, SPSS, Systat, Matlab

Languages: English, Spanish

TEACHING - 26 COURSES, >1000 STUDENTS -

† denotes courses with labs

* denotes courses with field trips

INSTRUCTOR OF RECORD – 4 COURSES

Historical Ecology Research Apprenticeship†*	UW Friday Harbor Labs	2017, sched. 2018
Foundations in Ecology x 2†*	University of Washington	2017, sched. 2018
Marine Ecological Processes	University of Washington	2017

TEACHING ASSISTANT – 22 COURSES

Introductory Cell & Molecular Biology†	University of Washington	2016
Mycology†*	University of Washington	2015
Invertebrate Zoology†*	University of Washington	2015
Marine Ecology*	University of Washington	2015
Cell & Molecular Lab Techniques x 3†	University of Washington	2013 - 2015
Limnology & Limnology Lab x 4†*	University of Washington	2011 - 2014
Invert. Zoology & Research Apprenticeship x 2†*	UW Friday Harbor Labs	2013 - 2014
Marine Algae & Research Apprenticeship x 3†*	UW Friday Harbor Labs	2010 - 2012
Foundations in Physiology	University of Washington	2012
Foundations in Ecology*	University of Washington	2011
Introductory Ecology & Evolution†*	University of Washington	2010
Invertebrate Zoology†*	San Jose State University	2008
Teacher Enhancement Program: Lab & Field	San Jose State University	2007
Teacher Enhancement Program: Biotechnology†*	San Jose State University	2006

RECOGNITION

Ingrith Deyrup Distinguished Teaching Award, U. of Washington	\$750	2015
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CLASS GUEST LECTURES

Girls in Science	Burke Museum	2016
Cell & Molecular Lab Techniques	University of Washington	2014
Invertebrate Zoology	Seattle University	2013
Marine Botany	UW Friday Harbor Labs	2012
Marine Ecological Processes	University of Washington	2012
Marine Ecology	U. of California, Santa Cruz	2008

HILARY A. HAYFORD

SERVICE & COMMUNITY

REVIEWER FOR

*Comparative Biochemistry & Physiology
Ecography
Ecological Monographs
Invertebrate Biology
Journal of Coastal Research*

*Journal of Experimental Biology
Journal of Experimental Marine Biology & Ecol.
Marine Ecology
Marine Ecology Progress Series*

PROFESSIONAL SERVICE

Student paper judge	Society Integr & Comp Biol	2017, 2018
Friday Harbor Labs Advisory Board	University of Washington	2013 - 2014
Undergraduate Curriculum Committee, Biology Dept.	University of Washington	2013 - 2014
Graduate Coordinating Committee, Biology Dept.	University of Washington	2012 - 2013
Graduate Program Committee, Biology Dept.	University of Washington	2010 - 2012
Biology Graduate Student Symposium Coordinator	University of Washington	2011
Judge, HHMI Undergraduate Research Symposium	University of Washington	2010
Dean's Student Advisory Board, College of Science	San Jose State University	2007 - 2009

FEATURES & POPULAR ARTICLES

“Avoiding high temperatures at a snail’s pace.” Feature article; Friday Harbor Labs Tide Bites newsletter & San Juan Islander, May 2016, <http://tinyurl.com/j4vg8mp>

“The best of both worlds: A clever intertidal snail feeds on land and cools off in the sea.” Feature article; Pacific Northwest Shell Club newsletter, Oct 2014, <http://tinyurl.com/nwt7smh>

“A snail can tell us a lot about global warming.” Radio feature; Crosscut Radio, Apr 2012
<http://tinyurl.com/pqtlgmj>

COMMUNITY OUTREACH > 1,300 hours

Volunteer docent, Seattle Aquarium, Seattle, WA	2016 - present
Visiting field biologist, Spring Street Summer Institute, Friday Harbor, WA	2013, 2014, 2017
Fundraiser volunteer, Puget Soundkeeper Alliance, Seattle, WA	2017
Visiting scientist, What Is A Scientist? SICB School Outreach, New Orleans, LA	2017
Science Positive blog contributor, Biology Dept., U. of Washington, Seattle, WA	2015
Seattle Nerd Night public lecturer, Seattle, WA	2015
Advancement Board Annual Dinner research lecturer, Friday Harbor Labs, WA	2014
Volunteer naturalist, Lime Kiln Point State Park, Friday Harbor, WA	2013 – 2014
Visiting scientist, Friday Harbor Elementary School, Friday Harbor, WA	2010 – 2014
Volunteer writing mentor, Dream Project, U. of Washington, Seattle, WA	2010
Volunteer mentor, Student Oceanography Club, Monterey Bay Aquarium, CA	2007 – 2009
Science fair judge, secondary schools, CA	2006 – 2009
Fundraiser volunteer, Moss Landing Marine Labs, Moss Landing, CA	2005 – 2009
Fundraiser volunteer, Long Marine Lab, Santa Cruz, CA	2003, 2008, 2009
Career panelist, junior & senior high schools, Santa Cruz County,	2007, 2008
Volunteer mentor, Young Women in Science, Monterey Bay Aquarium, CA	2007
Volunteer, Shark Festival & Sanctuary Celebration, Santa Cruz, CA	2002
Co-leader, Ocean Explorers summer camp, Long Marine Lab, Santa Cruz, CA	1999 – 2000

HILARY A. HAYFORD

Volunteer docent, school programs, Long Marine Lab, Santa Cruz, CA

1996 – 2000

PROFESSIONAL AFFILIATIONS

Ecological Society of America (ESA)

Society for Integrative and Comparative Biology (SICB)

Western Society of Naturalists (WSN)

COMMUNITY AFFILIATIONS

American Civil Liberties Union (ACLU)

National Association for the Advancement of People of Color (NAACP)