

## CURRICULUM VITAE

### **Aaron W. E. Galloway, Ph.D.**

Associate Professor  
University of Oregon  
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### **ACADEMIC APPOINTMENTS** (courses taught in bold)

*Associate Professor.* **Marine Environmental Issues, Marine Conservation Biology, Marine Ecology,** University of Oregon, Oregon Institute of Marine Biology. Fall 2015-present.

*Instructor.* **Ecology Between & Below Pacific Tides** (with Scientific Diving option). Session B Summer 2015. **Marine Subtidal Ecology** (with Scientific Diving option). Session A Summer 2018. UW, Friday Harbor Labs (FHL).

*Postdoctoral Research Associate.* Washington State University, School of the Environment, Pullman WA, USA. Supervisor: Prof. S. Hampton. September 2014-15.

*Visiting Postdoctoral Researcher.* Stockholm University, Department of Ecology, Environment and Plant Sciences, Sweden (Home Instit.: UC Davis). Supervisor: Prof. M. Winder. November 2013-14.

*Postdoctoral Researcher.* University of Eastern Finland, Department of Biology, Joensuu, Finland. Supervisor: Dr. P. Kankaala. June-November 2013.

### **EDUCATION**

<i>University of Washington</i>	Aquatic and Fishery Sciences (Ecology)	Ph.D. 2013
<i>Central Washington University</i>	Resource Management (Wildlife Biology)	M.S. 2004
<i>The Evergreen State College</i>	Environmental Science and Policy	B.A. 1999

### **SELECTED PEER-REVIEWED PUBLICATIONS** (of 56 total)

(♦=student coauthors, ^=postdoc coauthor, ‡=supervising author)

Iken, K, CD Amsler, K Gorman, AG Klein, AWE Galloway, MO Amsler, S Heiser, R Whippo♦, AT Lowe^, JB Schram^, ZX Schneider, and JB McClintock. 2023. Macroalgal input into the coastal food web along a gradient of seasonal sea ice cover along the Western Antarctic Peninsula. **Marine Ecology Progress Series** 718:1-22. doi:10.3354/meps14388

Amsler, CD, MO Amsler, AG Klein, AWE Galloway, K Iken, JB McClintock, S Heiser, AT Lowe^, JB Schram^, and R Whippo♦. 2023. Strong correlations of sea ice cover with macroalgal cover along the Antarctic Peninsula: ramifications for present and future benthic communities. **Elementa** 11:1. doi:10.1525/elementa.2023.00020

Schram, JB^, HG Hayes♦, E Street, N Thompson♦, RM Yoshioka, AWE Galloway‡. 2023. Juvenile Dungeness crab foraging behavior and lipid composition is altered more by food quantity than seawater pH in a multi-stressor experiment. **JEMBE** 563:151897. doi:10.1016/j.jembe.2023.151897

Galloway, AWE‡, SA Gravem, JN Kobelt, WN Heady, DK Okamoto, DM Sivitilli♦, VR Saccomanno, J Hodin, R Whippo♦. 2023. Sunflower sea star predation on urchins can facilitate kelp forest recovery. **Proceedings of the Royal Society B** 290:20221897. doi:10.1098/rspb.2022.1897

- This article was featured in *The New York Times Trilobites* section in March 2023.

Meyer, MF♦, T Ozersky, KH Woo, K Shchapov, AWE Galloway, JB Schram^, EJ Rosi, DD Snow, MA Timofeyev, DY Karnaukhov, NA Bondarenko, YM Zvereva, MR Brousil, and SE Hampton. 2022.

- Effects of spatially heterogeneous lakeside development on nearshore biotic communities in a large, deep, oligotrophic lake. **Limnology and Oceanography** 67:2649-2664. doi:10.1002/lno.12228.
- Raymond, WW ♦, JB Schram^, GL Eckert, AWE Galloway ‡. 2021. Sea otter effects on trophic structure of seagrass communities in Southeast Alaska. **Marine Ecology Progress Series** 674:37-58. doi:10.3354/meps13819
- Galloway, AWE ‡, AH Beaudreau, M Thomas ♦, BL Basnett ♦, L Lam ♦, Sc.L Hamilton, K Andrews, JB Schram^, JB Watson, JF Samhuri. 2021. Assessing prevalence and correlates of blue-colored flesh in lingcod (*Ophiodon elongatus*) across their geographic range. **Marine Biology** 168:139 doi: 10.1007/s00227-021-03936-6
- Salant, CD ♦, AL Shanks, JB Schram^, AWE Galloway ‡. 2021. Trophic biomarkers indicate coastal surfzone hydrodynamics affect resource assimilation of mussels and barnacles. **Estuaries and Coasts** doi: 10.1007/s12237-021-00932-3
- Lee, L, D McNeill, P Ridings, M Featherstone, D Okamoto, N Spindel ♦, AWE Galloway, G Saunders, E Adamczyk ♦, L Reshitnyk, O Pontier, M Post, R Irvine, N Wilson, V Bellis. 2021. Chiixuu TII iinasdII: Indigenous ethics and values lead to ecological restoration for people and place in Gwaii Haanas. **Ecological Restoration** 39:45-51. <https://muse.jhu.edu/article/793659>
- Whalen, MA, R Whippo ♦, AWE Galloway, and 63 additional authors. 2020. Climate drives the geography of marine consumption by changing predator communities. **Proceedings of the National Academy of Sciences** doi: 10.1073/pnas.2005255117
- Galloway, AWE ‡, G von Dassow, JB Schram^, T Klinger, TM Hill, AT Lowe^, F Chan, RM Yoshioka ♦, KJ Kroeker. 2020. Ghost factors of laboratory carbonate chemistry are haunting our experiments. **The Biological Bulletin** 239:pp-pp doi: 10.1086/711242
- Lowe, AT^, AWE Galloway. 2020. Urchin Searchin': Red urchins and drift kelp found at 284 m in the mesophotic zone. **Ciencias Marinas** 46(4):283-296 (WSN 2019 special issue) doi: 10.7773/cm.v46i4.3156
- Schram, JB^, HL Sorensen ♦, RD Brodeur, AWE Galloway, KR Sutherland. 2020. Abundance, distribution, and feeding ecology of *Pyrosoma atlanticum* in the Northern California Current. **Marine Ecology Progress Series** 651:97-110. doi: 10.3354/meps13465
- Galloway, AWE ‡ and SM Budge. 2020. The critical importance of experimentation in biomarker-based trophic ecology. Guest Editors for special issue "The next horizons for lipids as trophic biomarkers". **Philosophical Transactions of the Royal Society B** 375:20190638. doi: 10.1098/rstb.2019.0638
- Jardine, TD, MJ Kainz, and AWE Galloway. 2020. Unlocking the power of fatty acids as dietary tracers and metabolic signals in aquatic food webs. **Philosophical Transactions of the Royal Society B** 375: 20190639. doi: 10.1098/rstb.2019.0639
- Thomas, M ♦, JB Schram^, Z Clark-Henry ♦, B Yednock, AL Shanks, AWE Galloway ‡. 2020. Juvenile Dungeness crab (*Metacarcinus magister*) selectively integrate and modify the fatty acids of their experimental diets. **Philosophical Transactions of the Royal Society B** 375:20200038. doi:10.1098/rstb.2020.0038
- Dundas, SJ, AS Levine, RL Lewison, AN Doerr, C White, AWE Galloway, C Garza, EL Hazen, J Padilla-Gamiño, JF Samhuri, A Spalding, A Stier, JW White. 2020. Integrating the Oceans into climate policy: any green new deal needs a splash of blue. **Conservation Letters** e12716. doi:10.1111/conl.12716
- Schram, JB^, MO Amsler, AWE Galloway ‡, CD Amsler, JB McClintock. 2019. Fatty acid trophic transfer of Antarctic algae to a sympatric amphipod consumer. **Antarctic Science** 31:315-316 doi:10.1017/S0954102019000397
- Yoshioka, RM ♦, JB Schram^, and AWE Galloway ‡. 2019. Eelgrass pathogen *Labyrinthula zosterae* synthesizes essential fatty acids. **Diseases of Aquatic Organisms** 135:89-95 doi:10.3354/dao03382
- Taipale, SJ, SL Aalto, AWE Galloway, K Kuoppamäki, P Nzobeuh, and E Peltomaa. 2019. Differing eutrophication and browning influence on *Daphnia* nutritional ecology. **Inland Waters** 9:374-394 doi: 10.1080/20442041.2019.1574177

- Dethier, MN, G Hoins ♦, J Kobelt ♦, AT Lowe, AWE Galloway, JB Schram^, M Raymore, and DO Duggins. 2019. Feces as food: the nutritional value of urchin feces and implications for benthic consumers. **Journal of Experimental Marine Biology and Ecology** 514-515:95-102 doi:10.1016/j.jembe.2019.03.016
- Zuercher R ♦, and AWE Galloway. 2019. Coastal marine ecosystem connectivity: pelagic ocean to kelp forest subsidies. **Ecosphere** 10(2):e02602 doi:10.1002/ecs2.2602
- Sutherland, K, O Blondheim, R Brodeur, H Sorensen ♦, SR Marion, and AWE Galloway. 2018. Range expansion of tropical pyrosomes in the northeast Pacific Ocean. **Ecology** 99:2397-2399 doi:10.1002/ecy.2429
- Hampton, SE, AWE Galloway, and 14 additional authors. 2018. Recent ecological change in ancient lakes. **Limnology and Oceanography** 63(5):2277-2304 doi: 10.1002/lno.10938
- Schram, JB^, JN Kobelt ♦, MN Dethier, and AWE Galloway‡. 2018. Trophic transfer of macroalgal fatty acids in two urchin species: digestion, egestion, and tissue building. **Frontiers in Ecology and Evolution** 6:Art83 doi:10.3389/fevo.2018.00083
- Winder, M, J Carstensen, AWE Galloway, H Jakobsen, J Cloern. 2017. The land-sea interface: a source of high-quality phytoplankton to support secondary production. **Limnology and Oceanography** 62(S1):S258-S271 doi:10.1002/lno.10650
- Galloway, AWE‡, AL Shanks, S Groth, SR Marion, AR Thurber. 2017. Massive crab recruitment events to the shallow subtidal zone. **Ecology** 98:1468-1470 doi:10.1002/ecy.1740
- Brett, MT, SE Bunn, S Chandra, AWE Galloway, F Guo, MJ Kainz, DCP Lau, P Kankaala, TP Moulton, ME Power, JB Rasmussen, SJ Taipale, JH Thorp, JD Wehr. 2017. How important are terrestrial organic carbon inputs for secondary production in freshwater ecosystems? **Freshwater Biology** 62:833-853 doi:10.1111/fwb.12909
- Hampton, SE, AWE Galloway\*, and 60 additional authors (including one undergraduate student I mentored, M Pruet ♦). 2017. Ecology under lake ice. **Ecology Letters** 20:98-111 (\*2<sup>nd</sup> Author, where author order is organized by level of contribution) doi:10.1111/ele.12699
- Brett, MT, ME Eisenlord ♦, and AWE Galloway‡. 2016. Using multiple tracers and directly accounting for trophic modification improves dietary mixing model performance. **Ecosphere** 7(8):e01440 doi:10.1002/ecs2.1440 [Special Issue on Biomarkers in Trophic Ecology]
- Taipale, SJ, AWE Galloway, SL Aalto, KK Kahilainen, U Strandberg, and P Kankaala. 2016. Terrestrial carbohydrates support freshwater zooplankton during phytoplankton deficiency. **Scientific Reports** 6:30897 doi:10.1038/srep30897
- Lowe, AT ♦, EA Roberts ♦, and AWE Galloway‡. 2016. Improved marine-derived POM availability and increased pH related to freshwater influence in an inland sea. **Limnology and Oceanography** 61:2122-2138 doi: 10.1002/lno.10357
- Duggins, DO, M Gómez-Buckley, R Buckley, AT Lowe, AWE Galloway, and MN Dethier. 2016. Islands in the stream: kelp detritus as faunal magnets. **Marine Biology** 163:art17. doi:10.1007/s00227-015-2781-y
- Galloway, AWE, M Winder. 2015. Partitioning the relative importance of phylogeny and environmental conditions on phytoplankton fatty acids. **PLoS ONE** 10(6):e0130053. doi:10.1371/journal.pone.0130053
- Galloway, AWE, MT Brett, GW Holtgrieve, EJ Ward, AP Ballantyne, CW Burns, MJ Kainz, DC Muller-Navarra, J Persson, JL Ravet, U Strandberg, SJ Taipale, and G Ahlgren. 2015. A fatty acid based algorithm for inferring diet in aquatic consumers. **PLoS ONE** 10(6):e0129723. doi:10.1371/journal.pone.0129723
- Hampton, SE, MV Moore, T Ozersky, E Stanley, CM Polashenski, and AWE Galloway. 2015. Heating up a cold subject: prospects for under-ice research in lakes. **Journal of Plankton Research** 37:277-284. doi:10.1093/plankt/fbv002
- Lowe, AT, R Whippo ♦, AWE Galloway, KH Britton-Simmons, and MN Dethier. 2015. Sedentary urchins influence benthic community composition below the macroalgal zone. **Marine Ecology** 36:129-140 doi: 10.1111/maec.12124

- Galloway, AWE, S Taipale, M Hultunen ♦, E Peltomaa, U Strandberg, MT Brett, and P Kankaala. 2014. Diet specific biomarkers show that high quality phytoplankton fuel herbivorous zooplankton in large boreal lakes. **Freshwater Biology** 59:1902-1915. doi:10.1111/fwb.12394
- Galloway, AWE, ME Eisenlord ♦, MN Dethier, GW Holtgrieve, and MT Brett. 2014. Quantitative estimates of isopod resource utilization using a Bayesian fatty acid mixing model. **Marine Ecology Progress Series** 507:219-232. doi:10.3354/meps10860
- Raymond, WR ♦, AT Lowe, and AWE Galloway ‡. 2014. Degradation state of algal diets affects fatty acid composition but not size of red urchin gonads. **Marine Ecology Progress Series** 509:213-225. doi:10.3354/meps10888
- Dethier, MN, A Brown ♦, S Burgess ♦, ME Eisenlord ♦, AWE Galloway, J Kimber ♦, AT Lowe, CM O'Neil ♦, WR Raymond ♦, EA Sosik, and DO Duggins. 2014. Degrading detritus: changes in food quality of aging kelp tissue varies with species. **Journal of Experimental Marine Biology and Ecology** 460:72-79. doi:10.1016/j.jembe.2014.06.010
- Lowe, AT, AWE Galloway, JS Yeung ♦, MN Dethier, and DO Duggins. 2014. Broad sampling and diverse biomarkers allow characterization of nearshore particulate organic matter. **Oikos** 123:1341-1354 doi:10.1111/oik.01392
- Galloway, AWE, AT Lowe, EA Sosik ♦, JS Yeung ♦, and DO Duggins. 2013. Fatty acid and stable isotope biomarkers suggest microbe-induced differences in benthic food webs between depths. **Limnology and Oceanography** 58:1452-1462. doi:10.4319/lo.2013.58.4.1451
- Dethier, MN, EA Sosik ♦, AWE Galloway, DO Duggins, and CA Simenstad. 2013. Addressing assumptions: variation in stable isotopes and fatty acids in marine macrophytes can confound conclusions of food web studies. **Marine Ecology Progress Series** 478:1-14. (Feature Article). doi:10.3354/meps10310
- Galloway, AWE, KH Britton-Simmons, DO Duggins, PW Gabrielson, and MT Brett. 2012. Fatty acid signatures differentiate marine macrophytes at ordinal and family ranks. **Journal of Phycology** 48:956-965. doi:10.1111/j.1529-8817.2012.01173.x
- Britton-Simmons, KH, AL Rhoades ♦, RE Pacunski, AWE Galloway, AT Lowe, EA Sosik ♦, MN Dethier, and DO Duggins. 2012. Habitat and bathymetry influence the landscape-scale distribution and abundance of drift macrophytes and associated invertebrates. **Limnology and Oceanography** 57:176-184. doi:10.4319/lo.2012.57.1.0176
- Galloway, AWE, RJ Hickey, and GM Koehler. 2011. A Survey of ungulates by students along rural school bus routes. **Society and Natural Resources** 24:201-204. doi:10.1080/08941920903222572
- Galloway, AWE, MM Tudor, and M Vander Haegen. 2006. The reliability of citizen science: a case study of Oregon white oak stand surveys. **Wildlife Society Bulletin** 34:1425-1429. doi:10.2193/0091-7648(2006)34[1425:TROCSA]2.0.CO;2

**SELECTED RECENT PRESENTATIONS (of 62) at scientific meetings (\*indicates presenter)**

- Fatty acids of common macroalgae and benthic invertebrates across the Western Antarctic Peninsula.  
 \*AWE Galloway, JB Schram ^, R Whippo ♦, CD Amsler.  
 - International Temperate Reef Symposium (ITRS), 1/2023, Hobart, Tasmania, Australia
- Can the sunflower sea star (*Pycnopodia helianthoides*) aid in kelp forest recovery via predation on purple sea urchins? \*AWE Galloway, SG Gravem, JN Kobelt, WN Heady, DK Okamoto, DM Sivittilli, VR Saccomanno, R Whippo ♦.  
 - Western Society of Naturalists Annual Meeting, 11/2022, Oxnard, CA.
- The endangered sunflower star *Pycnopodia helianthoides* alters sea urchin grazing behavior through trait-mediated interactions. \*R Whippo ♦, S Gravem, AWE Galloway ‡.  
 - Western Society of Naturalists Annual Meeting, 11/2022, Oxnard, CA.

The influence of ocean acidification and food quality on juvenile Dungeness crab foraging behavior and lipid composition. \*HG Hayes ♦, JB Schram ^, RM Yoshioka ^, AWE Galloway ‡.

- Western Society of Naturalists Annual Meeting, 11/2022, Oxnard, CA.

Microplastic production and retention in purple sea urchin *Strongylocentrotus purpuratus*. \*GR Tetteh ♦, A Sullivan ♦, AWE Galloway, RM Yoshioka ^ ‡. **Honorable Mention for the Best Student Lightning Talk Award.**

- Western Society of Naturalists Annual Meeting, 11/2022, Oxnard, CA.

Seasonal differences in fatty acid trophic biomarkers of seaweeds and herbivores in a temperate coastal ecosystem. \*AWE Galloway, JB Schram, L Bell ♦, RM Yoshioka ♦, KJ Kroeker.

- Western Society of Naturalists Annual Meeting, 11/2021 (online)

Host with the most: Rhizocephalan parasitism and epibiosis in dock shrimp. \*RM Yoshioka ♦, S Brown ♦, JB Schram ^, AWE Galloway ‡. **Winner of Best Talk Award [Observational Ecology]**

- Western Society of Naturalists Annual Meeting, 11/2020 (online)

Fatty acids reveal large-scale geographic variation in the trophic niche of lingcod. \*AWE Galloway, MD Thomas ♦, BL Basnett ♦, Sc.L Hamilton, L Lam ♦, JF Samhuri.

- Western Society of Naturalists Annual Meeting, 11/2019, Ensenada, Baja, Mexico

### **SELECTED RECENT POSTERS (of 33) at scientific meetings (\*indicates presenter)**

What the kelp is going on? Examination of diver-operated video surveys as a method to monitor kelp forest communities? \*S Persad ♦, DK Okamoto, LC Lee, AWE Galloway ‡.

- Western Society of Naturalists Annual Meeting, 11/2022, Oxnard, CA

The parasite *Sylon hippolytes* alters the fatty acid composition of the dock shrimp *Pandalus danae*. \*RM Yoshioka ♦, JB Schram, AWE Galloway ‡.

- Aquaculture, 2/2022, San Diego, CA

Does a prolonged exposure to low pH water and low food quality affect juvenile Dungeness crab behavior? \*H Hayes ♦, R Nie ♦, E Street, SA Manos ♦, N Thompson ♦, JB Schram ‡, AWE Galloway ‡.

- Society for Integrative and Comparative Biology Annual Meeting, 1/2021 (online)

Juvenile Dungeness crab try to avoid low pH seawater, but when forced into such unfavorable conditions, they may take longer to find their prey. \*SA Manos ♦, HG Hayes ♦, JB Schram ^, AWE Galloway ‡. **Winner of the Best Student Poster Award**

- State of the Coast Annual Meeting, 11/2019, Gleneden Beach, OR

Interaction of trophic stressors and the role of cannibalism on newly recruited coastal Dungeness crab exposed to reduced seawater pH. \*JB Schram ^, AWE Galloway ‡.

- Gordon Research Seminar: Ocean Global Change Biology, 7/2018, Waterville Valley, NH

### **SELECTED INVITED TALKS and SEMINARS**

“The recovery of Northeast Pacific kelp forests may lie in the return of an endangered sea star”. 12-Feb-2023. Invited research seminar (in person) for Marine Science Program at KAUST, Saudi Arabia.

“Feeling blue? Prevalence and correlates of blue-colored flesh in lingcod (*Ophiodon elongatus*)”.

- 14-Oct-2021. Invited research seminar (via Zoom) for NOAA NMFS Monster Jam Seminar

- 7-Mar-2022. Invited research seminar (via Zoom) for University of Alabama Birmingham Dept. of Biology Seminar

“Take a dive! Choose your own underwater adventure and decide how ‘deep’ you want to go!”. 5-Feb-2021. Invited seminar (via Zoom) for Florida Atlantic University winter seminar series.

“Unlocking the potential of fatty acids as dietary tracers in marine consumers”. 7-Oct-2020. Tenure Advancement Seminar (via Zoom). University of Oregon Department of Biology. Eugene, OR.

“Take a dive! Underwater observations can unlock a treasure trove of new ideas”. 29-Jul-2020. Invited seminar (Zoom and in person) for the Friday Harbor Labs summer seminar series, University of Washington. Friday Harbor, WA.

“Fatty acids as trophic biomarkers for nearshore marine trophic ecology: opportunities and limitations”. 22-Feb-2018. Invited talk. DFO Canada Nearshore Habitat Productivity Workshop and Gap Analysis. Vancouver, BC, Canada.

### **SELECTED AWARDS and FELLOWSHIPS**

- Recipient of the **Parks Canada CEO Award of Excellence** for the Chiixuu TII iinasdII: Nurturing Seafood to Grow project – 2023 for my role in a collaborative project in Haida Gwaii in the Gwaii Haanas National Park Reserve and Haida Heritage Site.
- Recipient of the **UO 2019 Outstanding Early Career Award**, which is the UO’s highest university award for early career faculty to recognize and celebrate an emerging and significant record of scholarship and research at the UO – 2019.
- School of Aquatic and Fishery Sciences **Faculty Merit Award** for dissertation – 2013
- NSF Ocean and Coastal Interdisciplinary Science GK-12 Program Fellowship – 2012, 2010
- Richard and Megumi Strathmann Fellowship, Alan and Marian Kohn Fellowship; (FHL) – 2012
- International Phycological Society Paul C. Silva Student Grant – 2011
- PADI Foundation Research Funding Award – 2011
- UW SAFS Graduate Research Funds Scholarship Award – 2011
- American Acad. Underwater Scientists Kathy Johnston Award – 2010
- Corps member of the quarter award, Washington Conservation Corps – 2001

### **INVITED GOVERNMENTAL COUNCILS and PANELS**

Oregon Coordinating Council on Ocean Acidification and Hypoxia. Invited council member (1 of 13); 2-year appointment. The council met monthly in 2018, and quarterly in 2019, with a mandate to make recommendations to the Oregon Governor and State Legislature on actions to take to better understand and mitigate ocean acidification and hypoxia. We issued an Action Plan in 2019 (see unpublished products list above and the Appendix of the Service Portfolio for a copy of the Action Plan) [<https://www.oregonocean.info/index.php/ocean-acidification>]

### **SELECTED CURRENT and RECENTLY COMPLETED COMPETITIVE GRANTS awarded to Lead PI AWEG (12)**

“Oregon Kelp Forest Initiative - Subtidal and aerial surveys of Oregon’s kelp forests to inform a status report and kelp forest recovery/management plan” – The Ocean Foundation (current)

“Filling critical data gaps to address recent declines in red sea urchins, abalone, sunflower sea stars, and their primary rocky reef habitat along the Southern Oregon coast” – Oregon Dept. of Fish and Wildlife (current)

“Pycnopodia helianthoides feeding ecology and influence on purple urchins” – The Nature Conservancy, completed in 2022.

“Collaborative Research: Sea ice as a driver of Antarctic benthic macroalgal community composition and nearshore trophic connectivity” – NSF – Polar Programs [Proposal #1744570], completed in 2022.

“Kelp forests on the Oregon Coast: the foundation that links and supports healthy coastal ecosystems and economy” – Oregon Sea Grant SEED grant, completed in 2021.

“Effects of ocean acidification on behavior, development, and nutritional value of newly recruited coastal Dungeness crab” – Oregon Sea Grant, Biennial Projects award, completed in 2021.