CURRICULUM VITAE

Aaron W. E. Galloway, Ph.D.
Assistant Professor
University of Oregon
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ACADEMIC APPOINTMENTS (courses taught in bold)

Assistant Professor. **Marine Conservation Biology, Marine Ecology, Open Access Tools for Ecological Research**. University of Oregon, Oregon Institute of Marine Biology. Fall 2015-present.

Affiliate Assistant Professor. University of Washington (UW) Civil & Environmental Engineering. March 2017-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, Faculty. Washington State University, School of the Environment, Pullman WA, USA. Supervisor: Stephanie Hampton. September 2014-15.

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

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

Graduate Research Assistant. UW, School of Aquatic and Fishery Sciences, FHL. Supervisors: Sebens, Duggins, Dethier, Brett, Simenstad. 2007-2013.

Graduate Teaching Fellow. National Science Foundation (NSF) Ocean and Coastal Interdisciplinary Science (OACIS) GK-12 Program Fellowship, **Biology**. Spring Street Int. School, FHL, UW. 2012-13.

Graduate Teaching Assistant. **Marine Invertebrate Zoology, Marine Botany**. FHL, UW. 2011-2012.

Graduate Teaching Fellow. **Oceanography, Physics, Chemistry**. NSF OACIS GK-12, Friday Harbor High School, FHL, UW. 2010-11.

EDUCATION

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

PEER-REVIEWED PUBLICATIONS (38) (♦=student co-authors, ‡=supervising author)

38. 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** *doi:10.1017/S0954102019000397*
37. 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*
36. 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** *doi: 10.1080/20442041.2019.1574177*

35. 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*
34. 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*
33. Hakim, JA♦, JB Schram, AWE Galloway, CD Morrow, MR Crowley, SA Watts, and AK Bej. 2019. The purple sea urchin *Strongylocentrotus purpuratus* demonstrates a compartmentalization of gut bacterial microbiota, predictive functional attributes, and taxonomic co-occurrence. **Microorganisms** 7(2):35 *doi.org/10.3390/microorganisms7020035*
32. 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** *doi:10.1002/ecy.2429*
31. Hampton, SE, AWE Galloway, and 14 additional authors. 2018. Recent ecological change in ancient lakes. **Limnology and Oceanography** *doi: 10.1002/lno.10938*
30. JB Schram, 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*
29. 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*
28. Galloway, AWE and AL Shanks. 2017. Opening the black box of coastal crab life history: observation of an exceptionally high-density settlement event. **Bulletin of the Ecological Society of America** 98:236-239 *doi:10.1002/bes2.1325*
27. 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*
26. 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*
25. Hampton, SE, AWE Galloway*, and 60 additional authors. 2016. Ecology under lake ice. **Ecology Letters** 20:98-111 (*2nd Author, where author order is organized by level of contribution) *doi:10.1111/ele.12699*
24. 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]
23. Dalu, T, AWE Galloway, NB Richoux, and PW Froneman. 2016. Effects of substrate on biologically important fatty acids produced by phytobenthos in an austral temperate river. **Freshwater Science** 35(4):1189-1201 *doi:10.1086/688698*
22. 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*
21. 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*
20. 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*

19. 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*
18. 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*
17. 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*
16. Strandberg, U, SJ Taipale, M Hiltunen♦, AWE Galloway, MT Brett, and P Kankaala. 2015. Inferring heterogeneous phytoplankton composition with a fatty acid mixing model. **Ecosphere** 6:art16. *doi:10.1890/ES14-00382.1*
15. 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*
14. McDonald, PS, AWE Galloway, K McPeek♦, and GR VanBlaricom. 2015. Effects of geoduck (*Panopea generosa* Gould, 1850) aquaculture gear on resident and transient macrofauna communities of Puget Sound, Washington, USA. **Journal of Shellfish Research** 34:189-202. *doi:10.2983/035.034.0122*
13. McDonald, PS, TE Essington, JP Davis, AWE Galloway, BC Stevick♦, GC Jensen, GR VanBlaricom, and DA Armstrong. 2015. Distribution, abundance, and habitat associations of a large bivalve (*Panopea generosa*) in a eutrophic fjord estuary. **Journal of Shellfish Research** 34:137-145. *doi:10.2983/035.034.0117*
12. 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*
11. 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*
10. 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.
9. 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*
8. 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*
7. 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*
6. Taipale, S, E Peltomaa, U Strandberg, AWE Galloway, A Ojala, and MT Brett. 2013. Fatty acid composition as biomarkers of freshwater microalgae: analysis of 37 strains of microalgae in 22 genera and in 7 classes. **Aquatic Microbial Ecology** 71:165-178. *doi:10.3354/ame01671*
5. 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).*

4. 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*
3. 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*
2. 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*
1. 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.

NON-PEER REVIEWED PUBLICATIONS, SOFTWARE, and DATA SETS

5. Hampton, SE, SG Labou, KH Woo♦, AWE Galloway, and 10 additional authors. 2016. Dataset: Winter and summer comparison of biological, chemical, and physical conditions in seasonally ice-covered lakes. **Knowledge Network for Biocomplexity**. *doi:10.5063/F12V2D1V*
4. Galloway, AWE, GW Holtgrieve, EJ Ward and MT Brett. 2015. Software/program: FASTAR (Fatty Acid Source Tracking Algorithm in R) mixing model approach. **EcologyBox** (an open-source code repository for ecological modeling and statistics). http://conserver.iugo-cafe.org/user/gway. Last updated June 2015. [475 total downloads as of April 2017]
3. Galloway, AWE. 2013. Trophic transfer of nearshore basal resources: interpreting fatty acid and stable isotope biomarkers. **PhD Dissertation**, UW.
2. Galloway, AWE, BL Murphie. 2007. Harbor seal haulout verification in Hood Canal, WA. Unpublished internal report, Washington Department of Fish and Wildlife, Wildlife Science Program, Marine Mammal Investigations. 22 pp.
1. Galloway, AWE. 2004. The use of rural school bus routes and students for monitoring ungulate distribution in Kittitas County, Washington. **Master's Thesis**, CWU.

SELECTED RECENT PRESENTATIONS (*indicates presenter) at scientific meetings

Integrating a networked subtidal kelp removal experimental protocol (KEEN) into a scientific diving class. *AWE Galloway, AT Lowe, MS Turner♦, R Whippo♦,P Kitaeff.
- Western Society of Naturalists Annual Meeting, 11/2018, Tacoma, WA

Synthesizing snail size shifts: evidence for body size decline over time despite considerable response heterogeneity. R Elahi, AWE Galloway, H Hayford, W King.
- Western Society of Naturalists Annual Meeting, 11/2018, Tacoma, WA

Eelgrass pathogen synthesizes essential fatty acids. *RM Yoshioka♦, JB Schram, AWE Galloway‡. [POSTER]
- Western Society of Naturalists Annual Meeting, 11/2018, Tacoma, WA

Abundance, distribution, and feeding ecology of *Pyrosoma atlanticum* in the northern California Current during the 2017 bloom. *HL Sorensen♦, KR Sutherland, RD Brodeur, AWE Galloway, JB Schram. [POSTER]
- Calif. Coop. Oceanic Fisheries Investigations (CalCOFI) Conference, 12/2018, La Jolla, CA

Relationship of under-ice light environment with biomass and nutritional quality of winter phytoplankton. SE Hampton, S Labou, AWE Galloway, S Powers, N Lottig.
- Assoc. for the Sci. of Limnol. & Oceanogr. (ASLO) Annual Meeting, 7/2018, Victoria, Canada

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

- Gordon Research Seminar: Ocean Global Change Biology, 7/2019, Waterville Valley, NH

Relationship of under-ice light environment with biomass and nutritional quality of winter phytoplankton. SE Hampton, S Labou, AWE Galloway, S Powers, N Lottig.

- Assoc. for the Sci. of Limnol. & Oceanogr. (ASLO) Annual Meeting, 7/2018, Victoria, Canada

Do *Daphnia* and *Aphanizomenon* have a symbiotic relationship? Evidence for highly selective zooplankton resource utilization in a hypereutrophic lake. MT Brett, JB Schram, AWE Galloway, A Střížek, J Kann, JM Nielsen.

- Assoc. for the Sci. of Limnol. & Oceanogr. (ASLO) Annual Meeting, 7/2018, Victoria, Canada

Why so blue? Assessing possible drivers for bright blue-colored flesh in lingcod. *AWE Galloway, JB Schram, M Thomas♦, JL Watson.

- Western Society of Naturalists Annual Meeting, 11/2017, Pasadena, CA

Algae and sea urchin feces as alternative prey for newly settled Dungeness crab (*Metacarcinus magister*). *Z Clark-Henry♦, AWE Galloway. [POSTER]

- Western Society of Naturalists Annual Meeting, 11/2017, Pasadena, CA

Cancer magister, massive settlement events and their potential effect on crab recruitment and the ecology of the shallow subtidal. *AL Shanks, AWE Galloway.

- International Larval Biology Symposium, 8/2017, Honolulu, HI

Purple urchin compensatory consumption of sympatric macroalgae maintains growth and influences nutritional subsidies. *JB Schram, AWE Galloway.

- North American Echinoderm Conference, 7/2017, Worcester, MA

Influence of macroalgal diet on purple urchin trophic efficiency. *JB Schram, AWE Galloway.

- Ecological Society of America Annual Meeting, 8/2017, Portland, OR

Massive crab recruitment events to the rocky nearshore subtidal. *AWE Galloway, AL Shanks.

- Western Society of Naturalists Annual Meeting, 11/2016, Monterey, CA

The influence of algal diet mixtures on isopod growth, tissue turnover, and coloration. *JB Schram, AWE Galloway.

- Western Society of Naturalists Annual Meeting, 11/2016, Monterey, CA

Take a Shot: integrating photography into natural history, science, and communication. *R Yoshioka♦, AWE Galloway. [POSTER]

- Western Society of Naturalists Annual Meeting, 11/2016, Monterey, CA

Trophic biomarkers reveal basal food web dynamics in changing environmental conditions. *JB Schram, AWE Galloway.

- Gordon Research Seminar: Ocean Global Change Biology, 7/2016, Waterville Valley, NH

Are zooplankton and clams dining on super food or junk food? Application of a phytoplankton food quality index. *T Schraga, M Peacock, AWE Galloway, M Winder, D Senn, R Kudela, JE Cloern.

- Biennial Bay-Delta Science Conference, 11/2016, Sacramento, CA

RECENT INVITED TALKS and SEMINARS

"Diving the Seaweed Forests of the Western Antarctic Peninsula". 26-June-2019. Invited Institute Seminar. Charleston, OR.

"Update on the Oregon Ocean Acidification and Hypoxia Coordinating Council". 27-Oct-2018. Invited 'Coastal Snapshot' presentation to the full conference body, at the State of the Coast Annual Meeting, Coos Bay, OR.

"Fatty acids as tracers for trophic interactions among coastal consumers". 19-Mar-2018. Invited Departmental Seminar. San Diego State University; San Diego, CA.

"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.

"Combining traditional and novel approaches for observing trophic relationships in nearshore subtidal coastal zones". 4-Dec-2017. Invited Departmental Seminar. Oregon State University, Hatfield Marine Science Center; Newport OR.

"Is Dungeness crab prey-sensing affected by exposure to ocean acidification?". 17-Oct-2017. Invited talk. Annual Meeting of the Oregon Dungeness Crab Commission; Brookings, OR.

"Preparing undergraduates for 'publish or perish' using model journals of course-related research". 31-Mar-2017. Invited seminar. Annual Cyamus Regional Meeting of the International Association of Aquatic and Marine Science Libraries and Information Centers; Charleston OR.

"Quantitative diet reconstruction of the food webs supporting juvenile suckers in the Upper Klamath Basin using fatty acid based mixing models". 10-Mar-2017. Invited talk (with co-author MT Brett), Sucker Science Summit, Klamath Falls OR.

"Tracking algal production through food webs: subsidies, food quality, and fatty acids as trophic markers". 8-Dec, 9-Dec-2014. Invited seminars, Oregon Institute of Marine Biology (Coos Bay, OR) and Department of Biology (Eugene, OR), University of Oregon.

"Quantitative estimates of basal resource utilization by herbivorous consumers using fatty acids". 13-Nov-2013. Invited seminar, Department of Biology, University of E. Finland, Joensuu, Finland.

"Quantitative partitioning of basal resource utilization by boreal lake *Daphnia* using a fatty acid based Bayesian mixing model". 7-Nov-2013. Invited seminar, Department of Biological and Environmental Science, Jyväskylä University, Finland.

"Tracking trophic relationships with biomarkers". 13-May-2013. Invited Seminar, UW School of Aquatic and Fishery Sciences, Seattle WA.

INVITED GOVERNMENTAL COUNCILS and PANELS

Oregon Coordinating Council on Ocean Acidification and Hypoxia. Invited council member (1 of 13); 2-year appointment. The council meets monthly, 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. [http://www.oregonocean.info/index.php/oah-council-info]

CURRENT PRIMARY GRANTS (2 of 7)

"Collaborative Research: Sea ice as a driver of Antarctic benthic macroalgal community composition and nearshore trophic connectivity"
PI: Charles D. Amsler, University of Alabama Birmingham
Co-PIs: Aaron W. E. Galloway, University of Oregon; Katrin Iken, University of Alaska Fairbanks; Andrew Klein, Texas A&M University; James B. McClintock, University of Alabama Birmingham
Proposal #1744570; Submitted 23-May-2017; Total to UO: $253,303
Agency: NSF Office of Polar Programs
Start date: Sep-2018 [3-year project]

"Effects of ocean acidification on behavior, development, and nutritional value of newly recruited coastal Dungeness crab"
PI: Aaron W. E. Galloway, University of Oregon
Co-PI: Julie B. Schram, University of Oregon
Proposal: Oregon Sea Grant 2018-2020 Biennial; Awarded 4-Oct-2017; Total: $201,881
Start date: 1-Feb-2018 [2-year project]