

Kathryn Lyn Van Alstyne

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Western Washington University
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Anacortes, WA 98221 USA**

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Web site: <http://faculty.wwu.edu/kathyva/index.shtml>;

Research Interests

Phycology; algal physiological ecology, marine chemical ecology, marine ecology; harmful macroalgal blooms

Employment and Education

2010-present	Marine Scientist/Supervisor of Marine Chemistry Services, Shannon Point Marine Center, Western Washington University, Anacortes, Washington
1997-2010	Marine Scientist/Information Services Specialist, Shannon Point Marine Center, Western Washington University, Anacortes, Washington
2000-present	Adjunct Faculty, Department of Biology, Western Washington University, Bellingham, Washington
2000-present	Adjunct Faculty, Huxley College of Environmental Science, Western Washington University, Bellingham, Washington
1995-1998	Research Professor of Zoology, Department of Zoology, Oregon State University, Corvallis, Oregon
1991-1997	Assistant Professor of Biology, Department of Biology, Kenyon College, Gambier, Ohio
1990-1991	Guyer Postdoctoral Fellow, Department of Zoology, University of Wisconsin, Madison, Wisconsin (Supervisor: Dr. Dianna K. Padilla)
1989-1990	Research Associate/Temporary Faculty, Department of Biological Sciences, California State University, Fullerton, California
1988-1989	Postdoctoral Research Associate, University of Guam Marine Laboratory, University of Guam, Mangilao, Guam (Supervisor: Dr. Valerie J. Paul)
1983-1988	Ph.D. in Marine Ecology, Department of Zoology, University of Washington, Seattle, Washington (Advisor: Dr. Robert T. Paine)
1980-1983	B.S. in Zoology, University of Rhode Island, Kingston, Rhode Island

Honors and Awards

Guyer Postdoctoral Fellow, University of Wisconsin, Madison WI, Jul 1990 - Jun 1991
Woods Hole Oceanographic Institution: WHOI Summer Fellowship, Jun 1983 - Aug 1983
Department of Zoology, University of Rhode Island: URI President's Award for Academic Excellence in Zoology, 1983
Department of Botany, University of Rhode Island: R.D. Wood Award for Excellence in Undergraduate Research in Botany, 1983

Grants Awarded

Western Washington University, Research and Sponsored Programs, "Development of Microplate Methods for Measuring Condensed Tannins", May 2014- Nov 2014
National Science Foundation: (OCE 1228631) "Acquisition of a Gas Chromatograph/Mass Spectrometer for Marine Science Research" Sep 2012-Aug 2013
National Science Foundation: (IOS 1118944) "Chemical Signaling among Intertidal Organisms" Sep 2011-Aug 2015
Western Washington University Research and Sponsored Programs Pilot Grant, Dec 2010-Dec 2011
Washington State Department of Ecology Saltwater Algae Program, Apr 2009-Apr 2010
National Science Foundation: (IOS 0717631) "Production of Toxins by Bloom-Forming Macroalgae" Sep 2007-Aug 2010
National Science Foundation Research Experiences for Undergraduates Supplement, Jun 2009
National Oceanic and Atmospheric Administration: (NA05NOS4781192), Sep 2005-Aug 2008
National Science Foundation: (OCE 0526644) "Harmful Ulvoid Macroalgal Blooms in Washington State", Sep 2005-Aug 2008
National Science Foundation Research Experiences for Undergraduates Supplement, Jun 2006
National Science Foundation: (DBI 0300970) "An HPLC-MS for Conducting Studies of Responses to Environmental Stresses in Marine Organisms" May 2003-Apr 2005
Western Washington University, May 2003-Apr 2004
National Science Foundation: (IBN 0090825) "Geographic Variation in Activated Antiherbivore Defenses", Feb 2001-Feb 2005
Western Washington University: May 2001-Apr 2002
National Science Foundation: (DBI 0098409) "A CHNS Analyzer for Examining the Biochemical Composition of Marine Organisms" Apr 2001-Mar 2002
National Science Foundation: (IBN 9982794) "SICB SYMPOSIUM: New Approaches to the Study of Marine Plant-Animal Interactions, held at the SICB meeting in Atlanta, Georgia, January 4-8, 2000", Dec 1999-Nov 2000
National Science Foundation: (DBI 9877129) "Physiological and Chemical Equipment for Studying Interactions between Marine Organisms", Jan 1999-Dec 2000
David and Lucille Packard Foundation "The Aldo Leopold Leadership Program", Jun 1998-May 2002
National Science Foundation: (DUE 9851243) "Improvement of Computing Facilities for Undergraduate Education in the Marine Sciences", Jul 1998-Jun 2000
David and Lucille Packard Foundation, "The Aldo Leopold Leadership Program", Sep 1997-Jun 1998
National Science Foundation: (IBN 9513988) "Ontogenetic Changes in Defensive and Nutritional Characteristics of Juvenile Kelps and their Effects on Community Structure", 1996-1999
Kenyon College: Faculty Development Award, May 1994
Kenyon College: Academic Computing Award, Apr 1994
Kenyon College: Teaching Initiatives Award, Mar 1994
Kenyon College: Faculty Development Award, Apr 1993
Kenyon College: Faculty Development Award, May 1992
Carolinas-Ohio Science Ed Network: Curriculum Development in Environmental Studies, 1992
California Sea Grant: Funding for Western Society Naturalists Symposium on Marine Plant-Herbivore Interactions, Dec 1990
National Science Foundation: NSF Predoctoral Fellowship, Sep 1983-Aug 1987
Lerner Grey Fund for Marine Research, May 1986
Sigma Xi: Grant in Aid of Research, Aug 1986
Sigma Xi: Grant in Aid of Research, Feb 1984
University of Washington Department of Zoology Research Fund, Jun 1986

Peer-Reviewed Publications (Does not include published abstracts; *undergraduate coauthor, +graduate student coauthor)

1. Van Alstyne KL, Olson TK* (2014) Estimating variation in surface emissivities of intertidal macroalgae using an infrared thermometer and the effects on temperature measurements. **Marine Biology** 161: 1409-1418, DOI: 10.1007/s00227-014-2429-3
2. Van Alstyne KL, Harvey EL+, Cataldo M* (2014) Effects of dopamine, a compound released by the green-tide macroalga *Ulvaria obscura*, on marine algae and invertebrate larvae and juveniles. **Phycologia** 53:195-202. DOI: dx.doi.org/10.2216/13-237.1
3. Van Alstyne KL, Anderson KJ*, van Hees DH+, Gifford S-A. (2013) Dopamine release by *Ulvaria obscura* (Chlorophyta): environmental triggers and impacts on the photosynthesis, growth, and survival of the releaser. **Journal of Phycology**, 49: 719-727, DOI: 10.1111/jpy.12081
4. van Hees DH+, Van Alstyne KL (2013) Effects of emersion, temperature, dopamine, and hypoxia on extracellular oxidant accumulations surrounding the bloom-forming seaweeds *Ulva lactuca* and *Ulvaria obscura*. **Journal of Experimental Marine Biology and Ecology**, 448: 207-213 DOI: 10.1016/j.jembe.2013.07.013
5. Oduro H+, Van Alstyne KL, Farquar J (2012) Sulfur isotope variability of oceanic DMSP: implications for DMSP generation and its contributions to biogenic sulfur emissions. **Proceedings of the National Academy of Sciences USA**, 109: 9012-9016 DOI:10.1073/pnas.1117691109
6. Van Alstyne KL, Anderson K*, Winans A+ (2011) Dopamine release by the green alga *Ulvaria obscura* after simulated immersion by incoming tides. **Marine Biology**, 158: 2087-2094, DOI: 10.1007/s00227-011-1716-5.
7. Van Alstyne KL, Flanagan J*, Gifford, S.-A. (2011) Recreational clam harvesting affects sediment nutrient remineralization and the growth of the green macroalga *Ulva lactuca*. **Journal of Experimental Marine Biology and Ecology** 401: 57-62. DOI: 10.1016/j.jembe.2011.03.002
8. Lyons D+, Scheibling R, Van Alstyne KL (2010) Spatial and temporal variation in DMSP content in the invasive seaweed *Codium fragile* ssp. *fragile*: effects of temperature, light, and grazing. **Marine Ecology Progress Series** 417: 51-61. DOI: 10.3354/meps08818
9. Van Alstyne KL, Pelletreau KN, Kirby A* (2009) Nutritional preferences override chemical defenses in determining food choice by a generalist herbivore, *Littorina sitkana*. **Journal of Experimental Marine Biology and Ecology**, 379: 85-91. DOI: 10.1016/j.jembe.2009.08.002
10. Van Alstyne KL, Dominique VJ III*, Muller-Parker G (2009) Is dimethylsulfoniopropionate (DMSP) produced by the symbionts or the hosts in an anemone-zooxanthella symbiosis? **Coral Reefs** 28: 167-176 DOI 10.1007/s00338-008-0443-y
11. Van Alstyne KL (2008) Ecological and physiological roles of dimethylsulfoniopropionate (DMSP) and its DMSP cleavage in marine macroalgae. In: **Algal Chemical Ecology** (ed: C. Amsler), Springer, Heidelberg, pp. 173-194. DOI 10.1017/S0025315408001562
12. Van Alstyne KL (2008) The distribution of DMSP in green macroalgae from Northern New Zealand, eastern Australia, and southern Tasmania. **Journal of the Marine Biological Association of the United Kingdom** 88: 799-805. DOI: 10.1017/S0025315408001562
13. Nelson TA, Haberlin K*, Nelson AV*, Ribarich H*, Hotchkiss R*, Van Alstyne KL, Buckingham L*, Simunds DJ* (2008) Ecological and physiological controls of species composition in green macroalgal blooms **Ecology** 89: 1287-1298. DOI: 10.1890/07-0494.1
14. Van Alstyne KL, Koellermeier L*, Nelson TA (2007) Spatial variation in dimethylsulfoniopropionate (DMSP) production in *Ulva lactuca* (Chlorophyta) from the northeast Pacific. **Marine Biology** 150: 1127-1135. DOI: 10.1007/s00227-006-0448-4

15. Van Alstyne KL, Puglisi MP (2007) DMSP in marine macroalgae and macroinvertebrates: distribution, functions, and ecological impacts. **Aquatic Sciences** 69: 394-402 DOI: 10.1017/s00027-007-0888-z
16. Lyons D⁺, Van Alstyne KL, Scheibling R (2007) Anti-grazing activity and seasonal variation of dimethylsulfoniopropionate (DMSP)-associated compounds in the invasive alga *Codium fragile* ssp. *tomentosoides*. **Marine Biology** 153: 179-188 DOI: 10.1007/s00227-007-0795-9
17. Ross C, Van Alstyne KL (2007) Intraspecific variation in stress-induced hydrogen peroxide scavenging by the ulvoid macroalga *Ulva lactuca*. **Journal of Phycology**, 43: 466-474 DOI: 10.1111/j.1529-8817.2007.00346.x
18. Van Alstyne KL, Nelson AV⁺, Vyvyan JR, Cancilla D (2006) Dopamine functions as an antiherbivore defense in the temperate green alga *Ulvaria obscura*. **Oecologia** 148: 304-311. DOI: 10.1007/s00442-006-0378-3
19. Van Alstyne KL, Schupp PJ, Slattery M (2006) The distribution of dimethylsulfoniopropionate in tropical Pacific coral reef invertebrates. **Coral Reefs** 25: 321-327. DOI: 10.1007/s00338-006-0114-9
20. Edwards K*, Pfister CA, Van Alstyne KL (2006) Nitrogen content in the brown alga *Fucus gardneri* and its relation to light, herbivory, and wave exposure. **Journal of Experimental Marine Biology and Ecology** 336: 99-109. DOI: 10.1016/j.jembe.2006.04.013
21. Erickson AA⁺, Paul VJ, Van Alstyne KL, Kwiatkowski LM* (2006) Palatability of macroalgae that use different types of chemical defenses. **Journal of Chemical Ecology** 32: 1883-1895. DOI: 10.1007/s10886-006-9116-x
22. Henry BE*, Van Alstyne KL (2004) Effects of UV radiation on growth and phlorotannins in *Fucus gardneri* (Phaeophyceae) juveniles and embryos **Journal of Phycology** 40: 527-533. DOI: 10.1111/j.1529-8817.2004.03103.x
23. Van Alstyne KL, Houser LT* (2003) Dimethyl sulfide release during macroinvertebrate grazing and its role as an activated chemical defense. **Marine Ecology Progress Series** 250: 175-181. DOI: 10.3354/meps250175
24. Van Alstyne KL, Pelletreau KN, Rosario K* (2003) The effects of salinity on dimethylsulfoniopropionate production in the green alga *Ulva fenestrata* Postels et Ruprecht (Chlorophyta). **Botanica Marina** 46: 350-356. DOI: 10.1515/BOT.2003.033
25. Pfister CA, Van Alstyne KL (2003) An experimental assessment of the effects of nutrient enhancement on the intertidal kelp *Hedophyllum sessile* (Laminariales, Phaeophyceae). **Journal of Phycology** 39: 285-290. DOI: 10.1046/j.1529-8817.2003.01229.x
26. Van Alstyne KL, Whitman SL*, Ehlig JM* (2001) Differences in herbivore preferences, phlorotannin production, and nutritional quality between adult and juvenile tissues from marine brown algae. **Marine Biology** 139: 201-210. DOI: 10.1007/s002270000507
27. Van Alstyne KL, Wolfe GV, Freidenburg TL⁺, Neill A*, Hicken C* (2001) Activated defense systems in marine macroalgae: evidence for an ecological role for DMSP cleavage. **Marine Ecology Progress Series** 213 53-65. DOI: 0.3354/meps213053
28. Van Alstyne KL, Dethier MN, Duggins DO (2001) Spatial patterns in macroalgal chemical defenses. In: J.B. McClintock and B.J. Baker (eds) **Marine Chemical Ecology**, pp 301-324.
29. Van Alstyne KL, Pelletreau KN (2000) Effects of nutrient enrichment on growth and phlorotannin production in *Fucus gardneri* embryos. **Marine Ecology Progress Series** 206: 33-43. DOI: 10.3354/meps206033
30. Van Alstyne KL, McCarthy JJ III,* Hustead CL*, Kearns LJ* (1999) Phlorotannin allocation among tissues of northeastern Pacific kelps and rockweeds. **Journal of Phycology** 35: 483-492 DOI: 10.1046/j.1529-8817.1999.3530483.x

31. Van Alstyne KL, Ehlig JM*, Whitman SL* (1999) Feeding preferences for juvenile and adult algae depend on algal stage and herbivore species. **Marine Ecology Progress Series** 180: 179-185 DOI: 10.3354/meps180179
32. Van Alstyne KL, McCarthy JJ III,* Hustead CL*, Duggins DO (1999) Geographic variation in polyphenolic levels of northeastern Pacific kelps and rockweeds. **Marine Biology** 133: 371-379 DOI: 10.1007/s002270050476
33. Lubchenco J, Mooney HA, Risser PG, Van Alstyne KL, Vergun JR (1998) The Aldo Leopold Leadership Program. **Bulletin of the Ecological Society of America** 79: 232-234.
34. Van Alstyne KL, (1995) A comparison of three methods for quantifying brown algal polyphenolic compounds. **Journal of Chemical Ecology** 21: 45-58. DOI: 10.1007/BF02033661
35. Van Alstyne KL, Wylie CR⁺, Paul VJ (1994) Antipredator defenses in tropical Pacific soft corals (Coelenterata: Octocorallia). II. The relative importance of chemical and structural defenses in three species of *Sinularia*. **Journal of Experimental Marine Biology and Ecology** 178: 17-34. DOI: 10.1016/0022-0981(94)90222-4
36. Boulding EG, Van Alstyne KL (1993) Mechanisms of differential survival and growth of *Littorina* on wave-exposed and on protected shores. **Journal of Experimental Marine Biology and Ecology** 169: 139-166. DOI: 10.1016/0022-0981(93)90191-P
37. Boulding EG, Buckland-Nicks J, Van Alstyne KL (1993) Morphological and allozyme variation in *Littorina sitkana* and related *Littorina* species from the Northeastern Pacific. **The Veliger** 36: 43-68.
38. Van Alstyne KL, Wylie CR⁺, Paul VJ, Meyer K⁺ (1992) Antipredator defenses in tropical Pacific soft corals (Coelenterata: Octocorallia). I. Sclerites as defenses against generalist carnivorous fishes. **Biological Bulletin** 182:231-240. DOI: 10.2307/1542116
39. Van Alstyne KL, Paul VJ (1992) Chemical and structural defenses in the sea fan *Gorgonia ventalina*: effects against generalist carnivorous fishes and specialist molluscan predators. **Coral Reefs** 11: 155-159. DOI: 10.1007/BF00255470
40. Paul VJ, Van Alstyne KL (1992) Activation of chemical defenses in the tropical green algae *Halimeda* spp. **Journal of Experimental Marine Biology and Ecology** 160: 191-203. DOI: 10.1016/0022-0981(92)90237-5
41. Van Alstyne KL (1990) Effects of wounding by herbivorous snails *Littorina sitkana* and *Littorina scutulata* (Mollusca) on growth and reproduction of the intertidal brown alga *Fucus distichus* (Phaeophyta). **Journal of Phycology** 26: 412-416. DOI: 10.1111/j.0022-3646.1990.00412.x
42. Van Alstyne KL, Paul VJ (1990) The biogeography of polyphenolic compounds in marine macroalgae: temperate brown algal defenses deter feeding by tropical herbivorous fishes. **Oecologia** 84: 158-163.
43. Van Alstyne KL (1989) Adventitious branching as an herbivore-induced defense in the intertidal brown alga *Fucus distichus*. **Marine Ecology Progress Series** 56: 169-176. DOI: 10.3354/meps056169
44. Van Alstyne KL (1988) Herbivore grazing increases polyphenolic defenses in the brown alga *Fucus distichus*. **Ecology** 69: 655-663. DOI: 10.2307/1941014
45. Van Alstyne KL, Paul VJ (1988) The role of secondary metabolites in marine ecological interactions. **Proceedings of the 6th International Coral Reef Symposium** 1: 175-186.
46. Paul VJ, Van Alstyne KL (1988) The use of ingested algal diterpenoids by *Elysia halimeda* MacNae (Opisthobranchia: Ascoglossa) as antipredator defenses. **Journal of Experimental Marine Biology and Ecology** 119: 15-29. DOI: 10.1016/0022-0981(88)90149-9
47. Paul VJ, Van Alstyne KL (1988) Antiherbivore defenses in *Halimeda*. **Proceedings of the 6th International Coral Reefs Symposium** 3:133-138.
48. Paul VJ, Van Alstyne KL (1987) Chemical defense and chemical variation in some tropical Pacific species of *Halimeda* (Halimedaceae; Chlorophyta). **Coral Reefs** 6: 263-269.

49. Van Alstyne KL (1986) Effect of phytoplankton taste and smell on feeding behavior of the copepod *Centropages hamatus*. **Marine Ecology Progress Series** 34: 187-190. DOI: 10.3354/meps034187
50. Sheath RG, Burkholder JM, Morison MO, Steinman A, Van Alstyne KL (1986) Effect of tree canopy removal by gypsy moth larvae on the macroalgae of a Rhode Island headwater stream. **Journal of Phycology** 22: 567-570. DOI: 10.1111/j.1529-8817.1986.tb02506.x
51. Sheath RG, Burkholder JM, Hambrook JA, Hogeland AM, Hoy E, Kane ME, Morison MO, Steinman AD, Van Alstyne KL (1986) Characteristics of softwater streams in Rhode Island. III. Distribution of macrophytic vegetation in a small drainage basin. **Hydrobiologia** 140: 183-191. DOI: 10.1007/BF00007573
52. Sheath RG, Morison MO, Cole KM, Van Alstyne KL (1986) A new species of freshwater Rhodophyta, *Batrachospermum carpocontortum*. **Phycologia** 25: 321-330. DOI: 10.2216/i0031-8884-25-3-321.1
53. Sheath RG, Van Alstyne KL, Cole KM (1986) Distribution, seasonality, and reproductive phenology of *Bangia atropurpurea* (Rhodophyta) in Rhode Island, USA. **Journal of Phycology** 21: 297-303. DOI: 10.1111/j.0022-3646.1985.00297.x

Other Publications and Reports

1. Van Alstyne KL (2011) Penn Cove algal accumulations. Prepared for the Washington State Department of Ecology, 15 pp.
2. Van Alstyne KL (2008) The Smell of the Sea. **JMBA Global Marine Environment**. Marine Biological Association, Plymouth.
3. Tsuda RT, Nelson SG, Paul, VJ, Van Alstyne KL (1987) Survey of potentially important economic seaweeds in Yap Lagoon, Micronesia. Prepared for Marine Resources Management Division, Yap State, FSM. Univ. of Guam Marine Lab., Misc. Rept. No. 56, 16 pp.

Invited Presentations

International Phycological Congress, Algal Chemical Ecology Symposium, Orlando FL, Aug 2013
Ocean Sciences Meeting, Salt Lake City, UT, Feb 2012
National Oceanic and Atmospheric Administration Oceans and Human Health Seminar Series, Seattle, WA, Dec 2011
Texas A & M, Science and Technology Distinguished Lecturer, Corpus Christi, TX, Nov 2011
Dauphin Island Sea Lab, Dauphin Island, AL, Mar 2011
Pacific Northwest National Laboratories, Sequim, WA, May 2010
Gordon Research Conference (Plant and Vegetative Volatiles), Oxford, England, Aug 2009
Hawaii Institute of Marine Biology, Kaneohe, HI Jul 2009
Maui Seaweed Bloom Workshop, Honolulu, HI Dec 2008
Rosario Marine Station, Walla Walla College, WA Jul 2007
Shannon Point Marine Center, Western Washington University, Anacortes, WA, Jul 2007
Georgia Institute of Technology, School of Biology, Atlanta, GA, Apr 2007
Friday Harbor Laboratories, University of Washington, Friday Harbor, WA, Apr 2007
Smithsonian Marine Station, Fort Pierce, FL, Apr 2005
Bamfield Marine Science Centre, Bamfield, BC, Canada, Sept 2004
Department of Biology, University of Puget Sound, Tacoma, WA, Nov 2004
University of Guam Marine Lab, University of Guam, Mangilao, GU, April 2004
Friday Harbor Laboratories, University of Washington, Friday Harbor, WA, May 2003
Huxley College of Environmental Studies, W. Washington University, Bellingham WA, May 2003

Department of Biosciences, University of New South Wales, Sydney, Australia, Mar 2002
Leigh Marine Laboratory, University of Auckland, Leigh, New Zealand, Feb 2002
Friday Harbor Laboratories, University of Washington, Friday Harbor, WA, Aug 2001
Friday Harbor Laboratories, University of Washington, Friday Harbor, WA, Jul 1999
Huxley College of Environmental Studies, W. Washington University, Bellingham WA, Mar 1998
Department of Biology, Western Washington University, Bellingham, WA, Nov 1997
Department of Biology, University of Oregon, Eugene, OR, May 1997
Shannon Point Marine Center, Western Washington University, Anacortes, WA, Apr 1997
Oregon Institute of Marine Biology, University of Oregon, July 1996
Hatfield Marine Science Center, Newport, OR, May, 1996
Department of Zoology, Oregon State University, Corvallis, OR, Nov 1995
Department of Oceanography, Florida State University, Tallahassee, FL, Sep 1995
College of Marine Studies, University of Delaware, Lewes, DE, Oct 1994
Department of Biology, College of Charleston, Charleston, SC, Apr 1994
Department of Biology, Boston University, Boston, MA, Mar 1994
Marine Biological Laboratory, Woods Hole, MA, Mar 1994
Department of Biology, College of Wooster, Wooster, OH, Nov 1993
Dauphin Island Sea Lab, Dauphin Island, AL, April 1993
Department of Biology, Kenyon College, Gambier, OH, Sep 1991
Department of Zoology, University of Wisconsin, Madison, WI, Feb 1991
Department of Biology, Kenyon College, Gambier, OH, Nov 1990
Shannon Point Marine Center, Western Wash. University, Anacortes, WA, Aug 1990
Department of Biological Sciences, California State University, Fullerton, CA, Feb 1990
University of Guam Marine Lab, Mangilao, GU, Oct 1989, Nov 1988, May 1988
Friday Harbor Laboratories, University of Washington, Friday Harbor, WA, Jan 1988
Department of Zoology, Oregon State University, Corvallis, OR, Jan 1988.
Friday Harbor Laboratories, University of Washington, Friday Harbor, WA, Apr 1987
Department of Botany, North Carolina State University, Raleigh, NC, Mar 1987
University of Guam Marine Laboratory, University of Guam, Mangilao, GU, Oct 1986
Department of Zoology, University of Hawaii, Manoa, HI, Sep 1986
Woods Hole Oceanographic Institution, Woods Hole, MA, Sep 1983

Papers Presented at Professional Meetings (does not include papers presented by other authors)

Joint Aquatic Sciences Meeting, Portland OR, May 2014 (Integrative session co-organizer)
7th Symposium on Harmful Algae in the United States, Tampa FL, Nov 2013
Pacific Estuarine Research Society, Anacortes, WA, Apr 2012
6th Symposium on Harmful Algae in the United States, Austin, TX, Nov 2011
International Society of Chemical Ecologists, Burnaby, BC, Canada, July 2011 (Symposium Organizer)
Phycological Society of America, Seattle, WA, Jul 2011
Phycological Society of America, East Lansing, MI Jul 2010
Phycological Society of America, Honolulu, HI Jul 2009
Western Society of Naturalists, Vancouver, BC Nov 2008
Western Society of Naturalists, Ventura, CA, Nov 2007
Pacific Coast Shellfish Growers Association and National Shellfisheries Association Annual Shellfish Conference, Oct 2007
Gordon Research Conference (Plant-Herbivore Interactions), Ventura CA, Feb 2007 (poster)
American Society of Limnology and Oceanography, Victoria, BC, Jun 2006

4th International Symposium on DMS(P), Norwich, England, May 2006
Ecological Society of America, Portland, OR, Aug 2004
Gordon Research Conference (Plant-Herbivore Interactions), Ventura CA, Feb 2004 (poster)
Phycological Society of America, Newport, OR, Jun 2003
Western Society of Malacologists, Monterey, CA Jul 2002
Ecological Society of America, Madison, WI Aug 2001
Phycological Society of America, Estes Park, CO, Jun 2001
Western Association of Marine Laboratories, Anacortes, WA, Jun 2001
Northwest Algal Symposium, Coupeville, WA, May 2001
Benthic Ecology Meetings, Wilmington, NC, Mar 2000
Society for Integrative and Comparative Biology, Symposium on "Marine Plant-Animal Interactions",
Atlanta, GA, Jan 2000 (Symposium Organizer)
Ecological Society of America, Spokane, WA, Aug 1999
Northwest Algal Symposium, Yachats, OR, May 1999
Northwest Algal Symposium/Pacific Estuarine Research Society, Coupeville, WA, May 1998
Society for Conservation Biology, Victoria, BC, Jun 1997, with K. Nielsen
Ecological Society of America, Providence, RI, Aug 1996 (poster)
Western Society of Naturalists, Port Townsend, WA, Jan 1996
International Society of Chemical Ecologists, Tampa, FL, Jul, 1993
Benthic Ecology Meetings, Mobile, AL, Apr 1993 (session chair)
7th International Coral Reefs Symposium, Agana, Guam, Jun 1992 (session chair)
Marine Science Symposium, Bowling Green State University, Bowling Green, OH, Sep 1991
Western Society of Naturalists, Symposium on "Marine Herbivory", Monterey CA, Dec 1990 (session
chair)
6th International Coral Reef Symposium, Townsville, Australia, Aug 1988 (2 papers presented)
Northwest Algal Symposium, University of Oregon, Nov 1987
Benthic Ecology Meetings, North Carolina State University, Mar 1987
Western Society of Naturalists, Symposium on "Chemical Antiherbivore Defenses in Marine Algae",
Hilo HA, Dec 1986
American Society of Limnology and Oceanography, University of Rhode Island, Jun 1986

Teaching Experience

Western Washington University

Marine Chemical Ecology (*graduate seminar: 3 students*)
Marine Ecology (*course coordinator and one of eight instructors: advanced
undergraduate lecture and laboratory: 8 students*)
Marine Natural Products Chemistry (*graduate independent study: 2 students*)
Methods in Marine Chemical Ecology (*graduate independent study: 1 student*)
Harmful Seaweed Blooms (*graduate independent study: 1 student*)
Professional Work Experience in Biology (*undergraduate independent study: 1 student*)
Directed Independent Study (*graduate independent study in Biology: 2 students*)

Oregon State University

Aquatic Botany (*graduate and advanced undergraduate lecture and laboratory: 16
students*)
Human Impacts on Ecosystems (*advanced undergraduate lecture: 105 students*)
Marine Chemical Ecology (*1 week module; advanced undergraduate lecture, field and
laboratory at the Hatfield Marine Science Center: 10 students*)

Marine Ecology (*advanced undergraduate lecture: 35 students*)
Marine Ecology Laboratory (*advanced undergraduate field course: 14 students*)
Phycology (*1 week module; advanced undergraduate lecture, field and laboratory at the Hatfield Marine Science Center: 22 students per year*)
Plant Ecology (*advanced undergraduate lecture and laboratory: 30 students*)
Special Topics Seminar: Chemical Ecology (*graduate seminar: 20 students*)

Kenyon College

Aquatic Biology Laboratory (*advanced undergraduate laboratory: 12 students*)
Ecology/Ecology Laboratory (*advanced undergraduate lecture and laboratory: 12-35 students*)
Freshwater Biology (*advanced undergraduate lecture: 20-25 students*)
Introduction to Experimental Biology (*instructor and course director; introductory undergraduate laboratory: 10-16 students*)
Marine Biology (*advanced undergraduate lecture: 20-35 students*)
Population and Environmental Biology (*introductory undergraduate lecture: 85-120 students*)
Principles of Evolution (*advanced undergraduate lecture: 6 students*)

California State University, Fullerton

Introductory Biology (*introductory undergraduate lecture: 100 students*)

University of Washington: (teaching assistant)

Natural Sciences and the Environment (*introductory undergraduate lecture: 100 students*)
Introductory Biology (*introductory undergraduate laboratory: 20-30 students*)
Marine Ecology (*5 week intensive lecture, field and laboratory course at the Friday Harbor Laboratories: 12 students*)
Invertebrate Zoology/Phycology (*10 week intensive lecture, field and laboratory course at the Friday Harbor Laboratories: 18 students*)

Graduate Committee Member

Jason Hall, M.Sc., Department of Biology, Western Washington University
Elizabeth Harvey, M.Sc., Huxley Department of Environmental Science, Western Washington University
Timothy Haggitt, Ph.D., Leigh Marine Laboratory, University of Auckland (outside examiner)
Amorah V. Nelson, M.Sc., Department of Biology, Western Washington University
Karen Pelletreau, M.Sc., Department of Biology, Western Washington University
Jenny Pearson, M.Sc., Department of Biology, Western Washington University
Yolimar Rivera, M.Sc. Candidate, Huxley Department of Environmental Science, Western Washington University
Sandra Ryan, M.Sc., Huxley Department of Environmental Science, Western Washington University
Daniel van Hees, M.Sc., Department of Biology, Western Washington University

Undergraduate Research Projects Advised (*coauthor on peer-reviewed publication or manuscript in preparation for publication). KC: Kenyon College, OSU: Oregon State University, SPMC: Shannon Point Marine Center

- Natasha Borgen (SPMC) “the effects of short duration environmental stresses on longer-term susceptibility to grazing and changes in algal chemical composition”
- *Theresa Olson (SPMC) “The effects of temperature on the release of volatile compounds by intertidal macroalgae”
- Christa Kohnert (SPMC) “Dimethyl sulfide as a chemical inducer of green algal chemical defenses”
- Don Valentine (SPMC) “Effects of environmental factors on the release of dimethyl sulfide by marine green algae”
- Theresa Keates (SPMC) “Do terrestrial plants chemical signaling molecules induce natural products formation in intertidal seaweeds?”
- Don Valentine (SPMC) “Development of a gas chromatography method for measuring phenolic acids from eelgrass”
- Umi Hoshijima (SPMC) “Do metabolites released by algae during incoming tides alter seawater pH?”
- Jenna Dohman (SPMC) “Generation of airborne dimethyl sulfide (DMS) by ulvoid green algae”
- Josh Galvan (SPMC) “Exposure time and dopamine concentration have different effects on zygote germination rates and embryo growth in *Fucus distichus*”
- Sandra Schleier Hernandez (SPMC) “Development of culture methods for *Symbiodinium muscatinei* and *Elliptochloris marina*, symbionts of northeastern Pacific sea anemones (*Anthopleura* spp.)”
- Ronesha Strozier (SPMC) “Effects of dopamine on the growth and fluorescence of marine phytoplankton”
- Monica Moritsch (SPMC) “Allelopathic interactions between marine phytoplankton and the seaweeds *Ulva lactuca* and *Ulvaria obscura*”
- *Katie Anderson (SPMC) “Environmental factors influencing the release of dopamine by *Ulvaria obscura* following simulated immersion by an incoming tide”
- Monique Savedo (SPMC) “Development of a solid-phase microextraction-gas chromatography method to measure airborne dimethyl sulfide emitted by seaweeds”
- Reuben Biel (SPMC) “Do waterborne cues induce changes to herbivore palatability or DMSP in *Ulva lactuca*?”
- Jennifer Middleton (SPMC) “Induction of dimethylsulfoniopropionate (DMSP) production in *Ulva lactuca* by airborne dimethyl sulfide (DMS)”
- *Jean Flanagan (SPMC) “Effects of recreational clam harvesting on nutrient distribution in Penn Cove, Whidbey Island, WA”
- Neal Smith (SPMC) “Chemical signaling involving the DMSP cleavage reaction: chemical induction in *Ulva lactuca* and tri-trophic interactions”
- *Vincent Dominique (SPMC) “DMSP production by the tropical anemone *Aiptasia pallida* and its symbionts”
- Alexandra Nicely (SPMC) “Food preferences of the green sea urchin *Strongylocentrotus droebachiensis* for Ulvacean algae”
- *Marianne Cataldo (Muhlenberg College) “Effects of nitrogen on food preferences of the *Lacuna vincta* snails for ulvoid algae”
- Amanda Salas (SMPC) “Effects of dopamine on the growth and photosynthetic rate of *Ulva lactuca*”

- *Marianne Cataldo (SPMC) "Effects of *Ulva* and *Ulvaria* extracts on the germination of *Fucus gardneri* embryos"
- Tiffany Robinson (SPMC) "Detection of chemical cues from conspecific snails and the alga *Ulva fenestrata* by *Littorina sitkana*"
- Carly Steeves (SPMC) "Detection of chemical cues released during feeding by herbivorous snails"
- Thomas Grubaugh (SPMC) "Can herbivores induce phlorotannin production in *Fucus gardneri*?"
- *Lauren Koellermeier (SPMC) "The effects of UV light on DMSP production by *Ulva fenestrata*"
- Adrianna Campos (SPMC) "Determining the effective concentration of dopamine as a feeding deterrent towards sea urchins *Strongylocentrotus droebachiensis*"
- *Brianna E. Henry (SPMC) "Effects of UV radiation on growth and phlorotannins in *Fucus gardneri* (Phaeophyceae) juveniles and embryos"
- *Anna Kirby (SPMC) "Food preferences of herbivorous invertebrate herbivores"
- *Karyna Rosario (SPMC) "The effects of reduced salinity on DMSP production in *Ulva fenestrata*"
- Nathan Galdi (SPMC) "Feeding behavior of green sea urchins during food preference assays"
- *Letise Houser (SPMC) "The effects of DMS and acrylate on feeding by sea urchins, *Strongylocentrotus droebachiensis*"
- *Heather Ogden (WWU) "Food choice among microalgae by littorinid snails"
- Elizabeth Sanchez (SPMC) "Histological studies of phlorotannins and physodes in kelp gametophytes"
- *Anna Neill (SPMC) "Quantification of DMSP and DMSP lyase, an activated defense system in marine macroalgae"
- Jessica Ward (SPMC) "Chemical defenses of *Fucus gardneri* and *Agarum fimbriatum* towards herbivorous sea urchins"
- Richard Hipschman (SPMC) "The effects of diet history on growth, reproduction and food preferences of the snail *Littorina sitkana*"
- *Corrine Hicken (SPMC): "Acrylic acid from seaweeds as an antiherbivore chemical defense towards generalist urchins, snails, and isopods"
- *Janette Ehlig (OSU): "Development of bioassays to test the effectiveness of water soluble compounds as antiherbivore defenses"
- *Shauna Whitman (OSU): "Evaluation of methods for phenolic analysis and bioassays"
- *Laura Kearns (KC): "Effect of chemical defenses of a marine brown alga, *Alaria marginata*, on the feeding behavior of *Strongylocentrotus droebachiensis*, *Lacuna vincta*, and *Lacuna variegata*"
- *James McCarthy (KC): "Geographic variation in phenolic levels of kelps and rockweeds from the west coast of North America",
- *Cynthia Hustead (KC): "Variation in phenolic compound concentrations of fucoid brown algae due to site and tissue type"
- Katie Aloe (KC): "Analysis of soft coral and gorgonian sclerite morphology with image analysis"
- Daniel Geller (KC): "Isolation and quantification of polyphenolic compounds from *Alaria marginata*"
- Ariana Ochoa (KC): "Morphological variation in shell characteristics of *Littorina sitkana* as a function of diet type"
- Amanda Rinehart (KC): "Responses of marine phytoplankton to nitrogen sources and concentrations"
- Amanda Neff (KC): "Effects of deer browsing on mutualistic interactions between pines (*Pinus strobus*) and roses (*Rosa rugosa*)"
- Elizabeth King (KC): "Food preferences of freshwater gastropods for macrophytic vegetation"

Professional and Collegiate Service

Special session on Seaweed Blooms, Co-organizer, Joint Aquatic Sciences Meeting, Portland, OR
May 2014
Macroalgal Blooms in SW England, Advisory Board Member, 2013-2015
Journal of Phycology, Editorial Board Member, 2009-2012
Marine Chemical Ecology: started and administer a Facebook page for the international community of
scientists interested in marine chemical ecology, 2011-present
Shannon Point Marine Center Chemistry Advisory Board Chair: 2005-present
Shannon Point Marine Center Information Technology Advisory Board Chair: 2003-2008
Scientific Technical Services Advisory Board, WWU: 2003-2008
Aldo Leopold Leadership Program: Steering Committee Member, 1997-2003
Project Director, Aldo Leopold Leadership Program, 1997-1998
Ship Harbor Wetland Project: development and implementation of web site, 1999
Curricular Policy Committee, Kenyon College, 1992-1994
Library Committee Chair, Kenyon College, 1992-1994
Development of the Kenyon College Environmental Studies Concentration, 1991-1992
Developed plans for the Kenyon College Nature Preserve, 1991-1992
National Science Foundation Panel Member: Field Stations and Marine Laboratories, Course,
Curriculum and Laboratory Improvements
National Oceanic and Atmospheric Administration Panel Member: Ecology of Harmful Algal Blooms
(ECOHAB), Prevention, Control and Mitigation of Harmful Algal Blooms (PCMHAB)
Reviewer for: American Naturalist, Botanica Marina, Biotropica, Coral Reefs, Deep Sea Research,
Ecology, Ecological Monographs, Estuarine Coastal and Shelf Science, Environmental and
Experimental Botany, Environmental Chemistry, Environmental Protection Agency, Gulf of
Mexico Science, Hydrobiologia, International Journal of Integrative Biology, Journal of
Applied Phycology, Journal of Chemical Ecology, Journal of Experimental Marine Biology
and Ecology, Journal of the Marine Biological Association of the United Kingdom, Journal of
Phycology, Limnology and Oceanography, Marine Biology, Marine Chemistry, Marine
Ecology Progress Series, Murdock Charitable Trusts, National Science Foundation, National
Oceanographic and Atmospheric Administration, Natural Environment Research Council,
Oecologia, Phycologia, Proceedings of the National Academy of Sciences, Rhode Island Sea
Grant

Membership in Professional Societies

American Association for the Advancement of Science
American Chemical Society
American Society for Limnology and Oceanography
Asian-Pacific Association of Chemical Ecologists
Ecological Society of America
International Society for Chemical Ecology
Phi Beta Kappa
Phi Kappa Phi
Phycological Society of America
Sigma Xi
Society of Integrative and Comparative Biology
Western Society of Naturalists

Outreach, Media and Policy Interactions

Western Window, May 2014, "Dopamine-Producing Sea Lettuce"

Salish Sea Stewards, May 2014, field presentation on intertidal seaweed identification and natural history

Skagit Marine Resource Committee Beach Naturalists, Apr 2014, training on the identification of intertidal seaweeds

Island County Beach Watchers, Apr 2012 classroom/laboratory presentation on seaweed natural products

Island County Marine Resources Committee, Jan 2012, presentation on Penn Cove water quality and its effects on seaweeds

Bellingham Herald, Sept 2011, "Scientist at WWU's Shannon Point Wins Four-Year Grant"

KOMO Bellingham, Sept 2011, "WWU Awarded Grant for Study of Marine Seaweeds"

Island County Beach Watchers, Oct 2010, classroom presentation on Harmful Seaweed Blooms

Skagit County Marine Resources Committee, Aug 2010, presentation on Skagit County Seaweeds

Skagit County Beach Watchers, Apr 2010, classroom presentation on Skagit County Seaweeds

Island County Beach Watchers, Oct 2009, classroom presentation on Harmful Seaweed Blooms

Bellingham Herald, Aug 2009, "Undersea Mystery: WWU Scientists Study Harmful Algal Blooms"

Skagit County Beach Watchers, Mar 2009, classroom presentation on Skagit County Seaweeds

Skagit County Beach Watchers, Apr 2008, classroom presentation on Skagit County Seaweeds

Island County Beach Watchers, Apr 2008, classroom presentation on Harmful Seaweed Blooms

Island County Beach Watchers Sound Waters University, Feb 2008, presentation on Penn Cove Environmental Conditions

Served on Washington State Department of Ecology Sea Lettuce Bloom Expert Panel, Aug 2007

Worked with Island County Marine Resources Committee on Water Quality Issues in Penn Cove, Jul 2007

Island County Beach Watchers, Nov 2006- Apr 2007, assisted with the development of on-line and printed identification guide to local seaweeds

Whidbey News-Times, Jul 2006 "Green Tide Tracked in Penn Cove Waters"

Anacortes American, Feb 2006 "\$688,000 Grant Will Fund Study of Green Tides"

Skagit County Beach Watchers, Oct 2006, Classroom presentation on Skagit County Seaweeds

Provided training and study materials for selected Puget Sound Marine Pilot applicants on general oceanography, local geography, and marine navigation, Fall, 2005.

Skagit County Beach Watchers, Sept 2005, Classroom presentation and field trip on Skagit County Intertidal Seaweeds

Skagit Valley Herald, May 2003, "Seaweed Study Backed"

Skagit Valley Herald, Jun 2001, "Why Sea Urchins Don't Like Sea Lettuce"

Bellingham Herald, Jun 2001, "Seaweed Secrets"

Anacortes American, Jun 2001 "Shannon Point Scientist Wins Grant"

Apple Valley Lake Policy Committee, Vice-Chair, 1992-1994