

## ANGELIQUE E. WHITE

School of Ocean and Earth Science and Technology

Department of Oceanography

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### RESEARCH INTERESTS

The fundamental objective of my research is to develop an enhanced and mechanistic understanding of the chemical and biological processes that define the fluxes, standing stocks and productivity of the oceanic component of Earth's life support system. Accordingly, my research skill set and interests are broad, spanning the following topical areas: phytoplankton physiology, nitrogen fixation, phosphorus cycling, elemental stoichiometry, hyperspectral absorbance, attenuation and fluorescence, harmful algal blooms, numerical approaches to modeling phytoplankton-mediated processes, and utilization of remote sensing tools to explore habitat variability.

### EDUCATION

- Ph.D., Biological Oceanography, Oregon State University 2001-2006  
Advisors: Dr. Ricardo Letelier and Dr. Yvette Spitz  
"Phosphorus physiology and environmental forcing of oceanic cyanobacteria, primarily *Trichodesmium* spp"
- M.S., Biology, University of Alabama in Huntsville 1999-2001  
Advisors: Dr. Ronald Ritschard and Dr. Richard McNider  
"A numerical model of primary productivity and dissolved oxygen dynamics in Mobile Bay"
- B.S., with highest honors, Biology, University of Alabama in Huntsville 1994-1998

### ACADEMIC POSITIONS

- Associate Professor, University of Hawaii, Honolulu, HI 2018-present  
Associate Professor, Oregon State University, Corvallis, OR 2015-2018  
Assistant Professor, Oregon State University, Corvallis, OR 2009-2015  
Postdoctoral Research Associate, Oregon State University, Corvallis, OR 2006-2009

### HONORS, FELLOWSHIPS, AND PROFESSIONAL SERVICE

- Ocean Carbon and Biogeochemistry Ocean Time-Series Committee co-chair 2017  
ASLO Yentsch-Schindler Early Career Award 2016  
Associate Editor, Limnology and Oceanography Letters 2016  
AGU Early Career Award 2015  
Ocean Carbon and Biogeochemistry Steering Committee- Member 2015-2018  
OSU Inspirational Woman Award 2015  
National HAB Committee – Elected Member 2014-2016

*HONORS, FELLOWSHIPS, AND PROFESSIONAL SERVICE (CONTINUED)*

Interagency Carbon Cycle Scientific Steering Group – Member	2014-2016
Alfred P. Sloan Research Fellowship	2012
National Academy of Science Kavli Fellow	2010
OSU Distinguished Dissertation Award	2007
Agouon Summer Microbiology Course Instructor	2012,2015
AGU Outstanding Presentation Award	2006
NASA Earth System Science Fellowship	2005-2006
Yerex Graduate Fellowship, First Alternate (OSU)	2005
NASA Space Grant (OSU)	2001-2003
Thomas James Dimopoulos Environmental Fellowship (UAH)	2000-2001

**PROFESSIONAL DEVELOPMENT**

Journey into Leadership Program, Oregon State University	(2014)
Effective Communication and Team Building Workshop, ASLO Honolulu, HI	(2014)
COMPASS Communications Training Workshop, OSU	(2011)
Media Training, OSU News and Communications	(2011)

**RESEARCH FUNDING**

My research program has attracted funding from diverse sources including the National Science Foundation, National Oceanic and Atmospheric Administration, National Aeronautics and Space Administration and private funding sources such as the Simons Foundation. I was a lead or co-principal investigator on grants totaling \$ 16,585,282. Funding levels below indicate grant dollars to my home institutions.

1. National Science Foundation, Biological Oceanography (08/2018 – 07/2023)  
 “Hawaii Ocean Time-series”  
 Lead Investigator(s): (White, Karl, and Potemra: UH Manoa).....(\$9,029,111)
2. National Science Foundation, Biological Oceanography (04/2019 – 04/2021)  
 “EAGER Collaborative Research: Early career chief scientist training for biological and chemical oceanographers  
 Lead Investigator(s): (Church, U. Montana)  
 Co-Investigators” (Goetze, White, Ferron; UH Manoa).....(\$215,068)
3. National Science Foundation, Chemical Oceanography (04/2017 – 02/2020)  
 “EAGER: Collaborative Research- Detection limit in marine nitrogen fixation measurements - Constraints of rates from the mesopelagic ocean  
 Lead Investigator(s): (White, OSU; Granger, UConn; Moisaner, UMD)..... ..(\$53,699)
4. National Science Foundation, Chemical Oceanography (09/2015 – 08/2018)  
 “*Measurement of ocean productivity from the diurnal cycle of oxygen and carbon*”  
 Lead Investigator(s): (White, OSU; Quay, UW) ..... (\$359,108)

5. National Science Foundation, Chemical Oceanography (06/2015 – 05/2017)  
*“Coastal Ocean Carbon Cycling during Wintertime Conditions”*  
 Lead Investigator(s): (Goñi, OSU)  
 Co-Investigator(s) (White and Shearman, OSU)..... (\$756,682)
6. Simons Foundation (3/2016 – 2/2017)  
*“Ecology of the NPSG Transition Zone”*  
 Lead Investigator(s): (Armbrust, University of Washington)  
 Co-Investigator (White, OSU and multiple other institutions..... (\$127,098)
7. Simons Foundation, SCOPE (10/2014 – 6/2017)  
*“Estimating Primary Productivity via Diurnal Changes in Carbon”*  
 Lead Investigator(s): (Karl and Delong, University of Hawaii)  
 Co-Investigator (White, OSU and multiple other institutions) ..... (\$552,369)
8. National Science Foundation, Science and Technology Center (6/2010 – 6/2016)  
*“Center for Microbial Oceanography: Research and Education”*  
 Lead Investigator: Karl (University of Hawaii)  
 Co-Investigators: Letelier and White (OSU).....(\$1,346,563)
9. Alfred P. Sloan Research Fellowship (8/2012 – 9/2014)  
*“The Sloan Research Fellowships seek to stimulate fundamental research by early-career scientists and scholars of outstanding promise”*  
 Lead Investigator (White, OSU).....(\$50,000)
10. National Aeronautics and Space Administration, New Investigator, (7/2010-1/2015)  
*“Primary Productivity as a Function of Absorption, Pigment-based Phytoplankton Diversity and Particle Size Distributions”*  
 Lead Investigator (White, OSU).....(\$325,723)
11. NOAA Cooperative Institute for Oceanographic Satellite Studies (4/2012-3/2014)  
*“Development and Validation of Satellite Bloom Detection Products for Coastal Oregon”*  
 Lead Investigator (Strub, OSU)  
 Collaborator: White (OSU) .....(\$98,517)
12. State of Oregon, Support for shiptime aboard the R/V Oceanus (4/2010)  
*“Building Effective Marine Reserve Monitoring Through Research and Education”*  
 Co-Investigators (White, Shearman, and Juranek, OSU) ..... (\$100,000)
13. National Science Foundation, Biological Oceanography, (07/2010 – 08/2014)  
*“Collaborative Research: Taxon-Specific Variability of Organic Matter Production and Remineralization Potential”*  
 Lead Investigator (White, OSU).....(\$413,035)
14. NOAA, Monitoring and Event Response for Harmful Algal Blooms (8/2007 – 7/2014)  
*“MERHAB 2007: Integrated HAB Monitoring and Event Response for Coastal Oregon Sponsoring Agency”*  
 Lead Investigator (White, OSU).....(\$2,861,021)  
 Co-Investigators (Wood, UO; Peterson, NOAA; Hunter, OSFW)
15. NSF Polar Programs (6/2010-12/2012)  
*“Primary Productivity in the Ross Sea”*  
 Lead Investigator: (Kohut, Rutgers, Lead Institution)  
 Collaborators (Milligan and White, OSU), subcontract ..... (\$297,288)

## PUBLICATIONS

REFEREED ARTICLES (AW 1<sup>st</sup> author = 20, AW Student/Post-doc 1<sup>st</sup> author = 12; AW co-author = 31)

63. Ribalet, F. C. Bertiaume, A. Hynes, J. Swalwell, M. Carlson, S. Clayton, G. Hennon, C. Poirier, E. Shimabukuro, A.E. White, E.V. Armbrust, (2019) SeaFlow data 1.0: high-resolution abundance, size and biomass of small phytoplankton in the North Pacific. *Submitted to Scientific Data*
62. Connell, P. E., Ribalet, F., Armbrust, E.V., White, A.E., and D. A. Caron. (2019). Diel oscillations in feeding strategies of heterotrophic and mixotrophic nanoplankton in the North Pacific Subtropical Gyre. *Submitted to Limnology and Oceanography*
61. Janssen, D. J., Rickli, J., Quay, P.D., White, A.E., and Jaccard, S.L. (2019). Biological control of Cr in the surface ocean – Implications for the  $\delta^{53}\text{Cr}$  paleoproxy. *Submitted to Nature Geosciences*.
60. White, A.E., J. Granger, C. Selden, M.R. Gradoville, L. Potts, A. Bourbonnais, R.W. Fulweiler, A. N. Knapp, W. Mohr, P. Moisander, C.R. Tobias, S.T. Wilson, M. Benavides, S. Bonnet, B. Chang, and M. Mulholland (2019). A Review of the  $^{15}\text{N}_2$  Tracer Method to Measure Diazotroph Production in Pelagic Ecosystems. *Submitted to Limnology and Oceanography Methods*
59. Dugenne, M., F. Hendrikx Freitas, S. T. Wilson, B. Barone, D.M. Karl, and A.E. White (2019). Life and death of *Crocospaera watsonii* in the Pacific Ocean: Fine Scale Predator-Prey Dynamics. *Submitted to Limnology and Oceanography*
58. Gradoville, M.R., H. Farnelid, A. E. White, K. A. Turk-Kubo, B. Stewart, F. Ribalet, E. V. Armbrust, and J. P. Zehr (2019) Geographical Constraints on the Diversity, Abundance, and Activity of the Cyanobacterium UCYN-A and other Marine Diazotrophs in the North Pacific. *In revision at Limnology and Oceanography*
57. Kieft, B., B.C. Crump, A.E. White, M.A. Goñi, and R.S. Mueller (2019). Winter river plumes shape community composition and activity of heterotrophic microorganisms on the Oregon Coast. *Submitted to Aquatic Microbial Ecology*.
56. Palter, J., P. Moisander, M. Benavides, K. Watkins-Brandt, A. Goncalves, E. Ames, and J. Granger (2019). Nitrogen fixation in and near the Gulf Stream. *Submitted to Nature Geoscience*.
55. Benway, H. M., L. Lorenzoni, A.E. White, B. Fiedler, N. Levine, D.P. Nicholson, M.D. DeGrandpre, H.M. Sosik, M.J. Church, T.D. O'Brien, M. Leinen, R.A. Weller, D.M. Karl, S. Henson, R.M. Letelier (2019). Ocean Time Series Observations of Changing Marine Ecosystems: An Era of Integration, Synthesis, and Societal Applications. *In Press with Frontiers in Marine Science*
54. Juranek\*, L.W., A.E. White\*, M. Dugenne, S. Dutkiewicz, S. Ferron, and D.M. Karl. (2019). The importance of the ‘middle class’ to oceanic net community production. *In review with Scientific Reports*. \*Both authors contributed equally
53. Letelier, R.M., K. Björkman, M. Church, A.E. White, and D.M. Karl. (2019). Climate driven oscillation in nutrient limitation in the North Pacific Subtropical Gyre. *Proceedings of the National Academy of Sciences*. doi:10.1073/pnas.1900789116

PUBLICATIONS (CONTINUED)

52. White, A.E. S. J. Giovannoni, Y. Zhao, C. Carlson (2019). Elemental Content and Stoichiometry of SAR11 Chemoheterotrophic Marine Bacteria. *Limnology and Oceanography Letters*. doi: 10.1002/lol2.10103
51. Becker, K.W., J. R. Collins, B. P. Durham, R. Groussman, A. E. White, H. F. Fredricks, J. E. Ossolinski, D. J. Repeta, P. Carini, S. W. Chisholm, E. V. Armbrust, and B. A. S. Van Mooy. (2018). Daily changes in phytoplankton lipidomes reveal mechanisms of energy storage in the open ocean. *Nature Communications* 9:5179, doi: 10.1038/s41467-018-07346-z
50. Lee, B.S., K. Lajtha, J. Jones, and A.E. White (2018). Fluorescent DOC characteristics are related to streamflow and pasture cover in streams of a mixed landscape. *Biogeochemistry*. doi: 10.1007/s10533-018-0494-2
49. Follett, C.L., A.E. White, S. Wilson, and M. Follows. (2018). Nitrogen Fixation Measured by Stoichiometric Fluctuations. *Limnology and Oceanography*. doi:10.1002/lno.10815
48. Gradoville, M.R., B. Crump, C. Hase, and A. E. White (2018) Environmental controls of oyster-pathogenic *Vibrio* spp. in Oregon estuaries and a shellfish hatchery. *Applied and Environmental Microbiology*. doi: 10.1128/AEM.02156-17
47. White, A.E., K. Watkins-Brandt, and M.J. Church (2018). Temporal variability of *Trichodesmium* and *Richelia* spp. in the North Pacific Subtropical Gyre. *Frontiers in Microbiology*, 5(27), doi: 10.3389/fmars.2018.0002
46. Henderikx-Freitas, F., G. S. Saldías, M. Goñi, R. K. Shearman, and A.E. White. (2018) Temporal and spatial dynamics of physical and biological properties along the Endurance Array of the California Current Ecosystem. *Oceanography* 31(1):80–89, doi.org/10.5670/oceanog.2018.113.
45. Moisaner, P., Benavides, S. Bonnet, I. Berman-Frank, A.E. White and L. Riemann. (2017) Chasing after non-cyanobacterial nitrogen fixation in marine pelagic environments. *Frontiers in Microbiology*. doi:10.3389/fmicb.2017.01736
44. Gradoville, M.R., B. Crump, R.M. Letelier, M. Church and A. E. White (2017) Microbiome of *Trichodesmium* colonies in the North Pacific Subtropical Gyre. *Frontiers in Microbiology*. doi: 10.3389/fmicb.2017.01122
43. White, A.E. B. Barone, R.M. Letelier, and D.M. Karl (2017). Productivity diagnosed from the diurnal cycle of particulate carbon in the North Pacific Subtropical Gyre. *Geophysical Research Letters*. doi: 10.1002/2016GL071607
42. Gradoville, M.R., D. Bombar, B. Crump, R.M. Letelier, J.P. Zehr and A. E. White (2017) Diversity and activity of nitrogen-fixing communities across ocean basins. *Limnology and Oceanography*. doi: 10.1002/lno.10542
41. Letelier, R, A.E. White, R. Bidigare, B. Barone, M.J. Church, and D.M. Karl (2017). Light absorption by phytoplankton in the North Pacific subtropical gyre. *Limnology and Oceanography*. doi: 10.1002/lno.10515

PUBLICATIONS (CONTINUED)

40. McKibben, S.M., W. T. Peterson, A. M. Wood, V. Trainer, M. Hunter, and A.E. White (2017). Climatic regulation of the neurotoxin domoic acid. *Proceedings of the National Academy of Sciences*. [10.1073/pnas.1606798114](https://doi.org/10.1073/pnas.1606798114)
39. Kohut, J. T., A.B. Kustka, M. Hiscock, P. Lam, C. Measures, A. Milligan, A.E. White, F. Carvalho, M. Hatta, B. Jones, D. Ohnemus and J. Schwartz. (2016) Mesoscale variability of the summer bloom over the Northern Ross Sea Shelf: A Tale of two banks. *Journal of Marine Systems*. [doi:10.1016/j.jmarsys.2016.06.009](https://doi.org/10.1016/j.jmarsys.2016.06.009)
38. Bryant, T. Clemente, D. Viviani, A. Fong, P. Kemp, D.M. Karl, A. E. White and E.F. Delong. (2016) Diversity and activity of communities inhabiting plastic debris in the North Pacific Gyre. *mSystems*. **1**(3):e00024-16. [doi:10.1128/mSystems.00024-16](https://doi.org/10.1128/mSystems.00024-16).
37. Kustka, A, J. Kohut, A.E. White, P. Lam, A. Milligan, M. Dinniman, M. S. Mack, E. Hunter, M. Hiscock, W. O. Smith, and C. Measures (2015) The role of Modified Circumpolar Deep Water as an iron source to productive mid-summer phytoplankton in the Ross Sea. *Deep Sea Research Part I*. **105**: 171-185, [doi:10.1016/j.dsr.2015.08.012](https://doi.org/10.1016/j.dsr.2015.08.012)
36. White, A.E. A.L. Whitmire, B. Barone, R.M. Letelier, D.M. Karl, and M.J. Church (2015) Phenology of particle size distributions in the North Pacific gyre. *Journal of Geophysical Research-Oceans*. [doi: 10.1002/2015JC010897](https://doi.org/10.1002/2015JC010897)
35. McKibben, S.M., K. Watkins-Brandt, M. Wood, M. Hunter, Z. Forster, X. Du, and W. T. Peterson, and A.E. White (2015) Environmental regulation of HAB formation along the Oregon Coast. *Harmful Algae* **50**: 32-44, [doi.org/10.1016/j.hal.2015.10.004](https://doi.org/10.1016/j.hal.2015.10.004).
34. Wilson. S., B. Barone, F. Ascani, R. Bidigare, M. J. Church, D. del Valle, S. T. Dyrman, S. Ferrón, J. N. Fitzsimmons, L. W. Juranek, Z. Kolber, R. M. Letelier, S. Martínez-García, D. P. Nicholson, K. J. Richards, Y. M. Rii, M. Rouco, D. A. Viviani, A. E. White, J. P. Zehr and D.M. Karl. (2015) Short-term variability in euphotic zone biogeochemistry and primary productivity at Station ALOHA: A case study of summer 2012. *Global Biogeochemical Cycles*, **29**, [doi: 10.1002/2015GB005141](https://doi.org/10.1002/2015GB005141)
33. Puigcorbe, V., C. Benitez-Nelson, P. Masque, E. Verdeny, A. E. White, B.N. Popp, F. G. Prahl and P.J. Lam (2015) Small particles drive summertime carbon and nutrient export in the Gulf of California and Eastern Tropical North Pacific. *Global Biogeochemical Cycles*, **29**, [doi: 10.1002/2015GB005134](https://doi.org/10.1002/2015GB005134).
32. Carini, P. B, van Mooy, J. C. Thrash, A.E. White, Y. Zhao, E. O. Campbell, H. Fredericks, and S. Giovanonni (2015) SAR11 lipid renovation in response to phosphorus starvation. *Proceedings of the National Academy of Sciences* **112**: [doi:10.1073/pnas.1505034112](https://doi.org/10.1073/pnas.1505034112)
31. Barone, B., M.J. Church, D.M. Karl, R.M. Letelier and A. E. White (2015) Particle distributions and dynamics from laser diffraction in the North Pacific Subtropical Gyre. *Journal of Geophysical Research-Oceans*. **120**: [doi:10.1002/2015JC010774](https://doi.org/10.1002/2015JC010774)
30. Carini, P. \* A.E. White \*, E.O. Campbell and S. Giovanonni (2014) Aerobic methanogenesis by phosphate-starved SAR11 chemoheterotrophic marine bacteria. *Nature Communications* **5**: [doi:10.1038/ncomms5346](https://doi.org/10.1038/ncomms5346). \*Both authors contributed equally

PUBLICATIONS (CONTINUED)

29. White, A.E., K. Watkins-Brandt, S.M. McKibben, M. Wood, M. Hunter, X. Du, and W. T. Peterson (2014) Persistent blooms of *Akashiwo sanguinea* along the Oregon-Washington coastal margin in 2009. *Harmful Algae* **37**: 38-46. doi: 10.1016/j.hal.2014.05.004.
28. Muller-Karger, F. E., M. Kavanaugh, E. Montes, W. M. Balch, M. Breitbart<sup>1</sup>, F. P. Chavez, S. C. Doney, E. M. Johns, R. M. Letelier, M. W. Lomas, H. M. Sosik, A. E. White (2014). Urgent Need for Creating A Coastal Marine Biodiversity Observing Network (MBON) to Establish Baselines and Monitor Changing Seascapes. *Oceanography* **27(2)**: 18-23.
27. Gradoville, M.R., A. E. White and R.M. Letelier (2014) Physiological effects of enhanced carbon dioxide on high density *Crocospaera* cultures. *PlosOne*: 9(10): e110660. doi:10.1371/journal.pone.0110660
26. Burkhardt, B., K. S. Watkins-Brandt, D. Defforey, A. Paytan and A. E. White (2014) Remineralization of phytoplankton-derived organic matter by natural populations of heterotrophic bacteria. *Marine Chemistry* **162**: doi: 10.3389/fmicb.2013.00105.
25. Gradoville, M.R., A. E. White, D. Böttjer, M.J. Church and R.M. Letelier (2014) Diversity trumps acidification: No carbon dioxide enhancement of *Trichodesmium* community nitrogen or carbon fixation at Station ALOHA. *Limnology and Oceanography* **59(3)**: 645-659.
24. Wolhowe, Matthew D., Fredrick G. Prahl, Angelicque E. White, Brian N. Popp, and Anaïd Rosas Navarro (2014) A biomarker perspective on coccolithophorid growth and export in a stratified sea. *Progress in Oceanography* **122**: 65-76.
23. Kavanaugh, M.T., B. Hales, M. Saraceno, Y. H. Spitz, A. E. White, R.M. Letelier (2014) Hierarchical and dynamic seascapes: A quantitative framework for scaling pelagic biogeochemistry and ecology. *Progress in Oceanography*. **120**, 291-304.
22. White, A.E. and S. Dyhrman (2013) The marine phosphorus cycle. *Frontiers in Microbiology*, **4** doi: 10.3389/fmicb.2013.00105
21. White, A. E., R. Foster, C. Benitez-Nelson, B.N. Popp, P. Masque, E. Verdeny and F. G. Prahl (2013) Nitrogen fixation in the Gulf of California and the Eastern Tropical North Pacific. *Progress in Oceanography*, **109**, 1-17.
20. McKibben, S.M., P.G. Strutton, D.G. Foley, T.D. Peterson, and A.E. White (2012) Satellite-Based Detection and Monitoring of Phytoplankton Blooms along the Oregon Coast. *Journal of Geophysical Research*, **117**:C12, C12002
19. White, A.E. (2012) The trouble with the bubble. *Nature*, **488**, 291.
18. White, A. E., K. Watkins-Brandt, M. A. Engle, B. Burkhardt, and A. Paytan (2012) Characterization of the rate and temperature sensitivities of bacterial remineralization of dissolved organic phosphorus by natural populations. *Frontiers in Microbiology*, **3** doi: 10.3389/fmicb.2012.00276
17. Luo, Y., et al. (2012). Database of Diazotrophic Abundance, Biomass and Nitrogen Fixation Rates in Global Ocean. *Earth System Science Data*, **5**, 47-106.

PUBLICATIONS (CONTINUED)

16. White, A. E., K. Björkman, E. Grabowski, R. M. Letelier, S. Poulos, B. Watkins, and D. M. Karl (2011) Reply: Challenges remain in the engineering of wave pumps for long term deployment in the open ocean. *Journal of Oceanic and Atmospheric Technology*. **28**: 850-851.
15. Hixon, M., Gregory, S. Robinson, W.D., Baker, S, Batchelder, H., Epps, C. Garcia, T.S., Haig, S. Letelier, R., Lytle, D., Menge, B., Miller, J., Noakes, D. Peterson, W. Rice, J., Rumrill, S., Schreck, C., Suryan, R., Systma, M. and White, A. (2010) Oregon's Fish and Wildlife in a Changing Climate. In: Oregon Climate Change Research Institute, The Oregon Climate Assessment Report K.D. Dello and P.W. Mote (eds). College of Oceanic and Atmospheric Sciences, Oregon State University, Corvallis, Oregon.
14. Watkins-Brandt, K., R. M. Letelier, Y. H. Spitz, M. Church, D. Bottjer and A. E. White. (2010) Enhancement of nitrogen fixation in the oligotrophic North Pacific via inorganic and organic phosphorus additions. *Marine Ecology Progress Series*. **432**: 17-29.
13. White, A. E., D. M. Karl, K. Björkman, L. J. Beversdorf, and R. M. Letelier (2010) Production of organic matter by *Trichodesmium* IMS101 as a function of phosphorus source. *Limnology and Oceanography*. **55**: 1755-1767.
12. Beversdorf, L. J., A. E. White, K. Björkman, R. M. Letelier, and D. M. Karl (2010) Phosphonate metabolism by *Trichodesmium* IMS101 and the production of greenhouse gases. *Limnology and Oceanography*. **55**: 1768-1778.
11. Moisander, P.H., R. A. Beinart , I. Hewson, A.E. White, K. S. Johnson, C. A. Carlson, J. P. Montoya and J. P. Zehr (2010) Unicellular cyanobacterial distributions broaden the oceanic N<sub>2</sub> fixation domain. *Science*. **327**: 1512-1514.
10. White, A. E., K. Björkman, E. Grabowski, R. M. Letelier, S. Poulos, B. Watkins, and D. M. Karl (2010) An Open Ocean Trial of Controlled Upwelling Using Wave Pump Technology. *Journal of Oceanic and Atmospheric Technology*. **27**: 385-396.
9. White, A. E. (2009) New Insights into bacterial acquisition of phosphorus in the surface ocean. *Proceedings of the National Academy of Sciences*. **106**: 21013–21014.
8. Hewson, I., R. S. Poretsky, S. T. Dyhrman, B. Zielinski, A. E. White, H. J. Tripp, J. P. Montoya, and J. P. Zehr (2009) Microbial community gene expression within colonies of the diazotroph, *Trichodesmium*, from the Southwest Pacific Ocean. *The International Society for Microbial Ecology Journal*, **3**: 1286–1300.
7. Hewson, I., R. S. Poretsky, R. A. Beinart, A. E. White, T. Shi, S.R. Bench, P. H. Moisander, R. W. Paerl, H. J. Tripp, J. P. Montoya, M. A. Moran, and J. P. Zehr (2009) In situ transcriptomic analysis of the globally important keystone N<sub>2</sub>-fixing taxon *Crocospaera watsonii*. *The International Society for Microbial Ecology Journal*, **4**: doi: 10.1038/ismej.2009.8
6. White, A. E., Y. H. Spitz, and R. M. Letelier (2007) What factors are driving summer phytoplankton blooms in the North Pacific Subtropical Gyre? *Journal of Geophysical Research-Oceans*, **112**: C12006, doi: 10.1029/2007JC004129.

*PUBLICATIONS (CONTINUED)*

5. White, A. E., F. G. Prahl, R. M. Letelier, and B. N. Popp (2007) Summer in the Gulf of California: prime habitat for biological N<sub>2</sub> fixation. *Global Biogeochemical Cycles*, **21**: 10.1029/2006GB002779.
4. White, A. E., Y. H. Spitz, and R. M. Letelier (2006) A numerical model of carbohydrate ballasting for *Trichodesmium* spp. at Station ALOHA. *Marine Ecology Progress Series*, **323**: 35-45.
3. White, A. E., Y. H. Spitz, D. M. Karl, and R. M. Letelier (2006) Flexible elemental stoichiometry in *Trichodesmium* spp. and its ecological implications. *Limnology and Oceanography*, **51**: 1777-1790.
2. White, A. E. (2006) Phosphorus physiology and environmental forcing of oceanic cyanobacteria, primarily *Trichodesmium* spp., Oregon State University, Ph.D. Dissertation.
1. White, A. E. (2001) A numerical model of primary productivity and dissolved oxygen dynamics in Mobile Bay. University of Alabama in Huntsville, Master's Thesis.

*INVITED PROFESSIONAL PRESENTATIONS*

White, A. E. (2018) Quantification of N<sub>2</sub> Fixation: Current Challenges and Opportunities. Ocean Sciences Meeting, Portland, Oregon, February 2018 ( Town Hall).

White, A. E. (2017) Seasonality of the ‘elephantine’ diazotrophs of the North Pacific subtropical gyre. Ocean Sciences Meeting, Honolulu, Hawaii, February 2017 (oral presentation).

White, A. E. (2016) Diagnosis of community productivity via the diurnal cycle of optically derived carbon. Ocean Sciences, New Orleans, LA, February 2016 (oral presentation).

White, A. E.; Milligan, A.; Kustka, A. (2014) Primary Productivity in the Ross Sea: Results from <sup>14</sup>C tracer measurements and models based on continuous flow thru data. Ocean Sciences Meeting, Honolulu, Hawaii, February, 2014

White, A.E., J.P. Zehr, D. Bombar, and D.M. Karl. (2013) Diazotrophy in the South Pacific: Reconciling Habitat, Nitrogen Fixation Rates and Metrics of Diazotrophic Abundance and Diversity. Ocean Sciences Meeting, New Orleans, LA, February 2013 (oral presentation).

White, A.E., A.L. Whitmire, R.M. Letelier, M. T. Kavanaugh, and M.J. Church. (2012) Time-series analyses of primary productivity as a function of absorption, pigment-based phytoplankton diversity and particle size distributions. Ocean Sciences Meeting, Salt Lake City, UT, February 2012 (oral presentation).

White, A.E. et al. (2011) The rise of *Pseudo-nitzschia* concentrations in the coastal Oregon surfzone and the role of coastal upwelling as a control on the severity and extent of domoic acid events. U.S. Harmful Algal Bloom Symposium, Austin, TX, Nov. 2011.

White, A.E. et al. (2011) Primary Productivity as a Function of Absorption, Pigment Based Phytoplankton Diversity And Particle Size Distributions. NASA Carbon Cycle & Ecosystems Workshop. Washington D.C. (October 2011)

White, A.E. et al. (2010) Elemental Stoichiometry of Organic Matter Production by *Trichodesmium* IMS101 as a Function of Phosphorus Source with Emphasis on Phosphonate Utilization and the Production of Greenhouse Gases. Ocean Sciences Meeting, Portland, OR, February 2010 (oral presentation).

White, A.E. et al. (2010) *Invited*: Nitrogen Fixation in the Gulf of California and the Eastern Tropical North Pacific: Interannual Variability of Diazotrophic Productivity, Community Composition and Potentially Limiting Factors. Ocean Sciences Meeting, Portland, OR, February 2010 (oral presentation).

White, A.E. (2009) Invited Speaker, Salem Progressive Film Series showing of Addicted to Plastic. Salem, Oregon, March 2009.

*INVITED PROFESSIONAL PRESENTATIONS (continued)*

White, A. E., K. Björkman, E. Grabowski, R. M. Letelier, S. Poulos, B. Watkins and D. M. Karl (2008) Assessing the Feasibility and Risks of Using Wave-Driven Upwelling to Enhance the Biological Sequestration of Carbon in Open Oceans. American Geophysical Union Fall Meeting, San Francisco, CA, December 2008 (oral presentation).

White, A., Spitz, Y., Zehr, J., Björkman, K., Karl, D. and Letelier, R. (2008) Physical and Chemical Forcing of Diazotrophic Biomass along a transect from 23°S to 24.75°N, ASLO Annual Meeting, Orlando, Fl, Mar 2008 (oral presentation).

**INVITED SEMINARS**

Hanauma Bay Education Program, Hosted by Hawai'i Sea Grant and the City and County of Honolulu (Feb 2019)  
Ocean Carbon and Biogeochemistry Summer Workshop (2015)  
CEOAS All College Meeting (2014)  
Pacific Rim Shellfish Sanitation Conference (2014)  
Coastal Marine Resource Committee (OR-WA Joint meeting) (2013)  
University of Oregon. Department of Ecology and Evolution (2013)  
University of Hawaii, SOEST (2011-2012)  
Oregon Institute of Marine Biology (2010)  
Lamont Doherty Ocean Observatory (2009)  
Hatfield Marine Science Center (2008)  
University of California Santa Cruz, Ocean Sciences Dept. (2007)

**TEACHING EXPERIENCE**

OCN 621 Biological Oceanography (Fall 2019, UH)  
OCN 780 Oceanography Seminar (Fall 2019, UH)  
OCN 626 Marine Microplankton Ecology, Guest lecturer (Spring 2019, UH)  
OC521 Applications in Ocean Ecology and Biogeochemistry (Spring 2012-2018, OSU)  
Guest lecturer, OC 332, Coastal and Estuarine Oceanography (Summer 2016, OSU)  
OC407H Oceans, Coasts, and People (Winter 2013-2016, OSU)  
OC333 Oceans, Coasts, and People (Spring 2015, OSU)  
Guest lecturer, Math Camp Special Topics (Summer 2015, 2016, OSU)  
Agouron Course in Microbiology, Invited Instructor (May 2012, May 2015, U. Hawaii)  
Invited Speaker, Ecology and Evolution Seminar (Winter 2012, OSU)  
Hands-on workshops in Ocean Optics, Saturday Academy Summer Conference (2011, 2012, 2013, 2016 OSU)  
Guest lecturer, Satellite Oceanography (OC 678, Fall 2010, OSU)  
Faculty, COSEE Pacific Partnership Summer Workshop for Community College Instructors, Newport, Oregon (2010)

Faculty, Oregon Coastal and Aquatic Marine Science Teachers Workshop (2010)  
 Teaching Assistant, Exploring the Deep (OC 103, spring 2005, OSU)  
 Teaching Assistant, Biological Oceanography (OC 540, winter 2003, OSU)  
 Oregon State University, College of Oceanic & Atmospheric Sciences

**MENTORING/ADVISING**

Lucie Knor (UH- SOEST, PhD, 2019- present)	Committee member
Eric Shimakaburo (UH- SOEST, MS, 2019- present)	Advisor
B.B. Cael (UH- SOEST, Post-doctoral, 2019- present)	Advisor
Kirsten Popp (UH Marine Biology, PhD, 2019- present)	Committee member
Fernanda Hendrikx-Freitas (OSU-UH, Post-doctoral, 2017- present)	Advisor
Mathilde Dugenne (OSU-UH, Post-doctoral, 2017- present)	Advisor
Gwen Wonhof (OSU, undergraduate researcher, 2016)	Mentor
Nisha Sridhar (OSU, Saturday Academy high school intern, 2016)	Mentor
Gwen Wonhof (OSU, Saturday Academy high school intern, 2016)	Mentor
Leah Newton (OSU, Summer intern from Antioch College, 2016)	Mentor
Morgaine McKibben (OSU, MS, PhD, degree in 2017)	Committee Chair
Mary-Rose Gradoville (OSU, MS, PhD, degree in 2017)	Committee Chair
Nerissa Fisher (OSU, MS candidate, degree in 2015)	Committee member
Larkin Loewenherz (Undergraduate Honors College, degree in 2015)	Committee member
Elisabeth Sherry (Undergraduate Honors College, degree in 2015)	Committee member
Sage DeLuca (Undergraduate Honors College, degree in 2015)	Committee Chair
Matthew Wolhowe (OSU, PhD, degree in 2014)	Committee member
Brian Burkhardt (OSU, MS, degree in 2012)	Committee Chair
Nathaniel Tilp (OSU, Saturday Academy intern, 2011)	Mentor
Jin Kyoung Kwon (OSU, Saturday Academy intern, 2011)	Mentor
Katie Watkins (OSU, MS, degree in 2010)	Committee Chair
Morgan Engle (OSU, Saturday Academy high school intern, 2010)	Mentor
Sara Ackers (OSU, IDES Program, Summer Intern, 2010)	Mentor

## FIELD EXPERIENCE

<i>Cruise</i>	<i>Vessel</i>	<i>Year</i>	<i>Days at Sea</i>
Simons Foundation, NPSG Gradient/Transition Zone 3.0	R/V Kilo Moana	2019	20
Hawaii Ocean Time-series 305	R/V Kilo Moana	2019	5
HOT-LAVA, Simons Foundation Supported	R/V KOK	2018	7
Simons Foundation, Mesoscale Cruise	R/V Falkor	2018	13
Hawaii Ocean Time-series 300	R/V Kilo Moana	2018	4
NSF Diel Oxygen and Carbon Cycling, KM1713	R/V Kilo Moana	2017	25
Hawaii Ocean Time-series 294	R/V Kilo Moana	2017	5
Simons Foundation, NPSG Gradient/Transition Zone 2.0	R/V M. Langseth	2017	21
Winter carbon cycling, OC1701	R/V Oceanus	2017	5
Hawaii Ocean Time-series 288	R/V Sikuliaq	2016	4
Oceanography Boot Camp, Student Training Cruise	R/V Oceanus	2016	6
Simons Foundation, NPSG Gradient/Transition Zone	R/V KOK	2016	16
C-MORE HOE Legacy	R/V Kilo Moana	2016	10
Winter carbon cycling, OC1601A - OC1602A - OC1603B	R/V Oceanus	2016	15
OC1505 Ocean Observing Initiative	R/V Oceanus	2015	3
SCOPE I: Ocean Productivity	R/V Kilo Moana	2015	10
State of Oregon RFP: Graduate Student Training	R/V Oceanus	2014	4
C-MORE PhOR-II	R/V Kilo Moana	2013	12
C-MORE HOE DYLAN VII	R/V Kilo Moana	2012	9
Mesocosm deployment off Hawaii, C-MORE BAG1	R/V KOK	2011	13
Hawaii Ocean Time-series 234	R/V Kilo Moana	2011	3
CO <sub>2</sub> control of N <sub>2</sub> fixation in the NPSG	R/V Kilo Moana	2011	6
MCDW and Iron in the Ross Sea	R/V NB Palmer	2011	31
BIG-RAPA, C-MORE	R/V Melville	2010	28
Harmful Algal Bloom Monitoring, Oregon Coast	R/V Elakha	2010	2
Hawaii Ocean Time-series 216	R/V KOK	2009	5
C-MORE ST-15B (NPSG)	R/V Kilo Moana	2009	2
Survey of Underwater Plastic and Ecosystem Response,	R/V Kilo Moana	2008	12
Ocean Productivity Perturbation EXperiment (OPPEX)	R/V Kilo Moana	2008	5
GoCAL-4, Nitrogen fixation in the Gulf of California	R/V New Horizon	2008	29
BLOOMER, C-MORE, NPSG	R/V Kilo Moana	2007	12
Biogeochemistry of the Upper ocean: Latitudinal	R/V Kilo Moana	2007	11
Nitrogen fixation in the South Pacific, NSF	R/V Kilo Moana	2007	17
GoCAL-3, Alkenone production in the Gulf of California	R/V New Horizon	2005	21
NSF Biocomplexity, Pacific Cruise MP09	R/V Reville	2003	22
NSF Biocomplexity, NW Atlantic MP04	R/V Seward	2002	26
Photoheterotrophy at Station ALOHA, P-3	R/V Kilo Moana	2002	4
Coastal Ocean Advances in Shelf Transport, Oregon	R/V Thompson	2001	23

TOTAL 466 days

## ACTIVITIES, OUTREACH AND SERVICE

### CONFERENCES, WORKSHOPS

- ASLO Multicultural Program Mentor, Ocean Sciences, New Orleans, LA (Feb. 2016)
- Invited speaker at the C-MORE PDOC Diversity Workshop, ASLO (Feb. 2014)
  - Participant in an international training workshop for spectroscopic characterization of organic matter in Granada, Spain (May 2010)
- Session chair, Nitrogen Cycling Near Oxygen Minima Zones: Linking Observations to Global Models of Nitrogen Fixation in the Anthropocene, Ocean Sciences, Portland, Oregon (Feb. 2010)
- Session convener, Phosphorus Cycling in Marine Systems: Biochemical, Genomic and Model Studies, Aquatic Sciences Meeting, San Juan, Puerto Rico (Feb. 2009)
- Invited participant, Canadian Institute For Advanced Research (CIFAR) Panel Discussion of Nitrogen cycling in the Anthropocene (July 2009)

### OUTREACH

- Cover art for EOS, Volume 96. No. 22 (2015)
- Terra magazine, interview for ‘Oceanography boot camp’:  
<http://oregonstate.edu/terra/2014/08/oceanography-boot-camp/> (2014)
- Da Vinci Days Festival, Plankton in Art exhibit (2012)
- Research highlights covered in [Terra](#) and [Science360](#) (2011)
- Saturday Academy Mentor (2010, 2011)
- Saturday Academy Summer Workshops (2011, 2012, 2016)
- SMILE Program High School Challenge Event, Speaker (2011, 2012)
- Press for marine plastics research (<http://tinyurl.com/2byu667>) covered by Earthsky.org, Coast to Coast AM, the Oregonian, Maclean’s magazine (Canada), San Jose Mercury News, thebenshi.com, Willamette Week (newspaper, Portland, Oregon), KVAL (television interview with CBS affiliate), Discovery news, Oregon Business magazine, Hawaii Public Radio, Oregon Public Radio and numerous other blogs, print, web and radio that picked up this press release (2011)
- Terra magazine, interview for Plankton in Art exhibit:  
<http://oregonstate.edu/terra/2012/10/forms-from-the-sea/> (2012)
- Oregon Coastal and Aquatic Marine Science Teachers Workshop (2010)
- COSEE Pacific Partnership Summer Workshop Faculty, Newport, Oregon (2010)
- Participation in Oregon State University Discovery Days (2008, 2009)
- Expert Speaker: Salem Sustainability Film Series, “Addicted to Plastic” (2009)
- Generation of a [web-based image gallery](#) for the C-MORE (2009)

*SERVICE*

- UH Committees: Award Committee (2018- present), Faculty Search Committee (2019)
- Associate Editor, *Limnology and Oceanography Letters* (2016-current)
- NSF Biological Oceanography Panelist (2015)
- NOAA MERHAB/ECOHAB Panelist (2015)
- NASA PACE Science Mission Panelist (2014)
- Editor, *Frontiers in Microbiology: The Oceanic Phosphorus Cycle* (2012)
- NOAA Global Climate Change Proposal Review Panelist (2009)
- OSU Committees: Ship Operations, Chair (2015-2018), Radiation Safety Committee (2009-2018), Safety Committee (2010-2013), Peer Review of Teaching (2014), Instructional Programs Committee (2005/2006), Promotion and Tenure Committee (2004, 2015) and Student Advisory Committee (2005)
- Reviewer for *Science, Nature, Aquatic Microbial Ecology, Marine Chemistry, Faculty of 1000, Frontiers in Marine Science, Ecosystems, Limnology and Oceanography, ICES Journal of Marine Science, Limnology and Oceanography: Methods, Marine Ecology Progress Series, Progress in Oceanography, Proceedings of the National Academy of Science, the Long-term Estuary Assessment Group, NOAA, and the National Science Foundation*

*PROFESSIONAL ASSOCIATIONS*

American Society of Limnology and Oceanography, member	2004-present
American Geophysical Union, member	2005-present

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