

Clara A. Fuchsman

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Professional Preparation

B.S., 2001, Swarthmore College, Swarthmore, PA (Biochemistry)
M.S., 2004, University of Washington, Seattle, WA (Chemical Oceanography)
Ph.D., 2010, University of Washington, Seattle, WA (Chemical Oceanography)
Certificate in Astrobiology, 2010, University of Washington, Seattle, WA

Appointments

'18-present Assistant Professor, University of Maryland Horn Point Laboratory
'13-'17 Postdoctoral Scientist, University of Washington
'11-'12 Research Scientist, University of Washington

Teaching

Fall 2018, 2020: MEES 663 Ecological Genomics (co-taught with Louis Plough)
Spring 2020: MEES 718D Ocean Deoxygenation (co-taught with James Pierson)

Service

Meeting Session Chair: Walker, B., **Fuchsman, C.A.** SS035: Exploring microbial interactions and organic matter transformations within oxygen minimum zones. ASLO 2019, San Juan, Puerto Rico
2018-present: Education Committee (Horn Point Laboratory)
2020-present: Diversity, Equity and Inclusion Committee (Horn Point Laboratory)
2021: AGU URGE program active participant

Publications:

Fuchsman, C. A.,* Carlson, M. C. G.,* Garcia Prieto, D., Hays, M. D., and Rocap, G.. (2020) Cyanophage host-derived genes reflect contrasting selective pressures with depth in the oxic and anoxic water column of the Eastern Tropical North Pacific. *Environmental Microbiology*: <https://doi.org/10.1111/1462-2920.15219>.
*co-first authors

Cram JA, **Fuchsman CA**, Duffy ME, Pretty JL, Lekanoff RM, Neibauer JA, Leung SW, Huebert KB, Weber TM, Bianchi D, Evans N, Devol AH, Keil RG, McDonnell AMP. (2021) Slow particle remineralization, rather than suppressed disaggregation, drives efficient flux transfer through the Eastern Tropical North Pacific Oxygen Deficient Zone. *Earth and Space Science Open Archive*: DOI:10.1002/essoar.10507130.2

Fuchsman, C. A., and Stüeken, E. E. (2020) Using modern low-oxygen marine ecosystems to understand the nitrogen cycle of the Paleo- and Mesoproterozoic oceans. *Environmental Microbiology*: <https://doi.org/10.1111/1462-2920.15220>.

Fuchsman, C.A., Palevsky, H.I., Widner, B., Duffy, M., Carlson, M.C.G., Neibauer, J.A., Mulholland, M.R., Keil, R.G., Devol, A.H., Rocap, G. (2019) Cyanobacteria and cyanophage contributions to carbon and nitrogen cycling in an oligotrophic oxygen-deficient zone. *ISME* **13**: 2714-2726.

- Fuchsman, C.A.**, Paul, B., Staley, J.T., Yakushev, E.V., Murray, J.W. (2019) Detection of transient denitrification during a high organic matter event in the Black Sea. *Global Biogeochemical Cycles* **33**: 143-162.
- Saunders, J.K., **Fuchsman, C.A.**, McKay, C., Rocap, G. (2019) Complete arsenic-based respiratory cycle in the marine microbial communities of pelagic oxygen-deficient zones. *PNAS* **116**: 9925-9930.
- Ahlgren, N.A., **Fuchsman, C.A.**, Rocap, G., Fuhrman, J.A. (2019) Discovery of several novel, widespread, and ecologically distinct marine *Thaumarchaeota* viruses that encode nitrifying genes. *ISME* **13**: 618-631. (ISME 2018 Editor's choice)
- Kirkpatrick, J.B.,* **Fuchsman, C.A.**,* Yakushev, E.V., Egorov, A.V., Staley, J.T., Murray, J.W. (2018) Dark Nitrogen Fixation: Expression in the Redoxcline of the Black Sea. *Aquatic Microbial Ecology* **82**: 43-58. *co-first author
- Widner, B.,* **Fuchsman, C.A.**,* Chang B.X., Rocap, G., Mullholland, M.R. (2018) Utilization of cyanate and urea in waters overlying and within the Eastern Tropical North Pacific Oxygen Deficient Zone. *FEMS Microbial Ecology* **94**: fiy138. *co-first author
- Fuchsman, C.A.**, Devol, A.H., Casciotti, K.L., Buchwald, C., Chang, B.X., Horak, R.E.A (2018) A N isotopic mass balance of the Eastern Tropical North Pacific Oxygen Minimum Zone. *Deep Sea Research II* **156**: 137-147.
- Peters B., Horak R., Devol, A.H., **Fuchsman, C.A.**, Forbes, M., Mordy, C., Casciotti K. L. (2018) Estimated fixed nitrogen loss and associated isotope effects using concentrations and isotopic measurements of NO_3^- , NO_2^- , and N_2 from the Eastern Tropical South Pacific oxygen deficient zone. *Deep Sea Research II* **156**: 121-136.
- Fuchsman, C.A.**, Devol, A.H., Saunders, J.K., McKay, C. Rocap, G. (2017) Niche partitioning in the N cycling community of an offshore Oxygen Deficient Zone. *Frontiers in Microbiology* **8**:2384.
- Fuchsman, C.A.**, Collins, R.E., Rocap G., Brazelton, W.J. (2017) The effect of the environment on horizontal gene transfer. *Peer J* **5**: e3865.
- Peng, X., **Fuchsman, C.A.**, Jayakumar A., Warner, M.J., Devol, A.H., Ward, B.B. (2016) Revisiting Nitrification in the Eastern Tropical South Pacific: A focus on its controls. *Journal of Geophysical Research—Oceans* **121**: 1667-1684.
- Peng, X., **Fuchsman, C.A.**, Martens-Habbena, W., Jayakumar A., Devol, A.H., Ward, B.B. (2015) Ammonia and nitrite oxidation in the Eastern Tropical North Pacific Oxygen Minimum Zone. *Global Biogeochemical Cycles*: GB005278.
- Fuchsman, C.A.**, Devol, A.H., Chase, Z., Reimers, C.E., Hales B. (2015) Benthic fluxes on the Oregon shelf. *Estuarine, Coastal and Shelf Science* **163**: 156-166.
- Kirkpatrick J.B., **Fuchsman, C.A.**, Yakushev, E.V., Staley, J.T., and Murray, J.W. (2012) Activity of Anammox and Denitrifying Bacteria in the Black Sea. *Frontiers in Microbiology* **3**: 255.
- Fuchsman, C.A.**, Murray, J.W., and Staley, J.T. (2012) Stimulation of autotrophic denitrification by intrusions of the Bosphorus Plume into the anoxic Black Sea. *Frontiers in Microbiology* **3**: 257.

- Fuchsman, C.A.**, Staley, J.T., Oakley, B.O., Kirkpatrick J.B. and Murray, J.W. (2012) Free-living and aggregate associated Planctomycetes in the Black Sea. *FEMS Microbiology Ecology* **80**: 402-416.
- Fuchsman, C.A.**, Kirkpatrick, J.B., Brazelton, W.J., Murray, J.W., and Staley, J.T. (2011) Metabolic strategies of free-living and aggregate associated bacterial communities inferred from biological and chemical profiles in the Black Sea suboxic zone. *FEMS Microbiology Ecology* **78**: 586-603.
- Fuchsman, C.A.**, Murray, J.W., and Konovalov, S.K. (2008) Concentration and natural stable isotope profiles of nitrogen species in the Black Sea. *Marine Chemistry* **111**: 90-105.
- Konovalov, S.K., **Fuchsman, C.A.**, Belokopitov, V., Murray, J.W. (2008) Modeling the distribution of N species and isotopes in the water column of the Black Sea. *Marine Chemistry* **111**: 106-124.
- Oakley, B.B., Francis, C.A., Roberts, K.J., **Fuchsman, C.A.**, Srinivasan, S., and Staley, J.T. (2007) Analysis of nitrite reductase (nirK and nirS) genes and cultivation reveal depauperate community of denitrifying bacteria in the Black Sea suboxic zone. *Environmental Microbiology* **9**: 118-130.
- Fuchsman, C.A.**, and Rocap, G. (2006) Whole-genome reciprocal BLAST analysis reveals that Planctomycetes do not share an unusually large number of genes with Eukarya and Archaea. *Applied and Environmental Microbiology* **72**: 6841-6844.
- Kirkpatrick J., Oakley, B., **Fuchsman, C.**, Srinivasan, S., Staley, J.T., and Murray, J.W. (2006) Diversity and distribution of Planctomycetes and related bacteria in the suboxic zone of the Black Sea. *Applied and Environmental Microbiology* **72**: 3079-3083.