

## Emma K. Wear

Visiting assistant professor  
Department of Biology  
Lewis and Clark College  
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### Professional Employment

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Visiting assistant professor, August 2021 - present  
Department of Biology, Lewis and Clark College, Portland, OR  
Postdoctoral research associate, November 2017 - July 2021  
Flathead Lake Biological Station, University of Montana  
Postdoctoral associate, April - October 2017  
University of California, Santa Barbara

### Education

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**Ph.D.**, 2017; Marine Science, University of California, Santa Barbara  
Advisor: Dr. Craig Carlson  
Dissertation: Bottom-up Drivers of Bacterial Community Composition and Metabolism of Dissolved Organic Carbon in the Santa Barbara Channel, CA  
**M.S.**, 2009; Coastal Marine and Wetland Studies, Coastal Carolina University, Conway, SC  
Advisor: Dr. Eric Koepfler  
Thesis: Effects of Inter-tributary Dissolved Organic Carbon Variability on Heterotrophic Microbial Communities in Upper Winyah Bay, SC  
**B.S.**, 2007; Biology, English minor, magna cum laude, Phi Beta Kappa  
Illinois Wesleyan University, Bloomington, IL

### Research Fellowships Obtained

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2012 NASA Earth and Space Science Fellowship (3 years, \$90,000)  
2008 National Estuarine Research Reserve System Graduate Research Fellowship, North Inlet-Winyah Bay NERR (1 year, \$20,000)

### Peer-reviewed Publications

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12. KA Evans, LM Peoples, JR Ranieri, **EK Wear**, and MJ Church. 2024. Mixing-driven changes in distributions and abundances of planktonic microorganisms in a large, oligotrophic lake. *Limnology and Oceanography* 69: 604-620. doi: 10.1002/lno.12509
11. D Catlett, DA Siegel, PG Matson, **EK Wear**, CA Carlson, TS Lankiewicz, and MD Iglesias-Rodriguez. 2023. Integrating phytoplankton pigment and DNA meta-barcoding observations to determine phytoplankton community composition in the coastal ocean. *Limnology and Oceanography* 68: 361-376. doi: 10.1002/lno.12274

10. J Comstock, CE Nelson, A James, **E Wear**, N Baetge, K Remple, A Juknavorian, and CA Carlson. 2022. Bacterioplankton communities reveal horizontal and vertical influence of an Island Mass Effect. *Environmental Microbiology* 24: 4193-4208. doi: 10.1111/1462-2920.16092
9. **EK Wear**, MJ Church, BN Orcutt, CN Shulse, MV Lindh, and CR Smith. 2021. Bacterial and archaeal communities in the abyssal Clarion-Clipperton Zone: Emerging patterns and considerations for future monitoring studies. *Frontiers in Marine Science* 8: 634803. doi: 10.3389/fmars.2021.634803
8. NJ Hawco, B Barone, MJ Church, L Babcock-Adams, DJ Repeta, **EK Wear**, RK Foreman, KM Björkman, S Bent, BAS Van Mooy, U Sheyn, EF DeLong, M Acker, RL Kelly, A Nelson, J Ranieri, TM Clemente, DM Karl, and SG John. 2021. Iron depletion in the deep chlorophyll maximum: mesoscale eddies as natural iron fertilization experiments. *Global Biogeochemical Cycles* 35: e2021GB007112. doi: 10.1029/2021GB007112
7. MJ Church, E Kyi, RO Hall, DM Karl, M Lindh, A Nelson, and **EK Wear**. 2021. Production and diversity of microorganisms associated with sinking particles in the subtropical North Pacific Ocean. *Limnology and Oceanography* 66: 3255-3270. doi: 10.1002/lno.11877
6. **EK Wear**, CA Carlson, and MJ Church. 2020. Bacterioplankton use of phytoplankton lysates across a cyclone-anticyclone eddy dipole impacts the cycling of semi-labile organic matter in the photic zone. *Limnology and Oceanography* 65: 1608-1622. doi: 10.1002/lno.11409
5. **EK Wear**, EG Wilbanks, CE Nelson, and CA Carlson. 2018. Primer selection impacts specific population abundances but not community dynamics in a monthly time-series 16S rRNA gene amplicon analysis of coastal marine bacterioplankton. *Environmental Microbiology* 20: 2709-2726. doi: 10.1111/1462-2920.14091
4. **EK Wear**, CA Carlson, LA Windecker, and MA Brzezinski. 2015. Roles of diatom nutrient stress and species identity in determining the short- and long-term bioavailability of diatom exudates to bacterioplankton. 2015. *Marine Chemistry* 177: 335-348. doi: 10.1016/j.marchem.2015.09.001
3. **EK Wear**, CA Carlson, AK James, MA Brzezinski, LA Windecker, and CE Nelson. 2015. Synchronous shifts in dissolved organic carbon bioavailability and bacterial community responses over the course of an upwelling-driven phytoplankton bloom. *Limnology and Oceanography* 60: 657-677. doi: 10.1002/lno.10042
2. **EK Wear**, ET Koepfler, and EM Smith. 2014. Spatiotemporal variability in dissolved organic matter composition is more strongly related to bacterioplankton community composition than to metabolic function in a blackwater estuarine system. *Estuaries and Coasts* 37: 119-133. doi: 10.1007/s12237-013-9651-y
1. BP Durham, J Grote, KA Whittaker, SJ Bender, H Luo, SL Grim, JM Brown, JR Casey, A Dron, L Florez-Leiva, A Krupke, CM Luria, AH Mine, OD Nigro, S Pather, A Talarmin, **EK Wear**, TS Weber, JM Wilson, MJ Church, EF DeLong, DM Karl, GF Steward, JM Eppley, NC Kyrpides, S Schuster, and MS Rappé. Draft genome sequence of marine alphaproteobacterial strain HIMB11, the first cultivated representative of a unique lineage within the Roseobacter clade possessing a remarkably small genome. *Standards in Genomic Sciences* 9: 632-645. doi: 10.4056/signs.4998989

## Other Publications

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2. Technical report: MJ Church, **EK Wear**, BN Orcutt, CR Young, and JM Smith. 2019. Taxonomic diversity of Bacteria and Archaea in the Clarion-Clipperton Zone of the North Pacific Ocean. In: DeepCCZ Biodiversity Synthesis Workshop Report, prepared for the International Seabed Authority. [https://www.isa.org.jm/wp-content/uploads/2022/06/deep\\_ccz\\_biodiversity\\_synthesis\\_workshop\\_report\\_-\\_final.pdf](https://www.isa.org.jm/wp-content/uploads/2022/06/deep_ccz_biodiversity_synthesis_workshop_report_-_final.pdf)
1. Commentary: CE Nelson and **EK Wear**. 2014. Microbial diversity and the lability of dissolved organic carbon. PNAS 111: 7166-7167. doi:10.1073/pnas.1405751111

## Teaching Experience

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### Instructor of record:

- Biological Oceanography\*, L&C; 23F, 24F
- Microbial Ecology\* (lecture and lab), L&C; 22S, 23F, 25S
- Microbiology\* (lecture and lab), L&C; 23S, 24S, 24F
- Core Concepts: Systems\*\* (intro bio: evolution and ecology for sophomores), L&C, 21F (2x); 22S; 22F (2x); 23S; 24S, 25S
- Biological Investigations\*\* (intro bio: skills in biology for first-years), L&C, 22F
- Perspectives in Biology\*\* (non-majors, lecture and lab), L&C; 24Su

\*Courses I developed \*\*Courses in which I heavily modified content within departmental guidelines

### Teaching assistant:

- Introductory Biology Laboratory II, UCSB, 15W
- Chemical and Physical Methods of Aquatic Environments (lab), UCSB, 12W
- Processes in Oceans (discussion section), UCSB, 10W, 11W
- Plant Anatomy and Physiology Lab, IWU, 07S

## Recent Conference and Workshop Presentations

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- 2024 **EK Wear. Poster**: Incorporating community-level 16S rRNA gene sequencing of local rivers into a semester-long undergraduate course: benefits and challenges. ASLO summer meeting, Madison, WI.
- 2021 **EK Wear**, LA Windecker, JL Jones, AK James, ER Halewood, MA Brzezinski, and CA Carlson. **Talk**: Distinct heterotrophic bacterioplankton communities associated with upwelling-driven diatom and *Phaeocystis* blooms in different physiological states. Aquatic Sciences Meeting, virtual.
- 2020 **EK Wear**, CR Smith, JC Drazen, and MJ Church. **Talk**: Deep-sea bacterial and archaeal communities of the western Clarion-Clipperton Zone. Ocean Sciences Meeting, San Diego, CA.
- 2019 **EK Wear** and MJ Church. **Talk**: Synthesis of microbial diversity in the CCZ. DeepCCZ Biodiversity Synthesis Workshop, Friday Harbor, WA.
- 2019 **EK Wear**, CA Carlson, and MJ Church. **Talk**: Mesoscale eddy effects differentially impact

bacterioplankton use of phytoplankton lysates across a cyclone-anticyclone dipole in the North Pacific Subtropical Gyre. Aquatic Sciences Meeting, San Juan, PR.

### **Invited Talks**

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- 2023 Biology Department seminar, Portland State University. Portland, OR.  
2019 BIOS-SCOPE Annual Workshop. San Juan, PR.

### **Workshops**

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- 2020 Participant: Ocean Nucleic Acids 'Omics Intercalibration and Standardization Workshop, Ocean Carbon & Biogeochemistry, Chapel Hill, NC  
2019 Topic section assistant: DeepCCZ Biodiversity Synthesis Workshop, International Seabed Authority and DeepCCZ Project (University of Hawaii), Friday Harbor, WA.

### **Cruises**

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- 2018 DeepCCZ, R/V *Kilo Moana*, Clarion-Clipperton Zone; 32 days, May-June  
2018 SCOPE cruise, R/V *Falkor*, North Pacific Subtropical Gyre; 14 days, March-April  
2010-15 Plumes and Blooms, R/V *Shearwater*, Santa Barbara Channel; 35 one-day cruises  
2011 Course-associated cruise, R/V *Kilo Moana*, North Pacific Subtropical Gyre; 10 days, June  
2011 SBDOM11, R/V *Point Sur*, Santa Barbara Channel; 6 days, May  
2010 Course-associated cruise, R/V *Atlantic Explorer*, Sargasso Sea; 2 days, June  
2010 SBDOM10, R/V *Point Sur*, Santa Barbara Channel; 7 days, April

### **Professional Service and Affiliations**

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Reviewer for journals including: Aquatic Microbial Ecology; Biogeosciences; Environmental Microbiology (Reports); Estuarine, Coastal and Shelf Science; Frontiers in Microbiology; The ISME Journal; Limnology and Oceanography (Letters); Marine Chemistry; MicrobiologyOpen; mSphere; PeerJ; Science of the Total Environment

- I track my reviews at: <https://www.webofscience.com/wos/author/record/L-1525-2013>

Member: Association for the Sciences of Limnology and Oceanography

### **Institutional Service**

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- 2024 Faculty supervisor of natural history practicum student, L&C  
2020-21 Seminar organizer, postdoctoral representative, FLBS  
2019 Postdoctoral research associate search committee member, FLBS  
2014-15 Faculty search committee student representative, UCSB marine science program  
2012 Seminar organizer, UCSB marine science program

### **Professional Training**

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- 2018 Data Intensive Biology Summer Institute ANGUS: Analyzing High Throughput Sequencing

- Data, University of California, Davis
- 2013 Cornell Satellite Remote Sensing Training Program, Cornell University
- 2011 Summer Course on Microbial Oceanography, Center for Microbial Oceanography:  
Research and Education, University of Hawai'i
- 2010 Microbial Oceanography course, Bermuda Institute of Ocean Sciences

### **Pedagogical and Diversity and Inclusion Training**

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- 2023 Skills for Teaching Data Science Workshop, part 2, University of Arizona and Lewis & Clark
- 2022 Skills for Teaching Data Science Workshop, University of Arizona and Lewis & Clark
- 2021 Microbiomes For All, REMNet and ASM online course – microbiome pedagogy
- 2019 LGBTQ Allies Faculty and Staff Training, University of Montana
- 2019 Indigenous Mentoring Program Workshop, University of Montana
- 2017 CIRTl Network MOOC: An Introduction to Evidence-Based Undergraduate STEM Teaching

### **Outreach and Diversity Activities**

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- 2019 Panelist, ESA SEEDS coffee hour, Salish Kootenai College
- 2018 Contributor, DeepCCZ cruise blog through NOAA Ocean Exploration and Research
- 2016 Guest speaker, UCSB Summer Sessions Intro to Marine Science (high school students)

### **Supplemental Funding Awards**

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- 2019 ASLO Early Career Travel Grant to attend Aquatic Sciences Meeting
- 2013 UCSB Academic Senate Doctoral Student Travel Grant
- 2013 Ocean Carbon & Biogeochemistry funding to attend Cornell Satellite Remote Sensing  
Training Program

### **Student Research Positions**

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Laboratory student worker, Environmental Quality Lab, Coastal Carolina University, summer 2009  
 Graduate research assistant, Coastal Carolina University, June 2007 - May 2008  
 Interdisciplinary Watershed Studies REU Fellow, The College of William & Mary, summer 2006  
 Laboratory intern, City of Bloomington Water Treatment Plant, Hudson, IL, summer 2005