Chelsea Wegner Koch

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EDUCATION

University of Maryland Center for Environmental Science	Solomons, MD	Marine, Estuarine and Environmental Science	Ph.D., 2021
University of South Carolina	Columbia, SC	Marine Science	M.S., 2013
University of Mary Washington	Fredericksburg, VA	Environmental Science	B.S., 2011

AREAS OF RESEARCH

Arctic marine ecology, sea ice habitat, biogeochemistry, stable isotopes (bulk and compound specific), benthic-pelagic coupling, trace metals and contaminants, marine microplastic pollution, co-production of knowledge with Indigenous and northern communities

RESEARCH AND PROFESSIONAL APPOINTMENTS

Assistant Professor, American University, Department of Environmental Science, Washington, DC **Dec 2023- present**

NERC Postdoctoral Researcher, Natural History Museum, London, Vertebrates Division **Sep 2022 – Dec 2023**

- Project: "*Plastics and heavy metals in Nunatsiavut food ways and environment (NGPlastics)*"
- Funding: Natural Environment and Research Council (NERC) – UKRI, Canada-Inuit Nunagat-United Kingdom (CINUK)

Science Officer, UN Decade of Ocean Science for Sustainable Development (Ocean Decade), Intergovernmental Oceanographic Commission (IOC) of UNESCO, **Sep 2021 – Aug 2022**

Senior Research Assistant, Chesapeake Biological Laboratory, University of Maryland Center for Environmental Science, **Aug 2017 – May 2021**

- Dissertation title: "*The significance of sea ice algae in the Pacific Arctic determined by highly branched isoprenoid biomarkers"*
- Funding: National Science Foundation, National Oceanic and Atmospheric Administration, North Pacific Research Board, University of Maryland

Marine Science Planner, National Science Foundation (NSF), Office of Polar Programs, United States Antarctic Program, **Sep 2015 – July 2017**

Program Analyst II, International Activities Office, Oceanic and Atmospheric Research (OAR), National Oceanic and Atmospheric Administration (NOAA), **Mar 2015 – Aug 2015**

Hydrographic Intern, NOAA Ocean Exploration Program, University Corporation of Atmospheric Research, **Feb 2015 – Mar 2015**

Special Assistant to the Director of NOAA Research, Knauss Marine Policy Fellowship (National Sea Grant Program), **Jan 2014 – Jan 2015**

Research Assistant, Beach and Dune Laboratory, University of South Carolina, **Aug 2011 – June 2013**

- Thesis title: *Tidal variability of waves and currents on a Caribbean barrier reef*

Undergraduate Research Assistant, University of Mary Washington, **Aug 2009-May 2011**

PUBLICATIONS

Peer-reviewed

2023

Koch, CW, Brown TA, Amiraux R, Ruiz-Gonzalez C, Maccorquodale M, Yunda-Guarin GA, Kohlbach D, Loseto LL, Rosenberg B, Hussey NE, Ferguson SH, Yurkowski D, 2023, Year-round utilization of sea ice-associated carbon in Arctic ecosystems, *Nature Communications* **14**, 1964 https://doi.org/10.1038/s41467-023-37612-8

2022

Ahkinga O, Alexander E, Apassingok MD, Baker B, Baker M, Berman M, Blair M, Bloom E, Burns NJ, Copenhaver AE, Cravalho EQ, Donatuto J, Dunton K, Fletcher SV, Froehlich E, George JC, Harris C, Heavner M, Hoffbeck M, Holland M, Jorgenson MT, Kelly BP, Kerttula E, Kling GW, **Koch, CW,** Landrum L, Lange S, Lukin MK, Marino E, Metcalf VK, Nunn C, Pincus R, Pungowiyi P, Robards M, Schaeffer JQ, Shahbazi A, Shultz A, Turner DT, Walsh JE, Wiese F, Wong G & Justin W, 2022, Consequences of Rapid Environmental Arctic Change for People. *Arctic Report Card 2022*, M. L. Druckenmiller, R. L. Thoman, and T. A. Moon, Eds., https://doi.org/10.25923/kgm2-9k50

2021

Koch, CW, Cooper, L.W., Woodland, R.J., Grebmeier, J.M.**,** Frey, K.E., Stimmelmayr, R., Magen C. and Brown, T.A., 2021, Female Pacific walruses (*Odobenus rosmarus divergens*) show greater partitioning of sea ice organic carbon than males: Evidence from ice algae trophic markers. *PLOS One*. https://doi.org/10.1371/journal.pone.0255686

Koch, CW, 2021, *The significance of sea ice algae in the Pacific Arctic determined by highly branched isoprenoid biomarkers.* (PhD Dissertation) University of Maryland, College Park, Maryland, https://doi.org/10.13016/jtti-zi4e

2020

Koch, CW, Cooper, L.W., Grebmeier, J.M.**,** Frey, K.E. and Brown, T.A., 2020, Ice algae resource utilization by benthic macro- and megafaunal communities on the Pacific Arctic shelf determined through lipid biomarker analysis. *Marine Ecology Progress Series*. https://doi.org/10.3354/meps13476

Koch, CW, Cooper, L.W., Lalande, C., Brown, T.A., Frey, K.E., and Grebmeier, J.M.**,** 2020, Seasonal and latitudinal variations in sea ice algae deposition in the northern Bering and Chukchi Seas determined by algal biomarkers. *PLOS One*. https://doi.org/pone.0231178

2017

Wegner, C. and Ellis, J.T., 2017, The Influence of Sea-Level Rise on Wave-Energy Dissipation and Wave-Driven Currents at Buck Island Reef National Monument. *Journal of Coastal Research* **(33)1**: 56 – 66. https://doi.org/10.2112/JCOASTRES- D-15-00052.1

2013

Wegner, C., 2013, *Tidal variability of waves and currents on a Caribbean barrier reef.* (Master's thesis). https://scholarcommons.sc.edu/etd/1559

Odhiambo, BK, Brown, V, Armentrout, G, Giancarlo, L, and **Wegner, C**, 2013, Sediment trace metals and PCB input history in Lake Anna, Spotsylvania, and Caroline Counties, Virginia, *Environmental Earth Science*, 69(6), 2103-2117. https://doi.org/10.1007/s12665-013-2500-2

Other – Technical Reports and Publications

UNESCO-IOC*. 2022. The Contribution of the UN Decade of Ocean Science for Sustainable Development to the Achievement of the 2030 Agenda. Paris, UNESCO. (The Ocean Decade Series, 34). https://unesdoc.unesco.org/ark:/48223/pf0000381919

UNESCO-IOC*. 2021. The Ocean Decade at COP26 of the United Nations Framework Convention on Climate Change. Paris, UNESCO. (The Ocean Decade Series, 31) https://oceandecade.org/decade-publications/?pages=2

*Lead contributing author

LEADERSHIP, OUTREACH, AND SERVICE

Professional Appointments

- Board of Directors, Arctic Research Consortium of the United States (ARCUS), 2024-2026
- Study of Arctic Environmental Change (SEARCH), Co-Production team member, Drivers and Ecological Consequences of Arctic Environmental Change (NSF-funded), 2022– present (https://searcharcticscience.org)
- Interagency Arctic Research Policy Committee (IARPC), Early Career Forum, team lead, 2019-2022
- US Association of Polar Early Career Scientists (USAPECS), board member, 2018-2020

Conference Session Co-Chair

- "The Distributed Biological Observatory: A Change Detection Array in the Arctic", 2021 Arctic Science Summit Week
- "Open Community Workshop on Advancing Arctic Observation and Data Actions within the UN Ocean Decade Plan", 2022 Arctic Science Summit Week

Guest Editor

- McLean C, **Wegner CE,** Myers B., 2015, Discovering NOAA: Applications of Science and Technology Then, Now, and in the Future, *Marine Technology Society*, 49(2).

Workshops

- Participant, Arctic Horizon Scan Workshop, Oxford University, September 2022
- Participant, Establishing the Distributed Biological Observatory system in the Atlantic Sector of the Arctic Ocean, ASSW 2022, Tromsø, Norway, March 2022
- Organizer/Chair, First Regional Workshop on Traditional Knowledge in the Ocean Decade, IOC-UNESCO and Pacific Community (SPC), virtual, July 2022
- Presenter, Distributed Biological Observatory Data Meeting, Seattle, WA, January 2020
- Participant, APECS Science-Policy Workshop, Reykjavik, Iceland, October 2019
- Participant, Synoptic Arctic Survey Open Planning Workshop, May 2019
- Presenter, Gordon Research Seminar, Polar Marine Sciences, Lucca, Italy, March 2019

Professional Community

- American Geophysical Union, 2012-present
- Association for the Sciences of Limnology and Oceanography (ASLO), 2017-2018
- Association of Polar Early Career Scientists, 2017-present
- Interagency Arctic Research and Policy Committee (IARPC), 2017-present
- Oceanography Society, 2014-2016

MEDIA AND INTERVIEWS

- "Sea ice algae on which Arctic animals rely under threat from climate change", by Emma Canton, Natural History Museum, Science News, Apr 2023 https://www.nhm.ac.uk/discover/news/2023/april/sea-ice-algae-on-which-arctic-animals-rely-under-threat-from-climate-change.html
- "Female and young walruses depend on disappearing Arctic sea ice for food sources", EurekAlert! Press Release, Aug 2021, https://www.eurekalert.org/news-releases/925963
- "Disappearing Alaskan sea ice is significant for Arctic marine ecosystem", EurekAlert! Press Release, Apr 2020, https://www.eurekalert.org/news-releases/673437
- "Decreasing Sea Ice Has Impact On Food Chain In Marine Ecosystem" by James Mason in the Nome Nugget:http://www.nomenugget.com/news/decreasing-sea-ice-has-impact-food-chain- marine-ecosystem
- "Dramatic sea-ice melt caps tough Arctic summer" by Alexandra Witze for Nature: https://www.nature.com/articles/d41586-019-02653-x