Heather Kim, PhD
Associate Scientist without Tenure
Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution
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EDUCATION

Columbia University, New York, NY	Earth and Environmental Sciences	Ph.D.	2013-2017
University of Rhode Island, Narragansett, RI	Oceanography	M.S.	2010-2012
Seoul National University, Seoul, South Korea	Earth and Environmental Sciences	B.S.	2007-2010

PROFESSIONAL EXPERIENCE

Associate Scientist, Woods Hole Oceanographic Institution, Woods Hole, MA	2024-Present
Assistant Scientist, Woods Hole Oceanographic Institution, Woods Hole, MA	2019-2024
Postdoctoral Research Associate, University of Virginia, Charlottesville, VA	2017-2019
Postdoctoral Research Scientist, Lamont-Doherty Earth Observatory, Palisades, NY	2017

AWARDS

James E. and Barbara V. Moltz Early Career Science Fellow	WHOI, 2025
Faculty Affiliate	NSF Center for Chemical Currencies of a Microbial Planet, 2024-2025
Faculty Fellow	NSF Center for Chemical Currencies of a Microbial Planet, 2023-2024
Antarctica Service Medal	United States Antarctic Program, 2016
Summer Course participant	NSF Center for Microbial Oceanography: Research and Education, 2014
Dean's Fellow	Columbia University, Graduate School of Arts and Sciences, 2013
Travel Award	NOAA, 2012

PROFESSIONAL AFFILIATIONS

Member	American Geophysical Union
Member	Association for the Sciences of Limnology and Oceanography

RESEARCH INTERESTS

Computational biogeochemistry; microbial oceanography; marine carbon dioxide removal; biogeochemical modeling; data-driven modeling; artificial intelligence and machine learning

PROFESSIONAL ACTIVITIES

National and Federal Scientific Service

2024-Present	Invited Author, Physical Systems Chapter, Sixth National Climate Assessment (NCA6), U.S. Global Change Research Program – Canceled under current administration; contributing to AGU Perspective with chapter team

Editorial and Advisory Board

2022-Present	Topical Editor, Geoscientific Model Development
2022-2023	Advisor, Ocean Visions Launchpad: $100M XPRIZE Carbon Removal competition

Service at Academic Conferences

2026 (accepted)	Session Chair, Modeling approaches for marine Carbon Dioxide Removal (mCDR) Ocean Sciences Meeting, Glasgow, Scotland
2025	Planning Committee, BioGeoSCAPES Modeling Workshop, Woods Hole, MA
2024	Session Co-chair, Modeling approaches for ocean-based carbon dioxide removal research, Ocean Sciences Meeting, New Orleans, LA
2023	Session Co-chair, Modeling approaches for ocean-based carbon dioxide removal research, AGU Fall Meeting, San Francisco, CA

2022 Student Presentation Evaluator, Ocean Sciences Meeting (virtual)
2020 Student Presentation Evaluator, AGU Fall Meeting (virtual)
2020 Student Presentation Evaluator, Ocean Sciences Meeting, San Diego, CA
2019 Session Co-organizer, Changing biogeochemistry and ecology across polar aquatic systems in the 21st century, Aquatic Sciences Meeting, San Juan, PR
2019 Mentor, ASLO Multicultural Program, Aquatic Sciences Meeting, San Juan, PR
2018 Student Presentation Evaluator, Ocean Sciences Meeting, Portland, OR
2018 Organizer, Postdoctoral Symposium, University of Virginia, Charlottesville, VA
2015 Student Presentation Evaluator, LTER All Scientists Meeting, Estes Park, CO

External Meetings and Workshops

2023 Invited Panelist, Department of Energy Advanced Research Projects Agency – Energy, Marine Carbon Sensing Workshop, Washington D.C.
2022 Invited Panelist, Schmidt Futures Ocean Biogeochemistry Strategic Planning Workshop, New York, NY (virtual)
2021 Invited Panelist, Open Ocean Blue Carbon Workshop, Environmental Defense Fund (EDF), Boston, MA
2017 Invited Panelist, Polar-ICE Student Polar Research Symposium, Rutgers University, New Brunswick, NJ
2016 Invited Panelist, Antarctic Edge: 80 degrees South, Columbia University Alumni Associations STEM Day, Columbia University, New York, NY

WHOI Institutional Service

2025-Present Postdoctoral Mentoring Committee
2022-Present Information Services Advisory Committee
2022-2023 Women's Committee
2022 Department of Marine Chemistry and Geochemistry Faculty Search Committee
2020-2021 Department of Marine Chemistry and Geochemistry Seminar Organizer

Manuscript Review

Remote Sensing of Environment; Journal of Experimental Marine Biology and Ecology; Geoscientific Model Development; Biogeosciences; Journal of Geophysical Research: Biogeosciences; Scientific Reports; Limnology and Oceanography; Ecosystems; Global Change Biology; Terrestrial, Atmospheric and Oceanic Sciences; Philosophical Transactions of the Royal Society A; PLoS ONE; Frontiers in Marine Science; Aquatic Microbial Ecology; Global Biogeochemical Cycles

Proposal Review

NSF OCE Chemical Oceanography Program; Ocean Visions Launchpad – $100M XPRIZE Carbon Removal competition

PAPERS IN REFEREED JOURNALS AND BOOKS (*asterisk denotes postdoc and student advisee)

Under Review:

Kim, H. H., *Mao, S., Archibald, K. M., *Terhaar, J., and *Thomason, R. M. (2025). Bacterial control of metabolic balance in the Sargasso Sea near Bermuda: Insights from data-assimilative biogeochemical modeling. *Journal of Geophysical Research: Biogeosciences*.

Rheuban, J. E., **Kim, H. H.**, Chen, K., Lima, I. D., McCorkle, D. C., Michel, A. P. M., Wang, Z. A., and Subhas, A. V. (2025). Carbonate system site selection characteristics for ocean alkalinity enhancement in the U.S. Northeast Shelf and Slope. *Journal of Geophysical Research: Biogeosciences.*

Marx, L., Rheuban, J., McCorkle, D., Murray, C., *Guo, Y., Wang, Z. A., Michel, A., Chen, K., **Kim, H. H.**, and Subhas, A. (2025). Development of the ecological activity index as an integrative

ecosystem assessment and monitoring asset for ocean alkalinity enhancement. *Nature Portfolio* [preprint]. https://doi.org/10.21203/rs.3.rs-6371725/v1

Subhas, A. V., Rheuban, J. E., Wang, Z. A., McCorkle, D. C., Michel, A. P. M., Marx, L., Dean, C. L., Morkeski, K., Hayden, M. G., Burkitt-Gray, M., Elder, F., *Guo, Y., **Kim, H. H.**, and Chen, K. (2025). A tracer study for the development of in-water monitoring, reporting, and verification (MRV) of ship-based ocean alkalinity enhancement. *EGUsphere* [preprint]. https://doi.org/10.5194/egusphere-2025-1348

Published:

*Guo, Y., Chen, K., Subhas, A. V., Rheuban, J. E., Wang, Z. A., McCorkle, D. C., Michel, A., and **Kim, H. H.** (2025). Site selection for ocean alkalinity enhancement informed by passive tracer simulations. *Communications Earth & Environment*, 6, 535. https://doi.org/10.1038/s43247-025-02480-1

Collins, J. R., Cape, M. R., Boenish, R. E., Benitez-Nelson, C. R., Doney, S. C., Fujita, R., Gaines, S. D., Gruby, R. L., Jin, D., **Kim, H. H.**, Kleisner, K. M., Mariani, G., Moore, L. A., Pershing, A. J., Rader, D. N., Roman, J., Saba, G. K., Sanchirico, J. N., Saul, S., Savoca, M. S., and Waller, A. (2025). The biogeochemistry of natural climate solutions based on fish, fisheries, and marine mammals: A review of current evidence, research needs, and critical assessment of readiness. *Global Biogeochemical Cycles*, 39(7), e2024GB008393. https://doi.org/10.1029/2024GB008393

Turner, J. S., Munro, D. R., Fay, A., Stammerjohn, S., **Kim, H. H.**, Schofield, O., and Dierssen, H. (2025). Seasonal variability of surface ocean carbon uptake and chlorophyll-a concentration in the West Antarctic Peninsula over two decades. *Geophysical Research Letters*, 52(4), e2024GL112446. https://doi.org/10.1029/2024GL112446

Tegler, L. A., Horner, T. J., Galy, V., Bent, S. M., Wang, Y., **Kim, H. H.**, Mete, Ö. Z., and Nielsen, S. G. (2024). Distribution and drivers of organic carbon sedimentation along the continental margins. *AGU Advances*, 5(4), e2023AV001000. https://doi.org/10.1029/2023AV001000

Turner, J. S., Dierssen, H., Schofield, O., **Kim, H. H.**, Stammerjohn, S., Munro, D. R., and Kavanaugh, M. (2024). Changing phytoplankton phenology in the marginal ice zone west of the Antarctic Peninsula. *Marine Ecology Progress Series*, 734, 1-21, https://doi.org/10.3354/meps14567

Mete, Ö. Z., Subhas, A. V., **Kim, H. H.**, Dunlea, A. G., Whitmore, L. M., Shiller, A. M., Gilbert, M., Leavitt, W. D., and Horner, T. J. (2023). Barium in seawater: dissolved distribution, relationship to silicon, and barite saturation state determined using machine learning. *Earth System Science Data*, 15, 4023-4045, https://doi.org/10.5194/essd-15-4023-2023

Kim, H. H., Laufkötter, C., Lovato, T., Doney, S. C., and Ducklow, H. W. (2023). Projected 21st-century changes in marine heterotrophic bacteria under climate change. *Frontiers in Microbiology*, 14:1049579, https://doi.org/10.3389/fmicb.2023.1049579

Cimino, M. A., Conroy, J. A., Connors, E., Bowman, J., Corso, A., Ducklow, H., Fraser, W., Friedlaender, A., **Kim, H. H.**, Larsen, G., Moffat, C., Nichols, Rl., Pallin, L., Patternson-Fraser, D., Roberts, D., Roberts, M., Steinberg, D., Thibodeau, P., Trinh, R., Schofield, O., and Stammerjohn, S. (2023). Long-term patterns in ecosystem phenology near Palmer Station, Antarctica. *Ecosphere*, 14(2), e4417, https://doi.org/10.1002/ecs2.4417

Kim, H. H., Bowman, J. S., Luo, Y.-W., Ducklow, H. W., Schofield, O. M., Steinberg, D. K., and Doney, S. C. (2022). Modeling polar marine ecosystems guided by bacterial physiological and taxonomic traits. *Biogeosciences*, 19(1), 117-136, https://doi.org/10.5194/bg-19-117-2022

Kim, H. H., Luo, Y.-W., Ducklow, H. W., Schofield, O. M., Steinberg, D. K., and Doney, S. C (2021). WAP-1D-VAR v1.0: development and evaluation of a one-dimensional variational data

assimilation model for the marine ecosystem along the West Antarctic Peninsula. *Geoscientific Model Development*, 14, 4939-4975, https://doi.org/10.5194/gmd-14-4939-2021

Kim, H., D. E. Lee, and H. W. Ducklow (2019). Winter extratropical cyclones as a potential driver of a long-term decline of bacterial production in the Sargasso Sea near Bermuda. *Geophysical Research Letters*, 46 (10), 5404-5412, https://doi.org/10.1029/2018GL081243

Kim, H., D. E. Lee, and H. W. Ducklow (2018). Mixing regime-dependent causality between phytoplankton and bacteria in the subtropical North Atlantic Ocean ecosystem. *Marine Ecology Progress Series*, 600, 41-53, https://doi.org/10.3354/meps12643

Kim, H., H. W. Ducklow, D. Abele, E. M. R. Barlett, A. G. J. Buma, M. P. Meredith, P. D. Rozema, O. M. Schofield, H. J. Venables, and I. R. Schloss (2018). Inter-decadal variability of phytoplankton biomass along the coastal West Antarctic Peninsula. *Philosophical Transactions of the Royal Society A*, 376 (2122), 20170174, https://doi.org/10.1098/rsta.2017.0174

Kim, H. and H. W. Ducklow (2016). A decadal (2002-2014) analysis for dynamics of heterotrophic bacteria in an Antarctic coastal ecosystem: Variability and physical and biogeochemical forcings. *Frontiers in Marine Science*, 3 (214), 1-18, https://doi.org/10.3389/fmars.2016.00214

Kim, H., S. C. Doney, R. A. Iannuzzi, M. P. Meredith, D. G. Martinson, and H. W. Ducklow (2016). Climate forcing for dynamics of dissolved inorganic nutrients at Palmer Station, Antarctica. *Journal of Geophysical Research: Biogeosciences*, 121 (9), 2369-2389, https://doi.org/10.1002/2015JG003311

Kim, H., Y. H. Kim, S.-G. Kang, and Y.-G. Park (2016). Development of environmental impact monitoring protocol for offshore carbon capture and storage (CCS): A biological perspective. *Environmental Impact Assessment Review*, 57, 139-150, https://doi.org/10.1016/j.eiar.2015.11.004

Kim, H. and S. Menden-Deuer (2013). Reliability of rapid, semi-automated assessment of plankton abundance, biomass, and growth rate estimates: Coulter Counter versus light microscope measurements. *Limnology and Oceanography: Methods*, 11 (7), 381-393, https://doi.org/10.4319/lom.2013.11.382

Kim, H., A. J. Spivack, and S. Menden-Deuer (2013). pH alters the swimming behaviors of the raphidophyte *Heterosigma akashiwo*: Implications for bloom formation in an acidified ocean. *Harmful Algae*, 26, 1-11, https://doi.org/10.1016/j.hal.2013.03.004

Proceedings and Book Chapters:

Nam, S. H., **H. Kim**, and C. Y. Hwang (2015). Blue Planet Earth Series: 4. Polar Research, Approaching with Science. eBook, Books I and I, KSI

Kim, H. and S. Menden-Deuer (2014). Estimating the effects of ocean acidification-induced behavioral shifts on primary production of *Heterosigma akashiwo*. Proceedings of the International Society for the Study of Harmful Algae

Kim, H. and Y. H. Kim (2013). Review of environmental risk assessment, regulations, standards on Carbon Capture and Storage. Development of Technology for CO_2 Marine Geological Storage Research and Development Report

INVITED LECTURES, PRESENTATIONS, AND ABSTRACTS

2022 NOAA Geophysical Fluid Dynamics Laboratory, Princeton, NJ (virtual)
Modeling marine heterotrophic bacteria: Implications for the ocean carbon cycle under climate change

2022 University of Rhode Island, Graduate School of Oceanography, Narragansett, RI (virtual)
Modeling marine heterotrophic bacteria: Implications for the ocean carbon cycle under climate change

2022 Massachusetts Institute of Technology, Atmospheres, Oceans, and Climate, Cambridge, MA
Ocean carbon cycle in a changing climate

2022 Scripps Institution of Oceanography, Scripps Polar Center, UC San Diego (virtual)
Modeling the role of marine heterotrophic bacteria in the ocean's biological carbon pump in a changing climate

2022 University of Virginia, TransUniversity Microbiome Initiative, Charlottesville, VA (virtual)
Modeling the role of marine heterotrophic bacteria in the ocean's biological carbon pump in a changing climate

2022 Microbiome Centers Consortium Seminar Series (virtual)
Modeling the role of marine heterotrophic bacteria in the ocean's biological carbon pump in a changing climate

2021 Scripps Institution of Oceanography, UC San Diego, San Diego, CA (virtual)
Microbial traits informed modeling of polar marine ecosystem functions

2020 Woods Hole Oceanographic Institution, Dept. of Biology, Woods Hole, MA (virtual)
Microbial diversity-informed modeling of polar marine ecosystem functions

2019 Seoul National University, School of Earth and Environmental Sciences, Seoul, South Korea
Microbial control of ocean carbon and biogeochemical cycling in a changing climate

2019 Korea Polar Research Institute, Incheon, South Korea
Microbial control of ocean carbon and biogeochemical cycling in a changing polar ocean: Insights from observations and modeling of the coastal West Antarctic Peninsula

2019 Chungnam National University, Dept. of Ocean Environmental Sciences, Daejeon, South Korea
Data assimilative modeling of an Antarctic coastal ecosystem: Impacts of microbial food web interactions on upper-ocean carbon cycling in a changing climate

2019 University of Delaware, School of Marine Science and Policy, Newark, DE
Modeling the impacts of marine microbial interactions on upper-ocean carbon and biogeochemical cycling in a changing climate

2019 Woods Hole Oceanographic Institution, Marine Chemistry and Geochemistry, Woods Hole, MA
Quantifying the impacts of marine microbial interactions on upper-ocean carbon and biogeochemical cycling in a changing climate

2017 University of Virginia, Dept. of Environmental Sciences, Charlottesville, VA
Microbial interactions in coupled climate-biogeochemical systems: Antarctica and Bermuda

2016 Princeton University, Atmospheric and Oceanic Sciences, Princeton, NJ
Palmer LTER: Revealing ecological interactions in the coupled climate-biogeochemical system based on observations and data-driven modeling

2015 Seoul National University, Dept. of Earth and Environmental Sciences, Seoul, South Korea
Climate forcing of bloom and nutrient dynamics at Palmer Station, Antarctica

SUPERVISION AT WHOI

Postdoctoral Researchers

Dr. Elizabeth Connors	Postdoctoral Investigator	2025-Present
Dr. Shun Mao	Postdoctoral Investigator	2024-Present
Dr. Emelia Chamberlain	NSF Postdoctoral Fellow	2024-Present
Dr. Yiming Guo	Postdoctoral Investigator	2024-Present
Dr. Onur Karakuş	Postdoctoral Investigator	2023-2025
Dr. Jens Terhaar	Postdoctoral Scholar	2022-2023
Dr. Ashley Dinauer	NSF Postdoctoral Fellow	2021-2022

Students

Linus Vogt	Guest Student (Sorbonne University, France)	2023
Gus McGuire	Falmouth Academy High School Intern	2022
Rhegan Thomason	NSF Bridge-to-PhD Fellow	2022-2024
Annabella Amato	Summer Student Fellow (UC Los Angeles)	2022

Elizabeth Connors	Guest Student (Scripps Institution of Oceanography, UC San Diego)	2022
Emelia Chamberlain	Guest Student (Scripps Institution of Oceanography, UC San Diego)	2022
Oreoluwa Solanke	Summer Student Fellow (Columbia University)	2020
Kira Baugh	Undergraduate Researcher (University of Virginia)	2018

Technical Staff

Theodore Calianos	Research Assistant	2024-Present
Dr. Ivan Lima	Guest Investigator	2022-2023

PARTICIPATION IN EDUCATION PROGRAM

MIT-WHOI Joint Program

2020, 2025	Co-instructor, MIT-WHOI 12.747 Modeling, Data Analysis, and Numerical Techniques for Geochemistry
2025	General Exam Paper Reviewer for Sophie Kuhl (advisor: Dr. Zhaohui Aleck Wang)
2021-2025	Thesis Committee Member of Shavonna Bent (advisor: Dr. Benjamin Van Mooy)
2020-2024	Thesis Committee Member of Noah Germolus (advisor: Dr. Elizabeth Kujawinski)
2022	PhD Thesis Defense Chair for Rebecca Chmiel (advisor: Dr. Mak Saito)
2022	PhD Thesis Proposal Defense Chair for Ellen Park (advisor: Dr. David Nicholson)
2022	General Exam Committee
2021-2022	First Year Student Academic Advising Committee
2022	Co-instructor, MIT-WHOI 12.757 Geodynamics Seminar: Climate Solutions

Columbia University

2016	Teaching Assistant, UN1030 Oceanography
2015-2016	Teaching Assistant, UN2100 Earth's Environmental System: Climate System
2015	Guest Instructor, Double Discovery Center

University of Rhode Island

2012	Teaching Assistant, OCG301 General Oceanography
2010-2012	Outreach Scientist, Office of Marine Programs

CONTRIBUTED PRESENTATIONS AND ABSTRACTS **(*asterisk denotes postdoc and student advisee)**

Kim, H. H., W. Wolfe, E. Lawrence, S. Doney, R. Braakman, M. Covert, M. Freilich, A. Krinos, M. A. Moran, H. Scott, D. Segrè, M. Yang, and E. Agmon (2025). From cellular to global: A hierarchical, multi-scale modeling strategy for linking metabolism, biogeochemistry, and the ocean carbon cycle. Ocean Carbon and Biogeochemistry Workshop, Virtual.

*Mao, S., **H. H. Kim,** and A. E. Maas (2025). Carbon export and flux attenuation near Bermuda: A July 2016 case study of a 1D biogeochemical model. Ocean Carbon and Biogeochemistry Workshop, Virtual.

*Chamberlain, E. J., *T. Calianos, *E. Connors, and **H. H. Kim** (2025). Leveraging community structure data and machine learning to improve microbial diversity in polar ecosystem models. ASLO 2025 Aquatic Sciences Meeting, Charlotte, NC.

Collins, J., M. Cape, R. Boenish, C. Benitez-Nelson, S. Doney, R. Fujita, S. Gaines, R. Gruby, D. Jin, **H. Kim**, K. Kleisner, G. Mariani, L. Moore, A. Pershing, D. Rader, J. Roman, G. Saba, J., Saul, S. Sanchirico, and M. Savoca (2025). Natural climate solutions based on fish, fisheries, and marine mammals: Current evidence and assessment of readiness. One Ocean Science Congress, Nice, France.

*Guo, Y., K. Chen, **H. H. Kim,** J. Rheuban, and A. V. Subhas (2024). Site selection for ocean alkalinity enhancement in the U.S. Northeast Shelf region: Perspectives from passive tracer experiments. AGU Fall Meeting, Washington, DC.

Subhas, A., A. Michel, K. Chen, **H. H. Kim,** J. Rheuban, A. Z. Wang, D. C. McCorkle, M. Hayden, L. Marx, M. Burkitt-Gray, *Y. Guo, K. Morkeski, D. P. Nicholson, F. Elder, T. Lanagan, B. Longworth, and C. Dean (2024). Preliminary results from LOC-02, the first field trial studying the effectiveness and environmental impacts of ship-based ocean alkalinity enhancement using sodium hydroxide, and the second expedition of the LOC-NESS Project. AGU Fall Meeting, Washington, DC.

Munro, D. R., A. R., Fay, H. M. Dierssen, J. S. Turner, O. Schofield, **H. H. Kim,** S. E. Stammerjohn, M. T. Kavanaugh, and C. Sweeney (2024). Updated estimates of surface water pCO_2 within the marginal ice zone along the West Antarctic Peninsula. American Geophysical Union Fall Meeting, Washington DC.

Turner, J. S., D. R. Munro, A. R. Fay, **H. H. Kim,** O. Schofield, S. E. Stammerjohn, and H. M. Dierssen (2024). Seasonal variability of surface ocean carbon uptake and surface chlorophyll-a concentration in the West Antarctic Peninsula over two decades. American Geophysical Union Fall Meeting, Washington DC.

*Chamberlain, E. J., R. Thomason, and **H. H. Kim** (2024). Leveraging genomics and machine learning to improve microbial diversity in a 1-D Arctic Ocean biogeochemistry model. Ocean Carbon and Biogeochemistry Workshop, Woods Hole, MA.

*Karakuş, O., K. Chen, R. Ji, and **H. H. Kim** (2024). Effects of riverine input on carbon cycle in the Northeastern United States continental shelf. Ocean Sciences Meeting, New Orleans, LA.

Munro, D. R., A. R. Fay, H. Dierssen, J. S. Turner, O. Schofield, **H. H. Kim**, S. Stammerjohn, M. Kavanaugh, G. McKinley, and C. Sweeney (2024). On the influence of phytoplankton community structure on surface water pCO_2 in the marginal ice zone along the West Antarctic Peninsula. Ocean Sciences Meeting, New Orleans, LA.

Rheuban, J. E., **H. H. Kim**, K. Chen, Z. A. Wang, I. D. Lima, and A. V. Subhas (2024). Site selection characteristics for Ocean Alkalinity Enhancement determined through machine learning. Ocean Sciences Meeting, New Orleans, LA.

Subhas, A. V., A. P. M. Michel, Z. A. Wang, J. E. Rheuban, **H. H. Kim**, K. Chen, D. McCorkle, J. Kapit, C. Dean., L. Marx, M. Hayden, K. Morkeski, F. Elder, and M. Burkitt-Gray (2024). Introducing the LOC-NESS Project and results from LOC-01, our first tracer release experiment. Ocean Sciences Meeting, New Orleans, LA.

*Thomason, R. and **H. H. Kim** (2024). Impacts of ecological and environmental forcings on heterotrophic bacteria: Insights from model analysis. Ocean Sciences Meeting, New Orleans, LA.

Turner, J. S., H. Dierssen, O. Schofield, **H. H. Kim**, S. Stammerjohn, D. Munro, and M. Kavanaugh (2024). Environmental drivers of changing phytoplankton phenology in the marginal ice zone west of the Antarctic Peninsula. Ocean Sciences Meeting, New Orleans, LA.

Turner, J. S., H. Dierssen, O. Schofield, **H. H. Kim**, S. Stammerjohn, D. Munro, and M. Kavanaugh (2023). Later start of the accumulation season: 25-year trends in phytoplankton phenology in the marginal ice zone west of the Antarctic Peninsula. International Ocean Colour Science Meeting, St. Petersburg, FL.

Cimino, M., J. Conroy, E. Connors, J. Bowman, A. Corso, H. Ducklow, W. Fraser, A. Friedlaender, **H. H. Kim**, G. Larsen, C. Moffat, R. Nichols, L. Pallin, D. Patterson-Fraser, D. Roberts, M. Roberts, D. Steinberg, P. Thibodeau, R. Trinh, R., O. Schofield, and S. Stammerjohn (2022). Long-term patterns in ecosystem phenology near Palmer Station (PAL), Antarctica. LTER All Scientists Meeting, Pacific Grove, CA.

Turner, J. S., H. Dierssen, O. Schofield, **H. H. Kim**, S. Stammerjohn, and D. Munro (2022). Shifts in the timing of the phytoplankton growing season west of the Antarctic Peninsula. Ocean Optics 2022 XXV, Quy Nhon, Binh Dinh, Vietnam.

*Mete, O. Z., A. G. Dunlea, **H. H. Kim**, A. V. Subhas, and T. J. Horner (2022). Dissolved distribution of barium in seawater and its relationship to silicon. Northeast Geobiology Symposium, Virtual.

*Mete, O. Z., **H. H. Kim**, A. G. Dunlea, L. Whitmore, A. Shiller, and T. J. Horner (2022). Dissolved distribution of barium in seawater and its relationship to silicon. Ocean Sciences Meeting, Virtual.

Turner, J. S., H. M. Dierssen, O. M. Schofield, S. E. Stammerjohn, **H. H. Kim**, and D. Munroe (2022). Interannual variability of satellite derived phytoplankton indices west of the Antarctic Peninsula 1997-2001. Ocean Sciences Meeting, Virtual.

Kim, H. H., C. Laufkötter, T. Lovato, S. C. Doney, and H. W. Ducklow (2022). Projected 21st-century changes in marine heterotrophic bacteria under climate change, Ocean Sciences Meeting, Virtual.

*Mete, O. Z., A. G. Dunlea, **H. H. Kim**, and T. J. Horner (2021). Distribution of dissolved barium in seawater: a machine learning approach. WHOI Summer Student Fellow Presentation, Virtual.

Subhas, A. V., **H. H. Kim**, and K. O. Buesseler (2021). Navigating the ocean's role in carbon dioxide removal. Ocean Decade: U.S. Launch Meeting (Ocean Shots), Virtual.

Kim, **H. H.**, J. S. Bowman, Y.-W. Luo, H. W. Ducklow, O. M. Schofield, D. K. Steinberg, and S. C. Doney (2021). Combining microbial observations and biogeochemical modeling: variational data assimilation models. Ocean Carbon and Biogeochemistry Workshop, Virtual.

Kim, **H. H.**, J. S. Bowman, Y.-W. Luo, H. W. Ducklow, O. M. Schofield, D. K. Steinberg, and S. C. Doney (2020). Microbial diversity-informed modelling of the polar marine ecosystem functions. AGU Fall Meeting, Virtual.

*Solanke, O. and **H. H. Kim** (2020). Quantifying the biogeochemical role of microbial communities at the Bermuda Atlantic Time-series Study site. AGU Fall Meeting, Virtual.

*Solanke, O. and **H. H. Kim** (2020). Quantifying the biogeochemical role of microbial communities at the Bermuda Atlantic Time-series Study site. WHOI Summer Student Fellow Presentation, Virtual.

*Chamberlain, E., **H. Kim**, S. C. Doney, and J. S. Bowman (2020). Leveraging microbial community structure data to inform ecosystem modeling, an approach based on microbial community segmentation. Ocean Sciences Meeting, San Diego, CA.

Kim, **H.**, Y.-W. Luo, H. W. Ducklow, O. M. Schofield, D. K. Steinberg, and S. C. Doney (2020). Bacteria-mediated carbon cycling in the warming polar ocean revealed by data assimilation modeling. Ocean Sciences Meeting, San Diego, CA.

Kim, **H.**, Y.-W. Luo, H. W. Ducklow, O. M. Schofield, D. K. Steinberg, and S. C. Doney (2019). Data assimilative modeling of an Antarctic coastal ecosystem: Impacts of microbial food-web interactions on upper-ocean carbon cycling in a changing climate. ASLO Aquatic Sciences Meeting, San Juan, PR.

Kim, **H.**, Y.-W. Luo, and S. C. Doney (2019). Data assimilative ecosystem modeling of bacterial dynamics and upper-ocean carbon cycling in the coastal West Antarctic Peninsula. University of Virginia, Charlottesville, VA.

*Chamberlain, E., **H. Kim**, S. C. Doney, and J. S. Bowman (2019). Leveraging microbial community structure to inform trait-based modeling, an approach based on microbial community segmentation. Trait-Based Approaches to Ocean Life Workshop, Buckinghamshire, UK.

*Baugh, K. R., **H. Kim**, and S. C. Doney (2019). The effects of hurricanes of the monthly anomalies of pH and dissolved inorganic carbon at the Bermuda Atlantic Time-series Study site. Undergraduate Research Symposium, University of Virginia, Charlottesville, VA.

*Baugh, K. R., **H. Kim**, and S. C. Doney (2019). The effects of hurricanes of the monthly anomalies of pH and dissolved inorganic carbon at the Bermuda Atlantic Time-series Study site. EnviroDay, University of Virginia, Charlottesville, VA.

Kim, **H.**, Y.-W. Luo, and S. C. Doney (2018). Data assimilative modeling of polar marine ecosystem dynamics using a variational adjoint scheme. University of Virginia, Charlottesville, VA.

Kim, **H.**, Y.-W. Luo, and S. C. Doney (2018). Data assimilative ecosystem modeling of bacterial dynamics and upper-ocean carbon cycling in the coastal West Antarctic Peninsula. Ocean Carbon and Biogeochemistry Workshop, Woods Hole, MA.

Kim, **H.**, D. E. Lee, and H. W. Ducklow (2018). Wintertime extratropical cyclones drive a long-term bacterial trend at the Bermuda Atlantic Time-series (BATS) site. University of Virginia, Charlottesville, VA.

Kim, **H.**, D. E. Lee, and H. W. Ducklow (2018). Wintertime extratropical cyclones drive a long-term bacterial trend at the Bermuda Atlantic Time-series (BATS) site. Ocean Sciences Meeting, Portland, OR.

Ducklow, H. W., M. R. Stukel, J. S. Bowman, **H. Kim**, N. Cassar, R. Eveleth, Z. Li, S. Doney, S. F. Sailley, T. D. Jickells, A. R. Baker, R. Chance (2016). Exploring estimates of net community production and export along the Western Antarctic Peninsula (WAP), 1993-2014. AGU Fall Meeting, San Francisco, CA.

Kim, H. (2016). Palmer LTER: Revealing ecological interactions in the coupled climate-biogeochemical system based on observations and data-driven modeling. Palmer Long-Term Ecological Research (LTER) Annual Meeting, New Brunswick, NJ.

Kim, **H.**, S. C. Doney, R. A. Iannuzzi, M. P. Meredith, D. G. Martinson, D. E. Lee, and H. W. Ducklow (2016). Palmer LTER: Climate-biogeochemical coupling in an Antarctic coastal ecosystem. Ocean Carbon and Biogeochemistry Workshop, Woods Hole, MA.

Kim, **H.**, S. C. Doney, R. A. Iannuzzi, M. P. Meredith, D. G. Martinson, and H. W. Ducklow (2016). Climate-biogeochemical coupling in an Antarctic coastal ecosystem. Ocean Sciences Meeting, New Orleans, LA.

Kim, **H.** and H. W. Ducklow (2015). Physical forcing of bacterial dynamics at Palmer Station, Antarctica. LTER All Scientists Meeting, Estes Park. CO.

Huete-Stauffer, T. M., C. Bunse, C. J. Closek, R. M. Gradoville, R. Mohamed, C. Moreno, J. Taylor, P. Wilburn, M. A. Budinich Abarca, T. Burrel, M. T. Gazitua Zavala, C. Gimpel, **H. Kim**, W. L. Liao, L. Peoples, A. Vislova (2015). Genomes to Biomes: C-MORE Summer Course on Microbial Oceanography. ASLO Aquatic Sciences Meeting, Granada, Spain.

Kim, **H.**, D. G. Martinson, R. A. Iannuzzi, and H. W. Ducklow (2014). Interannual variability in seasonal drawdown of dissolved inorganic nutrients at Palmer Station, Antarctica. AGU Fall Meeting, San Francisco, CA.

Kim, **H.**, D. G. Martinson, and H. W. Ducklow (2014). Physical and climate controls on drawdown of dissolved inorganic nutrients at Palmer Station: A 20-year study (1992-2012). Palmer LTER Annual Meeting, Williamsburg, VA.

Kim, **H.** and S. Menden-Deuer (2014). Effects of ocean acidification-induced swimming behaviors on population distributions and primary production of the raphidophyte *Heterosigma akashiwo*. Ocean Sciences Meeting, Honolulu, HI.

Kim, **H.** and S. Menden-Deuer (2012). Future-ocean pCO_2 condition alters the movement behaviors of the toxic *Heterosigma akashiwo*: implications for harmful algal bloom formation in an acidifying ocean. International Conference on Harmful Algae, Changwon, South Korea.

Kim, **H.** and S. Menden-Deuer (2011). Feasibility of rapid, automated assessment of phytoplankton abundance, biomass, and growth rate: Coulter Counter vs. light microscope. U.S. Symposium on Harmful Algae, Austin, TX.

OUTREACH ACTIVITIES

2022	Panelist, New York Signature Event, University Club of New York, New York, NY
2016-2017	Vice President, Columbia University Korean-American Scientists and Engineers Association, Columbia University, New York, NY
2013	Environmental consultant (part-time), RPS-ASA, South Kingstown, RI
2012	Volunteer, Environmental Protection Agency, Narraganset, RI
2012	Volunteer, Science Fair, America's Cup World Series, Newport, RI
2011	Volunteer, Science Saturday, University of Rhode Island, Narragansett, RI

CRUISE OR FIELDWORK PARTICIPATION

2015-2016	ARSV Laurence M. Gould, Palmer LTER research cruise, West Antarctic Peninsula
2014	R/V Kilo Moana, C-MORE Microbial Oceanography: Genomes to Biomes research cruise, North Pacific
2011	R/V Endeavor, North Atlantic Spring Bloom research cruise, Gulf of Maine
2010	R/V Tamyang, Shipboard Training course, East/Japan Sea