



Kevin Arrigo

Donald and Donald M. Steel Professor of Earth Sciences
Earth System Science

Bio

BIO

Kevin Arrigo received his B.S in Natural Resources from the University of Michigan in 1983. After working for the Michigan Department of Natural Resources, he attended the University of Southern California where he earned his Ph.D. in Biological Sciences in 1992. He went on to a postdoctoral position at the NASA Goddard Space Flight Center and became a civil servant there in 1995. In 1999, he joined the Stanford University faculty as an Assistant Professor in the Department of Geophysics, where he stayed until 2007 when he joined the Department of Environmental Earth System Science. Arrigo served as director of the interdisciplinary Graduate Program in Earth, Energy, and Environmental Sciences from 2005-2013. In 2012, he became co-director of the Earth Systems Program within the School of Earth Sciences. He has served on a number of university committees, including the Committee on Academic Computing and Information Services (2010-2012), Committee for the Review of Undergraduate Majors (2010-2013), and the Bing Overseas Studies Faculty Oversight Committee (2011-present). As a biological oceanographer, his principal interest has been in the role marine microalgae play in modulating the cycling of carbon and nitrogen, with particular emphasis on the scales of temporal and spatial variability of biological productivity in polar oceans. This knowledge is essential to understanding how anthropogenic and atmospheric forcing controls the biogenic flux of carbon dioxide into the oceans, and ultimately, to the sediments. His research is highly interdisciplinary and incorporates three fundamental approaches, (1) satellite remote sensing, (2) ecophysiological modeling, and (3) laboratory and field studies. By combining these techniques, it is possible to address many complex aspects of ocean biogeochemistry at spatial and temporal scales that would not be possible using a single approach

ACADEMIC APPOINTMENTS

- Professor, Earth System Science
- Member, Bio-X
- Affiliate, Stanford Woods Institute for the Environment

ADMINISTRATIVE APPOINTMENTS

- Fisheries Biologist, Department of Natural Resources, State of Michigan, (1984-1986)
- Teaching Assistant, Department of Biological Sciences, University of Southern California, (1986-1991)
- Research Assistant, Department of Biological Sciences, University of Southern California, (1987-1992)
- Resident Research Assistant, NASA Goddard Space Flight Center, (1992-1994)
- Adjunct Assistant Professor MEES, Horn Point Environmental Laboratory, University of Maryland, (1993-1999)
- Assistant Research Professor Dept. of Meteorology, University of Maryland, (1994-1995)
- Adjunct Assistant Professor Dept. of Meteorology, University of Maryland, (1994-1999)
- Oceanographer, NASA Goddard Space Flight Center, (1995-1999)
- Assistant Professor of Geophysics, Stanford University, (1999-2004)

- Associate Professor of Geophysics, Stanford University, (2004-2007)
- Director, Graduate Program in Earth, Energy, and Environmental Sciences, School of Earth Sciences, Stanford University, (2005-2010)
- Associate Chair, Department of Environmental Earth System Science, Stanford University, (2007- present)
- Associate Professor, Department of Environmental Earth System Science, Stanford University, (2007-2009)
- Professor, Department of Environmental Earth System Science, Stanford University, (2009- present)

HONORS AND AWARDS

- Competitive Scholarship, Oakland University (1977 - 1979)
- Competitive Scholarship, State of Michigan (1980 - 1983)
- Cum Laude, University of Michigan (1983)
- Outstanding Teaching Assistant Award, University of Southern California (1987 - 1991)
- Antarctic Service Medal, National Science Foundation (1988 - 1989)
- ARCS Fellowship, University of Southern California (1990 - 1992)
- Global Change Distinguished Postdoctoral Fellowship, United States Department of Energy (1992 - 1994)
- Peer Award for Outstanding Publication, NASA GSFC, Laboratory for Hydrospheric Processes (1995)
- Performance Award, NASA Goddard Space Flight Center (1995)
- Special Act Award, NASA Goddard Space Flight Center (1995)
- Quality Increase Award, NASA Goddard Space Flight Center (1996)
- Special Act Award, NASA Goddard Space Flight Center (1997)
- Frederick E. Terman Fellowship Award, School of Earth Sciences, Stanford University (1999-2002)
- Chair, Gordon Research Conference on Polar Marine Science, Gordon Research Conference (2007)
- School of Earth Sciences Excellence in Teaching Award, Stanford University (2008)
- Aldo Leopold Leadership Fellowship, Woods Institute for the Environment, Stanford University (2009)
- Gerhard Caspar University Fellow in Undergraduate Education, Stanford University (2011-2016)
- Group Achievement Award for ICESCAPE, NASA (2012)
- Donald & Donald M. Steel Professor in Earth Sciences, Stanford University (2013-present)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Director, Earth Systems Program, Stanford University (2015 - present)
- Associate Editor, Journal of Geophysical Research - Biogeochemistry (2012 - present)
- Co-Director, Earth Systems Program, School of Earth Sciences, Stanford University (2012 - 2015)
- Aldo Leopold Leadership Program Committee, Stanford University (2011 - present)
- Bing Overseas Studies Program, Faculty Oversight Committee, Stanford University (2011 - present)
- Advisory Board, Alliance for Climate Education (2010 - present)
- Committee for the Review of Undergraduate majors (C-RUM), Stanford University (2010 - 2013)
- Faculty of 1000, Contributing Member, Ecosystem Ecology (2010 - 2013)
- Committee on Academic Computing and Information Services (C-ACIS), Stanford University (2010 - 2011)
- E-IPER Reauthorization Review Committee, Stanford University (2010 - 2010)
- Environmental Ventures Project, Woods Institute for the Environment, Review Committee, Stanford University (2009 - 2012)
- Invited Speaker, Recent changes in Arctic Ocean Primary Production. Gordon Research Conference on Polar Marine Science, Lucca (Barga), Italy, March 15-20, Gordon Research Conference (2009 - 2009)

- Invited Speaker, University of California Santa Cruz, 19 January 2009, University of California Santa Cruz (2009 - 2009)
- Invited Speaker, Using remote sensing to monitor oceans and ice. Southern Ocean Sentinel program, Hobart, Tasmania (Australia), April 20-25, Southern Ocean Sentinel program (2009 - 2009)
- Board of Governors, Alternate, Ocean Leadership (2008 - present)
- Center for Ocean Solutions Early Career Fellowship, Selection Committee, Stanford University (2008 - present)
- Review Editor, Aquatic Biology (2008 - present)
- Earth Systems Undergraduate Curriculum Committee, Stanford University (2008 - 2012)
- Library Committee, School of Earth Sciences, Stanford University (2008 - 2012)
- Advisory Committee for Educational Outreach, School of Earth Sciences, Stanford University (2008 - 2011)
- Branner Library Space Committee, School of Earth Sciences, Stanford University (2008 - 2010)
- Chair, School of Earth Sciences Faculty Search Committee, Marine Chemist/Geochemist, Stanford University (2008 - 2010)
- School of Earth Sciences Faculty Search Committee, Climate scientist, Stanford University (2008 - 2009)
- Invited Speaker, Changes in Arctic Ocean primary production, 1998-2008, Arctic Change 2008, Quebec City, Quebec, Canada, December 9-12, Arctic Change 2008 (2008 - 2008)
- Associate Chair, Department of Environmental Earth System Science, Stanford University (2007 - present)
- Oceans Working Group, Canadian Institute for Advanced Research (CIFAR) (2007 - 2009)
- Chair, Gordon Research Conference on Polar Marine Science, Ventura, CA, March 25-30, Gordon Research Conference (2007 - 2007)
- Invited Speaker, C.B. van Niel Lecture, Hopkins Marine Station, Stanford University, April 6, Hopkins Marine Station, Stanford University (2007 - 2007)
- Invited Speaker, Duke University, 12 January, Duke University (2007 - 2007)
- Invited Speaker, Nicholas School Marine Laboratory, Duke University, 1 May, Duke University (2007 - 2007)
- Editorial Board, Annual Reviews of Marine Science (2006 - 2012)
- Chair, School of Earth Sciences Faculty Search Committee, Physical Oceanographer, Stanford University (2006 - 2007)
- Committee for School of Earth Sciences Reorganization, Stanford University (2006 - 2007)
- Invited Participant, SCOR Workshop on Anthropogenic Nitrogen Impacts on the Open Ocean, Norwich, UK, 16-20 November, Scientific Committee on Oceanic Research (2006 - 2006)
- Working Group for Carbon Research, IMBER/SOLAS (2005 - 2011)
- Director, Graduate Program in Earth, Energy, and Environmental Sciences, Stanford University (2005 - 2010)
- CEES Faculty Advisory Board, Stanford University (2005 - 2009)
- Understanding Change Panel (UCP), Study of Environmental Arctic Change (SEARCH) (2005 - 2008)
- School of Earth Sciences Faculty Search Committee, Climate scientist, Stanford University (2005 - 2007)
- Appointment Committee, Suki Hoagland-Senior Lecturer in IPER, Stanford University (2005 - 2005)
- Geological and Environmental Sciences Faculty Search Committee, Paleobiology, Stanford University (2005 - 2005)
- Invited Speaker, Oregon State University, 7 December, Oregon State University (2005 - 2005)
- Vice-Chair, Gordon Research Conference on Polar Marine Science, Gordon Research Conference (2005 - 2005)
- School of Earth Sciences Council, Stanford University (2004 - 2010)
- Board of Governors, Alternate, Ocean Leadership (2004 - 2008)
- Chair, School of Earth Sciences Ph.D/M.S. Academic Programs Committee, Stanford University (2004 - 2005)
- Geophysics Faculty Search Committee, Computational Global Seismology, Stanford University (2004 - 2005)
- Invited Speaker, Oregon State University, December 2, Oregon State University (2004 - 2004)
- Member, The Bering Sea Ecological Study (BEST) Committee, National Science Foundation (2003 - 2006)
- Carnegie Institute of Washington, Global Ecology/Oceanographer Search Committee, Stanford University (2003 - 2005)

- Committee on A Science Plan for the North Pacific Research Board, National Research Council of the National Academies (2003 - 2005)
- Member, Committee on A Science Plan for the North Pacific Research Board, National Research Council of the National Academies (2003 - 2005)
- Planning committee for the Bering Sea Ecological Study (BEST), National Science Foundation (2003 - 2005)
- Geophysics Faculty Pre-Search Committee, Stanford University (2003 - 2004)
- School of Earth Sciences Academic Programs Committee, Stanford University (2003 - 2004)
- Invited Speaker, Aquatic Sciences Meeting, Salt Lake City, American Society of Limnology and Oceanography (2003 - 2003)
- Invited Speaker, EGS-AGU-EUG Joint Assembly, Nice, France, EGS-AGU-EUG (2003 - 2003)
- Invited Speaker, Gordon Research Conference on Polar Marine Science, Ventura, California, Gordon Research Conference (2003 - 2003)
- Invited Speaker, The Bering Sea Ecological Study (BEST) Workshop, Seattle, Washington, The Bering Sea Ecological Study (BEST) (2003 - 2003)
- Invited Speaker, The Royal Society (The Role of the Southern Ocean in Global Processes: An Earth System Science Approach), London, The Royal Society (2003 - 2003)
- Invited Speaker, University of Southern California, Los Angeles, CA, January 28, University of Southern California (2003 - 2003)
- Faculty Liaison, The Australia Program, Overseas Studies Program, Stanford University (2002 - present)
- Earth Systems Executive Committee, Stanford University (2002 - 2012)
- Academic Advisor for Sophomores, Stanford University (2002 - 2009)
- Editor, Oceanography of the Ross Sea, Antarctic Science (2002 - 2002)
- Invited Speaker, Hopkins Marine Station, Stanford University, January 25, Hopkins Marine Station, Stanford University (2002 - 2002)
- Invited Speaker, United States Geological Survey, Menlo Park, CA, December, United States Geological Survey (2002 - 2002)
- Invited Speaker, University of California, Irvine, April 19, University of California, Irvine (2002 - 2002)
- Invited Speaker, University of California, Santa Barbara, March 12, University of California, Santa Barbara (2002 - 2002)
- Academic Advisor for Freshmen, Stanford University (2001 - 2008)
- Interdisciplinary Graduate Program In Environment and Resource (IPER) Advisory Council, Stanford University (2001 - 2008)
- Stanford's Environmental Initiative, Stanford University (2001 - 2004)
- Invited Speaker, International Polynya Symposium 2001, Polynyas in Changing Polar Seas, International Polynya Symposium 2001 (2001 - 2001)
- Invited Speaker, Romberg Tiburon Center, San Francisco State University (2001 - 2001)
- Panel on Biocomplexity in the Environment/Instrumentation Development for Environmental Activities, National Science Foundation (2001 - 2001)
- Chair, Department of Geophysics Teaching & Technology Committee, Stanford University (2000 - 2007)
- Ad-hoc Committee for Interdisciplinary Environmental Studies, Stanford University (2000 - 2005)
- Curriculum Committee, Geophysics Dept., Stanford University (2000 - 2004)
- Strategic Planning Committee, Geophysics Dept., Stanford University (2000 - 2004)
- Technology and Teaching Committee, Geophysics Dept., Stanford University (2000 - 2004)
- Faculty/Staff Development Committee, Geophysics Dept., Stanford University (2000 - 2003)
- Member, AGU Committee on Statutes and Bylaws, American Geophysical Union (2000 - 2003)
- Invited speaker, UC Santa Cruz (2000 - 2000)
- Member, DOE Panel on Ocean Carbon Sequestration Research, Department of Energy (2000 - 2000)
- Invited speaker, Gordon Research Conference (1998 - 1998)
- Council of Fellows, Joint Center for Earth System Science, Dept. of Meteorology, University of Maryland (1997 - 1997)
- Editor, Vol. 73, Antarctic Research Series (1997 - 1997)
- Invited speaker, NASA Goddard Space Flight Center (1997 - 1997)
- NASA Earth Science Vision team, NASA (1997 - 1997)

- Visiting Senior Scientist Search Committee, Laboratory for Hydrospheric Processes, NASA (1997 - 1997)

PROFESSIONAL EDUCATION

- Ph.D., University of Southern California , Biology (1992)
- B.S., University of Michigan , Natural Resources (1983)

LINKS

- Ocean Biogeochemistry Group: <http://ocean.stanford.edu/>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Research

My students and I use a combination of laboratory and field studies, remote sensing, and computer modeling techniques to understand phytoplankton dynamics in regions ranging from the Southern Ocean to the Red Sea. In particular, we are interested in the role these organisms play in regulating the uptake of atmospheric carbon dioxide by the ocean, as well as in how they help structure marine ecosystems. We work with colleagues in fields as diverse as molecular biology, glaciology, and physical oceanography to develop a comprehensive understanding of how these ecosystems operate and how they may respond to environmental changes--past, present, and future.

Teaching

I teach courses for graduate and undergraduate students on ocean biogeochemistry, global environmental change, satellite remote sensing, numerical ecosystem modeling, and biological oceanography. I also co-teach a field course on coral reef ecology as part of Stanford's Overseas Studies Program in Australia.

Professional Activities

Chair, Gordon Research Conference on Polar Marine Science, 2007; Editorial Board, Annual Reviews, 2006-present; IMBER/SOLAS Working Group for Carbon Research, 2005-present; Board of Governors, Alternate, Joint Oceanographic Institutions, 2004-present; Vice-Chair, Gordon Research Conference on Polar Marine Science, 2005; Member, Bering Sea Ecological Study (BEST) Committee, National Science Foundation, March 2003-present; Member, Committee on A Science Plan for the North Pacific Research Board, National Research Council of the National Academies, 2003-2005; Editor, Ross Sea Oceanography, Antarctic Science, Volume 15, 2003

PROJECTS

- Research Project - Stanford University
- Research Project - Stanford University

Teaching

COURSES

2021-22

- Biological Oceanography: EARTHSYS 151, EARTHSYS 251, ESS 151, ESS 251 (Spr)
- Introduction to Earth Systems: EARTHSYS 10 (Aut)
- Remote Sensing of the Oceans: EARTHSYS 141, EARTHSYS 241, ESS 141, ESS 241, GEOPHYS 141 (Win)
- The Oceans: An Introduction to the Marine Environment: ESS 8 (Spr)

2020-21

- Biological Oceanography: EARTHSYS 151, EARTHSYS 251, ESS 151, ESS 251 (Spr)
- Introduction to Earth Systems: EARTHSYS 10 (Aut)
- Marine Ecosystem Modeling: ESS 244 (Spr)
- Remote Sensing of the Oceans: EARTHSYS 141, EARTHSYS 241, ESS 141, ESS 241, GEOPHYS 141 (Win)
- The Oceans: An Introduction to the Marine Environment: EARTHSYS 8, ESS 8 (Spr)

2019-20

- Advanced Biological Oceanography: ESS 245 (Spr)
- Biological Oceanography: EARTHSYS 151, EARTHSYS 251, ESS 151, ESS 251 (Spr)
- Coral Reef Ecosystems: OSPAUSTL 10 (Aut)
- Introduction to Earth Systems: EARTHSYS 10 (Aut)
- Remote Sensing of the Oceans: EARTHSYS 141, EARTHSYS 241, ESS 141, ESS 241, GEOPHYS 141 (Win)
- The Oceans: An Introduction to the Marine Environment: EARTHSYS 8, ESS 8 (Spr)
- Topics in Earth System Science: ESS 301 (Aut)

2018-19

- Biological Oceanography: EARTHSYS 151, EARTHSYS 251, ESS 151, ESS 251 (Spr)
- Biology and Global Change: BIO 117, EARTHSYS 111, ESS 111 (Win)
- Introduction to Earth Systems: EARTHSYS 10 (Aut)
- Remote Sensing of the Oceans: EARTHSYS 141, EARTHSYS 241, ESS 141, ESS 241, GEOPHYS 141 (Win)

STANFORD ADVISEES

Master's Program Advisor

Poppy Brittingham

Doctoral (Program)

Stephanie Lim, Courtney Payne, Claudette Proctor

Publications

PUBLICATIONS

- **Springtime phytoplankton responses to light and iron availability along the western Antarctic Peninsula** *LIMNOLOGY AND OCEANOGRAPHY*
Joy-Warren, H. L., Alderkamp, A., van Dijken, G. L., Jabre, L., Bertrand, E. M., Baldonado, E. N., Glickman, M. W., Lewis, K. M., Middag, R., Seyitmuhammedov, K., Lowry, K. E., van de Poll, W., Arrigo, et al
2022
- **The distribution of Fe across the shelf of the Western Antarctic Peninsula at the start of the phytoplankton growing season** *MARINE CHEMISTRY*
Seyitmuhammedov, K., Stirling, C. H., Reid, M. R., van Hale, R., Laan, P., Arrigo, K. R., van Dijken, G., Alderkamp, A., Middag, R.
2022; 238
- **Warming of the Indian Ocean and its impact on temporal and spatial dynamics of primary production** *PROGRESS IN OCEANOGRAPHY*
Dalpadado, P., Arrigo, K. R., van Dijken, G. L., Gunasekara, S. S., Ostrowski, M., Bianchi, G., Sperfeld, E.
2021; 198
- **Fe-binding organic ligands in coastal and frontal regions of the western Antarctic Peninsula** *BIOGEOSCIENCES*
Ardiningsih, I., Seyitmuhammedov, K., Sander, S. G., Stirling, C. H., Reichart, G., Arrigo, K. R., Gerringa, L. A., Middag, R.
2021; 18 (15): 4587-4601
- **Physical Controls on the Macrofaunal Benthic Biomass in Barrow Canyon, Chukchi Sea** *JOURNAL OF GEOPHYSICAL RESEARCH-OCEANS*
Pickart, R. S., Spall, M. A., Lin, P., Bahr, F., McRaven, L. T., Arrigo, K. R., Grebmeier, J. M.

2021; 126 (5)

- **Massive Southern Ocean phytoplankton bloom fed by iron of possible hydrothermal origin.** *Nature communications*
Schine, C. M., Alderkamp, A., van Dijken, G., Gerringa, L. J., Sergi, S., Laan, P., van Haren, H., van de Poll, W. H., Arrigo, K. R.
2021; 12 (1): 1211
- **Response of Lower Sacramento River phytoplankton to high-ammonium wastewater effluent** *Elementa: Science of the Anthropocene*
Strong, A. L., Mills, M. M., Huang, I. B., van Dijken, G. L., Driscoll, S. E., Berg, G. M., Kudela, R. M., Monismith, S. G., Francis, C. A., Arrigo, K. R.
2021; 9(1)
- **Under-Ice Phytoplankton Blooms: Shedding Light on the "Invisible" Part of Arctic Primary Production** *FRONTIERS IN MARINE SCIENCE*
Ardyna, M., Mundy, C. J., Mayot, N., Matthes, L. C., Oziel, L., Horvat, C., Leu, E., Assmy, P., Hill, V., Matrai, P. A., Gale, M., Melnikov, I. A., Arrigo, et al
2020; 7
- **Dissolved Trace Metals in the Ross Sea** *FRONTIERS IN MARINE SCIENCE*
Gerringa, L. A., Alderkamp, A., van Dijken, G., Laan, P., Middag, R., Arrigo, K. R.
2020; 7
- **Comparison of Cloud-Filling Algorithms for Marine Satellite Data** *REMOTE SENSING*
Stock, A., Subramaniam, A., Van Dijken, G. L., Wedding, L. M., Arrigo, K. R., Mills, M. M., Cameron, M. A., Micheli, F.
2020; 12 (20)
- **Phytoplankton dynamics in a changing Arctic Ocean** *NATURE CLIMATE CHANGE*
Ardyna, M., Arrigo, K.
2020; 10 (10): 892–903
- **Summer High-Wind Events and Phytoplankton Productivity in the Arctic Ocean** *JOURNAL OF GEOPHYSICAL RESEARCH-OCEANS*
Crawford, A. D., Krumhardt, K. M., Lovenduski, N. S., van Dijken, G. L., Arrigo, K. R.
2020; 125 (9)
- **The Atlantic Water Boundary Current in the Chukchi Borderland and Southern Canada Basin** *JOURNAL OF GEOPHYSICAL RESEARCH-OCEANS*
Li, J., Pickart, R. S., Lin, P., Bahr, F., Arrigo, K. R., Juranek, L., Yang, X.
2020; 125 (8)
- **Environmental drivers of under-ice phytoplankton bloom dynamics in the Arctic Ocean** *ELEMENTA-SCIENCE OF THE ANTHROPOCENE*
Ardyna, M., Mundy, C. J., Mills, M. M., Oziel, L., Grondin, P., Lacour, L., Verin, G., Van Dijken, G., Ras, J., Alou-Font, E., Babin, M., Gosselin, M., Tremblay, et al
2020; 8
- **Unusual marine cyanobacteria/haptophyte symbiosis relies on N₂ fixation even in N-rich environments.** *The ISME journal*
Mills, M. M., Turk-Kubo, K. A., van Dijken, G. L., Henke, B. A., Harding, K., Wilson, S. T., Arrigo, K. R., Zehr, J. P.
2020
- **Climate effects on temporal and spatial dynamics of phytoplankton and zooplankton in the Barents Sea** *PROGRESS IN OCEANOGRAPHY*
Dalpadado, P., Arrigo, K. R., van Dijken, G. L., Skjoldal, H., Bagoien, E., Dolgov, A., Prokopchuk, I. P., Sperfelf, E.
2020; 185
- **Analysis of Iron Sources in Antarctic Continental Shelf Waters** *JOURNAL OF GEOPHYSICAL RESEARCH-OCEANS*
Dinniman, M. S., St-Laurent, P., Arrigo, K. R., Hofmann, E. E., van Dijken, G. L.
2020; 125 (5)
- **Light Is the Primary Driver of Early Season Phytoplankton Production Along the Western Antarctic Peninsula** *JOURNAL OF GEOPHYSICAL RESEARCH-OCEANS*
Joy-Warren, H. L., van Dijken, G. L., Alderkamp, A., Leventer, A., Lewis, K. M., Selz, V., Lowry, K. E., van de Poll, W., Arrigo, K. R.
2019
- **Characteristics and Transformation of Pacific Winter Water on the Chukchi Sea Shelf in Late Spring** *JOURNAL OF GEOPHYSICAL RESEARCH-OCEANS*
Pacini, A., Moore, G. K., Pickart, R. S., Nobre, C., Bahr, F., Vage, K., Arrigo, K. R.
2019
- **Zooplankton and micronekton respond to climate fluctuations in the Amundsen Sea polynya, Antarctica.** *Scientific reports*

- La, H. S., Park, K., Wahlin, A., Arrigo, K. R., Kim, D. S., Yang, E. J., Atkinson, A., Fielding, S., Im, J., Kim, T., Shin, H. C., Lee, S., Ha, et al
2019; 9 (1): 10087
- **Effects of iron and light availability on phytoplankton photosynthetic properties in the Ross Sea** *MARINE ECOLOGY PROGRESS SERIES*
Alderkamp, A., van Dijken, G. L., Lowry, K. E., Lewis, K. M., Joy-Warren, H. L., van de Poll, W., Laan, P., Gerringa, L., Delmont, T. O., Jenkins, B. D., Arrigo, K. R.
2019; 621: 33–50
 - **Water Mass Evolution and Circulation of the Northeastern Chukchi Sea in Summer: Implications for Nutrient Distributions** *JOURNAL OF GEOPHYSICAL RESEARCH-OCEANS*
Lin, P., Pickart, R. S., McRaven, L. T., Arrigo, K. R., Bahr, F., Lowry, K. E., Stockwell, D. A., Mordy, C. W.
2019; 124 (7): 4416–32
 - **Seasonal to mesoscale variability of water masses and atmospheric conditions in Barrow Canyon, Chukchi Sea** *DEEP-SEA RESEARCH PART II-TOPICAL STUDIES IN OCEANOGRAPHY*
Pickart, R. S., Nobre, C., Lin, P., Arrigo, K. R., Ashjian, C. J., Berchok, C., Cooper, L. W., Grebmeier, J. M., Hartwell, I., He, J., Itoh, M., Kikuchi, T., Nishino, et al
2019; 162: 32–49
 - **Benthic fluxes of trace metals in the Chukchi Sea and their transport into the Arctic Ocean** *MARINE CHEMISTRY*
Vieira, L. H., Achterberg, E. P., Scholten, J., Beck, A. J., Liebetau, V., Mills, M. M., Arrigo, K. R.
2019; 208: 43–55
 - **Fine-scale oceanographic features characterizing successful Adelie penguin foraging in the SW Ross Sea** *MARINE ECOLOGY PROGRESS SERIES*
Ballard, G., Schmidt, A. E., Toniolo, V., Veloz, S., Jongsomjit, D., Arrigo, K. R., Ainley, D. G.
2019; 608: 263–77
 - **Hydrothermal vents trigger massive phytoplankton blooms in the Southern Ocean.** *Nature communications*
Ardyna, M. n., Lacour, L. n., Sergi, S. n., d'Ovidio, F. n., Sallée, J. B., Rembauville, M. n., Blain, S. n., Tagliabue, A. n., Schlitzer, R. n., Jeandel, C. n., Arrigo, K. R., Claustre, H. n.
2019; 10 (1): 2451
 - **A DECISION FRAMEWORK FOR INTERVENTIONS TO INCREASE THE PERSISTENCE AND RESILIENCE OF CORAL REEFS**
Introduction *DECISION FRAMEWORK FOR INTERVENTIONS TO INCREASE THE PERSISTENCE AND RESILIENCE OF CORAL REEFS*
Palumbi, S. R., Anthony, K. N., Baker, A. C., Baskett, M. L., Bhattacharya, D., Bourne, D. G., Knowlton, N., Logan, C. A., Naish, K. A., Richmond, R. H., Smith, T. B., Von Stackelberg, K., Mayer, et al
2019: 19–32
 - **Nitrogen Limitation of the Summer Phytoplankton and Heterotrophic Prokaryote Communities in the Chukchi Sea** *FRONTIERS IN MARINE SCIENCE*
Mills, M. M., Brown, Z. W., Laney, S. R., Ortega-Retuerta, E., Lowry, K. E., van Dijken, G. L., Arrigo, K. R.
2018; 5
 - **Drivers of Ice Algal Bloom Variability Between 1980 and 2015 in the Chukchi Sea** *JOURNAL OF GEOPHYSICAL RESEARCH-OCEANS*
Selz, V., Saenz, B. T., van Dijken, G. L., Arrigo, K. R.
2018; 123 (10): 7037–52
 - **Phytoplankton and bacterial dynamics on the Chukchi Sea Shelf during the spring-summer transition** *MARINE ECOLOGY PROGRESS SERIES*
Connell, P. E., Michel, C., Meisterhans, G., Arrigo, K. R., Caron, D. A.
2018; 602: 49–62
 - **Optically-derived estimates of phytoplankton size class and taxonomic group biomass in the Eastern Subarctic Pacific Ocean** *DEEP-SEA RESEARCH PART I-OCEANOGRAPHIC RESEARCH PAPERS*
Zeng, C., Rosengard, S. Z., Burt, W., Pena, M., Nemcek, N., Zeng, T., Arrigo, K. R., Tortell, P. D.
2018; 136: 107–18
 - **Ice algal communities in the Chukchi and Beaufort Seas in spring and early summer: Composition, distribution, and coupling with phytoplankton assemblages** *LIMNOLOGY AND OCEANOGRAPHY*
Selz, V., Laney, S., Arnsten, A. E., Lewis, K. M., Lowry, K. E., Joy-Warren, H. L., Mills, M. M., van Dijken, G. L., Arrigo, K. R.
2018; 63 (3): 1109–33
 - **Carbon and nitrogen zooplankton isoscapes in West Antarctica reflect oceanographic transitions** *MARINE ECOLOGY PROGRESS SERIES*

- Brault, E. K., Koch, P. L., McMahon, K. W., Broach, K. H., Rosenfield, A. P., Sauthoff, W., Loeb, V. J., Arrigo, K. R., Smith, W. O.
2018; 593: 29–45
- **Exploring the Potential Impact of Greenland Meltwater on Stratification, Photosynthetically Active Radiation, and Primary Production in the Labrador Sea** *JOURNAL OF GEOPHYSICAL RESEARCH-OCEANS*
Oliver, H., Luo, H., Castelao, R. M., van Dijken, G. L., Mattingly, K. S., Rosen, J. J., Mote, T. L., Arrigo, K. R., Rennermalm, A. K., Tedesco, M., Yager, P. L.
2018; 123 (4): 2570–91
 - **Satellite sensor requirements for monitoring essential biodiversity variables of coastal ecosystems** *ECOLOGICAL APPLICATIONS*
Muller-Karger, F. E., Hestir, E., Ade, C., Turpie, K., Roberts, D. A., Siegel, D., Miller, R. J., Humm, D., Izenberg, N., Keller, M., Morgan, F., Frouin, R., Dekker, et al
2018; 28 (3): 749–60
 - **Microalgal community structure and primary production in Arctic and Antarctic sea ice: A synthesis** *ELEMENTA-SCIENCE OF THE ANTHROPOCENE*
van Leeuwe, M. A., Tedesco, L., Arrigo, K. R., Assmy, P., Campbell, K., Meiners, K. M., Rintala, J., Selz, V., Thomas, D. N., Stefels, J.
2018; 6
 - **Distribution of Phaeocystis antarctica-dominated sea ice algal communities and their potential to seed phytoplankton across the western Antarctic Peninsula in spring** *MARINE ECOLOGY PROGRESS SERIES*
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