Brian Kenneth Arbic–Curriculum Vitae

Department of Earth and Environmental Sciences
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Other U-M Affiliations:
Department of Climate and Space Sciences and Engineering (CLASP)–dry appointment
Applied Physics Program
African Studies Center
Michigan Institute for Computational Discovery and Engineering

Education

1994–2000	Ph.D., Physical Oceanography, *Massachusetts Institute of Technology/Woods Hole Oceanographic Institution Joint Program*
1984–1988	B.S., Physics (with distinction; high honors) and Mathematics, *University of Michigan*

Professional Positions

2010–present	Professor, Department of Earth and Environmental Sciences, *University of Michigan.* Associate Professor from 2015-2019, Assistant Professor from 2010-2015.
3/2018–8/2018	Visiting Professor, Laboratoire des Etudes en Géophysique et Océanographie Spatiale (LEGOS), *Université Toulouse III, Centre National de la Recherche Scientifique (CNRS), Centre National d'Études Spatiales (CNES), and Institut de Recherche pour le Développement (IRD)*, Toulouse, France
9/2017—2/2018	Visiting Professor, Institut des Géosciences de L'Environnement (IGE), *Université Grenoble Alpes, and Centre National de la Recherche Scientifique (CNRS)*, Grenoble, France
2008–2010	Assistant Professor, Department of Oceanography, *Florida State University*
2005–2008	Research Associate, Institute for Geophysics, Jackson School of Geosciences, *The University of Texas at Austin* Tenure-track research scientist position

2003–2005	Research Staff Member, Atmospheric and Oceanic Sciences Program, *Princeton University* Supervisor: Professor Jorge Sarmiento
2001–2003	Visiting Scientist, Atmospheric and Oceanic Sciences Program, *Princeton University* Postdoctoral hosts: Drs. Steve Garner and Robert Hallberg
1994–2000	Graduate Student Research Assistant, *Massachusetts Institute of Technology/Woods Hole Oceanographic Institution Joint Program* Doctoral thesis advisor: Professor Glenn Flierl Also collaborated with Dr. W. Brechner Owens
1993–1994	Research Assistant, Department of Geology, *University of Michigan* Supervisor: Professor Kenji Satake
1990–1992	Secondary School Teacher, *United States Peace Corps* Taught math and physics in rural secondary schools, first in Liberia (evacuated due to civil war), then in Ghana
1985–1988	Research Assistant, Physics Department, *University of Michigan* Senior thesis supervisor: Dr. Mark Skalsey
1984–1989	Miscellaneous Worked several odd jobs to finance undergraduate education and self

Honors and Awards

2019	John Dewey Award, University of Michigan

The John Dewey Award recipients are selected each year by the College of Literature, Science and Arts Executive Committee from among those recommended for promotion from associate professor to full professor with tenure. Award recipients have demonstrated long-term commitment to the education of undergraduate students.

2014	National Science Foundation (NSF) CAREER Award
1994	NSF Graduate Research Fellowship, declined in favor of:
1994–1997	Office of Naval Research-National Defense Science and Engineering Graduate Fellowship
1988	William Williams Undergraduate Thesis Award, Department of Physics, University of Michigan

Professional Service

2007–present	Member of proposal review panels for: NSF Physical Oceanography Program (3 times) NSF Office of Polar Programs Postdoctoral Fellows Program NASA Ocean Surface Topography Science Team (2 times)

2000–present	Reviewer of proposals for NSF (Physical Oceanography; Chemical Oceanography; Geophysics; and Office of Polar Programs), Naval Research Laboratory Postdoctoral Fellowship Program, United Kingdom Natural Environment Research Council, and Netherlands Organization for Scientific Research (NWO)
2000–present	Reviewer of manuscripts for multiple scientific journals, including *Earth's Future*, *Geophysical Research Letters*, *Journal of Geophysical Research Oceans*, *Journal of Physical Oceanography*, *Nature Geoscience*, *Ocean Dynamics*, *Ocean Modelling*, *Paleoceanography*, and several others.
2020–present	Lead of "Global Ocean Corps and Conveyor", a global capacity development programmme endorsed by the United Nations Decade of Ocean Science for Sustainable Development (`https://globaloceancorps.org`).
2014–present	Principal founder of Coastal Ocean Environment Summer School in Ghana, West Africa (`https://coessing.org`), a capacity development project endorsed by the United Nations Decade of Ocean Science for Sustainable Development.
2020–present	Co-lead of "EquiSea: The Ocean Science Fund for All" (`https://equisea.org`).
2022	Co-convenor of session on Capacity Development, American Geophysical Union Ocean Sciences Meeting, Virtual
2020	Co-convenor of town hall and poster session on Capacity Development, American Geophysical Union Ocean Sciences Meeting, San Diego, California
2019	Co-organizer of breakout session on Capacity Development, OceanObs19 meeting, Honolulu, Hawai'i
2017	Co-organizer, Arbitrary Lagrangian-Eulerian (ALE) Working Group Meeting, NOAA Silver Spring
2016	Lead organizer, Workshop on Improving Arbitrary Lagrangian-Eulerian (ALE) Ocean Modeling, NOAA Center for Weather and Climate Prediction
2006–2016	Co-convenor of sessions on tides at 2006, 2012, 2014, and 2016 American Geophysical Union Ocean Sciences meetings
2013	Primary organizer/host of 2013 Layered Ocean Model meeting, May 21-23, Ann Arbor, Michigan

University Service

2012–2017, 2020–present	STEM (Science, Technology, Engineering, Mathematics) Africa Steering Committee, African Studies Center
2021	Member, Reappointment Committee for Assistant Professor Ashley Payne, CLASP

2016–2017 University Fulbright Committee

2012–2017 ARCAT (Advanced Research Computing Advisory Team) Committee on University Supercomputing

Major Departmental Service

In the Department of Earth and Environmental Sciences at the University of Michigan:

2021 Chair, Postdoc to Faculty Transition Search Committee

2021 Member, Tenure and Promotion Committee for Professor Yihe Huang

2020–present Member, Departmental Admissions Committee

2019–present Faculty mentor for Yihe Huang

2019–2020 Strategic Plan Committee

2016–2017 Departmental Executive Committee (Member)

2016–2017 Geobiology and Biological Oceanography Faculty Search Committee

2015–2017 Departmental Faculty Ally for Diversity

2014–2015 Chair, Climate Change/Water Cycle Faculty Search Committee

2012–2013 Climate Change Faculty Search Committee

In the Department of Oceanography at Florida State University:

2008–2009 Member, search committee for faculty positions in climate cluster

In the Jackson School of Geosciences at The University of Texas at Austin:

2007–2008 Member, search committee for multiple permanent hires in Climate Systems Science. Committee made seven offers for permanent positions, five of which were accepted.

Doctoral Thesis and Preliminary Exam Committee Service

2010–present Not counting students in my research group, I have served on 11 doctoral thesis committees (9 at U-M, two in France) and 22 doctoral preliminary exam committees (all at U-M).

Hour-long Professional Seminars

2021-2022	Hour-long seminars on our Ghana oceanography summer school, performed with collaborators from Ghana and the US, were/will be given at University of North Carolina Wilmington, OASIS programme of the United Nations Decade of Sustainable Development, University of South Florida, Harvard University, NASA Jet Propulsion Laboratory, California Institute of Technology, and MIT.
2020-2021	Hour-long seminars on our Ghana oceanography summer school, performed with collaborators from Ghana and the US, were given at Lamont-Doherty Earth Observatory of Columbia University, University of Michigan, Woods Hole Oceanographic Institution, Oregon State University, University of Southern Mississippi, University of Rhode Island, Brown University, Scripps Institution of Oceanography, Universiti Sains Malaysia, Australian National University.
2013–2021	From 2013 through 2021, in addition to seminars on the Ghana school, delivered approximately 49 professional hour-long seminars on research topics, at venues throughout the United States, Canada, and Europe, including NOAA Geophysical Fluid Dynamics Laboratory, NASA Jet Propulsion Laboratory, Los Alamos National Laboratory, National Center for Atmospheric Research, University of Notre Dame, Stanford University, Columbia University, MIT, Woods Hole Oceanographic Institution, University of California San Diego, University of Toronto, McGill University, Australian National University, multiple laboratories in France, and others.
1998–2012	From 1998 through 2012, delivered approximately 120 professional hour-long seminars, at venues throughout the United States, Canada, United Kingdom, and France, including National Center for Atmospheric Research, Columbia University, Princeton University, MIT, Woods Hole Oceanographic Institution, University of Chicago, Johns Hopkins University, University of Washington, Oregon State University, University of California San Diego, University of Victoria, National Oceanography Centres in Liverpool and Southampton (United Kingdom), British Antarctic Survey, and others.

Professional Conference Presentations

2013–2021	From 2013 through 2021, delivered approximately 58 professional conference presentations, at venues throughout the United States, Canada, United Kingdom, France, Germany, Austrian, Japan, and Cameroon, including the Gordon Conference, American Geophysical Union Ocean Sciences meeting, American Geophysical Union Fall Meeting, CLIVAR (Climate Variability) program, project meetings for Office of Naval Research (ONR), Department of Energy (DOE), National Oceanic and Atmospheric Administration (NOAA), NASA Surface Water Ocean Topography (SWOT), NASA Ocean Surface Topography Science Team (OSTST), NSF Climate Process Team, and others.
1998–2012	From 1998 through 2012, delivered approximately 45 professional conference presentations, at venues throughout the United States, Canada, United Kingdom, and France, including the American Geophysical Union Ocean Sciences meeting, American Geophysical Union Fall Meeting (note invited talk in Fall 2008), European Geophysical Union meeting (note invited talk in Spring 2009), Chris Garrett 65th birthday Festschrift (2008; invited talk), University of Hamburg 2008 meeting on tide modeling (invited talk), University of Hamburg 2010 meeting on submesoscale motions (invited talk), and others.

Selected Community Outreach and Media

2020	Delivered February 15 Saturday Morning Physics lecture, *Ocean Modeling: Big computers, big science*
2020	Delivered two-hour class, *Understanding the ocean's role in Earth's climate*, to Ann Arbor Elderwise group on January 16.
2011	Delivered November 19 Saturday Morning Physics lecture, *Predicting the Maelstrom: The physics of the ocean*
1993–present	Have delivered numerous presentations on experience as math and science teacher in Peace Corps
Press & Media:	
2021	The Ocean Corps project was written up in article by the *University of Michigan Record*.
2021	The Klatt et al. 2021 paper is the number five paper in the history of *Nature Geosciences*, with respect to the amount of media coverage engendered, according to `https://nature.altmetric.com/details/110991165`.
2018	AGU's EOS ran a story on MS student Molly Range's project on modeling the tsunami caused by the Chicxulub asteroid impact.

2011–2012 A story on my Peace Corps experience and how it ultimately led to Ghanaian Joseph Ansong coming to work at U-M for a postdoc was posted on the University Record Online (December 12, 2011) and two other U-M sites.

2007–2008 Ayon Sen's research with Robert Scott and me at The University of Texas at Austin led to him being a national finalist in both the Intel Science Talent Search and the Siemens Competition in Math, Science, and Technology. Ayon's success was reported on in a U.S. News and World Report article and a Siemens press release.

Externally Funded Research Grants

"ONR" stands for "Office of Naval Research" and "DOE" denotes "Department of Energy". Other acronyms used: University of Michigan (U-M), University of Southern Mississipi (USM), Naval Research Laboratory (NRL), University of New Orleans (UNO), Johns Hopkins University (JHU), and Florida State University (FSU).

2020–2024 Lead PI on NASA grant *Predictability of stationary and non-stationary internal tides in the US Navy global hydrodynamical model* to U-M, USM, NRL, UNO, JHU, and FSU.

2020–2022 Sole PI on subcontract *Integrated Coastal Modeling*, from the DOE Pacific Northwest National Laboratory (PNNL). Subcontract is part of a large project led by PNNL, that includes Los Alamos National Laboratory (LANL), another DOE lab, and multiple academic institutions.

2019–2022 Sole PI on ONR grant *Modeling, characterizing, and predicting effects of internal gravity waves on acoustic propagation on basin to global scales* to U-M. Project is made up of related grants at Applied Research in Acoustics (ARiA), Applied Ocean Sciences, NRL, USM, and FSU.

2019–2022 Sole PI on NSF grant *Collaborative Research: Interactions between Internal Waves, Mesoscale Eddies, and Submesoscale Currents in the California Current System* to U-M. Amount includes one REU (Research Experiences for Undergraduates) supplemental award, and a second supplement to help fund the Coastal Ocean Environment Summer School in Ghana. Collaborators on related grants are at UCLA and USM.

2018–2021 Sole PI on ONR grant *Near-inertial waves in realistically forced HYCOM simulations with high-resolution atmospheric coupling* to U-M. Collaborators on related grants are at USM and NRL. Dates include one-year no-cost extension.

2017–2019 Sole PI on ONR grant *Connecting global HYCOM to FLEAT* to U-M.

2017–2022 Lead PI on NASA grant *Internal tides and waves in a high-resolution ocean general circulation model with data assimilation* to U-M, USM, NRL, FSU, and NASA Jet Propulsion Laboratory (JPL). Dates include one-year no-cost extension.

2016–2020 Lead PI on NASA grant *Modeling internal wave signals and their predictability for SWOT* to U-M, USM, NRL, and FSU. SWOT stands for "Surface Water Ocean Topography". It is a joint NASA/French space agency wide-swath satellite altimeter mission, with a planned launch in 2020.

2015–2018 Sole PI on subcontract to U-M from USM ONR grant *Improving global surface and internal tides through two-way coupling with high resolution coastal models.*

2014–2019 Sole PI on NSF CAREER Award *CAREER: Diagnosis of forced versus intrinsic low-frequency variability in high-resolution coupled climate models using geostrophic turbulence techniques* to U-M. Dates include one-year no-cost extension. Amount includes two REU (Research Experiences for Undergraduates) awards.

2013–2016 Lead PI on NASA grant *Application of high-resolution global simulations of tides embedded within an eddying general circulation model to SWOT mission planning* to U-M and NRL.

2011–2015 Sole PI on ONR grant *Insertion, validation, and application of barotropic and baroclinic tides in 1/12 and 1/25 degree HYCOM* to U-M.

2010–2016 Co-PI on NSF grant *Collaborative research: Representing internal-wave driven mixing in global ocean models.* Dates include one-year no-cost extension, preceded by two-year creativity extension granted in 2013. Multi-institution project led by Professor Jennifer MacKinnon (UC San Diego).

2010–2014 Lead PI on multiple institution NSF grant *Collaborative research: Impact of bottom boundary layer drag and topographic wave drag on the eddying general circulation.* Amount includes two REU (Research Experiences for Undergraduates) awards. Co-PIs/collaborators are from FSU, MIT, NOAA GFDL, WHOI, University of Oslo, Los Alamos National Laboratory, and University of Brest. End date includes one-year no-cost extension.

2007–2010 Co-PI on ONR grant *Effects of small-scale bathymetric roughness on the global internal wave field* to The University of Texas at Austin. Lead PI John Goff. Remaining funds transferred to FSU and expended there. End date includes one-year no-cost extension.

2006–2010 Co-PI on NSF grant *Collaborative research: Understanding tidal resonances in the present-day and ice-age oceans*, University of Texas portion $220,091. Collaborative grant with Columbia University. Remaining funds transferred to FSU and expended there. Amount includes one REU (Research Experiences for Undergraduates) award. End date includes one-year no-cost extension.

2006–2011 Sole PI on NRL contract to The University of Texas at Austin. Contract research laid groundwork for 2011 ONR grant to U-M as well as related $2.1M and $3.7M tide grants to FSU and NRL. Remaining funds transferred to FSU and expended there.

University Teaching Experience

"F" and "W" denote Fall and Winter semesters, respectively. "GEOSCI" courses became "EARTH" courses in the U-M course catalogue in 2012. Note Q1 asks whether the course is an excellent course, and Q2 asks whether the instructor is an excellent instructor. Both are rated on a scale of 1 to 5 with 1 being low and 5 being high. Q1 and Q2 scores have been discontinued beginning with the Fall 2021 semester.

Year	Term	Course	Credit hours	Enrollment	Q1/Q2
2021	F	EARTH 255	1	22	
2021	F	EARTH 421	3	22	
2021	W	EARTH 222	3	152	4.3/4.5
2020	F	EARTH 255	1	22	3.7/4.2
2020	F	EARTH 421	3	23	4.1/4.4
2020	W	EARTH 222	3	156	4.2/4.6
2019	F	EARTH 255	1	26	4.5/3.9
2019	F	EARTH 421	3	17	4.7/4.8
2018	F	EARTH 255	1	31	3.9/4.1
2018	F	EARTH 421	3	17	4.1/4.4
2017	W	EARTH 222	3	161	4.1/4.7
2016	F	EARTH 255	1	32	3.8/4.0
2016	F	EARTH 421	3	16	4.7/4.9
2016	W	EARTH 222	3	163	4.1/4.6
2015	F	EARTH 255	1	30	3.2/3.9
2015	F	EARTH 421	3	15	4.6/4.6
2015	W	EARTH 222	3	158	4.1/4.6
2014	F	EARTH 255	1	25	3.6/4.2
2014	F	EARTH 421	3	26	4.4/4.9
2014	W	EARTH 222	3	153	4.0/4.5
2014	W	EARTH 496	1	5	5.0/5.0
2013	F	EARTH 255	1	27	3.1/4.3
2013	W	EARTH 222	3	155	4.0/4.4
2013	W	EARTH 421	3	24	4.4/4.6
2012	W	EARTH 421	3	17	4.6/4.9
2011	F	GEOSCI 222	3	151	4.0/4.3
2011	W	GEOSCI 421	3	34	4.1/4.4
2009	F	Oceanography 1001	3	722	3.9/4.1

Further details of all courses:

EARTH 496 "Seminar in Physical Oceanography" is a 1-credit seminar course for upper level undergraduate and graduate students.

EARTH 421	"Introduction to Physical Oceanography" is a 3-credit course for upper level undergraduate and graduate students. From 2012 until COVID-19 struck, EARTH 421 included an optional 2-day field trip on the NOAA R/V Laurentian.
EARTH 255	"Introduction to Astronomy, Geology, and Climate Science" is an introductory 3-credit science course, designed at first for elementary education majors and now open to all. I cover 1/3 of the course.
EARTH 222	"Introductory Oceanography" is a 3-credit large-enrollment introductory course.
Oceanography 1001	"Elementary Oceanography" is a 3-credit large lecture course at Florida State University. I taught 3 sections of about 240 students each for 1/3 of term. Q1/Q2 scores given above are Florida State University equivalents.

Secondary School Teaching Experience

1990–1992	More than 2 years of full-time teaching experience in various mathematics and physics courses taught at Damongo Secondary School in northern Ghana, to approximately 1000 students, as a member of the United States Peace Corps. Also taught briefly in Liberia before evacuation due to civil war.

Postdoctoral and Research Scientist Mentees

2020–present	He Wang (PhD Princeton University). UCAR research scientist.
2020–present	Ritabrata Thakur (PhD International Centre for Theoretical Sciences of the Tata Institute of Fundamental Research, Bangalore, India).
2020–present	Joseph Skitka (PhD Brown University).
2017–2020	Arin Nelson (PhD University of Colorado). Now doing a second postdoc at University of Rhode Island.
2014–2017	Amanda O'Rourke (PhD Princeton University). Now Research Scientist at Johns Hopkins University Applied Physics Laboratory.
2011–2017	Joseph Ansong (PhD University of Alberta). Now Senior Lecturer (equivalent of tenured professor) in Department of Mathematics at University of Ghana.
2011–2013	David Trossman (PhD University of Washington). Now assistant professor at Louisiana State University.
2012–2013	Malte Müller (PhD University of Hamburg). Worked as a postdoctoral subcontractor from University of Victoria. Now Research Scientist at Norwegian Meteorological Institute.
2008–2012	Patrick Timko (PhD Memorial University of Newfoundland). Now Research Scientist at Environment Canada.

University of Michigan Graduate Students Supervised in Research

PhD Students:

2021–present	Lisa Nguyen (Applied Physics).
2021–present	Avik Mondal (Physics).
2020–present	Kristin Barton (Physics).
2013–2019	Paige Martin (Physics). Now a postdoc at Columbia University's Lamont-Doherty Earth Observatory.
2012–2018	Conrad Luecke (Earth and Environmental Sciences). Now a postdoc at Naval Research Laboratory.
2012–2017	Anna Savage (Applied Physics). Now a postdoc at Scripps Institution of Oceanography, University of California San Diego.
2010–2015	Alfredo Wetzel (Applied Math). Now living in New Zealand.
2010–2015	Andrew Morten (Physics). Now a "Software Engineer in Mathematical Optimization" at Mythic, a start-up in Silicon Valley.

MS Students:

2017–2018	Molly Range (Earth and Environmental Sciences major); co-supervised by emeritus professor Ted Moore. Now employed by Whirlpool.

Undergraduate Students Supervised in Research at University of Michigan

2021–present	Lingxiao Guan (Electrical Engineering and Computer Science major); co-supervised by Joseph Skitka and Ritabrata Thakur.
2021	Daniel Garcia (Electrical Engineering and Computer Science major); co-supervised by Joseph Skitka and Ritabrata Thakur.
2019–2021	Charles Light (Electrical Engineering and Computer Science major); co-supervised by Paige Martin and Arin Nelson.
2019–2021	Jonathan Brasch (Electrical Engineering and Computer Science major).
2016–2017	Ji Ye (Earth and Environmental Sciences major); principally supervised by graduate student Anna Savage.
2016–2017	Eliana Crawford (Physics major at Kenyon College); principally supervised by postdoc Joseph Ansong.
2016–2017	Molly Range (Earth and Environmental Sciences major); co-supervised by emeritus professor Ted Moore. Went on to receive an MS degree.
2014–2015	Andrew Miller (Earth and Environmental Sciences major); principally supervised by graduate students Anna Savage and Conrad Luecke.

2014–2016	Houraa Daher (AOSS major); principally supervised by postdoc Joseph Ansong.
2012–2014	Brandon Cloutier (Physics and Complex Systems double major); principally supervised by postdoc David Trossman.
2012–2014	Jeremy Upsal (Math major at University of Colorado); principally supervised by postdoc David Trossman.
2012	Caroline Kinstle (AOSS major); principally supervised by postdoc David Trossman.
2011–2015	Steve Bassette (Physics and Math double major)
2010–2012	Aaron Skiba (Aerospace Engineering major)
2010–2011	Libo Zeng (Physics major)

High School Students Supervised in Research at University of Michigan

2014	Hari Sharma, principally supervised by graduate student Anna Savage.

Undergraduate Students Supervised in Research at Florida State University

2009	Byron Conley (Physics major)
2009	Will Godwin (Physics major)
2009	Brian Rivera (Physics major)
2009	Joseph Molinari (Mathematics major)

High School Students Co-Supervised in Research with Collaborator Dr. Robert Scott, at The University of Texas at Austin

2008	Anson Varghese
2006–2007	Ayon Sen

Publications

ISI/Scopus/Google Scholar h-index as of April 6, 2022: 35/36/42
ISI/Scopus/Google Scholar citations as of April 6, 2022: 2948/3028/4313

Advisees are underlined. Note that some advisees, for instance Joseph Ansong, Paige Martin, Malte Müller, and Patrick Timko, have collaborated with me before and/or after the advisee relationship.

Manuscripts in-press/revision/review/advanced preparation:

Canavati, A., J. Toweh, A.C. Simon, A.C., and **B.K. Arbic** (2022), Electronic Graveyard: What is the solution to Ghana's e-waste dilemma? *World Development Perspectives*, in press. A. Canavati–Undergraduate Student; J. Toweh–Undergraduate Student.
Based upon research done by the first two authors (both University of Michigan undergraduates) during the 2016 Coastal Environment Summer School in Ghana (`https://coessing.org`). Partially funded by, and written up for, the Michigan Sustainability Cases project at the University of Michigan (`http://www.teachmsc.org/`).

Eberhard, E., J. Hicks, J., A.C. Simon, and **B.K. Arbic** (2022), Coping with cocoa complications: How do economic factors impact the land usage decisions of Ghanian cocoa farmers? *World Development Perspectives*, in press.
E. Eberhard–Undergraduate Student; J. Hicks–Undergraduate Student.. Also based upon work at 2016 COESSING.

Raja, K.J., M.C. Buijsman, J.F. Shriver, **B.K. Arbic**, and O. Siyanbola (2022), Near-inertial wave energetics modulated by background flows in global model simulations.

Ayaji, A., J. Le Sommer, L. Brodeau, **B.K. Arbic**, G. Sérazin, A. Albert, T. Uchida, and P. Klein (2022), On the modulation of kinetic energy transfer by internal gravity waves.

B.K. Arbic, S. Elipot, J.M. Brasch, D. Menemenlis, A.L. Ponte, J.F. Shriver, X. Yu, E.D. Zaron, M.H. Alford, M.C. Buijsman, R. Abernathey, D. Garcia, L. Guan, P.E. Martin, and A.D. Nelson (2022), Frequency dependence and vertical structure of ocean surface kinetic energy from global high-resolution models and surface drifter observations.
J.M. Brasch–Undergraduate Student; D. Garcia–Undergraduate Student;
L. Guan–Undergraduate Student; P.E. Martin–Graduate Student; A.D. Nelson–Postdoc.

Range, M.M., **B.K. Arbic**, B.C. Johnson, T.C. Moore, V. Titov, A.J. Adcroft, J.K. Ansong, C.J. Hollis, J. Ritsema, C.R. Scotese, and H. Wang (2022), The Chicxulub impact produced a powerful global tsunami. M.M. Range–Molly began project as an Undergraduate Student, then continued it as her MS project; J.K. Ansong—Postdoc.

Crawford, E.B., **B.K. Arbic**, N.D. Sheldon, J.K. Ansong, and P.G. Timko (2022), Investigating the behavior of mid-Archean tides and potential implications for biogeochemical cycling. E.B. Crawford–Undergraduate Student; J.K. Ansong–Postdoc.

Ansong, J.K., **B.K. Arbic**, A.D. Nelson, M.H. Alford, E. Kunze, D. Menemenlis, A.C. Savage, J.F. Shriver, A.J. Wallcraft, L. Zamudio, M.C. Buijsman, and J.G. Richman (2022a), Internal gravity wave kinetic energy spectra in global ocean models and observations.
J.K. Ansong–Postdoc; A.D. Nelson–Postdoc; A.C. Savage–Graduate Student.

Ansong, J.K., **B.K. Arbic**, D. Menemenlis, A.J. Wallcraft, R. Bourdalle-Badié, J. Chanut, F. Birol, M. Schindelegger, R.D. Ray, E.P. Chassignet, A.J. Adcroft, R.W. Hallberg, L. Carrère, G. Dibarboure, N. Picot, M.C. Buijsman, J.G. Richman, J.F. Shriver, C.N. Hill, M.R. Mazloff, A.T. Nguyen, R.M. Ponte, A. Koch-Larrouy, and F. Lyard (2022b), Importance of damping in comparison of internal tides in several hydrodynamical models with altimetry. J.K. Ansong–Postdoc.

Morten, A.J., **B.K. Arbic**, G.R. Flierl, and R.B. Scott (2022), Spatio-temporal spectral transfers in fluid turbulence: Theory and numerical results. A.J. Morten–Graduate Student.

Wetzel, A.N., **B.K. Arbic**, I. Cerovecki, M.C. Hendershott, R.H. Karsten, P.D. Miller, and J.F. Molinari (2022), On stratification, large-scale tides, and temporal changes in surface tidal elevations: Two-layer analytical model. A.N. Wetzel–Graduate Student; J.F. Molinari–Undergraduate Student.

Müller, M., **B.K. Arbic**, J.G. Richman, J.F. Shriver, and R.B. Scott (2022), Nonlinearities in westward propagating mesoscale eddies diagnosed from wavenumber-frequency spectra. M. Müller–Postdoc.

Peer-reviewed scientific journal articles:

2022

88) Light, C.X., **B.K. Arbic**, P.E. Martin, L. Brodeau, J.T. Farrar, S.M. Griffies, B.P. Kirtman, L.C. Laurindo, D. Menemenlis, A. Molod, A.D. Nelson, E. Nyadjro, A.K. ORourke, J.F. Shriver, L. Siqueira, R.J. Small, and E. Strobach (2022), Effects of grid spacing on high-frequency precipitation variance in coupled high-resolution global ocean-atmosphere models. *Climate Dynamics*.
https://doi.org/10.1007/s00382-022-06257-6.
C.X. Light–Undergraduate Student; P.E. Martin–Graduate Student; A.D. Nelson–Postdoc; A.K. O'Rourke–Postdoc.

2021

87) Shakespeare, C.J., **B.K. Arbic**, and A. McC. Hogg (2021), Dissipating and reflecting internal waves. *Journal of Physical Oceanography*. **51**, 2517-2531.
https://doi.org/10.1175/JPO-D-20-0261.1

86) Daher, H., **B.K. Arbic**, J.G. Williams, J.K. Ansong, D.H. Boggs, M. Müller, M. Schindelegger, J. Austermann, B.D. Cornuelle, E.B. Crawford, O.B. Fringer, H.C.P. Lau, S.J. Lock, A.C. Maloof, D. Menemenlis, J.X. Mitrovica, J.A.M. Green, and M. Huber (2021), Long-term Earth-Moon evolution with high-level orbit and ocean tide models. *Journal of Geophysical Research: Planets*. **126**, e2021JE006875.
https://doi.org/10.1029/2021JE006875
H. Daher–Undergraduate Student; J.K. Ansong–Postdoc; E.B. Crawford–Undergraduate Student.

85) Nazarian, R.H., C.M. Burns, S. Legg, M.C. Buijsman, H. Kaur, and **B.K. Arbic** (2021), On the magnitude of canyon-induced mixing. *Journal of Geophysical Research: Oceans*. **126**, e2021JC017671.
https://doi.org/10.1029/2021JC017671

84) Ray, R.D., J.-P. Boy, **B.K. Arbic**, G.D. Egbert, S.Y. Erofeeva, L. Petrov, and J.F. Shriver (2021), The Problematic ψ_1 ocean tide. *Geophysical Journal International*. **217**,

1181-1192.
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1988

1) **Arbic, B.K.**, S. Hatamian, M. Skalsey, J. Van House, and W. Zheng (1988), Angular correlation test of CPT in polarized positronium. *Physical Review A* **37**, 3189-3194.
https://doi.org/10.1103/PhysRevA.37.3189

Peer-reviewed book chapters:

2019

BC3) Contributing author to "Chapter 5: Changing ocean, marine ecosystems, and dependent communities." Coordinating lead authors: N.L. Bindoff, W.W.L. Cheung, and J.G. Kairo. 13 lead authors. 74 contributing authors including **B.K. Arbic**. *Intergovernmental Panel on Climate Change (IPCC) Special Report on the Ocean and Cryosphere in a Changing Climate*, September 2019.

2018

BC2) **Arbic, B.K.**, M.H. Alford, J.K. Ansong, M.C. Buijsman, R.B. Ciotti, J.T. Farrar, R.W. Hallberg, C.E. Henze, C.N. Hill, C.A. Luecke, D. Menemenlis, E.J. Metzger, M. Müller, A.D. Nelson, B.C. Nelson, H.E. Ngodock, R.M. Ponte, J.G. Richman, A.C. Savage, R.B. Scott, J.F. Shriver, H.L. Simmons, I. Souopgui, P.G. Timko, A.J. Wallcraft, L. Zamudio, and Z. Zhao (2018), A primer on global internal tide and internal gravity wave continuum modeling in HYCOM and MITgcm. In *"New Frontiers in Operational Oceanography"*, E. Chassignet, A. Pascual, J. Tintoré, and J. Verron, Eds., GODAE OceanView, 307-392.
https://doi.org/10.17125/gov2018.ch13
J.K. Ansong–Postdoc; C.A. Luecke–Graduate Student;
M. Müller–Postdoc; A.D. Nelson–Postdoc; A.C. Savage–Graduate Student;
P.G. Timko–Postdoc.

2001

BC1) Dickson, B., J. Hurrell, N. Bindoff, A. Wong, **B. Arbic**, W.B. Owens, S. Imakawi, and I. Yashayaev (2001), The world during WOCE. In *"Ocean Circulation and Climate"*, G. Siedler, J. Church, and J. Gould, Eds., Academic Press, London, pp. 557-583.

"Grey literature" contributions (white papers, mission documents, encyclopedia articles, etc.):

2021

GL9) Valauri-Orton, A., **B.K. Arbic**, J.R.B. Monsalve, G. Bonne, M.C. Ford, E. Mahu, C.

Park, and A.T.S. Hwai (2021), EquiSea: The Ocean Science Fund for All. *Marine Technology Society Journal*, **55**, 106-107.
https://doi.org/10.4031/MTSJ.55.3.41

2019

GL8) Buijsman, M.C., **B.K. Arbic**, S.M. Kelly, and A.F. Waterhouse (2019), Internal Gravity Waves. *Reference Module in Earth Systems and Environmental Sciences*, Encyclopedia of Ocean Sciences (Third edition), Elsevier **3**, 622-632.
https://doi.org/10.1016/B978-0-12-409548-9.04160-9

2017

GL7) One of the lead authors of white paper on *Arbitrary Lagrangian Eulerian (ALE) Working Group Meeting*, prepared in collaboration with developers and users of the GO2, HYCOM, and MOM6 ALE models.

2016

GL6) Lead author of white paper on *Workshop on Improving ALE Ocean Modeling*, prepared in collaboration with developers and users of the GO2, HYCOM, MOM6, and MPAS-OCEAN ALE models.

2015

GL5) Lead author of NASA/CNES SWOT mission white paper *Tides and the SWOT mission: Transition from Science Definition Team to Science Team*, posted on SWOT mission website.

GL4) One of 34 scientists listed as a workshop participant on the document *From space to the deep seafloor: Using SMART submarine cable systems in the ocean observing system, Report of Workshops*, Howe, B.M., and Workshop Participants, 9-10 October 2014, Pasadena, CA, and 26-28 May 2015, Honolulu, HI, 2015.

2014

GL3) **Arbic, B.K.**, M.C. Buijsman, E.P. Chassignet, S.T. Garner, S.R. Jayne, E.J. Metzger, J.G. Richman, J.F. Shriver, P.G. Timko, D.S. Trossman, and A.J. Wallcraft (2014), Inserting tides and topographic wave drag into high-resolution eddying simulations. *CLIVAR Exchanges* **65**, 30-33.

GL2) Chassignet, E.P., J.G. Richman, E.J. Metzger, X. Xu, P.G. Hogan, **B.K. Arbic**, and A.J. Wallcraft (2014), HYCOM high-resolution eddying simulations. *CLIVAR Exchanges* **65**, 22-25.

2012

GL1) One of 36 scientists listed as a contributing author to the mission document *SWOT: The Surface Water and Ocean Topography Mission*, Fu et al. 2012, Jet Propulsion Laboratory JPL-Publication 12-05, 228 pp.

Miscellaneous:

Research Cruise Experience–on Woods Hole Oceanographic Institution Directed Cruises:

1997	PRIMER Experiment, R/V Endeavor (4 days)
1997	World Ocean Circulation Experiment 52 West hydrographic section, R/V Knorr (25 days)
1996	GLOBEC experiment, R/V Endeavor (4 days)

Professional Society Memberships:

American Association for the Advancement of Science
American Geophysical Union
American Meteorological Society
The Oceanography Society
Union of Concerned Scientists