

Brian Kenneth Arbic—Curriculum Vitae

1

Department of Earth and Environmental Sciences
University of Michigan (U-M)
3020 North University Building
1100 North University Avenue
Ann Arbor, MI 48109-1005, USA
arbic@umich.edu; <https://arbic.earth.lsa.umich.edu>

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

- 2022 JPL Science Visitor and Colloquium Program, NASA JPL
Visited JPL for about three weeks, and gave 4 seminars.
- 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)
NASA Astrobiology

- 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.
- 2023–present Co-lead guest editor, Special issue on Capacity Sharing, *Oceanography* magazine, The Oceanography Society (<https://tos.org/capacity-sharing-special-issue>).
- 2023–present Co-chair, Working Group 9, with theme “Skills, knowledge and technology to all”, for the United Nations Decade of Ocean Science for Sustainable Development (<https://oceandecade.org>).
- 2023–present Member, Programme Committee, 2024 Ocean Decade Conference in Barcelona (<https://oceandecade.org/events/2024-ocean-decade-conference>).
- 2020–present Lead of “Global Ocean Corps and Conveyor”, a global capacity development programme endorsed by the United Nations Decade of Ocean Science for Sustainable Development (<https://globalocean corps.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

Brian Kenneth Arbic—Curriculum Vitae

4

- 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

- 2023–2024,
2025–2027 Member, Divisional Evaluation Committee, College of Literature, Science and the Arts. This committee evaluates all tenure and promotion cases in the natural science departments at U-M.
- 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:

- 2022–present Faculty mentor for incoming Assistant Professor Jessica Fayne
- 2023 Chair, Tenure and Promotion Committee for Professor Sierra Petersen
- 2022–2024 Departmental Executive Committee (Member)
- 2022 Member, ForALL Preview Committee
- 2022 Member, Postdoc to Faculty Transition Search Committee
- 2021 Chair, Postdoc to Faculty Transition Search Committee
- 2021 Member, Tenure and Promotion Committee for Professor Yihe Huang
- 2020–2022 Member, Departmental Admissions Committee
- 2019–2021 Faculty mentor for Assistant Professor 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 13 doctoral thesis committees (11 at U-M, two in France) and 25 doctoral preliminary exam committees (all at U-M).

Hour-long Professional Seminars

- 2020-2024 Hour-long seminars on our West Africa oceanography summer school, performed with collaborators from Ghana and the US, have been given at approximately 25 institutions.
- 2013–2024 From 1998 through 2024, in addition to seminars on the West Africa school, I have delivered approximately 170 professional hour-long seminars on research topics, at venues throughout the United States, Canada, United Kingdom, France, Austria, and Germany.

Professional Conference Presentations

- 2013–2024 From 1998 through 2024, have delivered approximately 100 professional conference presentations, at venues throughout the United States, Canada, United Kingdom, France, Germany, Austria, 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.

Selected Community Outreach and Media

- 2023 Co-delivered September 25 public outreach lecture at Chelsea Retirement Community on our Chicxulub impact megatsunami research.
- 2023 Co-delivered April 12 Science Café public outreach lecture on our Chicxulub impact megatsunami research.
- 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:

- 2022 As of December 24, 2023, the Range et al. 2022 paper is the number two paper in the history of *AGU Advances*, with respect to the amount of media coverage engendered, according to <https://nature.altmetric.com/details/136771691>.
- 2021 The Ocean Corps project was written up in article by the *University of Michigan Record*.
- 2021 As of December 24, 2023, the Klatt et al. 2021 paper is the number fifteen 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”.

- 2023–2026 Lead PI on NASA grant *Impact of changes in sea level and ocean stratification on tides and lunar orbital parameters* to U-M. Collaborators are at NASA JPL (which received a separate allotment of funds), NASA Goddard, and University of Bonn.
- 2023–2026 Lead PI on NSF grant *Collaborative Research: Probing internal gravity wave dynamics and dissipation using global observations and numerical simulations* to U-M. Amount includes support to run summer schools in Kenya in 2025 and 2026. Collaborators on related grants are at WHOI and USM, and NASA funds are used to support collaborators at NASA JPL.
- 2022–2025 Co-PI on subcontract *Diagnosis and validation of the time and spatial variability of remotely generated internal waves in global ocean simulations* from USM. Subcontract is part of a large ONR-funded project led by Maarten Buijsman at USM, that also includes NRL. Related projects, that Arbic is involved in as an unpaid collaborator, are led by Amy Waterhouse (Scripps Institution of Oceanography), Eric Chassignet (Florida State University), and Edward Zaron (Oregon State University). All of these projects are funded by a multi-agency call from the National Oceanographic Partnership Program (NOPP).
- 2022–2025 Sole PI on ONR grant *Expanding the Ghana/Nigeria oceanography summer school to include acoustics modules and relationships to UN Decade programmes*. Provided support for 2022, 2023, and 2023 summer schools in West Africa.
- 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.
- 2020–2024 Co-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. Dates include no-cost extensions.
- 2019–2023 Co-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. Dates include one-year no-cost extension.
- 2019–2024 Co-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. Dates include two-year no-cost extension.

- 2018–2021 Co-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 Co-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 were discontinued beginning with the Fall 2021 semester, but I add them in manually whenever I remember to do so.

Year	Term	Course	Credit hours	Enrollment	Q1/Q2
2023	F	EARTH 421	3	15	4.8/4.8
2023	W	EARTH 110	1	164	
2022	F	EARTH 255	1	36	4.0/3.8
2022	F	EARTH 421	3	18	4.3/4.2
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

University Teaching Experience Continued

Year	Term	Course	Credit hours	Enrollment	Q1/Q2
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” was 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 onwards (except for the height of COVID-19 in 2020 and 2021), EARTH 421 has included an optional 2-day field trip on the NOAA R/V Laurentian.

EARTH 255 “Introduction to Astronomy, Geology, and Climate Science” was an introductory 3-credit science course, designed at first for elementary education majors and then briefly made open to all before being discontinued. I covered 1/3 of the course.

EARTH 222 “Introductory Oceanography” is a 3-credit large-enrollment introductory course.

EARTH 110 “Evolving Oceans” is a 1-credit large-enrollment mini-course focused on anthropogenic changes to the oceans.

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

- 2024–present Siva Heramb Peddada (PhD Indian Institute of Technology Delhi, New Delhi, India).
- 2023–present Badarvada Yadidya (PhD Indian Institute of Technology Delhi, New Delhi, India).
- 2020–present He Wang (PhD Princeton University). UCAR Project Scientist II.
- 2020–2023 Ritabrata Thakur (PhD International Centre for Theoretical Sciences of the Tata Institute of Fundamental Research, Bangalore, India). Now a faculty member at Indian Institute of Technology Delhi.
- 2020–2023 Joseph Skitka (PhD Brown University). Now doing a second postdoc, at Woods Hole Oceanographic Institution.
- 2017–2020 Arin Nelson (PhD University of Colorado). Now Research Scientist at Naval Undersea Warfare Center.
- 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 employed as a contractor with University of Maryland ESSIC.
- 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:

- 2022–present Anthony Chen (Applied Math).
- 2021–present Lisa Nguyen (Applied Physics).
- 2021–present Avik Mondal (Physics).
- 2020–2023 Kristin Barton (Physics).
- 2013–2019 Paige Martin (Physics). Now a contractor, helping to write NASA’s Open Science Plan.
- 2012–2018 Conrad Luecke (Earth and Environmental Sciences). Now Research Scientist at Naval Research Laboratory.

- 2012–2017 Anna Savage (Applied Physics). Now employed by the private sector company Running Tide.
- 2010–2015 Alfredo Wetzel (Applied Math). Now employed in Australia.
- 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

- 2024–present Dan Nguyen (Data Science major); co-supervised by Badarvada Yadidya.
- 2021–2022 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 February 29, 2024: 41/42/47

ISI/Scopus/Google Scholar citations as of February 29, 2024: 4185/4486/6179

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:

Hiron, L., M.C. Schönau, K.J. Raja, E.P. Chassignet, M.C. Buijsman, **B.K. Arbic**, A. Bozec, E.M.C. Coelho, and M. Solano (2024), The influence of vertical resolution on internal tide energetics and subsequent effects on acoustic propagation.

Skitka, J., **B.K. Arbic**, Y. Ma, K. Momeni, Y. Pan, W.R. Peltier, D. Menemenlis, and R. Thakur (2024), Internal-wave dissipation mechanisms and vertical structure in a high-resolution regional ocean model. J. Skitka–Postdoc; R. Thakur–Postdoc.

Schönau, M.C., L. Hiron, J. Ragland, K.J. Raja, J. Skitka, M.S. Solano, X. Xu, **B.K. Arbic**, M.C. Buijsman, E.P. Chassignet, E. Coelho, R.W. Helber, J.F. Shriver, J.E. Summers, K.L. Verlinden, and A.J. Wallcraft (2024), An overview to modeling, characterizing, and predicting the effects of internal gravity waves on acoustic propagation at basin to global

scales. J. Skitka—Postdoc.

Buijsman, M.C., **B.K. Arbic**, E.P. Chassignet, L. Hiron, J.F. Shriver, M. Solano, and X. Xu (2024), Variance in baroclinic modes across frequency bands in a global ocean simulation with atmospheric and tidal forcing.

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 (2024), Importance of damping in comparison of internal tides in several hydrodynamical models with altimetry. J.K. Ansong—Postdoc.

Mondal, A., A.J. Morten, **B.K. Arbic**, G.R. Flierl, R.B. Scott, and J. Skitka (2024), Spatio-temporal spectral transfers in fluid turbulence: Theory and numerical results.

A. Mondal and A.J. Morten—Graduate Students; J. Skitka—Postdoc.

Wetzel, A.N., **B.K. Arbic**, I. Cerovecki, M.C. Hendershott, R.H. Karsten, P.D. Miller, and J.F. Molinari (2024), 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 (2024), Nonlinearities in westward propagating mesoscale eddies diagnosed from wavenumber-frequency spectra. M. Müller—Postdoc.

Peer-reviewed scientific journal articles:

2024

113) Siyanbola, O.Q., M.C. Buijsman, A. Delpech, R. Barkan, Y. Pan, and **B.K. Arbic** (2024), Interactions of remotely generated internal tides with the U.S. West Coast continental margin.

Journal of Geophysical Research Oceans **129**, e2023JC020859.

<https://doi.org/10.1029/2023JC020859>

112) Momeni, K., Y. Ma, W.R. Peltier, D. Menemenlis, R. Thakur, Y. Pan, **B.K. Arbic**, J. Skitka, and M.H. Alford (2024), Breaking internal waves and ocean diapycnal diffusivity in a high-resolution regional ocean model: Evidence of a wave-turbulence cascade.

Journal of Geophysical Research Oceans **129**, e2023JC020509.

<https://doi.org/10.1029/2023JC020509>

R. Thakur—Postdoc; J. Skitka—Postdoc.

111) 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, and M.C. Buijsman (2024), Surface and subsurface kinetic energy wavenumber-frequency spectra in global ocean models and observations. *Journal of Geophysical Research Oceans* **129**, e2023JC020480.

<https://doi.org/10.1029/2023JC020480>

J.K. Ansong—Postdoc; A.D. Nelson—Postdoc; A.C. Savage—Graduate Student.

110) Wang, H., R. Hallberg, A.J. Wallcraft, **B.K. Arbic**, and E.P. Chassignet (2024), Improving global barotropic tides with sub-grid scale topography. *Journal of Advances in Modeling Earth Systems* **16**, e2023MS004056.

<https://doi.org/10.1029/2023MS004056>

H. Wang—UCAR Project Scientist II.

109) Delpech, A., R. Barkan, K. Srinivasan, J.C. McWilliams, **B.K. Arbic**, O.Q. Siyanbola, and M.C. Buijsman (2024), Eddy-internal wave interactions and their contribution to cross-scale energy fluxes: A case study in the California Current. *Journal of Physical Oceanography* **54**, 741-754.

<https://doi.org/10.1175/JPO-D-23-0181.1>

108) Raja, K.J., M.C. Buijsman, A. Bozec, R.W. Helber, J.F. Shriver, A. Wallcraft, E.P. Chassignet, and **B.K. Arbic** (2024), Spurious internal wave generation during data assimilation in eddy resolving ocean model simulations. *Ocean Modelling* **188**, 102430.

<https://doi.org/10.1016/j.ocemod.2024.102340>

107) Yadidya, B., **B.K. Arbic**, J.F. Shriver, A.D. Nelson, E.D. Zaron, M.C. Buijsman, and R. Thakur (2024), Phase-accurate internal tides in a global ocean forecast model: Potential applications for nadir and wide-swath altimetry. *Geophysical Research Letters* **51**, e2023GL107232.

<https://doi.org/10.1029/2023GL107232>

Link to EOS story on paper:

<https://eos.org/research-spotlights/step-aside-internal-tides-supercomputer-modeling-imp>

B. Yadidya—Postdoc; R. Thakur—Postdoc.

106) Skitka, J., **B.K. Arbic**, R. Thakur, D. Menemenlis, W.R. Peltier, Y. Pan, K. Momeni, and Y. Ma (2024), Probing the nonlinear interactions of supertidal internal waves using a high-resolution regional ocean model. *Journal of Physical Oceanography* **54**, 399-425.

<https://doi.org/10.1175/JPO-D-22-0236.1>

J. Skitka—Postdoc; R. Thakur—Postdoc.

2023

105) Solano, M.S., M.C. Buijsman, J.F. Shriver, J. Magalhaes, J. da Silva, C. Jackson, **B.K. Arbic**, and R. Barkan (2023), Nonlinear internal tides in a realistically forced global ocean simulation. *Journal of Geophysical Research Oceans* **128**, e2023JC019913.

<https://doi.org/10.1029/2023JC019913>

104) Geoffroy, G., J. Nycander, M.C. Buijsman, J.F. Shriver, and **B.K. Arbic** (2023), Validating the spatial variability in the semidiurnal internal tide in a realistic global ocean simulation with Argo and mooring data. *Ocean Science* **19**, 811-835.

<https://doi.org/10.5194/os-19-811-2023>

103) Delpech, A., R. Barkan, L. Renault, J. McWilliams, O.Q. Siyanbola, M.C. Buijsman, and **B.K. Arbic** (2023), Wind-current feedback is an energy sink for oceanic internal waves.

Scientific Reports, **13**, 5915.

<https://doi.org/10.1038/s41598-023-32909-6>

102) Pal, N., K.N. Barton, M.R. Petersen, S.R. Brus, D. Engwirda, **B.K. Arbic**, A.F. Roberts, J.J. Westerink, and D. Wirasaet (2023), Barotropic tides in MPAS-Ocean (E3SM V2): Impact of ice shelf cavities. *Geoscientific Model Development*, **16**, 1297-1314.

<https://doi.org/10.5194/gmd-16-1297-2023>

K.N. Barton—Graduate Student.

101) Brus, S.R., K.N. Barton, N. Pal, A.F. Roberts, D. Engwirda, M.R. Petersen, **B.K. Arbic**, D. Wirasaet, J.J. Westerink, and M. Schindelegger (2023), Scalable self attraction and loading calculations for unstructured ocean tide models. *Ocean Modelling* **182**, 102160.

<https://doi.org/10.1016/j.ocemod.2023.102160>

K.N. Barton—Graduate Student.

100) Siyanbola, O.Q., M.C. Buijsman, A. Delpech, L. Renault, R. Barkan, J.F. Shriver, **B.K. Arbic**, and J.C. McWilliams (2022), Remote internal wave forcing of regional ocean simulations near the U.S. West Coast. *Ocean Modelling* **181**, 102154.

<https://doi.org/10.1016/j.ocemod.2022.102154>

2022

99) Barton, K.N., N. Pal, S.R. Brus, M.R. Petersen, **B.K. Arbic**, D. Engwirda, A.F. Roberts, J.J. Westerink, D. Wirasaet, and M. Schindelegger (2022), Global barotropic tide modeling using inline self-attraction and loading in MPAS-Ocean. *Journal of Advances in Modeling Earth Systems* **14**, e2022MS003207.

<https://doi.org/10.1029/2022MS003207>

Link to Editor's highlight of paper in EOS:

<https://eos.org/editor-highlights/accurate-ocean-tides-for-earth-system-models>

K.N. Barton—Graduate Student.

98) **Arbic, B.K.**, 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), Near-surface oceanic kinetic energy distributions from drifter observations and numerical models. *Journal of Geophysical Research: Oceans*, **127**, e2022JC018551.

<https://doi.org/10.1029/2022JC018551>

J.M. Brasch—Undergraduate Student; D. Garcia—Undergraduate Student;

L. Guan—Undergraduate Student; P.E. Martin—Graduate Student; A.D. Nelson—Postdoc.

97) Xu, X., E.P. Chassignet, A.J. Wallcraft, **B.K. Arbic**, M.C. Buijsman, and M. Solano (2022), On the spatial variability of the mesoscale sea surface height wavenumber spectra in the Atlantic Ocean. *Journal of Geophysical Research: Oceans*, **127**, e2022JC018769.

<https://doi.org/10.1029/2022JC018769>

96) 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. *AGU Advances*, **3**, e2021AV000627.

<https://doi.org/10.1029/2021AV000627>

M.M. Range—Molly began project as an Undergraduate Student, then continued it as her MS project; J.K. Ansong—Postdoc; H. Wang—UCAR Project Scientist II.

95) 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. *Precambrian Research*, **380**, 106799.

<https://doi.org/10.1016/j.precamres.2022.106799>

E.B. Crawford—Undergraduate Student; J.K. Ansong—Postdoc.

94) Thakur, R., **B.K. Arbic**, D. Menemenlis, K. Momeni, Y. Pan, W.R. Peltier, J. Skitka, M.H. Alford, and Y. Ma (2022), Impact of vertical mixing parameterizations on internal gravity wave spectra in regional ocean models. *Geophysical Research Letters*, **49**, e2022GL099614.

<https://doi.org/10.1029/2022GL099614>

R. Thakur—Postdoc; J. Skitka—Postdoc.

93) **Arbic, B.K.** (2022), Incorporating tides and internal gravity waves within global ocean general circulation models: A review. *Progress in Oceanography*, **206**, 102824.

<https://doi.org/10.1016/j.pocean.2022.102824>

92) Uchida, T., J. Le Sommer, C. Stern, R.P. Abernathey, C. Holdgraf, A. Albert, L. Brodeau, E.P. Chassignet, X. Xu, J. Gula, G. Roullet, N. Koldunov, S. Danilov, Q. Wang, D. Menemenlis, C. Bricaud, **B.K. Arbic**, J. F. Shriver, F. Qiao, B. Xiao, A. Biastoch, R. Schubert, B. Fox-Kemper, W.K. Dewar, and A. Wallcraft (2022), Cloud-based framework for inter-comparing submesoscale-permitting realistic ocean models. *Geoscientific Model Development*, **15**, 5829-5856.

<https://doi.org/10.5194/gmd-15-5829-2022>

91) Canavati, A., J. Toweh, A.C. Simon, A.C., and **B.K. Arbic** (2022), The world's electronic graveyard: What is the solution to Ghana's e-waste dilemma? *World Development Perspectives*. **26**, 100433.

<https://doi.org/10.1016/j.wdp.2022.100433>

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/>).

90) Eberhard, E.K., J. Hicks, J., A.C. Simon, and **B.K. Arbic** (2022), Livelihood considerations in land-use decision making: Cocoa and mining in Ghana. *World Development Perspectives*. **26**, 100417.

<https://doi.org/10.1016/j.wdp.2022.100417>

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/>).

89) 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 a global model simulation. *Journal*

of *Physical Oceanography*. **52**, 823-840.

<https://doi.org/10.1175/JPO-D-21-0130.1>

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. O'Rourke, 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*. **59**, 2887-2913.

<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. Schindegger, 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>

Wiley Top Downloaded article. One of the most downloaded 2021 articles for this journal during its first 12 months of publication.

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.

<https://doi.org/10.1093/gji/ggab263>

83) Klatt, J.M., A. Chennu, **B.K. Arbic**, B.A. Biddanda, and G.J. Dick (2021), Possible link between Earth's rotation rate and oxygenation. *Nature Geoscience*. **14**, 564-570.

<https://doi.org/10.1038/s41561-021-00784-3>

82) Nyadjro, E.S., **B.K. Arbic**, C.E. Buckingham, P.E. Martin, E. Mahu, J.K. Ansong, J. Adjetey, E. Nyarko, and K. Appeaning Addo (2021), Enhancing satellite oceanography-driven research in West Africa: a case study of capacity development in an underserved region. *Remote Sensing in Earth Systems Sciences*.

<https://doi.org/10.1007/s41976-021-00051-4>

81) Moskel, J.M., E.L. Shroyer, S. Rowe, M.D. Needham, and **B.K. Arbic** (2021), The Coastal Ocean Environment Summer School in Ghana: Exploring the research capacity building potential of a higher education informal science learning program. *Journal of Higher Education Outreach and Engagement* **25**, 187-214.

<https://openjournals.libs.uga.edu/jheoe/article/view/1488>

80) International Altimetry Team* (2021), Altimetry for the future: Building on 25 years of progress. *Advances in Space Research* **68**, 319-363.

<https://doi.org/10.1016/j.asr.2021.01.022>

*Approximately 400 co-authors including **B.K. Arbic**.

79) Shakespeare, C.J., **B.K. Arbic**, and A. McC. Hogg (2021), The impact of abyssal hill roughness on the benthic tide. *Journal of Advances in Modeling Earth Systems* **13**, e2020MS002376.

<https://doi.org/10.1029/2020MS002376>

78) Martin, P.E., **B.K. Arbic**, and A. McC. Hogg (2021), Drivers of atmospheric and oceanic surface temperature variance: A frequency domain approach. *Journal of Climate* **34**, 3975-3990.

<https://doi.org/10.1175/JCLI-D-20-0557.1>

P.E. Martin—Graduate Student.

77) Carrère, L., **B.K. Arbic**, B. Dushaw, G. Egbert, S. Erofeeva, F. Lyard, R.D. Ray, C. Ubelmann, E. Zaron, Z. Zhao, J.F. Shriver, M.C. Buijsman, and N. Picot (2021), Accuracy assessment of global internal tide models using satellite altimetry. *Ocean Science* **17**, 147-180.

<https://doi.org/10.5194/os-17-147-2021>

2020

76) Shakespeare, C.J., **B.K. Arbic**, and A. McC. Hogg (2020), The drag on the barotropic tide due to the generation of baroclinic motion. *Journal of Physical Oceanography* **50**, 3467-3481.

<https://doi.org/10.1175/JPO-D-19-0167.1>

75) Pan, Y., **B.K. Arbic**, A.D. Nelson, D. Menemenlis, W.R. Peltier, W. Xu, and Y. Li (2020), Numerical investigation of mechanisms underlying oceanic internal gravity wave power-law spectra. *Journal of Physical Oceanography* **50**, 2713-2733.

<https://doi.org/10.1175/JPO-D-20-0039.1>

A.D. Nelson—Postdoc.

74) Buijsman, M.C., G.R. Stephenson, J.K. Ansong, **B.K. Arbic**, J.A.M. Green, J.G. Richman, J.F. Shriver, C. Vic, A.J. Wallcraft, and Z. Zhao (2020), On the interplay between horizontal resolution and wave drag and their effect on tidal baroclinic mode waves in realistic global ocean simulations. *Ocean Modelling* **152**, 101656.

<https://doi.org/10.1016/j.ocemod.2020.101656>

J.K. Ansong—Postdoc.

73) Luecke, C.A., **B.K. Arbic**, J.G. Richman, J.F. Shriver, M.H. Alford, J.K. Ansong,

S.L. Bassette, M.C. Buijsman, D. Menemenlis, R.B. Scott, P.G. Timko, G. Voet, A.J. Wallcraft, and L. Zamudio (2020), Statistical comparisons of temperature variance and kinetic energy in global ocean models and observations: Results from mesoscale to internal wave frequencies. *Journal of Geophysical Research Oceans* **125**, e2019JC015306.

<https://doi.org/10.1029/2019JC015306>

C.A. Luecke—Graduate Student;

J.K. Ansong—Postdoc; S.L. Bassette—Undergraduate Student; PG. Timko—Postdoc.

72) Nelson, A.D., **B.K. Arbic**, D. Menemenlis, W.R. Peltier, M.H. Alford, N. Grisouard, and J.M. Klymak (2020), Improved internal wave spectral continuum in a regional ocean model. *Journal of Geophysical Research Oceans* **125**, e2019JC015974.

<https://doi.org/10.1029/2019JC015974>

A.D. Nelson—Postdoc.

71) Haigh, I.D., M.D. Pickering, J.A.M. Green, **B.K. Arbic**, A. Arns, S. Dangendorf, D.F. Hill, K. Horsburgh, T. Howard, D. Idier, D.A. Jay, L. Jänicke, S.B. Lee, M. Müller, M. Schindelegger, S.A. Talke, S.-B. Wilmes, and P.L. Woodworth (2020), The tides they are a-changin’: A comprehensive review of past and future non-astronomical changes in tides, their driving mechanisms, and future implications. *Reviews of Geophysics* **57**, e2018RG000636.

<https://doi.org/10.1029/2018RG000636>

70) Martin, P.E., **B.K. Arbic**, A. McC. Hogg, A.E. Kiss, J.R. Munroe, and J.R. Blundell (2020), Frequency-domain analysis of the energy budget in an idealized, coupled ocean-atmosphere model. *Journal of Climate* **33**, 707-726.

<https://doi.org/10.1175/JCLI-D-19-0118.1>

P.E. Martin—Graduate Student.

2019

69) Sulpis, O., C.O. Dufour, D.S. Trossman, A.J. Fassbender, **B.K. Arbic**, B.P. Boudreau, J.P. Dunne, and A. Mucci (2019), Reduced CaCO₃ flux to the seafloor and weaker bottom current speeds curtail benthic CaCO₃ dissolution over the 21st century. *Global Biogeochemical Cycles* **33**, 1654-1673.

<https://doi.org/10.1029/2019GB006230>

D.S. Trossman—Postdoc.

68) **B.K. Arbic**, O.B. Fringer, J.M. Klymak, F.T. Mayer, D.S. Trossman, and P. Zhu (2019), Connecting process models of topographic wave drag to global eddying general circulation models. *Oceanography* **32**, 146-155.

<https://doi.org/10.5670/oceanog.2019.420>

Included in Special issue “FLEAT: FLOW Encountering Abrupt Topography”.

D.S. Trossman—Postdoc.

67) Johnston, T.M.S., M.C. Schönau, T. Paluszkiwicz, J.A. MacKinnon, **B.K. Arbic**, P.L. Colin, M.H. Alford, M. Andres, L. Centurioni, H.C. Graber, K.R. Helfrich, V. Hormann, P.F.J. Lermusiaux, R.C. Musgrave, B.S. Powell, B. Qiu, D.L. Rudnick, H.L. Simmons, L. St. Laurent, E.J. Terrill, D.S. Trossman, G. Voet, H.W. Wijesekera, and K.L. Zeiden (2019),

Flow Encountering Abrupt Topography (FLEAT): A multiscale observational and modeling program to understand how topography affects flows in the western North Pacific. *Oceanography* **32**, 10-21.

<https://doi.org/10.5670/oceanog.2019.407>

Included in Special issue “FLEAT: FLOW Encountering Abrupt Topography”.

D.S. Trossman—Postdoc.

66) Nelson, A.D., **B.K. Arbic**, E.D. Zaron, A.C. Savage, J.G. Richman, M.C. Buijsman, and J.F. Shriver (2019), Toward realistic nonstationarity of semidiurnal baroclinic tides in a hydrodynamic model. *Journal of Geophysical Research Oceans* **124**, 6632-6642.

<https://doi.org/10.1029/2018JC014737>

A.D. Nelson—Postdoc; A.C. Savage—Graduate Student.

65) Howe, B.M., **B.K. Arbic**, J. Aucan, C.R. Barnes, N. Bayliff, N. Becker, R. Butler, L. Doyle, S. Elipot, G.C. Johnson, F. Landerer, S. Lentz, D.S. Luther, M. Müller, J. Mariano, K. Panayotou, C. Rowe, H. Ota, Y.T. Song, M. Thomas, P.N. Thomas, P. Thompson, F. Tilmann, T. Weber, and S. Weinstein (2019), SMART cables for observing the global ocean: Science and implementation. *Frontiers in Marine Science* **6:424**.

<https://doi.org/10.3389/fmars.2019.00424>

64) Sprintall, J., A.L. Gordon, S.E. Wijffels, M. Feng, S. Hu, A. Koch-Larrouy, H. Phillips, D. Nugroho, A. Napitu, K. Pujiana, R.D. Susanto, B. Sloyan, D. Yuan, N.F. Riama, S. Siswanto, A. Kuswardani, Z. Arifin, A.J. Wahyudi, H. Zhou, T. Nagai, J.K. Ansong, R. Bourdalle-Badié, J. Chanut, F. Lyard, **B.K. Arbic**, A. Ramdhani, and A. Setiawan (2019), Detecting change in the Indonesian Seas. *Frontiers in Marine Science* **6:257**.

<https://doi.org/10.3389/fmars.2019.00257>

63) Jeon, C.-H., M.C. Buijsman, A.J. Wallcraft, J.F. Shriver, **B.K. Arbic**, J.G. Richman, and P.G. Hogan (2019), Improving surface tidal accuracy through two-way nesting in a global ocean model. *Ocean Modelling* **137**, 98-113.

<https://doi.org/10.1016/j.ocemod.2019.03.007>

62) Timko, P.G., **B.K. Arbic**, P. Hyder, J.G. Richman, L. Zamudio, E. O’Dea, A.J. Wallcraft, and J.F. Shriver (2019), Assessment of shelf sea tides and tidal mixing fronts in a global ocean model. *Ocean Modelling* **136**, 66-84.

<https://doi.org/10.1016/j.ocemod.2019.02.008>

2018

61) Sulpis, O., B.P. Boudreau, A. Mucci, C. Jenkins, D.S. Trossman, **B.K. Arbic**, and R.M. Key (2018), Current CaCO₃ dissolution at the seafloor caused by anthropogenic CO₂, *Proceedings of the National Academy of Sciences of the United States of America* **115**, 11700-11705.

<https://doi.org/10.1073/pnas.1811488115>

D.S. Trossman—Postdoc.

60) Ansong, J.K., **B.K. Arbic**, H.L. Simmons, M.H. Alford, M.C. Buijsman, P.G. Timko, J.G. Richman, J.F. Shriver, and A.J. Wallcraft (2018), Geographical distribution of diur-

nal and semidiurnal parametric subharmonic instability in a global ocean circulation model. *Journal of Physical Oceanography* **48**, 1409-1431.

<https://doi.org/10.1175/JP0-D-17-0164.1>

J.K. Ansong—Postdoc; P.G. Timko—Postdoc.

59) Sérazin, G., T. Penduff, B. Barnier, J.-M. Molines, **B.K. Arbic**, M. Müller, and L. Terray (2018), Inverse cascades of kinetic energy as a source of intrinsic variability: A global OGCM study. *Journal of Physical Oceanography* **48**, 1385-1408.

<https://doi.org/10.1175/JP0-D-17-0136.1>

M. Müller—Postdoc.

58) O'Rourke, A.K., **B.K. Arbic**, and S.M. Griffies (2018), Frequency-domain analysis of atmospherically forced versus intrinsic ocean surface kinetic energy variability in GFDL's CM2-O model hierarchy. *Journal of Climate* **31**, 1789-1810.

<https://doi.org/10.1175/JCLI-D-17-0024.1>

A.K. O'Rourke—Postdoc.

57) Oliphant, E., M. Finlay, A.C. Simon, and **B.K. Arbic** (2018), Biofuels: Beneficial or bad? Should a Ghanaian chief sell his land for biofuel crop cultivation? *Sustainability* **11**, 16-23.

<https://doi.org/10.1089/sus.2018.29121.eo>

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/>).

2017

56) MacKinnon, J.A., Z. Zhao, C.B. Whalen, A.F. Waterhouse, D.S. Trossman, O.M. Sun, L.C. St. Laurent, H.L. Simmons, K. Polzin, R. Pinkel, A. Pickering, N.J. Norton, J.D. Nash, R. Musgrave, L.M. Merchant, A.V. Melet, B. Mater, S. Legg, W.G. Large, E. Kunze, J.M. Klymak, M. Jochum, S.R. Jayne, R.W. Hallberg, S.M. Griffies, S. Diggs, G. Danabasoglu, E.P. Chassignet, M.C. Buijsman, F.O. Bryan, B.P. Briegleb, A. Barna, **B.K. Arbic**, J.K. Ansong, and M.H. Alford (2017), Climate process team on internal-wave driven ocean mixing. *Bulletin of the American Meteorological Society* **98**, 2429-2454.

<https://doi.org/10.1175/BAMS-D-16-0030.1>

D.S. Trossman—Postdoc; J.K. Ansong—Postdoc.

55) Luecke, C.A., **B.K. Arbic**, S.L. Bassette, J.G. Richman, J.F. Shriver, M.H. Alford, O.M. Smedstad, P.G. Timko, D.S. Trossman, and A.J. Wallcraft (2017), The global mesoscale eddy available potential energy field in models and observations. *Journal of Geophysical Research Oceans* **122**, 9126-9143.

<https://doi.org/10.1002/2017JC013136>

C.A. Luecke—Graduate Student;

S.L. Bassette—Undergraduate Student; P.G. Timko—Postdoc; D.S. Trossman—Postdoc.

54) Savage, A.C., **B.K. Arbic**, M.H. Alford, J.K. Ansong, J.T. Farrar, D. Menemenlis,

A.K. O'Rourke, J.G. Richman, J.F. Shriver, G. Voet, A.J. Wallcraft, and L. Zamudio (2017), Spectral decomposition of internal gravity wave sea surface height in global models. *Journal of Geophysical Research Oceans* **122**, 7803-7821.

<https://doi.org/10.1002/2017JC013009>

A.C. Savage—Graduate Student; J.K. Ansong—Postdoc; A.K. O'Rourke—Postdoc.

53) Morten, A.J., **B.K. Arbic**, and G.R. Flierl (2017), Wavenumber-frequency analysis of single-layer shallow-water beta-plane quasi-geostrophic turbulence. *Physics of Fluids* **29**, 106602.

<https://doi.org/10.1063/1.5003846>

Paper featured as an “AIP Scilight”.

A.J. Morten—Graduate Student.

52) Buijsman, M.C., **B.K. Arbic**, J.G. Richman, J.F. Shriver, A.J. Wallcraft, and L. Zamudio (2017), Semidiurnal internal tide incoherence in the equatorial Pacific. *Journal of Geophysical Research Oceans* **122**, 5286-5305.

<https://doi.org/10.1002/2016JC012590>

51) Trossman, D.S., **B.K. Arbic**, D.N. Straub, J.G. Richman, E.P. Chassignet, A.J. Wallcraft, and X. Xu (2017), The role of rough topography in mediating impacts of bottom drag in eddying ocean circulation models. *Journal of Physical Oceanography* **47**, 1941-1959.

<https://doi.org/10.1175/JPO-D-16-0229.1>

D.S. Trossman—Postdoc.

50) Savage, A.C., **B.K. Arbic**, J.G. Richman, J.F. Shriver, M.H. Alford, M.C. Buijsman, J.T. Farrar, H. Sharma, G. Voet, A.J. Wallcraft, and L. Zamudio (2017), Frequency content of sea surface height variability from internal gravity waves to mesoscale eddies. *Journal of Geophysical Research Oceans* **122**, 2519-2538.

<https://doi.org/10.1002/2016JC012331>

A.C. Savage—Graduate Student; H. Sharma—High School Student.

49) Ansong, J.K., **B.K. Arbic**, M.H. Alford, M.C. Buijsman, J.F. Shriver, Z. Zhao, J.G. Richman, H.L. Simmons, P.G. Timko, A.J. Wallcraft, and L. Zamudio (2017), Semidiurnal internal tide energy fluxes and their variability in a global ocean model and moored observations. *Journal of Geophysical Research Oceans* **122**, 1882-1900.

<https://doi.org/10.1002/2016JC012184>

J.K. Ansong—Postdoc; P.G. Timko—Postdoc.

48) Timko, P.G., **B.K. Arbic**, J.A. Goff, J.K. Ansong, W.H.F. Smith, A. Melet, and A.J. Wallcraft (2017), Impact of synthetic abyssal hill roughness on resolved motions in numerical global ocean tide models. *Ocean Modelling* **112**, 1-16.

<https://doi.org/10.1016/j.ocemod.2017.02.005>

P.G. Timko—Postdoc; J.K. Ansong—Postdoc.

2016

47) Buijsman, M.C., J.K. Ansong, **B.K. Arbic**, J.G. Richman, J.F. Shriver, P.G. Timko, A.J. Wallcraft, C.B. Whalen, and Z. Zhao (2016), Impact of parameterized internal wave

drag on the semidiurnal energy balance in a global ocean circulation model. *Journal of Physical Oceanography* **46**, 1399-1419.

<https://doi.org/10.1175/JPO-D-15-0074.1>

J.K. Ansong—Postdoc; P.G. Timko—Postdoc.

46) Trossman, D.S., B.K. Arbic, J.G. Richman, S.T. Garner, S.R. Jayne, and A.J. Wallcraft (2016), Impact of topographic internal lee wave drag on an eddying global ocean model. *Ocean Modelling* **97**, 109-128.

<https://doi.org/10.1016/j.ocemod.2015.10.013>

D.S. Trossman—Postdoc.

45) Ngodock, H.E., I. Souopgui, A.J. Wallcraft, J.G. Richman, J.F. Shriver, and B.K. Arbic (2016), On improving the accuracy of the M_2 barotropic tides embedded in a high-resolution global ocean circulation model. *Ocean Modelling* **97**, 16-26.

<https://doi.org/10.1016/j.ocemod.2015.10.011>

2015

44) Trossman, D.S., S. Waterman, K.L. Polzin, B.K. Arbic, S.T. Garner, A.C. Naveira-Garabato, and K.L. Sheen (2015), Internal lee wave closures: Parameter sensitivity and comparison to observations. *Journal of Geophysical Research Oceans* **120**, 7997-8019.

<https://doi.org/10.1002/2015JC010892>

D.S. Trossman—Postdoc.

43) Ansong, J.K., B.K. Arbic, M.C. Buijsman, J.G. Richman, J.F. Shriver, and A.J. Wallcraft (2015), Indirect evidence for substantial damping of low-mode internal tides in the open ocean. *Journal of Geophysical Research Oceans* **120**, 6057-6071.

<https://doi.org/10.1002/2015JC010998>

J.K. Ansong—Postdoc.

42) Müller, M., B.K. Arbic, J.G. Richman, J.F. Shriver, E.L. Kunze, R.B. Scott, A.J. Wallcraft, and L. Zamudio (2015), Toward an internal gravity wave spectrum in global ocean models. *Geophysical Research Letters* **42**, 3474-3481.

<https://doi.org/10.1002/2015GL063365>

M. Müller—Postdoc.

41) Buijsman, M.C., B.K. Arbic, J.A.M. Green, R.W. Helber, J.G. Richman, J.F. Shriver, P.G. Timko, and A. Wallcraft (2015), Optimizing internal wave drag in a forward barotropic model with semidiurnal tides. *Ocean Modelling* **85**, 42-55.

<https://doi.org/10.1016/j.ocemod.2014.11.003>

P.G. Timko—Postdoc.

2014

40) Stammer, D., R.D. Ray, O.B. Andersen, B.K. Arbic, W. Bosch, L. Carrère, Y. Cheng, D.S. Chinn, B.D. Dushaw, G.D. Egbert, S.Y. Erofeeva, H.S. Fok, J.A.M. Green, S. Griffiths, M.A. King, V. Lapin, F.G. Lemoine, S.B. Luthcke, F. Lyard, J. Morison, M. Müller, L.

Padman, J.G. Richman, J.F. Shriver, C.K. Shum, E. Taguchi, and Y. Yi (2014), Accuracy assessment of global barotropic ocean tide models. *Reviews of Geophysics* **52**, 243-282.
<https://doi.org/10.1002/2014RG000450>

39) **Arbic, B.K.**, M. Müller, J.G. Richman, J.F. Shriver, A.J. Morten, R.B. Scott, G. Sérazin, and T. Penduff (2014), Geostrophic turbulence in the frequency-wavenumber domain: Eddy-driven low-frequency variability. *Journal of Physical Oceanography* **44**, 2050-2069.

<https://doi.org/10.1175/JPO-D-13-054.1>

M. Müller—Postdoc; A.J. Morten—Graduate Student.

38) Shriver, J.F., J.G. Richman, and **B.K. Arbic** (2014), How stationary are the internal tides in a high resolution global ocean circulation model? *Journal of Geophysical Research Oceans* **119**, 2769-2787.

<https://doi.org/10.1002/2013JC009423>

2013

37) Timko, P.G., **B.K. Arbic**, J.G. Richman, R.B. Scott, E.J. Metzger, and A.J. Wallcraft (2013), Skill testing a three-dimensional global tide model to historical current meter records. *Journal of Geophysical Research Oceans* **118**, 6914-6933.

<https://doi.org/10.1002/2013JC009071>

P.G. Timko—Postdoc.

36) Melet, A.M., M. Nikurashin, C. Muller, S. Falahat, J. Nycander, P.G. Timko, **B.K. Arbic**, and J.A. Goff (2013), Internal tide generation by abyssal hills using analytical theory. *Journal of Geophysical Research Oceans* **118**, 6303-6318.

<https://doi.org/10.1002/2013JC009212>

P.G. Timko—Postdoc.

35) Trossman, D.S., **B.K. Arbic**, S.T. Garner, J.A. Goff, S.R. Jayne, E.J. Metzger, and A.J. Wallcraft (2013), Impact of parameterized lee wave drag on the energy budget of an eddy global ocean model. *Ocean Modelling* **72**, 119-142.

<https://doi.org/10.1016/j.ocemod.2013.08.006>

D.S. Trossman—Postdoc.

34) Skiba, A.W., L. Zeng, **B.K. Arbic**, M. Müller, and W.J. Godwin (2013), On the resonance and shelf/open-ocean coupling of the global diurnal tides. *Journal of Physical Oceanography* **43**, 1301-1324.

<https://doi.org/10.1175/JPO-D-12-054.1>

A.W. Skiba—Undergraduate Student; L. Zeng—Undergraduate Student;

W.J. Godwin—Undergraduate Student.

33) **Arbic, B.K.**, K.L. Polzin, R.B. Scott, J.G. Richman, and J.F. Shriver (2013), On eddy viscosity, energy cascades, and the horizontal resolution of gridded satellite altimeter data. *Journal of Physical Oceanography* **43**, 283-300.

<https://doi.org/10.1175/JPO-D-11-0240.1>

2012

32) Richman, J.G., **B.K. Arbic**, J.F. Shriver, E.J. Metzger, and A.J. Wallcraft (2012), Inferring dynamics from the wavenumber spectra of an eddying global ocean model with embedded tides. *Journal of Geophysical Research* **117**, C12012.

<https://doi.org/10.1029/2012JC008364>

31) Shriver, J.F., **B.K. Arbic**, J.G. Richman, R.D. Ray, E.J. Metzger, A.J. Wallcraft, and P.G. Timko (2012), An evaluation of the barotropic and internal tides in a high resolution global ocean circulation model. *Journal of Geophysical Research* **117**, C10024.

<https://doi.org/10.1029/2012JC008170>

P.G. Timko—Postdoc.

30) **Arbic, B.K.**, R.B. Scott, G.R. Flierl, A.J. Morten, J.G. Richman, and J.F. Shriver (2012), Nonlinear cascades of surface oceanic geostrophic kinetic energy in the frequency domain. *Journal of Physical Oceanography* **42**, 1577-1600.

<https://doi.org/10.1175/JPO-D-11-0151.1>

A.J. Morten—Graduate Student.

29) Timko, P.G., **B.K. Arbic**, J.G. Richman, R.B. Scott, E.J. Metzger, and A.J. Wallcraft (2012), Skill tests of tidal currents in a three-dimensional ocean model: A look at the North Atlantic. *Journal of Geophysical Research* **117**, C08014.

<https://doi.org/10.1029/2011JC007617>

P.G. Timko—Postdoc.

28) **Arbic, B.K.**, J.G. Richman, J.F. Shriver, P.G. Timko, E.J. Metzger, and A.J. Wallcraft (2012), Global modeling of internal tides within an eddying ocean general circulation model. *Oceanography* **25**, 20-29.

<https://doi.org/10.5670/oceanog.2012.38>

Included in “Special issue on internal waves”.

P.G. Timko—Postdoc.

27) Wright, C.J., R.B. Scott, **B.K. Arbic**, and D.F. Furnival (2012), Bottom dissipation of subinertial currents at the Atlantic zonal boundaries. *Journal of Geophysical Research* **117**, C03049.

<https://doi.org/10.1029/2011JC007702>

26) **Arbic, B.K.**, R.B. Scott, D.B. Chelton, J.G. Richman, and J.F. Shriver (2012), Effects of stencil width on surface ocean geostrophic velocity and vorticity estimation from gridded satellite altimeter data. *Journal of Geophysical Research* **117**, C03029.

<https://doi.org/10.1029/2011JC007367>

2011

25) Müller, M., **B.K. Arbic**, and J.X. Mitrovica (2011), Secular trends in ocean tides: Observations and model results. *Journal of Geophysical Research* **116**, C05013.

<https://doi.org/10.1029/2010JC006387>

2010

24) Cummins, P.F., R.H. Karsten, and **B.K. Arbic** (2010), The semi-diurnal tide in Hudson Strait as a resonant channel oscillation. *Atmosphere-Ocean* **48**, 163-176.
<https://doi.org/10.3137/OC307.2010>

23) **Arbic, B.K.**, and C. Garrett (2010), A coupled oscillator model of shelf and ocean tides. *Continental Shelf Research* **30**, 564-574.
<https://doi.org/10.1016/j.csr.2009.07.008>
Included in special issue “Tides in Marginal seas—A special issue in memory of Professor Alexei N. Nekrasov”.

22) **Arbic, B.K.**, A.J. Wallcraft, and E.J. Metzger (2010), Concurrent simulation of the eddying general circulation and tides in a global ocean model. *Ocean Modelling* **32**, 175-187.
<https://doi.org/10.1016/j.ocemod.2010.01.007>
Included in special issue “The Magic of Modelling: A special volume commemorating the contributions of Peter D. Killworth—Part II”.

21) Scott, R.B., **B.K. Arbic**, E.P. Chassignet, A.C. Coward, M. Maltrud, W.J. Merryfield, A. Srinivisan, and A. Varghese (2010), Total kinetic energy in four global eddying ocean circulation models and over 5000 current meter records. *Ocean Modelling* **32**, 157-169.
<https://doi.org/10.1016/j.ocemod.2010.01.005>
Included in special issue “The Magic of Modelling: A special volume commemorating the contributions of Peter D. Killworth—Part II”.
A. Varghese—High School Student.

20) Goff, J.A., and **B.K. Arbic** (2010), Global prediction of abyssal hill roughness statistics for use in ocean models from digital maps of paleo-spreading rate, paleo-ridge orientation, and sediment thickness. *Ocean Modelling* **32**, 36-43.
<https://doi.org/10.1016/j.ocemod.2009.10.001>
Included in special issue “The Magic of Modelling: A special volume commemorating the contributions of Peter D. Killworth—Part I”.

2009

19) **Arbic, B.K.**, R.H. Karsten, and C. Garrett (2009), On tidal resonance in the global ocean and the back-effect of coastal tides upon open-ocean tides. *Atmosphere-Ocean* **47**, 239-266.
<https://doi.org/10.3137/OC311.2009>
Included in special issue “The interacting scales of ocean dynamics—A special tribute to Chris Garrett”.

18) **Arbic, B.K.**, J.F. Shriver, P.J. Hogan, H.E. Hurlburt, J.L. McClean, E.J. Metzger, R.B. Scott, A. Sen, O.M. Smedstad, and A.J. Wallcraft (2009), Estimates of bottom flows and bottom boundary layer dissipation of the oceanic general circulation from global high resolution models. *Journal of Geophysical Research* **114**, C02024.
<https://doi.org/10.1029/2008JC005072>
A. Sen—High School Student.

2008

17) **Arbic, B.K.**, J.X. Mitrovica, D.R. MacAyeal, and G.A. Milne (2008), On the factors behind large Labrador Sea tides during the last glacial cycle and the potential implications for Heinrich events. *Paleoceanography* **23**, PA3211.

<https://doi.org/10.1029/2007PA001573>

16) Scott, R.B., **B.K. Arbic**, C.L. Holland, A. Sen, and B. Qiu (2008), Zonal versus meridional velocity variance in satellite observations and realistic and idealized ocean circulation models. *Ocean Modelling* **23**, 102-112.

<https://doi.org/10.1016/j.ocemod.2008.04.009>

A. Sen—High School Student.

15) Sen, A., R.B. Scott, and **B.K. Arbic** (2008), Global energy dissipation rate of deep-ocean low-frequency flows by quadratic bottom boundary layer drag: Computations from current-meter data. *Geophysical Research Letters* **35**, L09606.

<https://doi.org/10.1029/2008GL033407>

A. Sen—High School Student.

14) **Arbic, B.K.**, and R.B. Scott (2008), On quadratic bottom drag, geostrophic turbulence, and oceanic mesoscale eddies. *Journal of Physical Oceanography* **38**, 84-103.

<https://doi.org/10.1175/2007JP03653.1>

2007

13) **Arbic, B.K.**, P. St-Laurent, G. Sutherland, and C. Garrett (2007), On the resonance and influence of the tides in Ungava Bay and Hudson Strait. *Geophysical Research Letters* **34**, L17606.

<https://doi.org/10.1029/2007GL030845>

Link to Nature Geoscience highlight of paper: <https://www.nature.com/articles/ngeo.2007.13>.

12) **Arbic, B.K.**, G.R. Flierl, and R.B. Scott (2007), Cascade inequalities for forced-dissipated geostrophic turbulence. *Journal of Physical Oceanography* **37**, 1470-1487.

<https://doi.org/10.1175/JP03067.1>

11) Scott, R.B., and **B.K. Arbic** (2007), Spectral energy fluxes in geostrophic turbulence: Implications for ocean energetics, *Journal of Physical Oceanography* **37**, 673-688.

<https://doi.org/10.1175/JP03027.1>

2005

10) Smith, W.H.F., R. Scharroo, V.V. Titov, D. Arcas, and **B.K. Arbic** (2005), Satellite altimeters measure tsunamis: Early model estimates confirmed. *Oceanography* **18**, 11-13.

<https://doi.org/10.5670/oceanog.2005.62>

9) **Arbic, B.K.** (2005), Atmospheric forcing of the oceanic semidiurnal tide. *Geophysical Research Letters* **32**, L02610.

<https://doi.org/10.1029/2004GL021668>

2004

8) **Arbic, B.K.**, D.R. MacAyeal, J.X. Mitrovica, and G.A. Milne (2004), Ocean tides and Heinrich events. *Nature* **432**, 460.

<https://doi.org/10.1038/432460a>

7) **Arbic, B.K.**, S.T. Garner, R.W. Hallberg, and H.L. Simmons (2004), The accuracy of surface elevations in forward global barotropic and baroclinic tide models. *Deep-Sea Research II* **51**, 3069-3101.

<https://doi.org/10.1016/j.dsr2.2004.09.014>

Included in special issue “Small and mesoscale processes and their impact on the large scale”.

6) Simmons, H.L., R.W. Hallberg, and **B.K. Arbic** (2004), Internal wave generation in a global baroclinic tide model. *Deep-Sea Research II* **51**, 3043-3068.

<https://doi.org/10.1016/j.dsr2.2004.09.015>

Included in special issue “Small and mesoscale processes and their impact on the large scale”.

5) **Arbic, B.K.**, and G.R. Flierl (2004), Baroclinically unstable geostrophic turbulence in the limits of strong and weak bottom Ekman friction: Application to mid-ocean eddies. *Journal of Physical Oceanography* **34**, 2257-2273.

<https://journals.ametsoc.org/doi/abs/10.1175/1520-0485%282004%29034%3C2257%3ABUGTIT%3E2.0.CO%3B2>

4) **Arbic, B.K.**, and G.R. Flierl (2004), Effects of mean flow direction on energy, isotropy, and coherence of baroclinically unstable beta-plane geostrophic turbulence. *Journal of Physical Oceanography* **34**, 77-93.

<https://journals.ametsoc.org/doi/abs/10.1175/1520-0485%282004%29034%3C0077%3AEOMFDO%3E2.0.CO%3B2>

2003

3) **Arbic, B.K.**, and G.R. Flierl (2003), Coherent vortices and kinetic energy ribbons in asymptotic, quasi two-dimensional f-plane turbulence. *Physics of Fluids* **15**, 2177-2189.

<https://doi.org/10.1063/1.1582183>

2001

2) **Arbic, B.K.**, and W.B. Owens (2001), Climatic warming of Atlantic intermediate waters. *Journal of Climate* **14**, 4091-4108.

<https://journals.ametsoc.org/doi/abs/10.1175/1520-0442%282001%29014%3C4091%3ACWDAIW%3E2.0.CO%3B2>

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:***2022**

BC4) Miloslavich, P., R. Zitoun, E.R. Urban Jr., F. Muller-Karger, N.J. Bax, **B.K. Arbic**, A. Lara-López, C. Delgado, M. Metian, S. Seeyave, P.W. Swarzenski, J. Uku, and A. Valauri-Orton (2022), Developing capacity for ocean science and technology. In *“Blue Economy: An ocean science perspective”*, E.R. Urban Jr., and V. Ittekkot, Eds., Springer, 467-504.
https://doi.org/10.1007/978-981-19-5065-0_15

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.):***2022**

GL10) **Arbic, B.K.**, O. Ajoku, J.K. Ansong, M.C. Ford, M. Foster-Martinez, W. Johnson, E. Mahu, P.E. Martin, E. Nyadjro, T. Osborne, K. Roche, A. Valauri-Orton, A.T.S. Hwai, and J.P. Walsh (2022), Global Ocean Corps and Conveyor: A capacity development program. *Marine Technology Society Journal*, **56**, 102-103.

<https://doi.org/10.4031/MTSJ.56.3.17>

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 eddy 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 eddy 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.

Cloud-based framework for inter-comparing submesoscale-permitting realistic ocean models

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