

Brian Kenneth Arbic—Curriculum Vitae

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Department of Earth and Environmental Sciences
University of Michigan (U-M)
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Other U-M Affiliations:

Department of Climate and Space Sciences and Engineering (CLASP)
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
- 8/2024–8/2025 Campus Visitor, Research School of Earth Sciences, *Australian National University (ANU)*
Canberra, Australia
- 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 Communications*, *Nature Geoscience*, *Ocean Dynamics*, *Ocean Modelling*, *Oceanography*, *Paleoceanography*, *Science Advances*, and several others.
- 2014–present Co-founder and lead of Coastal Ocean Environment Summer School In Nigeria and Ghana, West Africa (<https://coessing.org>), a capacity sharing/development project endorsed by the United Nations Decade of Ocean Science for Sustainable Development.
- 2020–present Lead of “Global Ocean Corps and Conveyor”, a global capacity sharing/development programme endorsed by the United Nations Decade of Ocean Science for Sustainable Development (<https://globalocean corps.org>).
- 2020–present Co-lead of “EquiSea: The Ocean Science Fund for All” (<https://equisea.org>).
- 2023–present Co-lead guest editor, Special issue on Capacity Sharing, *Oceanography* magazine, The Oceanography Society (<https://tos.org/capacity-sharing-special-issue>).
- 2023–2024 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>).
- 2023–2024 Member, Programme Committee, 2024 Ocean Decade Conference in Barcelona (<https://oceandecade.org/events/2024-ocean-decade-conference>).
- 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

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- 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

- 2023–2024,
2025–2027 Member, Divisional Evaluation Committee, College of Literature, Science and the Arts (LSA). This committee evaluates all tenure and promotion cases in the natural science departments in LSA.
- 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 Assistant Professor Jessica Fayne
- 2023 Chair, Tenure and Promotion Committee for Sierra Petersen promotion to Associate Professor
- 2022–2024,
2016–2017 Departmental Executive Committee (Member)
- 2022 Member, Postdoc to Faculty Transition Search Committee
- 2021 Chair, Postdoc to Faculty Transition Search Committee (hired Jessica Fayne)
- 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	Geobiology and Biological Oceanography Faculty Search Committee
2015–2017	Departmental Faculty Ally for Diversity
2014–2015	Chair, Climate Change/Water Cycle Faculty Search Committee (hired Naomi Levin and Benjamin Passey)
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
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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.
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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).
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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, 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.

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:

2024 The project “Ocean Margins Initiative”, supported by a \$9,000,000 gift from Schmidt Sciences, was written up by *University of Michigan News*.

2024 AGU ran an Editor’s Highlight on Yadidya Badarvada’s 2024 *GRL* paper on phase-accurate internal tides.

2022 AGU ran an Editor’s Highlight on Kristin Barton’s 2022 *JAMES* paper on inline self-attraction and loading.

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

Accumulated funding: \$9,169,638 (at University of Michigan), \$655,879 (at The University of Texas at Austin and Florida State University)—not counting funds sent to co-PIs at other institutions. “ONR” stands for “Office of Naval Research” and “DOE” denotes “Department of Energy”.

- 2024–2028 Lead PI on \$726,862 NASA grant *Mesoscale Eddies, Internal Waves, And Solitons in SWOT, Global Models, And Downscaled Regional Models* to U-M, USM, FSU, and Oregon State University.
- 2024–2029 Sole PI on \$249,920 subcontract *Ocean Margins Initiative; OMI* from Woods Hole Oceanographic Institution (WHOI). Subcontact is for organizing the Coastal Ocean Environment Summer School In Nigeria and Ghana (COESSING; <https://coessing.org>), which from 2025-2028 will serve as a networking/meeting event for the larger OMI project. The OMI project is a *sim* 9M USD project, led by WHOI, University of Rhode Island and University of Ghana, to perform biogeochemistry research in the Gulf of Guinea. The Michigan budget is small relative to the size of the project, but I played a key role in bringing the US and Ghana PIs together.
- 2023–2026 Lead PI on \$573,786 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 recieved a separate allotment of funds), NASA Goddard, and University of Bonn.

- 2023–2026 Lead PI on \$834,607 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 \$659,444 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 \$240,000 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 \$664,494 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 \$330,088 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 \$422,265 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.
- 2019–2025 Co-PI on \$346,946 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 two supplements to help fund the Coastal Ocean Environment Summer School In Nigeria and Ghana. Collaborators on related grants are at UCLA and USM. Dates include three-year no-cost extension.
- 2018–2021 Co-PI on \$85,944 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 \$105,980 ONR grant *Connecting global HYCOM to FLEAT* to U-M.
- 2017–2022 Lead PI on \$588,811 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 \$249,018 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 \$249,724 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 \$715,918 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 \$120,000 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 \$672,896 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*, U-M portion \$629,876 (including \$268K two-year creativity extension granted in 2013). Dates include one-year no-cost extension. 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*, U-M portion \$703,059. 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 \$244,017 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 that ultimately paid \$191,771 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 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 Yaddya.
- 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 July 13, 2024: 42/43/48

ISI/Scopus/Google Scholar citations as of July 13, 2024: 4477/4746/6534

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:

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.

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.

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.

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.

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.

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.

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.

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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.):

2024

GL11) **Arbic, B.K.**, E. Mahu, K. Alexander, P.M. Buchan, J. Hermes, S. Kidwai, E. Kostianaia, L. Li, X. Lin, S. Mahadeo, E.d.R. Maúre, C. Munga, A. M-Muslim, G. Sant, S. Seeyave, and Z. Sun (2024), *Ocean Decade Vision 2030 White Papers — Challenge 9: Skills, Knowledge, Technology, and Participatory Decision-Making for All*. Paris, UNESCO-IOC. (The Ocean Decade Series, 51.9).
<https://doi.org/10.25607/k5pt-fp54>

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