

REFEREED
JOURNAL
PUBLICATIONS

1. **Brett, G.**, D. Whitt, M. Long, F. Bryan, K. Feloy, K. Richards. “Sensitivity of 21st-century projected ocean new production changes to idealized biogeochemical model structure.” *Biogeosciences* 18.10 (2021): 3123-3145. doi:10.5194/bg-18-3123-2021
2. Richards, K., D. Whitt, **G. Brett**, F. Bryan, K. Feloy, M. Long. “The impact of climate change on ocean submesoscale activity.” *Journal of Geophysical Research: Oceans* 126.5 (2021): e2020JC016750. doi:10.1029/2020JC016750
3. **Brett, G.**, I. Rypina, L. Pratt, J.C. Sanchez-Garrido, 2020. “The Western Alboran Gyre: an analysis of its properties and its exchange with surrounding water.” *Journal of Physical Oceanography*, 50 (12), 3379-3402. doi:10.1175/JPO-D-20-0028.1
4. **Brett, G.**, L. Pratt, I. Rypina, P. Wang, 2019. “Competition between Chaotic Advection and Diffusion: Stirring and Mixing in a 3D Eddy Model.” *Nonlinear Processes in Geophysics*, 26 (2), 37-60. doi:10.5194/npg-26-37-2019
5. Gerbi, G., S. Kastner, **G. Brett**, 2015. “The role of whitecapping in thickening the ocean surface boundary layer.” *Journal of Physical Oceanography*, 45 (8), 2006 – 2024. doi:10.1175/JPO-D-14-0234.1
6. Li, W., Y. Liu, **G. Brett**, J. Gunton, 2012. “Encapsulation by Janus Oblate Spheroids” *Soft Matter*, 8 (22), 6027-6032. doi:10.1039/C2SM00005A
7. Liu, Y., W. Li, T. Perez, J. Gunton, **G. Brett**, 2012. “Self Assembly of Janus Ellipsoids” *Langmuir*, 28 (1), 3-9. doi:10.1021/la2032303

HONORS AND
AWARDS

APL Janney Grant for paper writing, “Submesoscale effects on changes to export production under global warming”, \$6k in 2022
APL Internal Research And Development (IRAD) grant co-author, “CRAB: Coastal Resiliency through Applied Biology”, PI Jenny Boothby. \$250k for 2022
NSF co-Investigator, “Collaborative Research: Tracing the Missing Physics of Submesoscale Entrainment and Subduction”, PI J. Wenegrat, coI B. Fox-Kemper. 1.1mil, JHUAPL portion \$90k performance May 2022-Apr 2025
DARPA grant co-author and key personnel, “The Physics-informed AI Climate Model Agent Neuro-symbolic Simulator (PACMANS) for Tipping Point Discovery”, PIs Jennifer Sleeman and Anand Gnanadesikan, \$700k for 2022
NCAR University Large Allocation UHAH0025, co-author of proposal, 7 million core-hours of computation and associated storage. 2019
George P. Pantaleyev award for commitment to improving the graduate student experience at WHOI 2018

Red Sock award for poster presentation by a student or postdoc, 1 of 5,
 SIAM Dynamical Systems Conference 2017
 DeSieno Prize for Excellence in Mathematics, Skidmore 2012
 Eleanor A. Samworth Prize in Physics, Skidmore 2012
 Nominated for the Barry Goldwater Scholarship, Skidmore 2010
 Porter Scholarship in Mathematics and Science, Skidmore 2008

TEACHING AND MENTORING Racism in Science Reading Group Organizer Jul-Dec 2020
 Weekly meetings of UH graduate students and postdocs
 GeoFutures Mentor, SACNAS Diversity in STEM Conference Oct 2020
 Meeting Mentor, ASLO Multicultural Program Feb 2020
 Co-instructor, Equations of Geophysics Spring 2019, 2020
 Graduate course with co-instructor Kelvin Richards, using Advanced
 Engineering Mathematics by M. Greenberg. I taught 7 weeks on ordinary
 differential equations and parabolic partial differential equations.
 Mentor of UH masters' student, Kate Feloy 2019, ongoing
 Mentor through the Society of Women in Marine Science 2018, ongoing
 Mentor of WHOI guest student, Amanda Anderson Spring 2017
 Teaching Assistant, Observational Physical Oceanography Fall 2015
 Instructors Magdalena Andres and Geoffrey (Jake) Gebbie, WHOI
 First-year graduate course. I held office hours and review sessions, graded
 homework, and gave one lecture.
 Co-Instructor, WHOI Summer Math Review Summer 2014, 2016
 Student-run review course for incoming Joint Program graduate students.
 I taught differential eqn.s, nondimensionalization, algebra, and calculus.
 Mentor in MIT-EAPS Graduate Mentor Program 2014-2016
 I provided near-peer mentoring for a pre-generals student.
 Co-Organizer, WHOI Summer Math Review Summers 2013-2015
 I co-developed curricula and evaluations, coordinated instructors, and
 communicated with students and administrators.
 Teaching Assistant, Skidmore, Calculus 1 Summer 2010
 Peer Tutor, Department of Physics 2009-2012
 Skidmore College
 Courses: General Physics 1 and 2, Light and Color, Modern Physics
 Grader, Department of Mathematics Sep 2009-Dec 2010
 Skidmore College
 Courses: Calculus 1 and 2, Linear Algebra, Statistics

INVITED TALKS "Ocean modeling for climate projection and adaptation"
 University of Rochester Oct 2022
 "Submesoscale effects on changes to export production under global
 warming"
 University of Maryland Oceans Lunch Seminar Aug 2021
 "The Western Alboran Gyre: an analysis of its properties and its exchange
 with surrounding water"

Johns Hopkins University–Applied Physics Labs Feb 2021
 “Eulerian Budgets and Lagrangian Structures: The Western Alboran Gyre”
 Coastal and Marine Systems Science Seminar, Coastal Carolina University Feb 2020
 “The Western Alboran Gyre, its properties, and their exchange”
 Boulder Fluid and Thermal Sciences Seminar, University of Colorado Boulder Oct 2018
 “Chaotic advection in the Alboran Sea: Lagrangian analysis of the Western Alboran Gyre”
 Bremen Winter School Symposium, University of Bremen Mar 2018
 “Lagrangian Chaos and Transport in the Alboran Sea: Dynamic Systems Analysis and Oceanographic Applications”
 Physics Seminar, Skidmore College Oct 2015

CONFERENCE AND SYMPOSIUM PRESENTATIONS “Submesoscale effects on changes to export production under global warming”
 Ocean Sciences Meeting (virtual) March 2022
 “Biogeochemical impacts of changes in upper-ocean physics with a warming climate”
 AGU Fall Meeting (virtual) Dec 2020
 “Roadmap to gender-inclusive restrooms in your institution”
 AGU Fall Meeting (virtual) Dec 2020
 “The Role of Model Structure in Simulating Changes in Oceanic New Production in the 21st Century”
 CESM Ocean Model Working Group Meeting (virtual) Apr 2020
 “Biological Impacts of Physics through Idealized Tracers: Changes in the seasonal cycle of vertical exchange from early to late 21st century”
poster Ocean Sciences Meeting in San Diego, CA Feb 2020
 “Biological impacts of physics changes due to climate perturbation using idealized tracers”
 CESM Workshop at NCAR, Boulder, CO June 2019
 “Application of Manifolds to an Aperiodic 3D Flow: the Western Alboran Gyre”
 SIAM Dynamical Systems Meeting in Snowbird, UT May 2019
 “The Western Alboran Gyre: an Eulerian Analysis of its Properties and their Budgets”
 AGU Fall Meeting, Washington D.C. Dec 2018
 “Chaotic Advection in the Alboran Sea: Lagrangian Analysis of Transport Processes in and out of the Western Alboran Gyre” *poster*
 SIAM Dynamical Systems Meeting in Snowbird, UT May 2017
 “Chaotic Advection in the Alboran Sea: Lagrangian Analysis”
poster, AGU Fall Meeting in San Francisco, CA Dec 2016
 “Chaotic advection and mixing in an idealized three-dimensional eddy model”

	<i>poster</i> , Amerimech Symposium at WHOI	May 2016
	“Transport of Atlantic Water in the Alboran Sea”	
	<i>poster</i> , Graduate Climate Conference at WHOI	Oct 2015
	“Transport in the Alboran Sea: Chaotic Advection and Dynamic Systems Analysis”	
	Stanford-University of Science and Technology China-MIT Geoscience Symposium at USTC	Sept 2015
	“Chaotic advection and mixing in an idealized three-dimensional eddy model”	
	Oceans 3D+1 Workshop at University of Miami	Nov 2014
	“Chaotic advection and mixing in an idealized three-dimensional eddy model”	
	<i>poster</i> , Ocean Sciences Meeting in Honolulu, HI	Feb 2014
DEPARTMENTAL PRESENTATIONS	“Competition between chaotic advection and diffusion: stirring and mixing in a 3-D eddy model”	
	IPRC seminar UH Mānoa	Apr 2019
	“The Western Alboran Gyre, its properties, and their exchange”	
	NCAR Climate and Global Dynamics seminar	Oct 2018
	“Chaotic advection, mixing, and property exchange in three-dimensional ocean eddies and gyres”	
	WHOI Physical Oceanography	Apr 2018
	“Competition between Chaotic Advection and Diffusion: Stirring and Mixing in an Overturning Eddy Model”	
	MIT EAPS Sack Lunch Seminar	Feb 2018
	“Divers4Oceanography.org”	
	Skidmore College Physics Seminar (SCPS)	Feb 2012
	“Encapsulation by Janus Particles” SCPS	Oct 2011
	“Coulomb Pucks: Electric charge memory design” SCPS	Oct 2010
SERVICE	Student Presentation Award Judge	
	AGU Fall Meeting	Dec 2020
	SACNAS National Diversity in STEM conferences	Oct 2019, 2020
	Ocean Sciences Meeting	Feb 2020
	UCAR SOARS undergraduate program	Aug 2018
	Convener of <i>Advancing Equity and Inclusion of LGBTQ+ Scientists</i>	
	AGU Fall Meeting	2020
	Marine Science Building All-gender Bathroom Working Group	2020
	University of Hawaii	
	Peer reviewer	2019-present
	Ocean Modelling (Elsevier), Geophysical Research Letters (AGU), Pure and Applied Geophysics (Springer), Journal of Physical Oceanography (AMS)	
	SACNAS reviewer	Summer 2020, 2021

Reviewed student travel scholarship applications (2020) and abstracts (both years) for the National Diversity in STEM conference
 Testers Symposium, Poster Session Committee Chair Apr 2019, 2020
 Albert L. Tester Memorial Symposium for student life sciences research.
 I organized presenters and volunteers.
 Skidmore Alumni Admissions Contact 2016-2019
 Letters to a Pre-Scientist Pen Pal 2017-2018
 MA Regional Ocean Science Bowl Volunteer Feb 2015-2018
 Science Fair Judge, Falmouth High School 2016, 2017
 Session Chair May 2016
 Amerimech Symposium on Fluid Transport and Nonlinear Dynamics
 CUWIP graduate student panel Jan 2016
 Conference for Undergraduate Women in Physics at Wesleyan
 STEM Career Presenter June 2014, 2015
 Eugene Wright Academy, Chelsea MA
 Student Representative for Physical Oceanography 2014-2015
 MIT Atmospheres Oceans and Climate Retreat Committee 2012-2015

SOCIETY Society for Industrial and Applied Mathematics
MEMBERSHIPS American Geophysical Union
 Society for Women in Marine Science
 Mentoring Physical Oceanography Women for Increased Retention
 Society for Advancement of Chicanos/Hispanics and Native Americans
 in Science
 Phi Beta Kappa, honor society for liberal arts and sciences
 Sigma Pi Sigma, honor society for physics
 Pi Mu Epsilon, honor society for mathematics

PROFESSIONAL Bystander Intervention Training Jul 2020
DEVELOPMENT Webinar training by Hollaback!
 Patullo Conference Sep 2019
 Three days of networking and mentorship on career progression and
 funding opportunities.
 University of Hawai'i Safe Zone Training Aug 2019
 Seminar on supporting LGBTQ staff and students and the relevant policies
 and procedures.
 Responsible Conduct of Research & Conflicts of Interest Training Mar 2019
 Online coursework, Collaborative Institutional Training Initiative (CITI)
 Diversity, Equity, and Inclusion Workshop Dec 2018
 Half-day workshop on supporting increasing diversity in geosciences,
 hosted at the American Geophysical Union Fall Meeting.
 Centers for Ocean Sciences Education Excellence's Gears Professional
 Development Workshop for Early Career Scientists Feb 2014
 Full-day workshop on effective science communication and teaching.
 Teaching College-Level Science and Engineering Fall 2014

MIT course, 2 hours/week, instructor Dr. Janet Rankin.

FIELD WORK Martha's Vineyard Sound. 4 days, Aug-Sept 2014, Aug 2017
R/V Tioga and Minuteman. Deployment and collection of surface drifters.
Mid-Atlantic Bight. 10 days, Jul 2013
SSV Corwith Cramer. Hydrographic surveys, water sample collection.

OTHER SKILLS Languages: native English, intermediate written and spoken French
Programming Languages: fluent in MATLAB; experienced with FORTRAN,
Bash, and Java; familiar with C++, Python, BASIC, HTML.
Modeling: Community Earth System Model, MIT general circulation model,
Regional Ocean Modeling System, General Ocean Turbulence Model,
Monte-Carlo methods.
Software: Microsoft Office Suite; Adobe Acrobat, Illustrator, Premier; LaTeX;
Zoom, Skype; Moodle, Blackboard