

Education

1993	University of Colorado B.S., Aerospace Eng.
2000	University of Colorado M.S., Computer Sci.
2005	University of Colorado Ph.D., Aerospace Eng. (Physical Oceanography)

Appointments

2018–current	University of Hawaii, Prof. of Oceanography
2013–2018	University of Hawaii, Associate Prof. of Oceanography
2008–2013	University of Hawaii, Assistant Prof. of Oceanography
2006–2008	Institute of Marine Sciences, Univ. of Calif., Santa Cruz
2005–2006	Cooperative Institute for Research in Environmental Science, Univ. of Colo.

Instruction

Courses (* – required course):

* OCN 310	“Global Environmental Change” (3 credits)
* OCN 312	“Geomathematics” (3 credits)
OCN 481/681	“Introduction to Ocean Ecosystem Modeling” (3 credits)
OCN 418	“Advanced Environmental Monitoring Systems and Measurements” (2 credits)
<u>Summary:</u>	Since 2013: Supervised and sponsored 2 Ph.D. and 1 M.S., served on 10 thesis committees, and supervised 1 undergraduate thesis.

Primary Graduate Advisor (with full grant support):

Rebecca Baltes	M.S. (2009–2011); Thesis: “Observing System Simulation Experiments on the Oahu Regional Ocean Model”; now with NOAA in Silver Springs, MD.
Abby Johnson	M.S. (2009–2012); Thesis: “Characterizing the effluence near Waikiki, Hawaii with a coupled biophysical model”; now with Bank of Hawaii
Emily Chang	M.S. (Fall, 2012)
Colette Kerry	Ph.D. (2010–2014); Thesis: “PREDICTABILITY IN A REGION OF STRONG INTERNAL TIDES AND DYNAMIC MESOSCALE CIRCULATION: THE PHILIPPINE SEA”; now postdoc at UNSW, Sydney
Emma Nuss	M.S. (2013–2016); Thesis: “Predicting pathogenic bacteria concentrations with a coupled microbial-physical model”; now with San Francisco Estuary Institute
Øyvind Lundesgaard	Ph.D. (2015–2018); Thesis: “Physical Processes in a Western Antarctic Fjord”

Thesis Committee Member:

Jake Cass	M.S., 2009–2010
Ana Vaz	Ph.D., 2008–2012
Christina Comfort	M.S., 2011–2012
Emily Norton	M.S., 2011–2013
Gen del Rey	Ph.D., 2013–2015
Johanna Wren	Ph.D., 2013–2016
Katharine Smith	Ph.D., 2013–2016
Chantel Chang	M.S., 2014–2016

Conor Jerolmon M.S., 2014–2016
 Assaf Azouri Ph.D., 2013–2016
 Nina Ribbat at UNSW, Sydney Ph.D., 2013–present
 Alma Castillo M.S., 2013–2014; Ph.D., 2014–present
 Sherril Soon Ph.D., 2016–2018
 Victoria Futch Ph.D., 2013–present
 Amanda Ziegler Ph.D., 2015–present
 Sherry Chou Ph.D., 2016–present
 Kelly Pearson Ph.D., 2016–present
 Seth Travis Ph.D., 2016–present

Undergraduate Thesis:

Ted Conroy GES, 2014–2015

Publications

Refereed: (students or post-docs underlined)

1. D. Partridge, T. Friedrich, **B. S. Powell**. Reanalysis of the PacIOOS Hawaiian Island Ocean Forecast System, an implementation of the Regional Ocean Modeling System v3.6. *Geosci. Model Dev.*, 12:1–20, 2019.
2. A. Castillo-Trujillo, D. Partridge, **B. S. Powell**, and P. J. Flament. Vorticity balance south shore of Oahu Hawaii, derived by high-frequency radio Doppler current observations. *J. Phys. Oceanogr.*, 2018.
3. C. Kerry, M. Roughan, and **B. S. Powell**. Observation Impact in a Regional Reanalysis of the East Australian Current System. *J. Geophys. Res.*, 123(10), 2018.
4. S. Stevenson, **B. S. Powell**, K. Cobb, J. Nusbaumer, M. Merrifield, and D. Noone. 20th Century Seawater $\delta^{18}\text{O}$ Dynamics and Implications for Coral-Based Climate Reconstruction. *Paleoceanography*, 33, 2018.
5. J. A.T.K. Wong-Ala, C. M. Comfort, J. M. Gove, M. A. Hixon, M. A. McManus, **B. S. Powell**, J. L. Whitney, and A. B. Neuheimer. How life history characteristics and environmental forcing shape settlement success of coral reef fishes. *Front. Mar. Science*, 5(65), 2018.
6. **B. S. Powell**. Quantifying How Observations Inform a Numerical Reanalysis of Hawaii. *J. Geophys. Res.*, 122(11):8,427–8,444, 2017.
7. J. Souza and **B. S. Powell**. Different approaches to model the nearshore circulation in the south shore of O’ahu, Hawaii. *Ocean Science*, 13:31–46, 2017.
8. C. Kerry, **B. S. Powell**, M. Roughan, and P. Oke. “Development and evaluation of a high-resolution reanalysis of the East Australian Current region using the Regional Ocean Modelling System (ROMS 3.4) and Incremental Strong-Constraint 4-Dimensional Variational (IS4D-Var) data assimilation.” *Geosci. Model Devel.*, pages 3,779–3,801, 2016.
9. A. Yanagihara, M. McManus, J. Sevadjan, and **B. S. Powell**. “Alatina alata (Hawaiian box jellyfish) spawning migration triggers: Lunar and physical oceanographic processes”. *Mar. Ecol. Prog. Ser.*, 2016.
10. C. Kerry, **B. S. Powell**, and G. Carter. “Quantifying the Incoherent M2 Internal Tide in the Philippine Sea.” *J. Phys. Oceanogr.*, 46:2,483–2,491, 2016.

11. S. Stevenson, **B. S. Powell**, M. Merrifield, K. Cobb, J. Nusbaumer, and D. Noone. “Characterizing Seawater Oxygen Isotopic Variability in a Regional Ocean Modeling Framework: Implications for Coral Proxy Records.” *Paleoceanography*, 30:1,573–1,593, 2015.
12. J. Souza, **B. S. Powell**, A. C. Castillo-Trujillo, and P. Flament. “The Vorticity Balance of the Ocean Surface in Hawaii from a Regional Reanalysis.” *J. Phys. Oceanogr.*, 45:424–440, 2014.
13. K. Chen, R. He, **B. S. Powell**, A. M. Moore, and H. G. Arango. “Data Assimilative Modeling Investigation of Gulf Stream Warm Core Ring Interaction with Continental Shelf and Slope Circulation, Part 1: Method.” *J. Geophys. Res.*, 119(9):5,968–5,991, 2014.
14. C. G. Kerry, **B. S. Powell**, and G. S. Carter. “The Impact of Subtidal Circulation on Internal Tide Generation and Propagation in the Philippine Sea.” *J. Phys. Oceanogr.*, 44:1,386–1,405, 2014.
15. C. G. Kerry, **B. S. Powell**, and G. S. Carter. “The Impact of Sub-Tidal Circulation on Internal Tide Induced Mixing in the Philippine Sea.” *J. Phys. Oceanogr.*, 44:3,209–3,224, 2014.
16. **B. S. Powell**, B. D. Cornuelle, and C. Kerry. “Using a numerical model to understand the connection between the ocean and acoustic travel-time measurements.” *J. Acoust. Soc. Am.*, 134(4):3,211–3,222, 2013.
17. I. Janeković, **B. S. Powell**, D. Matthews, M. A. McManus, and J. Sevadjan. “4D-Var Data Assimilation in a Nested, Coastal Ocean Model: A Hawaiian Case Study.” *J. Geophys. Res.*, 118:1–14, 2013.
18. A. E. Johnson, **B. S. Powell**, and G. F. Steward. “Characterizing the effluence near Waikiki, Hawaii with a coupled biophysical model.” *Cont. Shelf Res.*, 54:1–13, 2013.
19. C. Kerry, **B. S. Powell**, and G. S. Carter. “Effects of remote generation sites on model estimates of M_2 internal tides in the Philippine Sea.” *J. Phys. Oceanogr.*, 43:187–204, 2013.
20. **B. S. Powell**, I. Janeković, G. S. Carter, and M. A. Merrifield: “Sensitivity of Internal Tide Generation in Hawaii”, *Geophys. Res. Lett.*, 39(L10606):1–6, 2012c.
21. D. Matthews, **B. S. Powell**, and I. Janeković: “Analysis of Four-dimensional Variational State Estimation of the Hawaiian Waters”, *J. Geophys. Res.*, 117(C03013), 2012.
22. Janeković, I. and **B. S. Powell**: “Analysis of Imposing Tidal Dynamics to Nested Numerical Models”, *Con. Shelf Res.*, 34:30–40, 2012.
23. Matthews, D., **B. S. Powell**, and R. Milliff: “Dominant Variability and Spatial Scales from Observations around the Hawaiian Islands”, *Deep Sea Res. I*, 58:979–987, 2011.
24. A. M. Moore, H. G. Arango, G. Broquet, **B. S. Powell**, J. Zavala-Garay, and A. T. Weaver: “The Regional Ocean Modeling System (ROMS) 4-dimensional variational data assimilation systems. Part I: System overview and formulation”, *Prog. Oceanog.*, 91:34–49, 2011a.
25. Moore, A. M., H. G. Arango, G. Broquet, C. Edwards, M. Veneziani, **B. S. Powell**, D. Foley, J. Doyle, D. Costa, and P. Robinson: “The Regional Ocean Modeling System (ROMS) 4-dimensional variational data assimilation systems. Part II: Performance and application to the California Current System”, *Prog. Oceanog.*, 91:50–73, 2011b.
26. A. M. Moore, H. G. Arango, G. Broquet, C. Edwards, M. Veneziani, **B. S. Powell**, D. Foley, J. Doyle, D. Costa, and P. Robinson: “The Regional Ocean Modeling System (ROMS) 4-dimensional variational data assimilation systems. Part III: Observation impact and observation sensitivity in the California Current System”, *Prog. Oceanog.*, 91:74–94, 2011c.

27. Broquet, G., A. M. Moore, H. G. Arango, C. A. Edwards, and **B. S. Powell**: “Ocean state and surface forcing correction using the ROMS-IS4DVAR data assimilation system”, *Mercator Ocean Quart. Newsl.*, 34:5–13, 2009a.
28. Broquet, G., C. A. Edwards, A. Moore, **B. S. Powell**, M. Veneziani, and J. D. Doyle: “Application of 4D-Variational data assimilation to the California Current System”, *Dynam. Atmos. Oceans*, 48:69–92, 2009b.
29. **B. S. Powell** and A. Moore: “Estimating the 4DVAR Analysis Error of GODAE Products”, *Ocean Dynam.*, 59:121–138, 2009a.
30. **B. S. Powell**, A. Moore, H. Arango, E. Di Lorenzo, R. Milliff, and R. R. Leben: “Near real-time Assimilation and Prediction in the Intra-Americas Sea with the Regional Ocean Modeling System (ROMS)”, *Dynam. Atmos. Oceans*, 48:46–68, 2009b.
31. **Powell, B. S.**, H. Arango, A. Moore, E. Di Lorenzo, R. Milliff, and D. Foley: “4DVAR Data Assimilation in the Intra-Americas Sea with the Regional Ocean Modeling System (ROMS)”, *J. Ocean Mod.*, 23:130–145, 2008.
32. E. D. Lorenzo, A. M. Moore, H. G. Arango, B. D. Cornuelle, A. J. Miller, **B. S. Powell**, B. S. Chua, and A. F. Bennett: “Weak and Strong Constraint Data Assimilation in the inverse Regional Ocean Modeling System (ROMS): development and application for a baroclinic coastal upwelling system.” *J. Ocean Mod.*, 16:160–187, 2007.
33. **B. S. Powell**, R. R. Leben, and N. L. Guinasso: “Comparison of Buoy and Altimeter-derived Shelf Currents using an Optimal Operator” *Geosci. Remote Sens. Let.*, 3:192–196, 2006.
34. **B. S. Powell**, and R. R. Leben: “An optimal filter for geostrophic mesoscale currents from along-track satellite altimetry.” *J. Oceanic and Atmos. Tech.*, 21:1633–1642, 2004.
35. Leben, R. R. and **B. S. Powell**: “Accuracy assessment of Jason-1 and TOPEX/ Poseidon along-track sea surface slope.” *Marine Geodesy*, 26:355–366, 2003.

Refereed Book Chapters:

1. **B. S. Powell**. “Treating nonlinearities in data-space variational assimilation.” In S. Park and L. Xu, editors, *Data Assimilation for Atmospheric, Oceanic and Hydrologic Applications*, volume 2, pages 233– 250. Springer-Verlag, 2013.

Awards

2009–2014 ONR Young Investigator Award (\$399,233)

Recent Service

UH/Department of Oceanography:

2013 Oceanography Video Committee
 2013–2014 Responsible for Graduate Comprehensive Maths Exam
 2013–2014 Chair, Departmental Personnel Committee
 2013–2015 Chair, Departmental Curriculum Committee
 2014–2015 Departmental Personnel Committee
 2014–present GES, Student Advisor

UH/School of Ocean and Earth Science and Technology (SOEST):

2010–present Research Computing Facility Steering Committee
 2008–present Pacific Islands Ocean Observing System Steering Committee
 2013–present UH SuperComputer Committee (handled purchasing and now managing UH HPC)

2015–present	JIMAR Senior Fellow
2016–present	Elected Senator to the Manoa Faculty Service
2016–2017	Vice Chair of Committee on Academic Policy and Planning
2017–2019	Senate Executive Committee
2018–current	Chair of the Manoa Faculty Senate
<u>National:</u>	
2011–present	OOI/IOOS Integration: chosen as one of two facilities working with OOI to coordinate OOI/IOOS data sharing for real-time modeling support.
2012	National Glider Plan Workshop, Scripps Institute of Oceanography
2011	Session Chair, Earth System Prediction Capability: Data Assimilation and Ocean Integration Workshop, University of Maryland.
2010	NSF Panel
<u>International:</u>	
2015	Australian Integrated Marine Observing System Collaborator
2015	Elected Session chair at Gordon Research Conference, Coastal Ocean Modeling, Biddeford, Maine.
<u>Public Education/Outreach:</u>	
2013–2014	Judge Hawaii State and Regional Science Fairs
2013–present	Collaborate with USCG on search and rescue via PacIOOS
2014	Provide Data Charts to C&C Lifeguards on Currents
2013–present	Reviewer: NSF, NASA proposals; <i>J. Geophys. Res.</i> , <i>J. Phys. Ocean.</i> , <i>Ocean. Dynam.</i>
2015–present	Review Editor: <i>Frontiers in Marine Science: Ocean Observations</i>
<u>Post-Doctoral Advisor:</u>	
Dr. Andrei Natarov	(2008–2010) coadvisor
Dr. Dax Matthews	(2009–2011)
Dr. Ivica Janeković	(2009–2011)
Dr. Joao de Souza	(2012–2014)
Dr. Samantha Stevenson	(2013–2015)
Dr. Dale Partridge	(2015–2018)
Dr. Sarah Zedler	(2016–2018)
Dr. Lisa Hahn-Woernle	(2016–present)
Dr. Tobias Friedrich	(2018–present)
Dr. Lindsay Veazey	(2018–present)
<u>Supervisor:</u>	
Marcia Hsu	Ocean Modeling, 2009–2011
Sarah Williamson	Ocean Modeling, 2009–2011