

Brian Powell

Education

- 2005 Ph.D., University of Colorado, Aerospace Engineering
(Physical Oceanography, dissertation titled: “Global Warming and Mesoscale Eddy Dynamics”)
- 2000 M.S., University of Colorado, Computer Science
(Artificial Intelligence, thesis titled: “Reinforcement Learning in Game Play”)
- 1993 B.S., University of Colorado, Aerospace Engineering

Professional History

- 2013–current Associate Professor, Department of Oceanography, University of Hawai‘i.
- 2008–2013 Assistant Professor, Department of Oceanography, University of Hawai‘i.
- 2006–2008 Postdoctoral Research Associate, Institute of Marine Science, University of California, Santa Cruz.
- 2005–2006 Postdoctoral Researcher, Cooperative Institute for Research in Environmental Sciences, University of Colorado.
- 2001–2005 Graduate Research Assistant, Colorado Center for Astrodynamics Research, University of Colorado.
- 1997–2001 Founder and President, OS, Inc. (Software Company)
- 1996–1997 Senior Engineer, InfoNow, Corp.
- 1994–1996 Algorithm Engineer, TRW Space/Defense Sector.

Research

Refereed Publications: (students or post-docs underlined; citation counts from Google Scholar; line separates work prior to arrival at UH)

- 2013 K. Chen, R. He, **B. S. Powell**, A. Moore, and H. Arango: “Data Assimilative Modeling Investigation of Gulf Stream Warm Core Ring Interaction with Continental Shelf and Slope Circulation, Part 1: Method”, *J. Geophys. Res.*, in revision.
- 2013 A. Natarov and **B. S. Powell**: “Sensitivity of the Hawaiian Lee Counter current to winds and upstream conditions”, *Dyn. Atmos. Oceans*, in revision.
- 2013 I. Janeković, **B. S. Powell**, D. Matthews, M. A. McManus, and J. Sevdjian: “4D-Var Data Assimilation in a Nested, Coastal Ocean Model: A Hawaiian Case Study”, *J. Geophys. Res.*, 118:114.
- 2013 **B. S. Powell**, C. G. Kerry, and B. D. Cornuelle: “Using a numerical model to understand the connection between the ocean and travel-time measurements”, *J. Acoust. Soc. Am.*, 134(4):3,2113,222.
- 2013 A. Johnson, **B. S. Powell**, and G. Steward: “Characterizing the effluence near Waikiki, Hawaii with a coupled biophysical model”, *Con. Shelf Res.*, 54:113.
- 2013 C. G. 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.*, 43:187204.

- 2013 **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. Springer-Verlag.
- 2012 **B. S. Powell**, I. Janeković, G. S. Carter, and M. A. Merrifield: “Sensitivity of Internal Tide Generation in Hawaii”, *Geophys. Res. Let.*, 39(L10606):16.
- 2012 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 Janeković, I. and **B. S. Powell**: “Analysis of Imposing Tidal Dynamics to Nested Numerical Models”, *Con. Shelf Res.*, 34:3040.
- 2011 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 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.
- 2011 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.
- 2011 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.
- 2009 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.*, 34:513.
- 2009 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.
- 2009 **B. S. Powell** and A. Moore: “Estimating the 4DVAR Analysis Error of GODAE Products”, *Ocean Dynam.*, 59:121–138.
- 2009 **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.
- 2008 **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.
- 2007 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.

- 2006 **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. Lett.*, 3:192–196.
- 2004 **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.
- 2003 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.

Other Publications:

- 2012 T. Reyer, J. Rolfe, M. Rice, **B. S. Powell**, M. McManus, J. Sevadjan, I. Janeković, and D. Rak: “Ocean Circulation and Predictive Modeling Study of Two Sea-Disposed Military Munitions Sites in Hawaii: Ordnance Reef (HI-06) and HI-01”, *NOAA Final Report*.
- 2011 M. Arrott, C. Alexander, J. Graybeal, C. Mueller, R. Signell, J. de La Beaujardiere, A. Taylor, J. Wilkin, **B. S. Powell**, J. Orcutt: “Building transparent data access for ocean observatories: Coordination of U.S. IOOS DMAC with NSF’s OOI Cyberinfrastructure”, IEEE, *Oceans’11*.

Academic

Primary Graduate Advisor:

- Rebecca Baltés 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 S. Dollar lab at UH.
- Colette Kerry Ph.D. (2010–present)
- Emma Nuss Ph.D. (2013–present)

Post-Doctoral Advisor:

- Andrei Natarov (2008–2010): now assistant researcher at IPRC
- Dax Matthews (2009–2011): now research associate at HNEI
- Ivica Janeković (2009–2011): now research associate at Rudjer Boskovic Institute
- Joao de Souza (2012–present)
- Samantha Stevenson (2013–present)

Thesis Committee:

- Jake Cass M.S., 2009–2010
- Ana Vaz Ph.D., 2008–2012
- Emily Norton M.S., 2011–present
- Christina Comfort M.S., 2011–present

Advisory Committee:

- Katharine Smith Ph.D., 2009
- Joy Shih Ph.D., 2009–present

Amanda Ziegler M.S., 2012–present

Supervisor:

Marcia Hsu Technician, 2009–2011

Service

UH/Department of Oceanography:

2013–present Chair Departmental Personnel Committee
2013–present Chair Departmental Curriculum Committee
2013–present Departmental Promotional Video Committee
2009–present Chair of Incoming Graduate Comprehensive Maths Exam
2011–2012 Global Biogeochemical Modeling Faculty Search Committee
2009–2010 Graduate Student Recruitment Committee
2009–2010 Chair of Physical Oceanography (PO) graduate student recruitment
2008–2009 co-Chair of PO Division Curriculum Committee

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

2012–present Asian-Pacific Economic Cooperation Committee
2008–present Hawaii Ocean Observing System Steering Committee
2010–present Research Computing Facility Steering Committee
2008 SOEST Young Investigator Search Committee

National:

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: Type II Climate Sciences Panel.

International:

2010 Host and a Sponsor of 2010 International ROMS/TOMS User Workshop at East-West Center, Univ. of Hawaii.
2010 Session convener and chair at AGU 2010 Ocean Sciences, PO09, “Science of Ocean Forecasting from Advanced Data Assimilation Methods”, Portland, OR.
2011 Session chair at Gordon Research Conference, Coastal Ocean Modeling, S. Handley, MA.
2008–2009 Guest Editor of *Ocean Dynam.*

Reviewer: National Science Foundation, *J. Phys. Oceanogr.*, *J. Geophys. Res.*, *Tellus*, *Ocean Model.*, *Ocean Science*, *Mon. Weather Rev.*, *Dynam. Atmos. Oceans*, *Limnol. Oceanogr.*, *Mar. Geod.*

Awards

2009 ONR Young Investigator Award

Collaborators

Ph.D. Advisor: Robert Leben, Univ. of Colorado

Postdoctoral: Andrew Moore, Univ. of California, Santa Cruz

Professional: Hernan Arango (Rutgers); Bruce Cornuelle (SIO); Emanuele Di Lorenzo (GA Tech);
Chris Edwards (UCSC); Ruoying He (NC State); Robert Hetland (Texas A&M);
Arthur Miller (SIO); Ralph Milliff (CIRES, CORA)