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Senior Scientist, 1992–present; tenure awarded, 1985, Associate Scientist, 1982–1992; Assistant Scientist, 1978–1982; Postdoctoral Investigator, 1975–1978; Woods Hole Oceanographic Institution. Visiting Scientist, September 1986–August 1987, Max Plancke Institut für Meteorologie, Hamburg, F.R. Germany. Visiting Scientist, January–June, 1983, National Center for Atmospheric Research, Boulder, Colorado. Visiting Scientist, September–December, 1982, Centre Oceanologique de Bretagne, I.F.R.E.M.E.R., Brest, France. Chemical Engineer, Environmental Protection Agency, Denver, Colorado, summer 1972.

Relevant and/or Significant Publications

- Owens, W. B., and F. P. Bretherton, 1978. A numerical study of mid-ocean mesoscale eddies. *Deep-Sea Research*, **25**, 1–14.
- The MODE Group, 1978. The Mid-Ocean Dynamics Experiment. *Deep-Sea Research*, **25**, 859–910.
- Owens, W. Brechner, 1979. Simulated dynamic balances for mid-ocean mesoscale eddies. *Journal of Physical Oceanography*, **9**, 337–359.
- Schmitz, William, J., Jr., and W. Brechner Owens, 1979. Observed and numerically simulated kinetic energies for MODE eddies. *Journal of Physical Oceanography*, **9**, 1294–1297.
- Owens, W. Brechner, and Nelson G. Hogg, 1980. Oceanic observations of stratified Taylor columns near a bump. *Deep-Sea Research*, **27**, 1029–1045.
- Richardson, P. L., J. F. Price, W. B. Owens, W. J. Schmitz, H. T. Rossby, A. M. Bradley, J. R. Valdes and D. C. Webb, 1981. North Atlantic subtropical gyre: SOFAR floats tracked by moored listening stations. *Science*, **213**, 435–437.
- Schmitz, W., J., Jr., J. F. Price, P. L. Richardson, W. B. Owens, D. C. Webb, R. E. Cheney, and H. T. Rossby, 1981. A preliminary exploration of the Gulf Stream system with SOFAR floats. *Journal of Physical Oceanography*, **11**, 1194–1204.
- Brown, E. D., and W. B. Owens, 1981. Observations of the horizontal interactions between the internal wave field and the mesoscale flow. *Journal of Physical Oceanography*, **11**, 1474–1480.
- Owens, W. B., J. R. Luyten, and H. L. Bryden, 1982. Moored velocity measurements on the edge of the Gulf-Stream recirculation. *Journal of Marine Research*, Supplement to **40**, 509–524.
- McWilliams, J. C., and the LDE Group, 1983. The local dynamics of eddies in the western North Atlantic. Chapter 5 in: *Eddies in Marine Science*, A. R. Robinson, editor, Springer-Verlag, Berlin, pp. 92–113.
- Owens, W. B., 1984. A synoptic and statistical description of the Gulf Stream and subtropical gyre using SOFAR floats. *Journal of Physical Oceanography*, **14**(6), 104–113.
- Warren, B. A., and W. B. Owens, 1985. Some preliminary results concerning deep northern-boundary currents in the North Pacific. *Progress in Oceanography*, **14**, 537–551.

- Owens, W. B., and R. C. Millard, Jr., 1985. A new algorithm for CTD oxygen calibration. *Journal of Physical Oceanography*, **15**(5), 621–631.
- Owens, W. B., 1985. A statistical description of the vertical and horizontal structure of eddy variability on the edge of the Gulf Stream recirculation. *Journal of Physical Oceanography*, **15**, 195–205.
- McWilliams, J. C., W. B. Owens, and B.-L. Hua, 1986. An objective analysis of the POLYMODE Local Dynamics Experiment, I. General formalism and statistical model selection. *Journal of Physical Oceanography*, **16**(3), 483–504.
- Hua, B.-L., J. C. McWilliams, and W. B. Owens, 1986. An objective analysis of the POLYMODE Local Dynamics Experiment, II. Streamfunction and potential vorticity fields during the intensive period. *Journal of Physical Oceanography*, **16**(3), 506–522.
- Brown, E., W. B. Owens, and H. L. Bryden, 1986. Eddy potential vorticity fluxes in the Gulf Stream recirculation. *Journal of Physical Oceanography*, **16**, 523–531.
- Lindstrom, E. J., C. C. Ebbesmeyer, and W. B. Owens, 1986. Structure and origin of a small cyclonic eddy observed during the POLYMODE Local Dynamics Experiment. *Journal of Physical Oceanography*, **16**, 562–570.
- Riser, S. C., W. B. Owens, H. T. Rossby, and C. C. Ebbesmeyer, 1986. The structure, dynamics, and origin of a small scale lens of water in the western North Atlantic thermocline. *Journal of Physical Oceanography*, **16**, 572–590.
- Gordon, A. L., and W. B. Owens, 1987. Polar oceans. *Reviews of Geophysics*, **25**, 227–233.
- Warren, B. A., and W. B. Owens, 1988. Deep currents in the central subarctic Pacific Ocean. *Journal of Physical Oceanography*, **18**(4), 529–551.
- Owens, W. B., P. L. Richardson, W. J. Schmitz, Jr., H. T. Rossby, and D. C. Webb, 1988. Nine-year trajectory of a SOFAR float in the southwestern North Atlantic. *Deep-Sea Research*, **35**(12), 1851–1857.
- Manley, T. O., J.-C. Gascard, and W. B. Owens, 1989. The Polar Floats Program. *Journal of Oceanic Engineering*, **14**, 186–194.
- Millard, R., W. B. Owens, and N. P. Fofonoff, 1990. On the calculation of the Brunt-Väisälä frequency. *Deep-Sea Research*, **37**(1), 167–181.
- Lemke, P., W. B. Owens, and W. D. Hibler, III, 1990. A coupled sea ice–mixed layer–pycnocline model for the Weddell Sea. *Journal of Geophysical Research*, **95**(C6), 9513–9525.
- Owens, W. B., and P. Lemke, 1990. Sensitivity studies with a sea ice–mixed layer–pycnocline model in the Weddell Sea. *Journal of Geophysical Research*, **95**(C6), 9527–9538.
- Stössel, A., P. Lemke, and W. B. Owens, 1990. Coupled sea ice–mixed layer simulations for the Southern Ocean. *Journal of Geophysical Research*, **95**(C6), 9539–9555.
- Owens, W. B., 1991. A statistical description of the mean circulation and eddy variability in the northwestern Atlantic using SOFAR floats. *Progress in Oceanography*, **28**, 257–303.
- Frye, D. E., and W. B. Owens, 1991. Recent developments in ocean data telemetry at Woods Hole Oceanographic Institution. *IEEE Journal of Oceanic Engineering*, **16**(4), 350–359.
- Hermann, A. J., and W. B. Owens, 1991. Modeling the geostrophic adjustment and spreading of waters formed by deep convection. In: *Deep Convection and Deep Water Formation in the Oceans*, P. C. Chu and J. C. Gascard, editors, Elsevier Publishing Company, 283–308.

- Hermann, A. J., and W. B. Owens, 1993. Energetics of gravitational adjustment for mesoscale chimneys. *Journal of Physical Oceanography*, **23**(2), 346–371.
- Worcester, P. F., J. F. Lynch, W. M. L. Morawitz, R. Pawlowicz, P. J. Sutton, B. D. Cornuelle, O. M. Johannessen, W. H. Munk, W. B. Owens, R. Shuchman, and R. C. Spindel, 1993. Evolution of the large-scale temperature field in the Greenland Sea during 1988–89 from tomographic measurements. *Geophysical Research Letters*, **20**, 2211–2214.
- Lozier, M. S., M. S. McCartney, and W. B. Owens, 1994. Anomalous anomalies in averaged hydrographic data. *Journal of Physical Oceanography*, **24**, 2624–2638.
- Pawlowicz, R., J. F. Lynch, W. B. Owens, P. F. Worcester, W. M. L. Morawitz, and P. J. Sutton, 1994. Thermal evolution of the Greenland Sea gyre in 1988–1989. *Journal of Geophysical Research*, **100**(C3), 4727–4750.
- Lozier, M. S., W. B. Owens, and R. G. Curry, 1995. The climatology of the North Atlantic. *Progress in Oceanography*, **36**, 1–44.
- Alverson, K., and W. B. Owens, 1996. Topographic preconditioning of open-ocean deep convection. *Journal of Physical Oceanography*, **26**, 2196–2213.
- Hogg, N. G., W. B. Owens, G. Siedler, and W. Zenk, 1996. Circulation in the Deep Brazil Basin. In: *The South Atlantic: Present and Past Circulation*, G. Wefer, W. H. Berger, G. Siedler and D. Webb, editors; Springer-Verlag, Berlin, Heidelberg, pp. 249–260.
- Hogg, N. G. and W. B. Owens, 1999. Direct measurement of the deep circulation within the Brazil Basin. *Deep-Sea Research II*, **46**, 335–353.
- Robbins, P. E., J. F. Price, W. B. Owens, and W. J. Jenkins, 2000. The importance of lateral diffusion for the ventilation of the lower thermocline in the subtropical North Atlantic. *Journal of Physical Oceanography*, **30**, 67–89.
- Lavender, K. L., R. E. Davis, and W. B. Owens, 2000. Direct velocity measurements in the Labrador and Irminger Seas describe pathways of Labrador Sea Water. *Nature*, **407**, 66–69.
- Dickson, B., J. Hurrell, N. Bindoff, A. Wong, B. Arbic, B. Owens, S. Imawaki, and I. Yashayaev, 2001. The World during WOCE. Chapter 7.3 in: *Ocean Circulation and Climate, Observing and Modelling the Global Ocean*, G. Siedler, J. Church, and W. Gould editors, International Geophysics Series, Volume 77, Academic Press, London, pp. 557–583.
- Owens, W. B. and B. A. Warren, 2001. Deep circulation in the northwest corner of the Pacific Ocean. *Deep-Sea Research I*, **48**, 959–993.
- Arbic, B. and W. B. Owens, 2001. Climatic warming of Atlantic intermediate waters. *Journal of Climate*, **14**, 4091–4108.
- Sherman, J., R. E. Davis, W. B. Owens, and J. Valdes, 2001. The autonomous underwater glider ‘Spray.’ *IEEE Journal of Oceanic Engineering*, **26**, 437–446.
- Lavender, K. L., R. E. Davis, and W. B. Owens, 2002. Observations of open-ocean deep convection in the Labrador Sea from subsurface floats. *Journal of Physical Oceanography*, **32**, 511–526.
- Wong, A. P. S., G. C. Johnson, and W. B. Owens, 2003. Delayed-mode calibration of autonomous CTD profiling float salinity data by θ -S climatology. *Journal of Atmospheric and Oceanic Technology*, **20**, 308–318.
- Rasmussen, L. L., G. Gawarkiewicz, W. B. Owens, and M. S. Lozier, 2005. Slope water, Gulf Stream and seasonal influences in the southern Mid-Atlantic Bight circulation during the fall-winter transition. *Journal of Geophysical Research*, **110**, CO2009, doi:10.1029/2004/JC002311, 16pp.

- Beardsley, R. C., R. Limeburner, and W. B. Owens, 2005. Drifter measurements of surface currents near Marguerite Bay on the West Antarctic Peninsula during Austral summer and fall. *Deep-Sea Research II*, (SO GLOBEC Special Issue), **51**, 1047–1064.
- Lavender, K. L., W. B. Owens, and R. E. Davis, 2005. The mid-depth circulation of the subpolar North Atlantic Ocean as measured by subsurface floats. *Deep-Sea Research I*, **52**, 767-785.
- Hyatt, J., M. Visbeck, R. Beardsley, and W. B. Owens, 2008. Measuring sea ice coverage, velocity and draft using a moored upward-looking acoustic Doppler current profiler (ADCP). *Deep-Sea Research II*, in press.
- Moffatt, Carlos, Robert Beardsley, W. Brechner Owens, and Nicole van Lipzig, 2008. A first description of the Antarctic Peninsula coastal current. *Deep-Sea Research II*, SO GLOBEC Special Issue, in press.
- Wong, A. P. S., and W. B. Owens, 2008. An improved calibration method for the drift of the conductivity sensor on autonomous CTD profiling floats by θ -S climatology. *Deep-Sea Research*, in press.
- Cornuelle, Bruce, W. Brechner Owens, Steven R. Jayne, and James C. McWilliams. Extending optimal interpolation for global velocity estimation. *Journal of Geophysical Research*, submitted.

Synergistic Activities: Brechner Owens has taught several classes in the MIT/WHOI Joint Program in Oceanography, including the introductory class to observational physical oceanography that services students in other disciplines as well as physical oceanography students. He has advised six students (1 M.S. and 5 Ph.D.). He has served on U.S. WOCE Steering Committee from 1990 to 1998 and on the international WOCE Scientific Steering Group from 1992 to 1998, serving as co-chair for the last 3 years. He is presently co-chair of the U.S. Advisory Panel for the Argo float program. He has worked in the development of neutrally buoyant float technology, including the commercialization of the RAFOS float and the development of autonomous float profiling and glider capabilities.

Collaborating Scientists over last 48 months (not in publications list); co-editors of a journal, compendium or conference proceeding over last 24 months (not in publications list): Russ Davis (SIO), James McWilliams (NCAR), Dean Roemmich (SIO), Bruce Cornuelle (SIO), Greg Johnson (PMEL), Jeff Sherman (SIO), Kara Lavender (SIO/WHOI).

Graduate Advisors: Thesis: Francis Bretherton, Johns Hopkins University/NCAR; Postdoctoral: Peter Rhines, U. Washington.

Ph.D. Students Advised: Ellen Brown, Keith Alverson, Rich Pawlowicz, Cecilie Mauritzen, Paul Robbins, Avon Russell, Jason Hyatt, Carlos Moffatt.

Post-Docs Supervised: Bach-Lien Hua, Nan Bray, Al Hermann, Susan Lozier, Michele Morris, Kara Lavender.