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November 16, 2016

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B. A., University of Maine, Orono, 1975 (Physics). Sc. D., Massachusetts Institute of Technology and Woods Hole Oceanographic Institution Joint Program in Oceanography, 1980 (Physical Oceanography).

Senior Scientist, 1996-present; Department Chair, July 2010-August 2014; Associate Scientist, 1986-1996; tenure awarded, 1990; Assistant Scientist, 1982-1986; Woods Hole Oceanographic Institution. National Research Council Postdoctoral Research Associate, July 1980-June 1982, Pacific Marine Environmental Laboratory, NOAA.

Member, Phi Beta Kappa, Phi Kappa Phi, Sigma Phi Sigma  
Fellow of the American Geophysical Union, 2004  
Fellow of the American Academy of Arts and Sciences, 2008

## U.S. Patents:

No. 5,869,756: Moored water profiling apparatus. Inventors: K. W. Doherty, J. M. Toole and D. E. Frye, Feb. 9, 1999.

No. 5,665,909: Free-fall, wire-guided hydrographic profiler. Inventors: K. W. Doherty, J. M. Toole, and R.C. Millard, Sept. 9, 1997

Research Interests: The physics of ocean mixing including the nature of finescale and microscale velocity, temperature and salinity fluctuations and the relationships between them. Polar oceanography and upper-ocean/sea ice interactions, Seasonal to multi-decadal variability of ocean water properties, stratification and circulation, ocean time-series stations. Global oceanic heat and fresh water budgets, water mass formation and circulation. Low-latitude ocean circulation, El Niño. Oceanographic instrument development.

**Peer-reviewed Publications**

Joyce, Terrence M., Walter Zenk, and John M. Toole, 1978. The anatomy of the Antarctic Polar Front in the Drake Passage. *Journal of Geophysical Research*, **83**(C12), 6093-6113.

Horne, E. P. W., and J. M. Toole, 1980. Sensor response mismatches and lag correction techniques for temperature-salinity profilers. *Journal of Physical Oceanography*, **10**(7), 1122-1130.

Toole, John M., and Daniel T. Georgi, 1981. On the dynamics and effects of double-diffusively driven intrusions. *Progress in Oceanography*, **10**, 123-145.

Toole, John M., 1981. Sea ice, winter convection, and the temperature minimum layer in the Southern Ocean. *Journal of Geophysical Research*, **86**(C9), 8037-8047.

Toole, John M., 1981. Intrusion characteristics in the Antarctic Polar Front. *Journal of Physical Oceanography*, **11**(6), 780-793.

Toole, John M., 1981. Anomalous characteristics of equatorial thermohaline fine-structure. *Journal of Physical Oceanography*, **11**(6), 871-876.

Georgi, Daniel T., and John M. Toole, 1982. The Antarctic Circumpolar Current and the oceanic heat and freshwater budgets. *Journal of Marine Research*, Supplement to **40**, 183-197.

Hayes, S. P., J. M. Toole, and L. J. Mangum, 1983. Water-mass and transport variability at 110°W in the equatorial Pacific. *Journal of Physical Oceanography*, **13**(2), 153-168.

- Toole, John M., and Stanley P. Hayes, 1984. Finescale velocity-density characteristics and Richardson Number statistics of the eastern equatorial Pacific. *Journal of Physical Oceanography*, **14**(4), 712–726.
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- Toole, John M., and Mary E. Raymer, 1985. Heat and fresh water budgets of the Indian Ocean – revisited. *Deep-Sea Research*, **32**(8A), 917–928.
- Mangum, L. J., S. P. Hayes, and J. M. Toole, 1986. Eastern Pacific Ocean circulation near the onset of the 1982/83 El Niño. *Journal of Geophysical Research*, **91**(C7), 8428–8436.
- Toole, John M., Hartmut Peters, and Michael C. Gregg, 1987. Upper ocean shear and density variability at the Equator during TROPIC HEAT. *Journal of Physical Oceanography*, **17**(9), 1397–1406.
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- Peters, H., M. C. Gregg, and J. M. Toole, 1988. On the parameterization of equatorial turbulence. *Journal of Geophysical Research*, **93**, 1199–1218.
- Schmitt, Raymond W., John M. Toole, Richard L. Koehler, Edward C. Mellinger, and Kenneth W. Doherty, 1988. The development of a fine- and microstructure profiler. *Journal of Atmospheric and Oceanic Technology*, **5**(4), 484–500.
- Toole, J. M., E. Zou, and R. C. Millard, 1988. On the circulation of the upper waters in the western equatorial Pacific Ocean. *Deep-Sea Research*, **35**(9), 1451–1482.
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