

## Timothy Frederick Duda

### Senior Scientist

Applied Ocean Physics and Engineering Department, MS 11  
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### Research Interests

Internal gravity waves, ocean turbulence and mixing, ocean acoustic propagation, acoustic remote sensing; recent focus on internal tides, submerged float technology and three-dimensional aspects of acoustic fields.

### Education

1979              B.A., Physics, Cum Laude  
Pomona College, Claremont, CA  
1986              Ph.D., Oceanography, Scripps Institution of Oceanography,  
University of California, San Diego (with Prof. Charles S. Cox)

### Professional Experience

1986              Postdoctoral research, Ocean Research Division, Scripps Institution  
of Oceanography, UC San Diego (with Prof. Charles S. Cox)  
1986—1988      Postdoctoral research, Division of Natural Sciences,  
University of California, Santa Cruz (with Prof. Stanley M. Flatté)  
1988—1991      Research Oceanographer, Division of Natural Sciences,  
University of California, Santa Cruz  
1991—1995      Assistant Scientist, Woods Hole Oceanographic Institution  
1995—2011      Associate Scientist, Woods Hole Oceanographic Institution  
2011—              Senior Scientist, Woods Hole Oceanographic Institution

### Professional Society Membership

American Geophysical Union  
American Meteorological Society  
Acoustical Society of America. Fellow  
Institute of Electrical and Electronics Engineers (IEEE). Senior member  
IEEE Oceanic Engineering Society

**Refereed Publications**

- [1] Long, G. L., W. R. Ellington and T. F. Duda, Comparative enzymology and physiological role of D-lactate dehydrogenase from the foot muscle of two gastropod molluscs, *J. Exp. Zool.*, 207, 237-248, 1979.
- [2] Duda, T. F., and C. S. Cox, Vorticity measurement in a region of coastal ocean eddies by observation of near-inertial oscillations, *Geophys. Res. Lett.*, 14, 793-796, 1987.
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- [4] Duda, T. F., S. M. Flatté and D. B. Creamer, Modelling meter-scale acoustic intensity fluctuations from oceanic fine structure and microstructure, *J. Geophys. Res.*, 93, 5130-5142, 1988.
- [5] Duda, T. F., and C. S. Cox, Vertical wave number spectra of velocity and shear at small internal wave scales, *J. Geophys. Res.*, 94, 939-950, 1989.
- [6] Flegal, A. R., T. F. Duda and S. Niemeier, High gradients of lead isotopic composition in north-east Pacific upwelling filaments, *Nature*, 339, 458-460, 1989.
- [7] Duda, T. F., Modeling weak fluctuations of undersea telemetry signals, *IEEE J. Oceanic Eng*, 16, 3-11, 1991.
- [8] Duda, T. F., S. M. Flatté, J. A. Colosi, B. D. Cornuelle, J. A. Hildebrand, W. S. Hodgkiss, Jr., P. F. Worcester, B. M. Howe, J. A. Mercer and R. C. Spindel, Measured wavefront fluctuations in 1000-km pulse propagation in the Pacific Ocean, *J. Acoust. Soc. Am.*, 92, 939-955, 1992.
- [9] Duda, T. F., Analysis of finite-duration wide-band frequency sweep signals for ocean tomography, *IEEE J. Oceanic Eng*, 18, 87-94, 1993.
- [10] Cornuelle, B. D., P. F. Worcester, J. A. Hildebrand, W. S. Hodgkiss Jr., T. F. Duda, J. Boyd, B. M. Howe, J. A. Mercer and R. C. Spindel, Ocean acoustic tomography at 1000-km range using wavefronts measured with a large aperture vertical array, *J. Geophys. Res.*, 98, 16,365-16,377, 1993.
- [11] Worcester, P. F., B. D. Cornuelle, J. A. Hildebrand, W. S. Hodgkiss Jr., T. F. Duda, J. Boyd, B. M. Howe, J. A. Mercer and R. C. Spindel, A comparison of measured and predicted broadband acoustic arrival patterns in travel time-depth coordinates at 1000-km range, *J. Acoust. Soc. Am.*, 95, 3118-3128, 1994.
- [12] Duda, T. F., and J. B. Bowlin, Ray-acoustic caustic formation and timing effects from ocean sound-speed relative curvature, *J. Acoust. Soc. Am.*, 96, 1033-1046, 1994.
- [13] Duda, T. F., and D. C. Jacobs, Comparison of shear measurements and mixing predictions with a direct observation of diapycnal mixing in the Atlantic thermocline, *J. Geophys. Res.*, 100, 13,481-13,498, 1995.
- [14] Duda, T. F., R. A. Pawlowicz, J. F. Lynch and B. D. Cornuelle, Simulated tomographic reconstruction of ocean features using drifting acoustic receivers and a navigated source, *J. Acoust. Soc. Am.*, 98, 2270-2279, 1995.
- [15] Washburn, L., T. F. Duda and D. C. Jacobs, Interpreting conductivity microstructure: Estimating the temperature variance dissipation rate. *J. Atmos. Oceanic Technol.*, 13, 1166-1188, 1996.
- [16] Preisig, J. C., and T. F. Duda, Coupled acoustic mode propagation through continental shelf internal solitary waves, *IEEE J. Oceanic Eng.*, 22, 256-269, 1997.

- [17] Duda, T. F., and D. A. Trivett, Predicted scattering of sound by diffuse hydrothermal vent plumes at mid-ocean ridges. *J. Acoust. Soc. Am.*, *103*, 330-335, 1998.
- [18] Duda, T. F., and D. C. Jacobs, Stress/shear correlation: Internal wave/wave interaction and energy flux in the upper ocean, *Geophys. Res. Lett.*, *25*, 1919-1922, 1998.
- [19] Duda, T. F., and J. C. Preisig, A modeling study of acoustic propagation through moving shallow-water solitary wave packets, *IEEE J. Oceanic Eng.*, *24*, 16-32, 1999.
- [20] Rehmann, C. R., and T. F. Duda, Diapycnal diffusivity inferred from scalar microstructure measurements near the New England shelf/slope front, *J. Phys. Oceanogr.*, *30*, 1354-1371, 2000.
- [21] Duda, T. F., and C. R. Rehmann, Systematic microstructure variability in double-diffusively stable coastal waters of nonuniform density gradient, *J. Geophys. Res.*, *107(C10)*, 3144, doi:10.1029/2001JC000844, 2002.
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- [23] Duda, T. F., Finescale shear at 1660 and 2850 decibars over the Mid-Atlantic Ridge in the eastern Brazil Basin, *J. Phys. Oceanogr.*, *34*, 1281-1292, 2004.
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- [47] Chiu, L. Y. S., Y.-T. Lin, C.-F. Chen, T. F. Duda and B. Calder, Focused sound from three-dimensional sound propagation effects over a submarine canyon, *J. Acoust. Soc. Am.*, 129, EL260-EL266, 2011.

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- [53] Lynch, J. F., C. Emerson, P. A. Abbot, G. G. Gawarkiewicz, A. E. Newhall, Y.-T. Lin, and T. F. Duda, On whether azimuthal isotropy and alongshore translational invariance are present in low-frequency acoustic propagation along the New Jersey shelfbreak, *J. Acoust. Soc. Am.*, *131*, 1762-1781, 2012.
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- [55] Udovydchenkov, I. A., M. G. Brown, and T. F. Duda, Piecewise coherent mode processing of acoustic data recorded on two horizontally separated vertical line arrays, *J. Acoust. Soc. Am.*, *131* EL492-498, 2012.
- [56] Udovydchenkov, I. A., M. G. Brown, T. F. Duda, J. A. Mercer, R. K. Andrew, P. F. Worcester, M. A. Dzieciuch, B. M. Howe, and J. A. Colosi, Modal analysis of the range evolution of broadband wavefields in the North Pacific Ocean: Low mode numbers, *J. Acoust. Soc. Am.*, *131*, 4409-4427, 2012.
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- [58] Lin, Y.-T. and T. F. Duda, A higher-order split-step Fourier parabolic-equation sound propagation solution scheme, *J. Acoust. Soc. Am.*, *132*, EL61-EL67, 2012.
- [59] Udovydchenkov, I. A., R. A. Stephen, T. F. Duda, S. T. Bolmer, P. F. Worcester, M. A. Dzieciuch, J. A. Mercer, R. K. Andrew, and B. M. Howe, Bottom interacting sound at 50 km range in a deep ocean environment, *J. Acoust. Soc. Am.*, *132*, 2224-2231, 2012.
- [60] Lin, Y.-T., J. M. Collis, and T. F. Duda, A three-dimensional parabolic equation model of sound propagation using higher-order operator splitting and Padé approximants, *J. Acoust. Soc. Am.*, *132*, EL364-370, 2012.

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### Other Publications

- Duda, T. F., *Observations of Horizontal Flow, Vertical Shear and Microstructure in the Upper Ocean*, Ph.D. Dissertation, University of California, San Diego, 151 pages, 1986.
- Duda, T. F., and S. M. Flatté, Remote sensing of ocean turbulence using unsaturated acoustic transmission, in *Preprints from the Eighth Symposium on Turbulence and Diffusion*, American Meteorological Society, pp. 168-171, 1988.
- Duda, T. F., and C. S. Cox, Quasi-Lagrangian measurements of microstructure and shear near a front in the coastal California thermocline, *Scripps Inst. Oceanog. Reference Series 88-15*, 33 pages, 1988.
- Howe, B. M., J. A. Mercer, R. C. Spindel, P. F. Worcester, J. A. Hildebrand, W. S. Hodgkiss, Jr., T. F. Duda and S. M. Flatté, SLICE89: A single slice tomography experiment, in *Proceedings of the Workshop on Ocean Variability and Acoustic Propagation*, J. Potter and A. Warn-Varnas, Eds., Kluwer, pp. 81-86, 1991.
- Flatté, S. M., J. Colosi, G. L. Rovner and T. F. Duda, Impulse response analysis of ocean acoustic propagation, in *Proceedings of the Workshop on Ocean Variability and Acoustic Propagation*, J. Potter, A. Warn-Varnas, Eds., Kluwer, pp. 161-172, 1991.
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- Cornuelle, B. D., P. F. Worcester, J. A. Hildebrand, W. S. Hodgkiss, Jr., T. F. Duda, B. M. Howe, J. A. Mercer and R. C. Spindel, Vertical slice ocean acoustic tomography at 1000-km range in the North Pacific Ocean, *Scripps Inst. Oceanog. Reference Series 92-17*, 44 pages, 1992.
- Bowlin, J. B., J. L. Spiesberger, T. F. Duda and L. E. Freitag, Ocean acoustical ray-tracing software RAY, WHOI Tech Rept., WHOI-93-10, 47 pages, 1993
- Duda, T. F., and D. C. Jacobs, Stress/shear correlation: Observations of internal wave/wave interaction and energy flux in the upper ocean, in *Preprints from the 11th Conference on Atmospheric Oceanic Fluid Dynamics*, American Meteorological Society, pp. 287-291, 1997.
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- Duda, T. F., C. R. Rehmann and J. R. Ledwell, Mixing in a Bottom Layer Associated with the New England Shelf/Slope Water Front, in *Coastal Ocean Processes Symposium: A tribute to William D. Grant*, WHOI Tech Rept., WHOI-99-04, pp. 57-60, 1999.
- Duda, T. F., and D. M. Farmer, Editors, *The 1998 WHOI/IOS/ONR Internal Solitary Wave Workshop: Contributed Papers*. WHOI Tech. Rept., WHOI-99-07, 251 pages, 1999.
- Duda, T. F., and J. C. Preisig, Acoustic mode coupling within internal solitary waves and wave groups, in *The 1998 WHOI/IOS/ONR Internal Solitary Wave Workshop: Contributed Papers*. WHOI Tech. Rept., WHOI-99-07, 22-28, 1999.
- Newhall, A., L. Costello, T. Duda, J. Dunn, G. Gawarkiewicz, J. Irish, J. Kemp, N. McPhee, S. Libertore, J. Lynch, W. Ostrom, T. Schroeder, R. Trask, and K. Von der Heydt, Preliminary acoustic and oceanographic observations from the ASIAEX 2001 South China Sea Experiment, WHOI

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- Duda, T. F., B. J. Guest, C. M. Wooding, C. M. Jones, S. Lelievre, and D. C. Webb, Shearwater floats in the area of the WHOI Brazil Basin Tracer Release Experiment: Technical and Oceanographic Data, WHOI Tech. Rept., WHOI-2002-01, 44 pages, 2002.
- Duda, T. F., Relative influences of various environmental factors on 50-1000 Hz sound propagation in shelf and slope areas, in *Impact of Littoral Environmental Variability on Acoustic Predictions and Sonar Performance*, N. G. Pace and F. B. Jensen, Eds., Kluwer, Dordrecht, pp. 393-400, 2002.
- Duda, T. F., Internal wave effects on acoustic propagation, in *Proceedings of 1st International Conference on Underwater Acoustic Measurements: Technologies and Results*, J. S. Papadakis and L. Bjorno, Eds., 2005.
- Heaney, K. D., and T. F. Duda, Non-linear optimization of multi-vehicle ocean sampling networks for cost-effective ocean prediction studies, in *Oceans'06 (Singapore) Conference proceedings*, IEEE/MTS, May 2006.
- Duda, T. F., A. K. Morozov, B. M. Howe, M. G. Brown, K. Speer, P. Lazarevich, P. F. Worcester, and B. D. Cornuelle, Evaluation of a long-range joint acoustic navigation/thermometry system, in *Oceans'06 (Boston) Conference proceedings*, IEEE/MTS, Sept 2006. (6 pp.)
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- Duda, T. F., Initial results from a Cartesian three-dimensional parabolic equation acoustical propagation code, WHOI Tech. Rept., WHOI-2006-14, 2006. (20 pp.)
- Duda, T. F., B. M. Howe and J. H. Miller, Acoustics in global process ocean observatories, *Sea Technology*, 48, 35-38, 2007.
- Duda, T. F., Examining the validity of approximations to fully three-dimensional shallow-water acoustic propagation through nonlinear gravity waves, in *Oceans'07 (Aberdeen) Conference proceedings*, IEEE, June 2007. (5 pp.)
- Duda, T. F., and J. Collis, Acoustic field coherence in four-dimensionally variable shallow water environments: Estimation using co-located horizontal and vertical line arrays, in *Proceedings of 2nd International Conference on Underwater Acoustic Measurements: Technologies and Results*, J. S. Papadakis and L. Bjorno, Eds., 2007 (8 pp.)
- Irish, J. D., J. F. Lynch, J. N. Kemp, T. F. Duda and A. E. Newhall, A moored array for measuring internal solitary waves during Shallow Water 06, *Oceans 2007 Vancouver Conference Proceedings*, doi 10.1109/OCEANS.2007.4449170, 2007 (6 pp.)
- Newhall, A. E., T. F. Duda, K. von der Heydt, J. D. Irish, J. N. Kemp, S. A. Lerner, S. P. Liberatore, Y.-T. Lin, J. F. Lynch, A. R. Maffei, A. K. Morozov, A. Shmelev, C. J. Sellers, W. E. Witzell, Acoustic and oceanographic observations and configuration information for the WHOI moorings from the SW06 experiment, Woods Hole Oceanog. Inst. Tech. Rept., WHOI-2007-04, 2007.
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- Dushaw, B., W. Au, A. Beszczynska-M&Auml;Jller, R. Brainard, B. Cornuelle, T. Duda, M. Dzieciuch, E. Fahrbach, A. Forbes, L. Freitag, J.-C. Gascard, A. Gavrilov, J. Gould, B. Howe, S. Jayne, O. M. Johannessen, J. Lynch, D. Martin, D. Menemenlis, P. Mikhalevsky, J. H. Miller, W. H. Munk, J. Nystuen, R. Odom, J. Orcutt, T. Rossby, H. Sagen, S. Sandven, J. Simmen, E. Skarsoulis, R. Stephen, S. Vinogradov, K. B. Wong, P. F. Worcester, and C. Wunsch, A Global Ocean Acoustic Observing Network, Community white paper, in *Proceedings of "Ocean information for society: sustaining the benefits, realizing the potential, OceanObs'09"*, September 21-25, 2009, Venice, Italy, 2009.
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- Duda, T. F., Y.-T. Lin, W. Zhang, B. D. Cornuelle, P. F. J. Lermusiaux, Computational studies of three-dimensional ocean sound fields in areas of complex seafloor topography and active ocean dynamics, in *Proceedings of 10th International Conference on Theoretical and Computational Acoustics, ICTCA 2011*, Taipei, Taiwan, World Scientific Publishing, 2011.
- Lin, Y.-T., A. E. Newhall, T. F. Duda and C.-F. Chen, Numerical considerations for three-dimensional sound propagation modeling: Coordinate systems and grid sizes, in *Proceedings of 10th International Conference on Theoretical and Computational Acoustics, ICTCA 2011*, Taipei, Taiwan, World Scientific Publishing, 2011.
- Duda, T. F., Theory and observation of anisotropic and episodic internal wave effects on 100-400 Hz sound, in *Proceedings of 4th International Conference on Underwater Acoustic Measurements: Technologies and Results*, J. S. Papadakis and L. Bjorno, Eds., 999-1006, 2011.
- Duda, T. F., W. G. Zhang and Y.-T. Lin, Studies of internal tide generation at a slope with nonlinear and linearized simulations: Dynamics and implications for ocean acoustics, in *Oceans 2012 Hampton Roads Conference Proceedings*, IEEE/MTS, Oct. 2012 (6 pp.)

### Workshops and Panels

WOCE *Ad Hoc* Motional Electromagnetic Measurements Group, UW-APL, February 1989.

Office of Naval Research Acoustic Tomography Review, Arlington VA, November 1989.

North Atlantic Current Workshop, University of Rhode Island, March 1992.

ONR Shallow-Water Acoustics Workshop, Naval Research Lab, Stennis Space Center, October 1996.

ONR Long-Range Acoustics Workshop, Lake Arrowhead, CA, March 1997.

ONR/IOS/WHOI Internal Solitary Wave Workshop, October 1998 (See “Other Professional Activities”).

ONR Acoustic Observatory/Robust Passive Sensor (AO/RPS) Testbed Workshop, Newport, RI, June 2002.

ONR Internal Solitary Wave Workshop, Williamsburg, VA, July 2003.

ONR Nonlinear Littoral Internal Wave and Assessing the Effectiveness of Parameterizations Workshops, Herndon, VA, May 2004.

ONR Nonlinear Littoral Internal Wave Initiative Workshop, San Francisco, CA, August 2005.

ORION Observatory OOI Design and Implementation Workshop, Salt Lake City, March 2006.

NRL-sponsored Sensor Fusion meeting, December 2006.

NSF Workshop on Strongly Nonlinear Internal Waves, New Jersey Institute of Technology, March 2007

Five ONR Shallow-Water’06/Nonlinear Internal Wave Workshops, 2007, 2008(2), 2009 and 2010.

DIMES Southern Ocean Workshop, 2008.

Naval Research Lab. Technical Metrics Workshop, 2008.

ONR Quantifying, Predicting and Exploiting Uncertainty Workshop, Taipei, Nov. 2010.

Ocean Integration in Earth System Prediction Capability (ESPC) Workshop: Data Assimilation, U. of Maryland, Sept. 2011.

Oceanography of the Continental Shelf and Slope: Pioneer Array Science Workshop. U. Mass. Dartmouth, June 2012.

### **Oceanographic Cruises and Field Work**

July 1980: *RV Ellen B. Scripps*, San Diego, CA, Chief Scientist C. Cox. Cartesian Diver velocity and microstructure profiler testing.

June 1980: *RV Melville*, San Diego, CA to La Paz, BCS Mexico, Co-chief Scientists J. McClain and K. McDonald. Navigated-cable ocean bottom seismometer array deployment at East Pacific Rise (21 N); bottom dredging.

November 1980: *RV New Horizon*, San Diego, CA, Co-Chief Scientists C. Cox and L. Regier. AMETEK ADCP testing against VMCM mooring; Cartesian Diver profiler deployment.

November 1983: *RV Acania*, Monterey, CA, Co-Chief Scientists T. P. Stanton and R. Lueck. Cartesian Diver deployment; concurrent turbulent dissipation profiling (CAMEL 2); mixed-layer tow-yoing near the drifting platform R/P *FLIP* (MILDEX program).

March 1984: *RV Ellen B. Scripps*, San Diego, CA, Chief Scientist C. Cox. Cartesian Diver velocity profiling in San Diego Trough; electric field recorder tests.

May 1984: *MV Fisherette*, San Diego, CA, Chief Scientist T. Duda. Cartesian Diver velocity profiling in San Diego Trough.

August 1984: *RV John D. Isaacs*, San Diego, CA, Chief Scientist T. Duda. Cartesian Diver velocity profiling in a coastal jet offshore of San Luis Obispo, CA.

- April 1985: *RV Robert G. Sproul*, San Diego, CA, Chief Scientist C. Cox. Cartesian Diver profiling west of Baja California; attempted drag recovery of stranded active electromagnetic crustal sounding gear.
- September 1985: *MV Sand Dollar*, San Diego, CA, Chief Scientist T. Duda. Cartesian Diver velocity profiling in San Diego Trough.
- October 1985: *MV Sand Dollar*, San Diego, CA, Chief Scientist T. Duda. Cartesian Diver velocity profiling in San Diego Trough.
- August 1988: *RV Columbus Iselin*, Miami, FL, Chief Scientist H. Deferrari. Set and recover deep-sea acoustic source and receiver array moorings for a 300-km propagation study. (Two 6-day trips.)
- May 1989: *RV Columbus Iselin*, Miami, FL, Chief Scientist H. Deferrari. Set and recover source and receiver moorings for acoustic propagation study. (Two 6-day trips.)
- April/May 1993: *CSS Hudson*, Halifax, NS, Canada to Las Palmas, Gran Canaria, Spain, Chief Scientist N. Oakey. Sample J. Ledwell's intentional-release chemical tracer; sample microstructure; Cartesian Diver velocity profiling (NATRE mixing study, 39 days).
- September 1995: *RV Oceanus*, Woods Hole, MA, Chief Scientist J. Ledwell. Inject and sample dye; physical measurements (Coastal Mixing and Optics (CMO) Tracer Diffusion Expt., 6 days).
- September 1995: Shearmeter testing at Seneca Lake, New York, with Douglas Webb (Webb Research Corp.). Small boats.
- June 1996: Shearmeter testing at Seneca Lake, New York, with Douglas Webb and Clayton Jones (Webb Research Corp.). Small boats.
- September 1996: *RV Oceanus*, Woods Hole, MA, Chief Scientist J. Ledwell. Inject and sample dye; physical measurements; microstructure profiling (EPSONDE, N. Oakey) (CMO, 14 days).
- August 1997: *RV Oceanus*, Woods Hole, MA, Chief Scientist J. Ledwell. Inject and sample dye; physical measurements; microstructure profiling (EPSONDE, N. Oakey); towed microstructure recording (CMO, 14 days).
- April 2000: *RV Revelle*, Pusan, Korea to Kaohsiung, Taiwan, Chief Scientist J. Lynch. ASIAEX pilot study: moorings, CTD, bottom sampling, seismic survey. (20 days)
- February 2001: *RV Oceanus*, Bridgetown, Barbados to Fortaleza, Brazil, Chief Scientist R. Limeburner. Mooring and CTD's in Antarctic Bottom Water at the equator in the Atlantic; deployment of Shearmeter abyssal drifting floats in the Guiana Basin. (14 days)
- April 2001: *RV Ocean Researcher 1*, Kaohsiung, Taiwan, Chief Scientist Y. J. Yang. ASIAEX South China Sea mooring deployment cruise, instruments deployed at 31 sites, CTD's. (7 days)
- May 2001: *RV Ocean Researcher 1*, Kaohsiung, Taiwan, Chief Scientist Y. J. Yang. ASIAEX South China Sea mooring recovery cruise. Mooring recoveries, CTD casts, compromised mooring search, drag, and salvage. (8 days)
- August 2004: *RV Endeavor*, Narragansett, RI, Chief Scientist T. Duda. Towed instrument study of continental shelf turbulent mixing. (7 Days)
- July-Sept. 2006: *RV Knorr*, Woods Hole, MA, Chief Scientist J. Lynch. ONR SW06 mooring cruises. Environmental and acoustic mooring deployment and recovery. (2 cruises, 17 days total)
- May 2008: *RV Robert Gordon Sproul*, San Diego, CA. Chief Scientist T. Duda. DIMES Shearmeter testing in San Diego Trough. (3 days)
- Sept. 2009: *RV Ocean Researcher 1*, Keelung, Taiwan, Chief Scientist Y.-J. Yang. ONR QPE program adaptive acoustic and environmental sampling NE of Taiwan. (8 days)

### **Journal and Book Reviews**

Cambridge University Press

*Chinese Journal of Oceanology and Limnology*

*Continental Shelf Research*

*Deep-Sea Research*

*Dynamics of Atmospheres and Oceans*

*Geophysical Research Letters*

*IEEE Journal of Oceanic Engineering*

*IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*

*Journal of Atmospheric and Oceanic Technology*

*Journal of Geophysical Research*

*Journal of Marine Research*

*Journal of Ocean Technology*

*Journal of Physical Oceanography*

*Journal of the Acoustical Society of America*

*Marine and Freshwater Research*

*Nonlinear Processes in Geophysics*

*Ocean Dynamics*

*Progress in Oceanography*

*Surveys in Geophysics*

*U.S. Navy Journal of Underwater Acoustics*

### **Government Agency Service**

Natural Environment Research Council-UK: Reviewer

Natural Sciences and Engineering Research Council of Canada: Reviewer

US National Oceanic and Atmospheric Administration Office of Ocean Exploration: Reviewer

U.S. National Science Foundation Reviewer (Physical Oceanography, Polar Programs, Ocean Instrumentation, Biological Oceanography)

U.S. National Science Foundation Panel (Geoscience Instrumentation SBIR, twice)

Research Council of Norway: Reviewer

### **Other Professional Activities**

ONR/IOS/WHOI Workshop: Internal Solitary Waves in the Ocean: Their Physics and Implications for Acoustics, Biology and Geology, October 1998. Co-organizer with Dr. David Farmer of IOS.

Woods Hole Oceanographic Inst. Service:

- Member and Chair, WHOI Scientific Staff Executive Committee. (3-yr term)
- Member and Chair, WHOI Staff Committee. (3-yr term)
- Member, WHOI Postdoc Selection Committee.
- Member, AOPE Postdoc Mentoring Committee.
- WHOI Library Committee

Professional Society Service:

- Member, Technical Committee on Acoustical Oceanography (AO), Acoustical Society of America (Three 3-yr terms)
- Member, ASA-AO Subcommittee on Integrated Acoustics Systems for Ocean Observatories

(IASOO)

- Associate Editor, Journal of the Acoustical Society of America
- Acoustical Society of America (ASA) meeting technical program organizer (TPOM; twice)
- Chair, IEEE-OES Technical Committee on Environmental Acoustics, 2005- .
- Oceans '08 Kobe meeting: Asian Seas Acoustics session organizer
- Spring 2009 ASA meeting: Coherence and Acoustical Sensing session organizer
- Fall 2009 ASA meeting: Ocean Acidity and Acoustics session organizer; Stanley Flatté Memorial session co-organizer
- Spring 2011 ASA meeting: Ocean Observatories and Acoustic Observations session co-organizer

## **Education**

Advisor:

Chris Rehmann, WHOI Postdoctoral Fellow  
Ngoc Tran, WHOI Summer Student Fellow  
Anne-Sophie Corbeau, WHOI summer guest student  
Odile Hebert, WHOI summer guest student  
Jinshan Xu, Joint Program PhD Student

PhD thesis committee member:

Four WHOI/MIT joint program students (R. Headrick, B. Sperry, M. Sundermeyer, P. Echeverri)  
One URI student (Q. Li)  
One Northeastern University student (M. Andrews)

Thesis reader, two University of New South Wales students (Masters: M. DeGabriele; PhD: G. Buckley)