

Cabell S. Davis

Senior Scientist

Biology Department

Woods Hole Oceanographic Institution

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Education:

Ph.D., Boston University Marine Program 1982

B.S., University of Tampa (Biology) 1975

Awards:

Magna Cum Laude, Olsen Science Scholarship, Seimer Science Award, Alpha Chi,

Omicron Delta Kappa, Phi Eta Sigma

ASLO Lindeman Award

WHOI OLI Fellowship (2003-2005)

Military Service:

U.S. Navy, USNAB, Norfolk, VA, 1969-1971

Academic and Research Experience:

Director, Ocean Life Institute, WHOI, 2006-

Chair, US GLOBEC Northwest Atlantic Program, 2006-

Senior Scientist, Department of Biology, WHOI, 1999-

Associate Scientist, Department of Biology, WHOI, 1989-1999

Assistant Scientist, Department of Biology, WHOI, 1985-1988

Postdoctoral Investigator (Warm Core Rings Project), WHOI, 1982-1984

Fishery Biologist (Plankton Ecology), NOAA, NMFS, Woods Hole, 1977-1982

Teaching Assistant, Marine Biological Laboratory, 1979

Assistant Museum Curator, Marine Biological Laboratory, 1977

Laboratory Instructor, General Biology, Boston University, 1976-1977

Research Assistant, Boston University Marine Program, Woods Hole, 1976

Professional Societies:

American Society of Limnology and Oceanography

Optical Society of America

American Association for the Advancement of Science

American Geophysical Union

Publications

Davis, C. S. 1982. *Processes controlling zooplankton abundance on Georges Bank*. Ph.D. Thesis, Boston University Marine Program, Woods Hole, MA.

Davis, C. S. 1983. Laboratory rearing of marine calanoid copepods. *J. Exp. Mar. Biol. Ecol.*, 71, 119-133.

Davis, C. S. 1984a. Predatory control of copepod seasonal cycles on Georges Bank. *Mar. Biol.*, 82, 31-40.

- Davis, C. S. 1984b. Food concentrations on Georges Bank: Non-limiting effect on growth and survival of laboratory reared *Pseudocalanus* sp and *Paracalanus parvus*. *Mar. Biol.*, 82, 42-46.
- Davis, C. S. 1984c. Interaction of a copepod population with the mean circulation on Georges Bank. *J. Mar. Res.*, 42, 573-590.
- Davis, C. S. and P. H. Wiebe. 1985. Macrozooplankton biomass in a warm-core Gulf Stream Ring: Time series change in size structure, taxonomic composition and vertical distribution. *J. Geophys. Res.*, 90, 8871-8884.
- Wiebe, P. H., V. A. Barber, S. H. Boyd, C. S. Davis and G. R. Flierl. 1985. Macrozooplankton biomass in Gulf Stream warm-core rings: spatial distribution and temporal changes. *J. Geophys. Res.*, 90, 8885-8901.
- Davis, C. S. 1987a. Zooplankton Life Cycles. pp. 256-267. In: *Georges Bank*. R. H. Backus (ed.), MIT Press.
- Davis, C. S. 1987b. Components of the zooplankton production cycle in the temperate ocean. *J. Mar. Res.*, 45, 947-983.
- Zooplankton Colloquium. 1989. Future directions in marine zooplankton research: a perspective. *Mar. Ecol. Prog. Ser.*, 55, 197-207.
- Davis, C. S., G. R. Flierl, P. J. Franks and P. H. Wiebe. 1991. Micropatchiness, turbulence, and recruitment in plankton. *J. Mar. Res.*, 49, 109-151.
- Davis, C. S., S. M. Gallager, and A. R. Solow. 1992a. Microaggregations of oceanic plankton observed by towed video microscopy. *Science*, 257, 230-232.
- Davis, C. S., S. M. Gallager, M. S. Berman, L. R. Haury, and J. R. Strickler. 1992b. The Video Plankton Recorder (VPR): Design and initial results. *Arch. Hydrobiol. Beih.*, 36, 67-81.
- Bollens, S.M., Frost, B.W., Schwaninger, H., C. S. Davis, K. Way, and M.C. Landsteiner. 1992. Seasonal plankton cycles in a temperate fjord with comments on the match-mismatch hypothesis. *J. Plankton Res.*, 14, 1279-1305.
- Davis, C.S. and P. Alatalo. 1992. Effects of constant and intermittent food supply on life history parameters in a marine copepod. *Limnol. Oceanogr.*, 37, 1618-1639.
- Flierl, G. R. and C. S. Davis. 1993. Biological effects of Gulf Stream meandering. *J. Mar. Res.*, 51, 529-560.
- Lewis, C. V., C. S. Davis, and G. Gawarkiewicz. 1994. Wind-forced biological-physical dynamics on an isolated off-shore bank. *Deep-Sea Res.*, 41, 51-73.
- Zeldis, J. R., C. S. Davis, M. R. James, S. L. Ballara, W. E. Booth, and F. H. Chang. 1995. Salp grazing in a larval fish habitat: effects on phytoplankton abundance, vertical distribution, and species composition. *Mar. Ecol. Prog. Ser.*, 126, 267-283.
- Kleppel, G. S., C. S. Davis, and K. Carter. 1996. Temperature and copepod growth in the sea: a comment on temperature dependence. *Am. Nat.*, 148, 397-406.
- Dadou, I. V. Garcon, V. Anderson, G. Flierl, and C. Davis. 1996. Impact of the north equatorial current meandering on a pelagic ecosystem: A modeling approach. *J. Mar. Res.*, 54, 311-342.

- Davis, C. S., S. M. Gallagher, M. Marra, and W. K. Stewart. 1996. Rapid visualization of plankton abundance and taxonomic composition using the Video Plankton Recorder. *Deep Sea Res. II*, 43, 1947–1970.
- Gallagher, S. M., C. S. Davis, A. W. Epstein, A. Solow, and R. C. Beardsley. 1996. High-resolution observations of plankton spatial distributions correlated with hydrography in the Great South Channel, Georges Bank. *Deep Sea Res. II*, 43, 1627–1664.
- Benfield, M. C., C. S. Davis, P. H. Wiebe, S. M. Gallagher, R. G. Lough, and N. J. Copley. 1996. Video Plankton Recorder estimates of copepod, pteropod, and larvacean distributions from a stratified region of Georges Bank with comparative measurements from a MOCNESS sampler. *Deep Sea Res. II*, 43, 1925–1946.
- Norrbin, M. F., C. S. Davis, and S. M. Gallagher. 1996. Differences in fine-scale structure and composition of zooplankton between mixed and stratified regions of Georges Bank. *Deep Sea Res. II*, 43, 1905–1924.
- Thwaites, F. T., S. M. Gallagher, C. S. Davis, A. M. Bradley, A. Girard, W. Paul. 1998. A winch and cable for the autonomous vertically profiling plankton observatory. *Oceans 98, IEEE*, 1, 32–36.
- Lynch, D. R., Gentleman, W. C., McGillicuddy, D. J. and C. S. Davis, 1998. Biological/ physical simulations of *Calanus finmarchicus* population dynamics in the Gulf of Maine. *Marine Ecology Progress Series*, 169, 189–210.
- Tang, X., W. K. Stewart, L. Vincent, H. Huang, M. Marra, S. M. Gallagher, and C. S. Davis, 1998. Automatic plankton image recognition. *Artificial Intelligence Review*, 12, 177–199.
- Sieracki, M., D. Gifford, S. M. Gallagher, and C. S. Davis. 1998. Ecology of a Chaetoceros Socialis Lauder Patch on Georges Bank: Distribution, Microbial Associations, and Grazing Losses. *Oceanogr.*, 11, 30–35.
- Benfield, M. C., P. H. Wiebe, T. K. Stanton, C. S. Davis, S. M. Gallagher, and C. H. Green. 1998. Estimating the spatial distribution of zooplankton biomass by combining Video Plankton Recorder and single-frequency acoustic data. *Deep Sea Res. II*, 45: 1175–1199
- McGillicuddy, D. J., D. R. Lynch, A. M. Moore, W. C. Gentleman, C. S. Davis, and C. J. Meise. 1998. An adjoint data assimilation approach to the diagnosis of physical and biological controls on *Pseudocalanus* spp. populations in the Gulf of Maine - Georges Bank Region. *Fisheries Oceanogr.*, 7, 205–218.
- Benfield, M. C., C. S. Davis, and S. M. Gallagher. 2000. Estimating the in-situ orientation of *Calanus finmarchicus* on Georges Bank using the Video Plankton Recorder. *Plankton Biol. Ecol.*, 47, 69–72.
- Lewis, C. V. W., C. Chen, and C. S. Davis. 2001. Variability in wind forcing and its effect on circulation and plankton transport over Georges Bank. *Deep Sea Res. II*, 48, 137–158.
- McGillicuddy, D. J., Lynch, D. R., Wiebe, P., Runge, J., Gentleman, W. C. and C. S. Davis, 2001. Evaluating the synopticity of the U.S. GLOBEC Georges Bank broad-scale sampling pattern with observational system simulation experiments. *Deep-Sea Res. II*, 48, 483–499.

- Ashjian, C. A., C. S. Davis, S. M. Gallagher, and P. Alatalo. 2001. Distribution of plankton, particles, and hydrographic features across Georges Bank described using the Video Plankton Recorder. *Deep-Sea Res. II*, 48, 245–282.
- Lynch, D.R., Naimie, C.E., Ip, J.T., Lewis, C.V., Werner, F.E., Luettich, R., Blanton, B.O., Quinlan, J., McGillicuddy, D.J. Jr., Ledwell, J.R., Churchill, J., Kosnyrev, V., Davis, C.S., Gallagher, S.M., Ashjian, C.J., Lough, R.G., Manning, J., Flagg, C.N., Hannah, C.G., Groman, R.C. 2001. Real-time data assimilative modeling on Georges Bank. *Oceanography*, 14, 65–77.
- Lewis, C. V. L., J. R. Weinberg, and C. S. Davis. 2001. Population structure and recruitment of the bivalve *Arctica islandica* (Linnaeus, 1767) on Georges Bank from 1980-1999. *J. Shellfish Res.*, 20, 1135–1144.
- Solow, A., C. Davis, and Q. Hu. 2001. Estimating the composition of a sample when individuals are classified with error. *Mar. Ecol. Prog. Ser.*, 216, 309-311 .
- Dennett, M. R., D. A. Caron, A. E. Michaels, M. Church, S. M. Gallagher, and C. S. Davis. 2002. Video Plankton Recorder reveals high abundance of colonial radiolaria in surface waters of the central north Pacific. *J. Plankton Res.*, 24, 797–805.
- Thwaites, F. T. and C. S. Davis. 2002. Development of a towed, flyable fish for the Video Plankton Recorder, *Oceans 2002 Conference Proceedings*, 3, 1730-1736.
- Gallagher, S. M., H. Yamazaki, C. S. Davis. 2004. The contribution of finescale vertical structure and swimming behavior to the formation of plankton layers on Georges Bank. *Mar. Ecol. Prog. Ser.*, 267, 27–43
- Ashjian, C.J., Rosenwaks, G.A., Wiebe, P.H., Davis, C.S., Gallagher, S.M., Copley, N.J., Lawson, G.L., Alatalo, P. 2004. Distribution of zooplankton on the continental shelf of Marguerite Bay, Antarctic Peninsula, during austral fall and winter, 2001. *Deep-Sea Res. II*, 51, 2073–2098
- Wiebe, P. H., C. J. Ashjian, S. M. Gallagher, C. S. Davis, and N. J. Copley. 2004. The use of a high powered strobe light to increase the catch of Antarctic krill by a 1-m² MOCNESS. *Marine Biology*, 144, 493–502.
- Lawson, G. P. Wiebe, C. Ashjian, S. Gallagher, C. Davis, and J. Warren. 2004. Acoustically-Inferred Zooplankton Distribution in Relation to Hydrography West of the Antarctic Peninsula. *Deep Sea Res.*, 51, 2041–2072
- Davis, C. S., Q. Hu, S. M. Gallagher, X. Tang, and C. A. Ashjian. 2004. Real-time observation of taxa-specific plankton distributions: An optical sampling method. *Mar. Ecol. Prog. Ser.*, 284, 77-96.
- Ashjian, C.J., C.S. Davis, S.M. Gallagher, and P. Alatalo. 2005. Characterization of the zooplankton community and size composition in relation to hydrography and circulation in the Sea of Japan. *Deep Sea Res. II*, 52, 1363-1392.
- Davis, C. S., F. Thwaites, S. M. Gallagher, and Q. Hu. 2005. A three-axis fast-tow digital Video Plankton Recorder for rapid surveys of plankton taxa and hydrography. *Limnol. Oceanogr.: Methods*, 3, 59–74.
- Falkowski, P. G. and C. S. Davis. 2004. Natural proportions, Redfield ratios. *Nature*, 431, 131.

- Hu, Q. and C. S. Davis. 2005. Automatic plankton image recognition with co-occurrence matrices and support vector machine. *Mar. Ecol. Prog. Ser.*, 295, 21-31.
- Hu, Q. and C. S. Davis. 2006. Accurate automatic quantification of taxa-specific plankton abundance using dual classification with correction. *Mar. Ecol. Prog. Ser.*, 306, 51-61.
- Davis, C. S. and D. J. McGillicuddy. 2006. Transatlantic abundance of the N₂-fixing colonial cyanobacterium *Trichodesmium*, *Science*, 312, 1517 – 1520.
- Ashjian, C. A., R. Rnone , C. S. Davis, B. Jones, M. Kahru, C. Lee , and B. G. Mitchell. 2006. Biological structure and seasonality in the Japan/East Sea. *Oceanography*, 19(3), 126-137.
- McGillicuddy, D. J., L. A. Anderson, N. R. Bates, T. Bibby, K. O. Buesseler, C. Carlson, C. S. Davis, C. Ewart, P. G. Falkowski, S. Goldthwait, D. A. Hansell, W. J. Jenkins, R. Johnson, V. K. Kosnyrev, J. R. Ledwell, Q. P. Li, D. A. Siegel, and D. K. Steinberg. 2007. Mid-ocean plankton blooms modulated by eddy-wind interactions. *Science*, 316, 1021-1026.
- Benfield M. C, Grosjean P, Culverhouse P, Irigoien X, Sieracki M. E, Lopez-Urrutia A, Dam H. G, Hu Q, Davis C. S, Hansen A, Pilskaln C H, Riseman E, Schultz H, Utgoff P E, Gorsky G (2007) RAPID: Research on Automated Plankton Identification. *Oceanography*, 20 (2), 172-187.
- Ashjian, C.J., C.S. Davis, S.M. Gallager, P. H. Wiebe, and G. L. Lawson. Distribution of Larval Krill and Zooplankton in Association with Hydrography in Marguerite Bay, Antarctic Peninsula, in Austral Fall and Winter 2001 described using the Video Plankton Recorder. *Deep Sea Res II*, 55, 455–471.
- Li, W., N. C. Loomis, Q. Hu, and C. S. Davis. 2007. Focus detection from digital in-line holograms based on spectral l_1 norms. *J. Optical Soc. Am.*, 24(10), 3054-3062.
- Hu, Q., C. Petrik, and C. S. Davis. 2007. Normal versus Gamma: Stochastic model of copepod molting process. *J. Plankton Res.* 29(11), 985-997.
- Hu, Q., C. Davis, and C. Petrik. 2008. A simplified age-stage model for copepod population dynamics. *Mar. Ecol. Prog. Ser.*, 360, 179–187.
- Ji, R. C. Davis, C. Chen, D. Townsend, D. Mountain, R. Beardsley, 2007. Influence of ocean freshening on shelf phytoplankton dynamics. *Geophysical Research Letters*, 34, L24607, doi:10.1029/2007GL032010.
- Ji, R., C. Davis, C. Chen, R. Beardsley. 2008. Influence of local and external processes on the annual nitrogen cycle and primary productivity on Georges Bank: A 3-D biological-physical modeling study. *J. Mar. Systems*, 73, 31-47.
- Davis, C. S. 2008. Optical Imaging of Ocean Plankton: A Fantastic Voyage, in Digital Holography and Three-Dimensional Imaging, *OSA Technical Digest* (Optical Society of America, 2008), paper DMB1, 3pp.
- Ji, R. C. Davis, C. Chen, D. Townsend, D. Mountain, R. Beardsley. 2008. Modeling the influence of low-salinity water inflow on winter-spring phytoplankton dynamics in the Nova Scotian Shelf – Gulf of Maine region. *Journal of Plankton Research*, 30: 1399 - 1416.

- Ji, R. C. Davis, C. Chen, R. Beardsley. 2009. Life history traits and spatio-temporal distributional patterns of copepod populations in the Gulf of Maine - Georges Bank region. *Mar. Ecol. Prog. Ser.*, 384, 187–205.
- Mitra, A., Davis, C. 2009. Defining the “to” in end-to-end models. *Prog. Oceanogr.* doi:10.1016/j.pocean.2009.09.004
- Petrik C. M., T. Kristiansen, R. G. Lough, C. S. Davis. 2009. Prey selection of larval haddock and cod on copepods with species-specific behavior: a model-based analysis. *Mar. Ecol. Prog. Ser.*, doi: 10.3354/meps08268.
- Sieracki ME, Benfield M, Hanson A, Davis C, Pilskaln C, Checkley D, Sosik H, Ashjian C, Culverhouse P, Cowen R, Lopes R, Balch W, Irigoien X 2009. Optical plankton imaging and analysis systems for ocean observation. OceanObs09, Venice, Italy, September, 2009.
- Lin, P., R. Ji, C. Davis, and D. J. McGillicuddy. Optimizing plankton survey strategies using Observing System Simulation Experiments. (submitted)

Publications (in draft):

- Davis, C. S., R. Ji, J. R. Ledwell, S. M. Gallager, C. J. Ashjian, C. Chen, J. H. Churchill, Q. Hu, and R. C. Beardsley. Cross-frontal exchange of plankton on Georges Bank.
- Davis, C.S., Q. Du, C.J. Ashjian, S.M. Gallager, Q. Hu, R. Ji, D. McGillicuddy. Retention and loss of plankton on Georges Bank.
- Davis, C. S., S. M. Gallager, P. Alatalo, and C. Ashjian. Effect of vernal stratification and ring entrainment on micro-meso scale distributions of Georges Bank plankton.
- Davis, C. S., R. Goldsborough, S. Gallager, and G. Packard. Robotic sampling of plankton taxa: incorporation of the Video Plankton Recorder into the REMUS AUV.
- Davis, C. S., D. J. McGillicuddy, V. K. Kosnyrev, C. M. Petrik, N. C. Loomis and J. A. Eaton. Distribution of *Trichodesmium* and other plankton in relation to physical properties across the Caribbean Sea determined by in situ optical imaging. (in prep).

Technical Reports:

- Davis, C. S. 1982. Particulate organic carbon/nitrogen concentrations and particle size distributions on Georges Bank. Data Report. NOAA, NMFS, Woods Hole Laboratory Reference Document No. 82-28. 15 pp.
- Davis, C. S. 1982. Fine mesh (165 μ m) zooplankton on Georges Bank. NOAA, NMFS, Woods Hole Laboratory Reference Document No. 82-30. 283 pp.
- Davis, C. S., M. D. Grosslein, P. H. Wiebe, G. D. Grice, and S. Murawski. 1985. WHOI-NEFC fisheries ecology seminar series, a summary. WHOI Tech. Rep. 85-25.
- Beardsley, R., C. S. Davis, J. D. Irish, R. G. Lough, D. Mountain, and P. H. Wiebe. 1992. U.S. GLOBEC Implementation Plan for the Northwest Atlantic Field Program, 89 pp.
- Co-authored (w/ T. Dickey et al.) 1993. International GLOBEC: Sampling and Observational Systems. Workshop report, IOC, UNESCO, Paris, March, 1993.
- Davis, C. S. and J. H. Steele. 1994. Modeling upper ocean biological-physical processes. URIP Workshop Report, WHOI TECH RPT 94-32, 65 pp.

Davis, C. S. and S. Tiwari. 2000. Three-dimensional relationships of plankton and hydrography in Massachusetts and Cape Cod Bays as determined by Video Plankton Surveys: R/V Halos, March 26-28, 1996, OSV Peter W. Anderson, March 12-15, 1997, OSV Peter W. Anderson, June 29-July 1, 1998. Report for EPA, Boston, MA, 242pp.

Author or coauthor of over 25 cruise reports.

Author or coauthor of numerous presentations at national and international meetings.

Popular Articles:

Wiebe, P. H., C. S. Davis, and C. Greene. 1992. Visualizing life in the ocean's interior. *Oceanus*, Fall 92.

Davis, C. S. and S. M. Gallager. The Video Plankton Recorder. *GLOBEC News Letter*, 3, 1993.

Davis, C. S., C. Ashjian, and P. Alatalo. 1996. Zooplankton diversity: a bizarre - and changing - array of life forms. *Oceanus*, 39(1), 7-11.

Davis, C. S. 2006. Imaging ocean plankton. OLI Annual report, Spring 2006.

Davis, C. S., and R. Hopcroft. 2008. The drifters. *Ocean Geographic*, 5(3), 24-30.

Symposia Convened:

Convened NMFS/WHOI Seminar Series on Fisheries Ecology, Woods Hole, 1985

Co-convened [with M. Huntley (SIO) and G. Paffenhoffer (Skidaway)] an international colloquium of marine zooplankton researchers to evaluate status of current research and outline areas for future study. Lake Arrowhead Conference Center, UCLA, 18-22 April 1988.

Co-convened with J. Steele an international workshop on Upper Ocean Biological-Physical modeling, Woods Hole, June 7-12, 1993.

Convened the First U.S.-Japan GLOBEC Research Meeting, Woods Hole, March, 1996.

Large Program Development

Leading role in establishing GLOBEC Program on Georges Bank, including providing rationale for site selection and conception of basic constructs of science and logistical plan for program. Current chair of executive committee. Participated in development of Japan and Southern Ocean GLOBEC programs.

Instrument Development

Co-developed Video Plankton Recorder with S. Gallager (WHOI).

Co-developed new VPR 3-axis towfish, VPR/REMUS, VPR profiler, AutoVPR.

Developed Controlled Plankton Experimentation System (COPES) for flow-through culture of marine zooplankton

Co-developed digital holographic camera for plankton imaging.

Educational Activities:

Thesis Committees:

Nick Loomis, WHOI-MIT Joint Program, AOPE, PhD, WHOI Advisor

Colleen Petrik, WHOI-MIT Joint Program, Biology, PhD, Major Advisor

Qingling Du, WHOI-MIT Joint Program, Biology, MS thesis, Major Advisor

Qiao Hu, WHOI-MIT Joint Program, AOPE, PhD, Co-Major Advisor

Sara Grady, Boston University Marine Program, PhD
Jim Ruzicka, WHOI-MIT Joint Program, PhD
Krystin Lemieux, Harvard, MS thesis
Wendy Gentleman, Dartmouth College, PhD
Craig Lewis, WHOI-MIT Joint Program, PhD, Major Advisor
Armando Tamse, Boston University Marine Program, PhD
Mercedes Pascual-Dunlap, WHOI-MIT Joint Program, PhD
Ari Epstein, WHOI-MIT Joint Program, PhD
Peter J. S. Franks, WHOI-MIT Joint Program, PhD

Other Students:

WHOI Summer Student Advisor:

Jessica McKibben, Williams College, 1988,
Tya-Mae Julian, University of Pennsylvania, 1989,
Sabrina Drill, Virginia Polytechnic Institute, 1990,
Brendan Flannery, Stanford University, 1991
Alice Shumate, Wellesley College, 1992

Summer Guest Student Sponsor:

Alex Nachman, University of Vermont, 1990
Carol Lee, Stanford University, 1991
Alice Shumate, Wellesley College, 1993
Isabelle Dadou, Toulouse University, 1993
Robert Granucci, Falmouth High School/Iona College, 1995-97
Catherine Johnson, Scripps Inst. Oce., 1997
Thomas Leatherbee, Dartmouth College, 1998
Evan Kingsley, University of Rochester, 2001 and 2002
Michael Alberico, University of Tampa, 2003
Dean Kennedy, University of Rhode Island, 2004-2005
Klas Moller, University of Hamburg, Fall, 2008.

Postdoctoral Sponsorship:

Stephen Bollens, 1991-1992
Fredrika Norrbin, 1993-1995
Mark Benfield, 1993-1996
Carin Ashjian, 1995-1996
Tracey Sutton, 2002-2003
Rubao Ji, 2003-2005
Qiao Hu, 2006-2007

Course Lectures:

Marine Ecology Course (MBL), 1982-87
Oceanic Zooplankton Course (WHOI), 1985
Biological Oceanography Course–Zooplankton Section (WHOI), 1986-95
Topics in Zooplankton Ecology (WHOI), 2006

Committees:

WHOI Computer Committee, 1988-1994
WHOI Coastal Research Center Advisory Committee, 1992-1999
WHOI Graduate Admissions Committee, 1986-1987
NSF GLOBEC North Atlantic Field Program Steering Committee, 1993-1996
Developed Scientific Framework for GLOBEC Georges Bank Program
NSF Ocean Sciences Strategic Planning for Research and Education, 1993
NSF Biological Oceanography Proposal Review Panel, 1993
International GLOBEC Working Group for Sampling and Observing Systems, 1993
ONR URIP program steering committee, 1992-1997
WHOI/MBL Joint Library Committee, 1995-1996
NSF Biological Oceanography Future Research Planning Group (OEUVRE), 1997-98
NSF Southern Ocean GLOBEC Planning Group, 1998
NOPP Proposal Review Panel, 2002
WHOI Tenured Scientist Executive Committee, 2002-2005
WHOI Information Technology Advisory Committee, 2003-present
WHOI Access to the Sea Task Force 2005
GLOBEC NWA Program Executive Committee, Chair, 2005-present
ICES Working Group for Zooplankton Ecology, 2006
WHOI Ocean Life Institute, Director 2006
SCOR WG130 RAPID, 2008

Grants Awarded:

Principal Investigator on over 100 grants.

Oceanographic Cruises:

Sea experience includes participation in 50 cruises:

R/V *Mt. Mitchell*, Georges Bank, February 1977
R/V *Albatross IV*, Georges Bank, October 1978
R/V *Mt. Mitchell*, Georges Bank, February 1979
R/V *Albatross IV*, Georges Bank, August 1982
R/V *Delaware II*, Warm-Core Ring/Georges Bank, September 1982
R/V *Knorr* Cruise 122, Slope Water, May 1985
R/V *Cape Hatteras*, Gulf Stream, BIOSYNOP, September/October 1988
R/V *Columbus Iselin*, Gulf Stream, BIOSYNOP, April/May 1989
R/V *Oceanus*, Chief Scientist, VPR test, Warm-core ring/shelf, August, 1991
R/V *Oceanus*, Chief Scientist, VPR test, Gulf of Maine, December, 1991
R/V *Endeavor*, Chief Scientist, VPR survey, Georges Bank, May, 1992
R/V *Laney Chouest*, JASON Project, VPR/JASON, Guaymas Basin, March, 1993
R/V *Endeavor*, Georges Bank, VPR survey, GLOBEC, Jan, 1995
R/V *Endeavor*, Chief Scientist, Georges Bank, VPR survey, GLOBEC, Feb, 1995
R/V *Endeavor*, Georges Bank, VPR survey, GLOBEC, May, 1995
R/V *Endeavor*, Chief Scientist, JASON/VPR, Georges Bank, GLOBEC, June, 1995
R/V *Mytilus*, Lake Huron, VPR zebra mussel larval survey, July, 1995
R/V *Halos*, Cape Cod Bay, VPR copepod/whale sampling, March, 1996

R/V *Oceanus*, Shelf Water, VPR sampling, June, 1996
 R/V *Oceanus*, Slope Water/Georges Bank, VPR/Seasoar testing, December, 1996
 R/V *Endeavor*, Chief Scientist, Georges Bank, VPR survey, GLOBEC, Jan, 1997
 R/V *Delaware II*, Chief Scientist, Georges Bank, VPR survey, GLOBEC, Feb, 1997
 R/V *Peter Anderson*, Chief Scientist, Mass/Cape Cod Bays, VPR survey, March, 1997
 R/V *Cape Hatteras*, Chief Scientist, Georges Bank, VPR survey, GLOBEC, April, 1997
 R/V *Endeavor*, Georges Bank, VPR survey, GLOBEC, June, 1997
 R/V *Peter Anderson*, Chief Scientist, Mass/Cape Cod Bays, VPR survey, March, 1998
 R/V *Peter Anderson*, Chief Scientist, Mass/Cape Cod Bays, VPR survey, June, 1998
 R/V *Peter Anderson*, Chief Scientist, Mass/Cape Cod Bays, VPR survey, February, 1999
 R/V *Asterias*, Lead PI, Cape Cod Bay Copepod Patch study, VPR, March/April, 1999
 R/V *Endeavor*, Georges Bank, VPR, GLOBEC, May/June, 1999
 R/V *Roger Revelle*, Japan Sea, VPR/CTD, ONR, June/July, 1999
 R/V *Asterias*, Lead PI, Cape Cod Bay Copepod Patch study, NSF, March/April, 2000
 R/V *Nathan Palmer*, Southern Ocean GLOBEC, VPR/Biomapper, April-June, 2001
 R/V *Shunyo Maru*, Japan east coast, digital VPR testing, June/July, 2001
 R/V *Oceanus*, Gulf of Maine/Slope Water, VPR II testing, NSF, February, 2002
 R/V *Alkor*, Western Baltic, German GLOBEC, digital VPR testing, April, 2002
 R/V *Heinke*, Western Baltic German GLOBEC, digital VPR survey, May, 2002
 R/V *Albatross IV*, Gulf of Maine to Chesapeake Bay, VPR II, VPR/bongos, June, 2002
 R/V *Asterias*, Race Point/Stellwagen, VPR-Remus, June, 2002
 R/V *Oceanus*, North Atlantic Slope Water, 2nd Gen VPR, June, 2003
 R/V *Knorr*, Chief Scientist, Transatlantic VPR towyo, VPR II, Aug-Sept, 2003
 R/V *Oceanus*, Sargasso Sea Eddies Study, VPR II, June/July, 2004
 R/V *Oceanus*, Sargasso Sea Eddies Study, VPR II, July/August, 2004
 R/V *Oceanus*, Chief Scientist, New England Shelf, VPR II tests, June, 2005
 R/V *Knorr*, Chief Scientist, TransCaribbean VPR towyo, VPR II, June, 2006
 BHP *Hydrographer Presbitero*, Celebes Sea, Philippines, Holocam, VPR, Sept/Oct, 2007
 MSY *Seahorse*, Raja Ampat, Indonesia, Digital holography of plankton, February, 2008
 R/V *Kilo Moana*, North of Oahu, Hawaii, VPR II, June, 2008
 R/V *Auk*, Cape Cod Bay/Stellwagen Bank, color VPR, Holocam, net, Oct, 2008
 R/V *Oceanus*, St Thomas, USVI, Bermuda, VPR II, Holocam, CTD, Bongos, Dec 2008

Work at sea involved zooplankton sampling (Video Plankton Recorder [VPR] towed and on JASON ROV and REMUS AUV, Bongos, MOCNESS, Bioacoustics, digital holographic imaging [DHI]), phytoplankton measurements (VPR, DHI, chlorophyll, pigments and primary production, particle counters, HCN analysis), and physical measurements (XBT, CTD, ADCP, ADVs, deployment and retrieval of drogues and moored current meter arrays.)