

Joseph D. Warren

Work Address

School of Marine and Atmospheric Sciences, Stony Brook University
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Home Address

66 King Avenue
Flanders, NY 11901
631-902-9757

Scientific Interests

Acoustic scattering from biological and physical processes in the water column. Zooplankton and nekton behavior and ecology. Survey design and technology. Application of underwater acoustics to oceanographic problems. Use of sound by marine animals.

Education

Massachusetts Institute of Technology (MIT) & Woods Hole Oceanographic Institution (WHOI) Cambridge, MA
Woods Hole, MA
Ph.D. in Applied Ocean Sciences from the Joint Program in Oceanography and Ocean Engineering. February 2001. Thesis advisers : Drs. Timothy K. Stanton (Applied Ocean Physics and Engineering Dept.) and Peter H. Wiebe (Biology Dept.)

Harvey Mudd College Claremont, CA
B.S. in Engineering (General) with Distinction. May 1994.

Experience

Assistant Professor September 2005 - Present
School of Marine and Atmospheric Sciences, Stony Brook University

Guest Investigator October 2003 - Present
Biology Dept., Woods Hole Oceanographic Institution

Assistant Professor of Marine Science and Physics September 2002 - August 2005
Southampton College of Long Island University

Office of Naval Research Postdoctoral Fellow October 2000 - August 2002
Southwest Fisheries Science Center (SWFSC) and WHOI

Oceanography Faculty & Chief Scientist December 2000 - March 2001
Sea Education Association, Woods Hole, MA

Research Assistant 1994 - October 2000
Applied Ocean Physics & Engineering Dept., WHOI

Publications

J.N. Smith, P.H. Ressler, and **J.D. Warren** (submitted 18 Aug 2009) "Material properties of Bering Sea euphausiids and other zooplankton." *Journal of the Acoustical Society of America*.

J.D. Warren and D.A. Demer (submitted 15 Jun 2009) "Abundance and Distribution of Antarctic krill (*Euphausia superba*) nearshore of Cape Shirreff, Livingston Island, Antarctica during six Austral summers between 2000-2007." *Canadian Journal of Fisheries and Aquatic Sciences*.

- K.A. Forman and **J. D. Warren** (2009) "Variability in the density and sound speed of coastal zooplankton and nekton." *ICES Journal of Marine Science* doi: 10.1093/icesjms/fsp217
- M.J. Cox, **J.D. Warren**, D.A. Demer, G.R. Cutter, and A.S. Brierley (in press) "Three dimensional observations of Antarctic krill (*Euphausia superba*) swarms using a multi-beam echosounder." *Deep Sea Res. II*
- M.J. Cox, D.A. Demer, **J.D. Warren**, G.R. Cutter, and A.S. Brierley (2009) "Multibeam echosounder observations of Antarctic krill (*Euphausia superba*) swarms and interactions between krill and air breathing predators." *Marine Ecology Progress Series* **378**: 199-209. doi: 10.3354/meps07795
- J.D. Warren**, J. A. Santora and D. A. Demer (2009) "Submesoscale distribution of Antarctic krill and its avian and pinniped predators before and after a near gale." *Marine Biology* **156**, 479-491. doi: 10.1007/s00227-008-1102-0
- J. D. Warren** and P. H. Wiebe (2008) "Accounting for biological and physical sources of acoustic scattering improves estimates of zooplankton biomass" *Canadian Journal of Fisheries and Aquatic Sciences* **65**, 1321-1333. doi:10.1139/F08-047
- J. D. Warren** and J. N. Smith (2007) "Density and sound speed of two gelatinous zooplankton: ctenophore (*Mnemiopsis leidyi*) and lion's mane jellyfish (*Cyanea capillata*)" *Journal of the Acoustical Society of America* **122**(1), 574-580.
- J. D. Warren** and B. J. Peterson (2007) "Use of a 600 kHz Acoustic Doppler Current Profiler to measure estuarine bottom type, relative abundance of submerged aquatic vegetation, and eelgrass canopy height" *Estuarine, Coastal and Shelf Science* **72**, 53-62.
- E. E. Peacock, R. K. Nelson, A. R. Solow, **J. D. Warren**, J. L. Baker, and C. M. Reddy (2005) "The West Falmouth oil spill: ~ 100 Kg of oil found to persist decades later" *Environmental Forensics* **6**, 273-281.
- G.L. Lawson, P. H. Wiebe, C. J. Ashjian, S. M. Gallager, C. S. Davis, and **J. D. Warren** (2004) "Acoustically-inferred zooplankton distribution in relation to hydrography west of the Antarctic peninsula" *Deep Sea Research II* **51**, 2041-2072.
- J. D. Warren**, D. A. Demer, D. E. McGehee, R. Di Mento, and J. F. Borsani (2004) "Zooplankton in the Ligurian Sea: Part II. Exploration of their physical and biological forcing functions during summer 2000" *Journal of Plankton Research* **26**, 1419-1427.
- D.E. McGehee, D.A. Demer, and **J.D. Warren** (2004) "Zooplankton in the Ligurian Sea: Part I. Characterization of their dispersion, relative abundance, and environment during summer 1999" *Journal of Plankton Research* **26**, 1409-1418.
- J. D. Warren**, T. K. Stanton, P. H. Wiebe, and H. E. Seim (2003) "Inference of biological and physical parameters in an internal wave using multiple frequency acoustic scattering data" *ICES Journal of Marine Science* **60**, 1033-1046.
- P.H. Wiebe, T. K. Stanton, C. H. Greene, M. C. Benfield, H. M. Sosik, T. C. Austin, **J. D. Warren**, and T. Hammer (2002) "BIOMAPER-II: an integrated instrument platform for coupled biological and physical measurements in coastal and oceanic regimes." *IEEE Journal of Oceanic Engineering* **27**(3), 700-716.
- J.D. Warren**, T. K. Stanton, D. E. McGehee, and D. Chu (2002) "Effect of animal orientation on acoustic estimates of zooplankton properties." *IEEE Journal of Oceanic Engineering* **27**(1), 130-138.

J.D. Warren, T. K. Stanton, M. C. Benfield, P. H. Wiebe, D. Chu, and M. Sutor (2001) “*In situ* measurements of acoustic target strengths of gas-bearing siphonophores.” *ICES Journal of Marine Science* **58**(4), 740-749.

T.K. Stanton, D. Chu, P. H. Wiebe, R. L. Eastwood, and **J. D. Warren** (2000) “Acoustic scattering by benthic and planktonic shelled animals.” *Journal of the Acoustical Society of America* **108**, 535-550.

J.F. Lynch, J. D. Irish, T. F. Gross, P. L. Wiberg, A. E. Newhall, P. A. Traykovski and **J. D. Warren** (1997) “Acoustic measurements of the spatial and temporal structure of near-bottom boundary layer in the 1990-1991 STRESS experiment.” *Continental Shelf Research* **17**, 1271-1295.

Conference Talks

J.D. Warren, M. J. Cox, D. A. Demer, G. R. Cutter, and A. S. Brierley (2009). “Single- and multi-beam echosounder assessment of Antarctic krill aggregations.” 158th Meeting of the Acoustical Society of America. San Antonio, TX, October 2009.

J.D. Warren, J.A. Santora, D.A. Demer, and S.E. Parks (2009). “Active acoustic assessment of zooplankton prey abundance and distribution relative to the presence and behavior of cetacean, pinniped, or other predators in polar and temperate coastal waters.” 18th Biennial Conference on the Biology of Marine Mammals, Quebec, Canada, October 2009.

J.D. Warren, J.N. Smith, and P.H. Ressler (2009). “Density and soundspeed measurements of various Bering Sea zooplankton.” 157th Meeting of the Acoustical Society of America, Portland, OR. May 2009.

J.N. Smith, P.H. Ressler, and **J.D. Warren** (2009). “Assessing the Variability in the Material Properties of Bering Sea Euphausiids to Improve Acoustic Scattering Models,” Alaska Marine Science Symposium, Anchorage, AK, January 2009.

J.D. Warren, J.N. Smith, and P.H. Ressler (2009). “Improving Acoustic Scattering Models for Various Bering Sea Zooplankton.” Alaska Marine Science Symposium, Anchorage, AK, January 2009.

J.N. Smith and **J.D. Warren** (2007). “Measurement of material properties of two gelatinous coastal zooplankton.” 154th Meeting of the Acoustical Society of America, New Orleans, LA, November 2007. Awarded Best Student Paper (J.N. Smith).

M.J. Cox, D.A. Demer, **J. Warren**, G. Cutter and A.S. Brierley (2007). “Characterising the three dimensional structure of Antarctic krill (*Euphausia superba*) swarms.” 4th International Zooplankton Production Symposium, Hiroshima, Japan, June 2007.

J.D. Warren and D.A. Demer (2007). “Small vessel surveys of krill populations near Livingston Island.” ICES Working Group on Fisheries Acoustics, Science and Technology, Dublin, Ireland, April 2007.

J.A. Santora, W.Z. Trivelpiece, and **J.D. Warren** (2006). “Corroboration of simultaneous satellite tracking and ship-based surveys for estimating chinstrap penguin (*Pygoscelis antarctica*) distribution and correlation with Antarctic krill.” SCAR XXIX, Hobart, Tasmania, July 2006.

J.D. Warren, J. Santora, and D.A. Demer (2006) “Predator and prey interactions in the Antarctic krill ecosystem.” Ocean Sciences Meeting, Honolulu, Hawaii, February 2006.

- J.D. Warren**, J. Santora, and D.A. Demer (2005) "Where should we eat?: Predator and prey spatial relationships in the Antarctic krill ecosystem." 150th Meeting of the Acoustical Society of America, Minneapolis, Oct 2005.
- Y. Tremblay, M.E. Goebel, B. L. McDonald, D. P. Costa, **J. D. Warren**, C. Reiss, J. Santora, and D. A. Demer (2005) "Antarctic fur seals foraging at the southern limit of their range: A study combining behavior and oceanography." 9th SCAR International Biology Symposium, Curitiba, Brazil, July 2005.
- J. D. Warren** and D. A. Demer (2005) "A nearshore observatory for Antarctic krill: Analysis of the spatial variability in their distribution and abundance." 149th Meeting of the Acoustical Society of America, Vancouver, May 2005.
- J. D. Warren** and B. J. Peterson (2004) "Use of a 600-kHz ADCP to characterize submerged aquatic vegetation in a very shallow estuary." 148th Meeting of the Acoustical Society of America, San Diego, Nov 2004.
- J. D. Warren** and D. A. Demer (2004) "Nearshore krill distribution around Livingston Island, Antarctica." 147th Meeting of the Acoustical Society of America, New York City, May 2004.
- J. D. Warren** and D. A. Demer (2003) "Factors controlling krill distributions in the near-shore waters of Livingston Island, Antarctica." Third International Zooplankton Production Symposium, May 2003, Gijon, Spain.
- G.L. Lawson, P.H. Wiebe, C.J. Ashjian, S.M. Gallagher, C.S. Davis, and **J.D. Warren**. (2003) "Distribution, composition, and patch structure of zooplankton on the Western Antarctic Peninsula continental shelf, with emphasis on Antarctic krill." Third International Zooplankton Production Symposium, May 2003, Gijon, Spain.
- J. D. Warren**, D. A. Demer, D. E. McGehee, R. Di Mento, and J. F. Borsani. (2002) "Biological and physical factors affecting the distribution of *Meganyctiphanes norvegica* and other zooplankton in the Ligurian Sea in late summer 2000." ICES Symposium on Acoustics in Fisheries and Aquatic Ecology, June 2002, Montpellier, France.
- G. L. Lawson, P.H. Wiebe, C.J. Ashjian, S.M. Gallagher, C.S. Davis, and **J.D. Warren**. (2002) "Broad-scale distribution of zooplankton acoustic backscattering in relation to hydrography west of the Antarctic Peninsula." ICES Symposium on Acoustics in Fisheries and Aquatic Ecology, June 2002, Montpellier, France.
- G.L. Lawson, P.H. Wiebe, C.J. Ashjian, S.M. Gallagher, C.S. Davis, and **J.D. Warren**. (2002) "Acoustically inferred zooplankton distribution in relation to hydrography." Fourth U.S. Southern Ocean GLOBEC Science Investigator Meeting, Arlington, Virginia.
- G.L. Lawson, P.H. Wiebe, C.J. Ashjian, S.M. Gallagher, C.S. Davis, and **J.D. Warren**. (2002) "Broad-scale distribution of zooplankton acoustic backscattering in continental shelf waters of the Western Antarctic Peninsula during austral fall and winter 2001." American Society of Limnology and Oceanography/American Geophysical Union Ocean Sciences Meeting, Honolulu, Hawaii.
- J.D. Warren**, A.C. Lavery, R.W. Schmitt, and T.K. Stanton. (2001) "Laboratory measurements of acoustic scattering from a sharp, double-diffusive temperature and salinity gradient." 142nd Meeting of the Acoustical Society of America, December 2001, Ft. Lauderdale, FL.

J.D. Warren, P.H. Wiebe, H.E. Seim, and T.K. Stanton (2000) "Estimating the scattering contribution from microstructure and marine organisms using multiple-frequency acoustic data collected from a Gulf of Maine internal wave." 140th Meeting of the Acoustical Society of America, December 2000, Newport Beach, CA.

J.D. Warren, P.H. Wiebe, T.K. Stanton, and M.C. Benfield (2000) "Distinguishing zooplankton and microstructure as sources of acoustic scattering within an internal wave." AGU/ASLO Ocean Sciences Meeting, January 2000, San Antonio, TX

M.Sutor, P.H. Wiebe, M.C. Benfield, T.K. Stanton, D. Chu, and **J.D. Warren** (2000) "Ground-truthing of single-frequency acoustic returns from zooplankton using an ROV-mounted video camera." AGU/ASLO Ocean Sciences Meeting, January 2000, San Antonio, TX

T.K. Stanton, P.H. Wiebe, M.C. Benfield, C.H. Greene, and **J.D. Warren**. (1998) "Acoustic surveys of zooplankton, internal waves, and suspended sediment over the Georges Bank region and interpretations using acoustic scattering models," Coastal and Marginal Seas Conference, The Oceanography Society (TOS) and The Intergovernmental Oceanographic Commission (IOC), UNESCO Headquarters, Paris, France.

**Conference
Proceedings
& Technical
Reports**

J. Warren. (2007) "A Study of the Circulation of Orient Harbor and Hallock Bay, Long Island, New York," submitted to Cornell University Cooperative Extension of Suffolk County, pp. 1-27.

J. Warren, M. Cox, S. Sessions, A. Jenkins, D. Needham, and D. Demer. (2007) "Nearshore acoustical survey near Cape Shirreff, Livingston Island," in AMLR 2006/2007 Field Season Report, Ed. J. Lipsky, NOAA-TM-NMFS-SWFSC-409,107-121.

J. Warren, M. Cox, S. Sessions, A. Jenkins, D. Needham, and D. Demer. (2006) "Nearshore acoustical survey near Cape Shirreff, Livingston Island," in AMLR 2005/2006 Field Season Report, Ed. J. Lipsky, NOAA-TM-NMFS-SWFSC-397,145-159.

J. Warren, S. Sessions, M. Patterson, A. Jenkins, D. Needham, and D. Demer. (2005) "Nearshore survey," in AMLR 2004/2005 Field Season Report, Ed. J. Lipsky, NOAA-TM-NMFS-SWFSC-385,108-123.

J. Warren, A. Jenkins, D. Needham, M. van den Berg, M. Soule, and D. Demer. (2004) "Nearshore survey," in AMLR 2003/2004 Field Season Report, Ed. J. Lipsky, NOAA-TM-NMFS-SWFSC-367,117-129.

J. Warren, A. Jenkins, and D. Demer. (2003) "Near-shore acoustical survey," in AMLR 2001/2002 Field Season Report, Ed. J. Lipsky, NOAA-TM-NMFS-SWFSC-350,153-160.

Above reports available at: <http://swfsc.noaa.gov/textblock.aspx?Division=AERD&id=3154>

T.K. Stanton, T.K., D. Chu, L.V. Martin Traykovski, D.B. Reeder, **J.D. Warren**, and P.H. Wiebe. (2001) "Broadband acoustic classification of individual zooplankton and fish: A review of recent work," in Proceedings of the Institute of Acoustics Conference on Acoustical Oceanography (April), 181-188.

P.H. Wiebe, T.K. Stanton, C.H. Greene, M. Benfield, T. Austin, and **J. Warren**, (1999) "BIOMAPER-II: An integrated instrument platform for coupled biological and physical measurements in coastal and oceanic regimes," ICES Council Meeting Papers, Stockholm, Sweden, CM 1999/M:07.

J.D. Warren, T.K. Stanton, M.C. Benfield, P.H. Wiebe, and D. Chu, (1999) "In situ measurements of acoustic target strengths of siphonophores," Proceedings of the 2nd EAA International Symposium on Hydroacoustics, 24-27 May 1999, Gdansk-Jurata, Poland. Stepnowski, A., R. Salamon and E. Kozaczka (eds.), pp. 11-13.

T.K. Stanton, **J.D. Warren**, P.H. Wiebe, M.C. Benfield, and C.H. Greene. (1999) "Contributions of the turbulence field and zooplankton to acoustic backscattering by an internal wave," Proceedings to the 1998 WHOI/IOS/ONR Internal Solitary Wave Workshop (Sydney, B.C.) WHOI Technical Report #99-07.

J.D. Warren, T.K. Stanton, D. Chu, D.E. McGehee, and R.L. Eastwood. (1998) "Pulse compression processing of zooplankton echoes," Proceedings of the 16th International Congress on Acoustics and 135th Meeting of the Acoustical Society of America, The Sound of the Future: A Global View of Acoustics in the 21st Century, Seattle, Washington, Volume IV, 2787-2788.

Invited Seminars

College of Oceanic and Atmospheric Sciences, Oregon State University, Corvallis, OR. May 2009.

Instituto Antartico Uruguayo, Montevideo, Uruguay. February 2009.

Sea Education Association, Woods Hole, MA. April 2007.

University of New England, Biddeford, ME. May 2006.

Stony Brook University Topics in Atmospheric and Oceanic Sciences, Stony Brook, NY. March 2006.

Coastal Carolina University, Conway, SC, April 2005.

Texas A&M University, College Station, TX, April 2005.

University of South Carolina, Columbia, SC, March 2005.

Gulf of Maine Research Institute, Portland, ME, January 2005.

Stony Brook University, Stony Brook, NY, December 2004.

South Shore Tuna and Marlin Club, Bay Shore, NY, September 2004.

SMAST, Univ. of Massachusetts at Dartmouth, Dartmouth, MA, April 2004.

Stony Brook University, Stony Brook, NY, February 2003.

Harvey Mudd College, Claremont, CA, October 2001.

National Research Institute of Fisheries Engineering, Hasaki, Japan, March 1999.

Tokyo University of Fisheries Engineering, Shinagawa, Japan, March 1999.

Oceans Alive Symposium, Woods Hole Oceanographic Institution, Woods Hole, MA, May 1998.

Bioacoustical Oceanography Workshop, Santa Cruz, CA, August 1997.

Workshop Participation Invited Participant at New York Marine Endangered Species Workshop, NY Department of Environmental Conservation, 15-17 October 2008, Port Jefferson, NY

Participant in “Teaching About the Ocean System Using New Research Techniques: Data, Models and Visualization” a On the Cutting Edge workshop sponsored by NSF, July 2005.

Panel moderator for “Undergraduate Education” session at the Symposium on the Oceans and Education, Woods Hole Oceanographic Institution, September 2005.

Invited participant at Dissertation Initiative for the Advancement of Coastal and Estuarine Sciences (DIACES), Puerto Rico (2002)

Teaching Experience **Stony Brook University:** Introduction to Physical Oceanography and Physical Oceanography Laboratory (undergraduate), Utilization of Limited Marine Resources (undergraduate seminar), Zooplankton Ecology (graduate), Scientific Communication (graduate), Tropical Marine Ecology (undergraduate travel course).

Southampton College: Physical Oceanography, Introductory Physics I (Kinematics) and II (Electricity and Magnetism), The Oceans (non-major course), Estuaries (team taught course). Adviser to several student theses and research projects.

Sea Education Association: Practical Oceanography I and II (field-based course), Introduction to Oceanography.

MIT - teaching assistant: Ocean and Sea-bed Acoustics, Wave Scattering from Surfaces.

Student Advising Graduate advisor: Joy N. Smith (2008 - present), Krissy Forman (M.S., Aug 2007), Xiaodong Jiang (06-07)

Graduate committee member: Marianne McNamara (06-present), Jen Goleski (07-present)

Undergraduate research advisor: 2009: Allison Sowa, Eric Braen (Stony Brook University). 2008: Melissa Mazzocco and Andrea Tomasso (Stony Brook University), Lauren Bohrer (Coastal Carolina Univ.). 2007: Emily Olesin and Rachel Goodale (Stony Brook University). 2006: Joy Smith (Coastal Carolina University), Jordan Mertes (University of Nebraska, Omaha), Alexandre Nicolas (Lycee Louis le Grand, Paris, France). 2005: Elissa Ford (Southampton College), Stephanie Grassia (Southampton College). 2004: Jessica Luchini (Southampton College)

Honors

- Recipient of Antarctic Service Medal awarded by the U.S. Congress
- Research Release Time Award (2002 - 2004), Southampton College, Long Island University
- Dean’s Research Travel Award (2002 - 2004), Southampton College, Long Island University
- Office of Naval Research (ONR) Postdoctoral Fellow in Ocean Acoustics (2000)
- ONR Graduate Traineeship Award in Ocean Acoustics (1999)
- Paul M. Fye Graduate Teaching Fellow (1999)
- Member of Tau Beta Pi National Engineering Honor Society

- Woods Hole Oceanographic Institution Summer Student Fellow (1993)
- National Merit Scholar (1990)

**Professional
Activities**

Member of: American Geophysical Union (AGU), Acoustical Society of America (ASA), Society for Marine Mammalogy (SMM) and American Society of Limnology and Oceanography (ASLO).

Member of Acoustical Oceanography Technical Committee of the Acoustical Society of America

Member of ICES Working Group on Fisheries Acoustics Science and Technology

Reviewer of proposals and panel review member for NSF and Deutsche Forschungsgemeinschaft (German Research Foundation).

Reviewer of manuscripts for: Aquaculture; Aquatic Living Resources; Deep-Sea Research I, Deep-Sea Research II; Estuaries; Estuaries and Coasts, Estuarine, Coastal and Shelf Science; Hydrobiologia; ICES Journal of Marine Science; Journal of Atmospheric and Oceanic Technology; Journal of the Acoustical Society of America, Limnology & Oceanography: Methods; Marine Ecology Progress Series, and JGR-Oceans.

Book manuscript reviewer for Blackwell Publishing and Wiley Publishing.

Session chair for 147th Acoustical Society of America meeting, May 2004, New York.

Member, Stony Brook University Dive Safety Board.

Advanced Open Water Diver certification (PADI), Oxygen Provider certification, Emergency First Responder certification.

**Public
Outreach**

“Research Roundup” (p.16) in Spring 2009 issue of Stony Brook University’s “The Brook” highlighted my Antarctic research and results from my Marine Biology publication.

J.D. Warren. Radio Interview, WLIU, 29 May 2008, “Increasing awareness in high school students of marine environmental issues.”

“Surfrider Foundation’s local chapter to host school team surf contest” by James Haag. Article in the 27 May 2008 issue of the Southampton Press newspaper.

Education coordinator, Surfrider Foundation, Eastern Long Island Chapter, 2003 - present.

Board Member, South Fork Community Health Initiative, 2007 - present.

“The Antarctic Ecosystem: Are krill the real reason penguins have ‘Happy Feet’?”, June 2007, part of the Marine Sciences Research Center Public Lecture Series.

“Scientists keep eye on species” by Emily Stone. Article in The Antarctic Sun newspaper, 13 November 2005.

J.D. Warren and E. Himelblau (2003) “Wave Physics” Educational poster on the physics of near-shore waves for distribution to high school physics classes.

J. D. Warren. Radio Interview, WLIU, 16 Sep 2003, “Effects of Hurricane Isabel on Marine Life.”

J.D. Warren and D. Chu (1998) "Sounding out echoes." Special to abcnews.com as part of an "On-Line Expedition" during the July 1998 RV Sea Diver cruise.

**Current
Funding**

OFFICE OF NAVAL RESEARCH \$220,985
J. Warren "Fine-scale Survey of Right and Humpback Whale Prey Abundance and Distribution," Feb 2009 - Jan 2011.

NATIONAL MARINE FISHERIES SERVICE, ALASKA FISHERIES SCIENCE CENTER \$85,099
J. Warren "Modeling the Target Strength of Bering Sea euphausiids," June 2008 - Jan 2010.

**Previous
Funding**

NATIONAL SCIENCE FOUNDATION OFFICE OF POLAR PROGRAMS #06-33939 \$440,000
J. Warren and D. Demer (Southwest Fisheries Science Center) "Improving acoustic estimates of Antarctic krill populations," Oct 2004 - Sep 2007.

NEW YORK SEA GRANT \$50,000
J. Warren and R. Turner (Southampton College). "Physical, Sedimentary, and Hydrologic Impacts of Barrier Island Breach Events on Long Island Estuaries," Mar 2004 - Sep 2005.

UNIVERSITY OF NEW HAMPSHIRE CICEET PROGRAM \$19,890
J. Warren and B. Peterson (Southampton College). "Use of Acoustic Backscatter Surveys to Measure Changes in Submerged Aquatic Vegetation and Habitat in a Shallow-water Estuary," Apr 2003 - Nov 2004.

OFFICE OF NAVAL RESEARCH POSTDOCTORAL FELLOWSHIP \$74,000
J.D. Warren and R. W. Schmitt (WHOI) "Discrimination of Biological and Physical Sources of Acoustic Scattering in Shallow-Water Regions by Multiple Frequency Acoustic Data," Oct 2000 - Aug 2002.

OFFICE OF NAVAL RESEARCH GRADUATE FELLOWSHIP \$77,000
J.D. Warren. "Estimating the Zooplankton and Turbulence in a Shallow Water Coastal Region from High Frequency Acoustic, Video, and Environmental Data," 1997 - 1999.

**Sea
Experience**

Date	[Days]	Vessel	Location	Purpose
Jun 1994	[10]	SSV Westward	Northwest Atlantic	General Oceanography
Jul 1997	[3]	RV Diane G	Cape Cod Bay	BIOMAPER II Test Cruise
Aug 1997	[7]	RV Roger Revelle	Monterey Bay	Blue Whale and Zooplankton Study
Oct 1997	[10]	RV Endeavor	Gulf of Maine	GLOBEC Zooplankton Survey
Jul 1998	[9]	RV Sea Diver	Cape Cod Bay	Siphonophore Study
Oct 1998	[10]	RV Oceanus	Gulf of Maine	GLOBEC Zooplankton Survey
Dec 1998	[10]	RV Oceanus	Gulf of Maine	GLOBEC Zooplankton Survey
Aug 1999	[8]	FV Isabel S	Stellwagen Bank	Zooplankton Study
Oct 1999	[10]	RV Endeavor	Gulf of Maine	GLOBEC Zooplankton Survey
Dec 1999	[10]	RV Endeavor	Gulf of Maine	GLOBEC Zooplankton Survey
Aug 2000	[17]	ITS Magnaghi	Ligurian Sea	Zooplankton and Marine Mammal Study
Mar 2001	[39]	SSV Corwith Cramer	Caribbean Sea	General Oceanography
Jun 2001	[42]	RVIB Nathaniel B. Palmer	Southern Ocean	Ecological Survey
Sep 2001	[5]	RV Sproul	Channel Islands	Zooplankton Study
Feb 2002	[32]	RV Yuzhmorgeologiya	Antarctic Peninsula	Acoustic Krill Survey
Jan 2004	[35]	RV Yuzhmorgeologiya	Antarctic Peninsula	Acoustic Krill Survey
Jan 2005	[37]	RV Yuzhmorgeologiya	Antarctic Peninsula	Acoustic Krill Survey
Jan 2006	[35]	RV Yuzhmorgeologiya	Antarctic Peninsula	Acoustic Krill Survey
Jan 2007	[30]	RV Yuzhmorgeologiya	Antarctic Peninsula	Acoustic Krill Survey
Jun 2008	[20]	RV Oscar Dyson	Bering Sea	Pollock and Zooplankton Survey
May 2009	[7]	RVs Auk, Shearwater	Cape Cod Bay	Zooplankton Survey