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JOSEPH DEALTERIS

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University of Rhode Island:

Dept. of Fisheries & Aquaculture  
East Farm, Building 50  
Kingston, RI 02881

Education:

B.A., 1968, Natural Science (Marine Biology)  
Rutgers, The State University, New Brunswick, New Jersey

M.A., 1973, Marine Science (Coastal Processes),  
Virginia Institute of Marine Science,  
College of William and Mary, Gloucester Point, Virginia

Ph.D., 1986, Marine Science (Estuarine Processes),  
Virginia Institute of Marine Science,  
College of William and Mary, Gloucester Point, Virginia

Military Service:

1969-1972, U.S. Navy Reserve, served aboard submarines, retired reserve rank, Lieutenant

Prior Employment:

2013 Kingston, R.I.	Univ. of Rhode Island	Professor Emeritus
1990-2012 Kingston, R.I.	Univ. of Rhode Island	Professor
1989-1995	Univ. of Rhode Island Kingston, R.I.	Associate Professor
1983-1989	Univ. of Rhode Island Kingston, R.I.	Assistant Professor



1977-present	DeAlteris Associates Inc. Jamestown, R.I.	Consultant
1977-1983	DeAlteris Enterprises	Commercial Fishing, Boat Building
1975-1977 Dames and Moore	Pandullo Quirk Assoc. Project Oceanographer	Senior Oceanographer 1973-1977
1972-1973 of Marine Science	Virginia Institute	Marine Scientist
1969-1972	U.S. Navy	Lieutenant on submarines
1968-1969 of Marine Science	Virginia Institute	Computer Programmer
1967-1968	Sandy Hook Marine Lab.	Diver Technician

Certifications and Licenses:

Certified Professional Geologist #000120, 1984 Virginia Board of Geology.

Certified Scuba Diving Instructor, #1355 National Association of Underwater Instructors. 1969 to 2006.

Certified working diver, 1985-1995. NOAA, National Marine Fisheries Service.

U.S. Coast Guard Licensed Captain, vessels to 100 tons, operating to 100 miles offshore, all coasts of U.S., 1968 to present.

Professional Society Memberships:

American Fisheries Society

Honors and Awards:

Inducted Phi Eta Sigma, National Honor Society, at University of Rhode Island in 1996 for scientific leadership in the aftermath of the North Cape Oil Spill

American Fisheries Society award in Sept 2010 as co-author of best paper in 2009 in North American Journal of Fisheries Management. Citation: Reich, D. and J. DeAlteris. 2009. A simulation study of the effects of spatially complex population structure in Gulf of Maine Atlantic cod. Transactions of North American Journal of Fisheries Management. 29:116-126.

## Academic Activity:

### Courses taught 1995-present

AFS 101	Introduction to Fisheries and Aquaculture
AFS 200	Introduction to Marine Science and Technology
AFS 270	Introduction to SCUBA Diving in Science and Technology
AFS 312	Marine Fish Habitats and the Impacts of Fishing
AFS 321	World Fishing Methods
AFS 332	Interactions between Protected Species and Fisheries
AFS 421	Theory of Fish Harvesting and Sampling Gear Design
AFS 433	Research Diving Methods
AFS 521	Evaluation Fish Harvesting and Sampling Systems
AFS 510	Quantitative Methods in Marine Fisheries Ecology
AFS 531	Fish Stock Assessment
AFS 584	Advanced Aquacultural Engineering
AFS 591	Incorporating Uncertainty into Ecological Models

Major Professor for more than 40 M.S. and Ph.D. graduate students in the last thirty years.

## Professional Service:

Appointed to Atlantic Scientific Review Group for reauthorized of Marine Mammal Protection Act., 1996 to present, elected Chair of the ASRG 2008 to 2010

Appointed to NMFS - Marine Mammal Take-Reduction Team for fisheries interacting with offshore cetaceans, 1996-2001.

Appointed to NMFS Marine Mammal Take-Reduction Team for fisheries interacting with Mid-Atlantic harbor porpoise, 1996-present.

Appointed to NMFS Marine Mammal Take Reduction Team for fisheries interacting with Mid-Atlantic bottlenose dolphin, 2001-present

Appointed to New England Fishery Management Council. Habitat Technical Committee, 1998-2003.

Appointed to National Research Council Committee to review the effects of fishing on marine ecosystems, 2000-2002.

Appointed to National Research Council Committee to review opportunities for cooperative research at the NMFS with the fishing industry, 2002-2003.

Appointed to joint New England Fishery Management Council and Mid-Atlantic fishery Management Council Technical Committee for the NMFS NEFSC trawl survey, 2003-2008.

Appointed to the New England Fishery Management Council Habitat Plan Development Team 2004-2006.

Appointed to the Atlantic States Marine Fisheries Commission Committee of Fishing Gear, and elected Chair of the committee 2007-2010

Refereed Articles:

DeAlteris and Byrne, 1975. The recent history of Wachapreague Inlet, Virginia. In: Estuarine Research, J. Cronin, Editor, Academic Press, New York, pp. 167-182.

DeAlteris and Keegan, 1977. Advective transport processes related to the design of wastewater outfalls along the Southern New Jersey coast. In: Transport Processes in Lakes and Oceans, R.J. Gibbs, Editor, Plenum Press, pp. 63-90.

Haven, Ziegler and DeAlteris, 1987. Comparative attachment, growth and mortality of oyster spat, Crassostrea virginica on slate as contrasted to that on oyster shells in the James River. Journal of Shellfish Research, Vol. 6, No. 2, pp. 45-58.

DeAlteris, 1988. The geomorphic development of Wreck Shoal, a subtidal oyster reef of the James River, Va., Estuaries, Vol. 11, No. 4, pp 240-247.

DeAlteris, 1988. The application of hydroacoustics to the mapping of subtidal oyster reefs. Journal of Shellfish Research, Vol. 7, No. 1, pp. 41-45.

DeAlteris, 1989. The role of bottom current and estuarine geomorphology on the sedimentation processes and productivity of Wreck Shoal, an oyster reef of the James River, Va. In: Estuarine Circulation, B. Nielsen, Editor, Humana Press, pp. 278-307.

DeAlteris, and others, 1989. Comparison of the performance of two bottom sampling trawls. Transaction of American Fisheries Society, Vol. 118, pp 119-130.

Castro, DeAlteris and others, 1988. Resource assessment of Portunid crabs in Ecuador. Journal of Shellfish Research. Vol. 7, No. 3, pp 414-419.

DeAlteris, and others, 1988. Alternative treatments to prevent the biodeterioration of offshore wood lobster traps by the wood-boring bivalve, Xylophaga atlantica. Journal of Shellfish Research, Vol. 7, No. 3, pp 445-451.

Castro and DeAlteris, 1990. Effects of trap saturation and species interaction on the capture of Callinectes spp crabs in the Guayas Estuary, Ecuador. Fisheries Research, Vol. 8, pp. 223-332.

Romey, Castro, DeAlteris, and Bullock, 1990. Recruitment in the deep-sea wood-boring bivalves. Xylophaga atlantica. Veliger. Vol. 34, No. 1, pp. 14-20.

- Buxton and DeAlteris, 1992. Quantification of water flow and net drag in midwater trawls. *Fisheries Research*, 16:165-178.
- DeAlteris and Reifsteck, 1992. Escapement and survival of fish from the cod-end of a demersal trawl. Fish behavior in relation to fishing operations. I.C.E.S. Marine Science Symposium. Vol. 196, pp. 128-131.
- Romey, Bullock and DeAlteris, 1994. Rapid growth of a deep-sea wood-boring bivalve. *Continental Shelf Research*, Vol. 14, No. 12, pp. 1349-1359.
- Riedel and DeAlteris, 1995. Factors affecting hydrodynamic performance of the Nordmore Grate System: bycatch reduction device used in the Gulf of Maine shrimp fisheries. *Fisheries Research*, Vol. 24, pp. 181-198.
- DeAlteris and Riedel, 1996. Effect of size selection within and between fishing gear types on the yield and spawning stock biomass per recruit for a cohort of an idealized groundfish. *Journal of Northwest Atlantic Fishery Science*, Vol. 19, pp. 73-82.
- DeAlteris and Castro, 1996. Recent progress in the development of selective trawls for demersal fisheries. *Proceedings of World Fisheries Congress. Fisheries Resource Utilization and Policy*. Meyer and Zhang (Editors). Oxford Publishing, pp. 240-249.
- DeAlteris and Morse, 1997. Fishing Gear Management, pp. 165-173. In: *Northwest Atlantic Groundfish: Perspectives on a Fishery Collapse*. Ed. R. Kendall, Amer. Fish. Soc., Washington, D.C.
- DeAlteris, Milliken and Morse, 1997. Bycatch reduction in the Northwest Atlantic small mesh bottom trawl fishing for silver hake (*Merluccius bilineris*), pp. 568-573. In: *Developing and Sustaining World Fisheries Resources*. Eds. Hancock, Smith, Grant, and Beumer. CSIRO. Australia
- DeAlteris, Skrobe, Lipsky, 1999. Seabed disturbance by mobile fishing gear relative to: a case study in Narragansett Bay, R.I. Ed. L. Benaka, *American Fisheries Society Symposium Series* 22:224-239, Washington, D.C.
- DeAlteris and LaValley, 1999. Physiological response of scup, *Stenotomus chrysops*, to a simulated trawl capture and escape event. *Journal of Marine Technology Society*. 33(2):25-34.
- DeAlteris, Skrobe and Castro, 2000. Effects of fishing on biodiversity and habitat in offshore New England waters. In: *History, status and Future of the New England Offshore Fishery*. Special Issue of *Northeastern Naturalist*. 7(4) 379:394.
- Appleyard and DeAlteris. 2001. Modeling the growth of the Northern quahog, *Mercenaria mercenaria*. *Journal of Shellfish Research* 20 (3): 1117-1125.
- Appleyard and DeAlteris. 2002. The growth of the Northern quahog in an experimental upweller. *Journal of Shellfish Research* 21(1): 3-13.

French, Peterson, DeAlteris and Catena. 2003. Restoration that targets function as opposed to structure: replacing lost bivalve production and filtration. Marine Ecology Progress Series. 264:197-212.

Milliken and DeAlteris. 2004. Development of a large mesh panel to reduce the flatfish bycatch in the small mesh bottom trawls used in the New England silver hake fishery. North American Journal of Fisheries Management. 24:20-32.

DeAlteris and Kilpatrick. 2004. Habitat value of shellfish aquaculture gear as compared to eel grass beds and barren bottom. Journal of Shellfish Research, Vol. 23, No. 3, pp. 866-874.

DeAlteris, 2005. Alternative paradigm for the protection of essential fish habitat based on availability and vulnerability. In: Benthic Habitats and the Effects of Fishing, Barnes and Thomas Eds., pp. 785-795, American Fisheries Society, Md.

DeAlteris, Englert and Burnett. 2006. Assessment of trends in fish abundance in Mount Hope Bay relative to Narragansett Bay. Northeastern Naturalist. Vol. 13, No. 4, PP 95-116.

Resma, DeAlteris and Rice. 2006. Size selectivity of purse seines in the Southern Philippines multi-species tuna fisheries. Journal of Aquatic Science, Vol. 3:1-21.

LaValley, DeAlteris, and others. 2008 North Atlantic *Vibrio vulnificus* surveillance from postharvest oysters at a US shellfish processing facility. Journal of Food Service. Volume 19, No. 4, pp.234-237.

LaValley, DeAlteris and others/ 2009. Bacterial Community Profiling of the Eastern Oyster (*Crassostrea virginica*): Comparison of Culture-Dependent and Culture-Independent Outcomes. Journal of Shellfish Research. 28(4):827-835.

Reich, D. and J. DeAlteris. 2009. A simulation study of the effects of spatially complex population structure in Gulf of Maine Atlantic cod. Transactions of North American Journal of Fisheries Management. 29:116-126.

Politis and DeAlteris. 2011. Effect of sea-state on the physical performance of a survey bottom trawl. Fisheries Research Vol 123-124. Pp. 26-36. .

Silva and DeAlteris. 2011. Evaluation of a pound net leader designed to reduce sea turtle bycatch. Marine Fisheries Review. Vol. 73, No. 3., pp. 36-45.

Lawson, DeAlteris, and others. 2012. Evaluation of turtle excluder devices (TEDS) in two U.S. mid-Atlantic trawl fisheries. Submitted to Fisheries Research.

#### Books:

Steele, DeAlteris and others. 2002. Effects of Fishing on Habitat. National Research Council. 145p.

Hilborn, DeAlteris and others. 2003. Opportunities for Cooperative Research between the NMFS and the Fishing Industry. National Research Council. 95p.

#### Book Reviews:

DeAlteris, 1988. Fisheries technologies for developing countries, a report by the Office of International Affairs, National Research Council. Journal of the Marine Technology Society, Vol. 23, No. 3, p. 47.

#### Thesis and Dissertation:

DeAlteris, 1973. A study of a tidal inlet, Wachapreague, Virginia, an unpublished Masters Thesis presented to the College of William and Mary, 86 p.

DeAlteris, 1986. The sedimentary processes and geomorphic history of Wreck Shoal, an oyster reef of the James River, Va. an unpublished Doctorate Dissertation presented to the College of William and Mary, 196 p.

#### Manuals and Handbooks:

DeAlteris, 1986. Bottom Trawl Construction Manual. Published by URI, Marine Advisory Service, Sea Grant, 69 p.

DeAlteris, 1986. Bottom Trawl Repair Manual. Published by URI, Marine Advisory Service, Sea Grant, 39 p.

DeAlteris and Castro, 1989. Practical Twinework for Fisheries Technologists. International Center for Marine Resource Development, URI. 160 p.

Castro and DeAlteris, 1990. Atlantic Coast Fishing Vessel Safety Manual. Published by Department of Fisheries, URI. 303 p.

Castro and DeAlteris, 1992. Fishing vessel safety curriculum guides. Published by Department of Fisheries, URI. 210 p.

DeAlteris, 1998. Training Manual in Fishery Science and Technology for NOAA Corp Officers. Published by NOAA Corp., Washington, D.C. 167 p.

DeAlteris and Skrobe, 1999. Fundamentals of Quantitative Fish Stock Assessment. URI Fisheries Technical Publications 99-1. 180 p.

DeAlteris, 2000. Quantitative methods in fish stock assessment with EXCEL exercises. In: Brust and Skrobe (Eds.), Stock Assessment Users Manual. 9 chapters, Atlantic States Marine Fisheries Commission. Washington, D.C.

DeAlteris. 2008. Design and performance evaluation of commercial fishing and scientific sampling gears. 12 chapters.

DeAlteris, 2009. Stock Assessment Users Manual. (revised edition) In: Campfield and DeAlteris (Eds.), 9 chapters, Atlantic States Marine Fisheries Commission. Washington, D.C.

Abstracts and Papers Read at Professional Meetings:

DeAlteris and Byrne, 1973. A geological control of a natural inlet, a presentation at the Northeast Section Meeting of the Geological Society of American, Allentown, Pa., N.E.S.M., Geological Society of America, Vol. 5, No. 2, p. 155.

DeAlteris and Byrne, 1973. The recent history of Wachapreague Inlet, presented at the Second International Estuarine Research Conference, Myrtle Beach, South Carolina.

Byrne and DeAlteris, 1974. Channel stability in a tidal inlet, presented at the Fourteenth Coastal Engineering Conference, American Society of Civil Engineers, Copenhagen, Denmark.

DeAlteris, McCown, and Roney, 1974. Current measurements on shallow continental shelf environment, a presentation at an American Geophysical Union Topical Conference, Transport Mechanisms in the Nearshore Environment, Mystic, Connecticut.

DeAlteris, Carr, Roney, and Stahl, 1975. A sediment transport study, offshore, New Jersey, a presentation at Civil Engineering in the Oceans III, Newark, Delaware.

DeAlteris and Byrne, 1975. Possible evidence of late Quarternary uplift in the area of Wachapreague Inlet, Virginia, a presentation of the Northeast Section Meeting of the Geological Society of America, Washington, D.C., N.E.S.M., Geological Society of America, Vol. 7, No. 1, p. 47.

DeAlteris and Vespucci, 1975. Late Quarternary stratigraphic sequence of Little Egg Inlet, New Jersey, a presentation of the Northeast Section Meeting of the Geological Society of America, Washington, D.C., N.E.S.M., Geological Society of America, Vol. 7, No. 1, p. 129.

DeAlteris, 1975. Sea floor dynamics of the inner continental shelf, offshore New Jersey, a presentation at the Assateague Shore and Shelf Workshop, Gloucester Point, Virginia.

DeAlteris, 1976. A speculative model for the evolution of a barrier island, tidal inlet-lagoonal system coastline, a presentation at the Northeast Section Meeting, Geological Society of America, N.Y., N.Y., N.E.S.M., Geological Society of America, Vol. 8, No. 2, p. 159.

DeAlteris, 1976. Beach Haven and Little Egg Inlets, a case study, a presentation of Fifteenth Coastal Engineering Conference, American Society of Civil Engineers, Honolulu, Hawaii.

Mehta, Byrne and DeAlteris, 1976. Measurement of bed friction in tidal inlets, a presentation at the Fifteenth Coastal Engineering Conference, American Society of Civil Engineers, Honolulu, Hawaii.

McKinney and DeAlteris, 1976. Offshore sedimentary processes and responses near Beach Haven and Little Egg Inlets, New Jersey, a presentation at the Fifteenth Coastal Engineering Conference, American Society of Civil Engineers Honolulu, Hawaii.

DeAlteris and Keegan, 1976. An oceanographic study for wastewater outfalls along the Southern New Jersey Coast, a presentation at the Eighty-second National Meeting of the American Institute of Chemical Engineers Conference, Atlantic City, New Jersey, p. 48.

DeAlteris, Sharabani and Keegan, 1976. Nearshore current measurements off Cape May County, New Jersey, a presentation, Fall Meeting of Atlantic Estuarine Research Society.

DeAlteris, 1977. Dynamics of the coastal boundary waters off Southern New Jersey, a presentation at the Hydraulics of the Coastal Zone Conference, American Society of Civil Engineers, College Station, Texas.

Roney, McKinney and DeAlteris, 1977. Erosion Prediction for offshore nuclear power plants: a presentation at the Coastal Sediments '77 Conference, San Francisco, Ca.

Keegan, Konrad, Kroll and DeAlteris, 1977. Nearshore dispersion characteristics determined from drogue data, a presentation at 50th Anniversary Conference, Water Pollution Control Federation, Philadelphia, Pa.

DeAlteris, 1985. The role of the tidal currents and the geomorphology of the estuary on the sedimentation processes and productivity of Wreck Shoal, an oyster reef of the James River, Virginia, a presentation at Symposium on Circulation Patterns in Estuaries Williamsburg, Virginia.

Ziegler, Haven, and DeAlteris, 1985. Oyster spatfall on slate planted in the James River, a presentation at the Atlantic Estuarine Research Society Annual Meeting, Virginia Beach, Va.

DeAlteris, 1986. Fisheries technology programs at the University of Rhode Island, a presentation at the International Fisheries Conference, Rimouski, Canada.

DeAlteris and Castro, 1986. Preliminary observations on the Portunid crab resources of Ecuador, a presentation at the Portunid Ecology Workshop of the Smithsonian Institution, Washington, D.C.

Castro and DeAlteris, 1987. The development of a swimming crab fishery in Ecuador, a presentation at the Tropical and Sub Tropical Fisheries Conference, Orlando, Fla.

DeAlteris and Recksiek, 1988. The performance of estuarine scientific sampling trawls. NE Section Meeting, American Fisheries Society.

Recksiek and DeAlteris, 1988. The catchability of estuarine scientific sampling trawls. NE Section Meeting, American Fisheries Society.

DeAlteris, Wing, and Christensen, 1988. Bottom trawl performance: models versus prototypes. A presentation at the World Symposium on Fishing Gear Design and Performance, Newfoundland, Canada. p. 73.

Castro and DeAlteris, 1988. Methodologies for the development of a new fishery: a case study, swimming crabs in Ecuador. A presentation at the World Symposium on Fishing Gear Design and Performance, Newfoundland, Canada. p. 38.

DeAlteris and Reifsteck, 1988. Selectivity of codends on scup, Stenotomus chrysops in Narragansett Bay, and the survivability of codend escapees: a preliminary report. A presentation at the World Symposium of Fishing Gear Design and Performance, Square Mesh Workshop, Newfoundland, Canada.

Reifsteck and DeAlteris, 1989. Survival of codend escapees: methodology and results. 119th Annual Meeting of the American Fisheries Society, Anchorage, Alaska.

DeAlteris, Wing, and Castro, 1989. The fishing vessel safety training program of the University of Rhode Island, USA. A presentation at Safety and Working Conditions Aboard Fishing Vessels, Rimouski, Canada.

Reifsteck and DeAlteris, 1990. An evaluation of an experimental methodology for investigating the behavior and survival of bottom trawl cod-end escapees. A presentation of the Conservation Engineering Workshop, Narragansett, R.I.

Castro and DeAlteris, 1990. The effect of mesh size in the body of a bottom trawl on the catch retained in the codend. A presentation at the Conservation Engineering Workshop, Narragansett, R.I.

DeAlteris and Castro, 1990. Evaluation of fishing gear performance based on catch comparisons: experimental designs and data analysis methods. A presentation at the Conservation Engineering Workshop, Narragansett, R.I.

Sparsis and DeAlteris, 1992. Effects of disturbance on the estuarine benthic environment in Narragansett Bay, R.I., U.S.A. A presentation of the Benthic Ecology Conference, Newport, R.I.

Castro and DeAlteris, 1992. Development of a methodology for the quantification for fish behavior in the vicinity of a bottom trawl. A presentation at the ICES International Symposium on Fish Behavior in Relation to Fishing Operations, Bergen, Norway.

DeAlteris and Riefsteck, 1992. Escapement and survival of fish from the cod-end of a demersal trawl. A presentation at the ICES International Symposium on Fish Behavior in Relation to Fishery Operation, Bergen, Norway.

DeAlteris and Castro, 1992. Recent progress in the development of selective trawls for demersal fisheries in the Northwest Atlantic. A presentation at the World Fisheries Congress, Athens, Greece.

Morse, DeAlteris and Christensen, 1992. A preliminary analysis of bottom trawl performance comparisons: models versus prototypes. A presentation at Marine Technology Society '92, Washington, D.C.

Harris and DeAlteris, 1992. Preliminary analysis of selectivity of 14.0 cm (5.5 in) and 15.2 cm (6.0 in.) square and diamond mesh cod-ends for yellowtail flounder in New England commercial bottom trawls. A presentation at Marine Technology Society '92, Washington, D.C.

Lazar and DeAlteris, 1992. A preliminary analysis of the demersal gillnet fishery in the Gulf of Maine and adjacent waters. A presentation at the Marine Technology Society '92, Washington, D.C.

Riedel and DeAlteris, 1992. A preliminary analysis of funnel design relative to the optimization of the Nordmore Grate System: a by-catch reduction device used in Gulf of Maine shrimp fishery. A presentation at Marine Technology Society '92, Washington, D.C.

Milliken, DeAlteris, and Castro, 1992. Underwater video camera and recording system for observing fishing gear performance. A presentation at Marine Technology Society '92, Washington, D.C.

Castro, DeAlteris, and Milliken, 1992. The application of a methodology to quantify fish behavior in the vicinity of demersal trawls in the Northwest Atlantic, U.S.A. A presentation at Marine Technology Society '92, Washington, D.C.

DeAlteris, Morse, Carr, Milliken and Castro, 1993. Evaluation of bycatch reduction technologies in the small mesh trawl fisheries in the Northwest Atlantic Ocean. A presentation at the annual A.F.S. meeting, Portland, Oregon.

DeAlteris and Riedel, 1993. Effect of age specific fishing mortality between and within gear types on the yield of spawning stock biomass per recruit of an idealized groundfish. A presentation at a NAFO Special Scientific Meeting, Dartmouth, Nova Scotia.

Lazar and DeAlteris, 1993. On the selectivity of sink gillnets in the Gulf of Maine and adjacent waters. A presentation at a NAFO Special Scientific Meeting. Dartmouth, Nova Scotia.

DeAlteris, DeAlteris, Kaiser and Paquette, 1994. Factors affecting the design of a seabed installed instrument housing. A presentation of the Marine Technology Society Annual Meeting, 1994, Washington, D.C.

DeAlteris, Milliken and Morse, 1996. Bycatch reduction in the Northwest Atlantic small mesh bottom trawl fishery for silver hake (Merluccius bilinearis). A presentation at the Second World Fisheries Congress, Brisbane, Australia.

DeAlteris, DeAlteris, Vincent and Kaiser, 1996. A seabed platform for long-term monitoring in the littoral environment. A presentation at the OCEAN 96 Conference. Fort Lauderdale, Fla.

DeAlteris, Castro, Catena, and Arditio, 1997. Relieving the "Bottleneck": an artificial reef for the early life history phase American Lobster, Homarus americanus. A presentation at the Fifth International Conference and Workshop on Lobster Biology and Management. Queenstown, New Zealand.

Klein-MacPhee, Young, DeAlteris and Beutel, 1997. Long-term rearing of juvenile summer flounder (Paralichthys dentatus) at different salinities to enhance growth for aquaculture. American Society of Ichthyologists and Herpetologists. Annual Meeting. Seattle, Washington.

DeAlteris, Beutel, Alves, and Thompson, 1997. Differential growth of American oysters, (Crossostrea virginica) in Narragansett Bay, R.I. Symposium on Marine Finfish and Shellfish Aquaculture. New Hampshire.

Lazar and DeAlteris, 1997. Indirect estimation of gillnet selection: a case study of the New England groundfish gillnet fisheries. NAFO Symposium. "What Future for Capture Fisheries." St. John's, Newfoundland

Kinani, DeAlteris, and Hanumara, 1997. Catchability of fishing gears used in the New England groundfish fishery. NAFO Symposium. "What Future for Capture Fisheries." St. John's, Newfoundland.

Grogan and DeAlteris, 1997. Analysis of yield and spawning stock biomass per recruit for groundfish species in the Northwest Atlantic. NAFO Symposium. "What Future for Capture Fisheries." St. John's, Newfoundland.

DeAlteris, 1997. Bycatch reduction in the Northwest Atlantic Trawl Fisheries: Myth or Reality. Atlantic Fisheries Technology Conference, Newport, R.I.

Williams and DeAlteris, 1998. The operation of inshore fish pots. Winter meeting of Southern New England Chapter of American Fisheries Society.

Skrobe and DeAlteris, 1998. Aspects of sub-legal lobster bycatch in Rhode Island trawl fisheries. Winter meeting of Southern New England Chapter of American Fisheries Society.

Guimond, Fridman, Williams and DeAlteris, 1998. Estimation of the tractive force of large whales. Winter meeting of the Southern New England Chapter of American Fisheries Society.

DeAlteris, Skrobe and Lipsky, 1998. Seabed disturbance by mobile fishing gear: a case study in Narragansett Bay, R.I. American Fisheries Society, annual meeting. Hartford, Conn.

DeAlteris, Beutel, Lipsky, Williams and Lavigne, 1998. Recent progress in the development of Passive-Static Fishing Technologies. Fish Expo. Boston, Mass.

DeAlteris, Williams, Beutel and Thompson, 1998. Differential growth of oysters, Crossostrea virginica, in Narragansett Bay. Rhode Island Aquaculture Conference. Cranston, R.I.

DeAlteris, Thompson, Mauseth and Erickson, 1999. Effect of North Cape Oil spill on the surf clam fishery resource off southern Rhode Island. International Oil Spill Conferences, Seattle, Washington.

DeAlteris, Skrobe and Castro, 1999. Effects of fishing on biodiversity and habitat in offshore New England waters. Conference on the History, Status, and Future of the New England Offshore Fishery. New London, Conn.

DeAlteris, Skrobe and Hammond, 1999. Seabed disturbance by mobile fishing gear relative to natural processes: application of a general model to the southern New England continental shelf. American Fisheries Society, Annual Meeting, Charlotte, N.C.

DeAlteris and Skrobe, 1999. Essential elements of a fishing experiment. NEFMC Small Mesh Experimental Fishery Workshop. Narragansett, R.I.

Skrobe and DeAlteris, 2000. Seabed disturbance by mobile fishing gear relative to natural processes: application of a general model to the Northeast U.S. continental shelf. American Fisheries Society, southern New England Chapter Meeting, Narragansett, R.I.

Appleyard and DeAlteris, 2000. Maximizing the efficiency of hard clam culture in an experimental-scale upweller. Aquaculture America 2000. New Orleans, Louisiana.

Appleyard and DeAlteris, 2000. Modeling the growth of the hard clam. 20<sup>th</sup> Milford Aquaculture Seminar. Milford, Conn.

Appleyard and DeAlteris, 2000. Hard clam culture in upwellers. Issues and Advances in Aquaculture. Old Lyme, Conn.

DeAlteris, Skrobe, and Gibson, 2000. Fisheries of Rhode Island. BAY SUMMIT 2000. Providence, R.I.

DeAlteris, Skrobe and Caporelli, 2000. Restoring American lobster resource after an oil spill; project implementation and short-term impacts. International Conference on Lobster Biology and Management. Key West, Fla.

Mauseth, Challenger and DeAlteris. 2000. Restoration and compensation of the Rhode Island lobster fishery follows the North Cape Oil Spill International Oil Spill Conference, Seattle Wash.

Kilpatrick, DeAlteris and Rheault. 2002. Assessing the habitat value of modified rack and bag aquaculture gear in comparison with submerged aquatic vegetation. 22<sup>nd</sup> Milford Aquaculture Seminar. Milford, Conn. and Journal of Shellfish Research 21(1):344.

Kilpatrick, DeAlteris and Rheault. 2002. Habitat value of aquaculture gear. Oyster Reef Restoration Conference, Hilton Head, SC.

Kilpatrick, DeAlteris and Rheault. 2002. Assessing the habitat value of modified rack and bag aquaculture gear in comparison with submerged aquatic vegetation. *Journal of Shellfish Research* 21(1):344.

DeAlteris and Chosid. 2003. Effects of Increasing the Codend Mesh Size in the Multispecies Fisheries of New England. 59<sup>th</sup> Annual Fish and Wildlife Conference, Newport, RI. April 13-16 2003.

DeAlteris and Milliken. 2003. Bycatch reduction technologies: from problem identification to implementation. American Fisheries Society Annual Meeting, 10-14 August 2003, Quebec, Canada.

DeAlteris and Chosid. 2003. Effects of increasing codend mesh size in the multispecies fisheries of New England: a cooperative research project. American Fisheries Society Annual Meeting, 10-14 August 2003, Quebec, Canada.

DeAlteris, Englert and Burnett. 2003. Assessment of trends in fish abundance in Mount Hope Bay relative to Narragansett Bay. New England Estuarine Research Society meeting, 8-10 May 2003. Fairhaven, MA.

DeAlteris and Chosid. 2004. Optimizing biological and economic yield from the Georges Bank , mixed species bottom trawl fishery. World Fisheries Congress, Vancouver, CA

Chosid and DeAlteris, 2004. Effects of codend mesh size on the yield of the yied of the multispecies trawl fishery on Georges Bank. AFS northeast and mid-atlantic section meeting, Ocean City Md.

Nordahl and DeAlteris, 2005, A performance comparison of a standard sea scallop dredge with and without rock excluding chains. American Fisheries Society Annual Meeting, Anchorage Ak.

Politis and DeAlteris, 2005, The effects of weather on the performance of the National Marine Fisheries Service Northeast Fisheries Science Center Yankee 36 survey trawl. American Fisheries Society Annual Meeting, Anchorage Ak.

Hovermale and DeAlteris, 2005, Quantifying fish behavior in the mouth of the National Marine Fisheries Service Northeast Fisheries Science Center Yankee 36 survey trawl. American Fisheries Society Annual Meeting, Anchorage Ak.

Silva and DeAlteris, 2005, Reducing pound net and sea turtle interactions in Chesapeake Bay. American Fisheries Society Annual Meeting, Anchorage Ak.

DeAlteris and Burnett, 2005, Trends in fish abundance in Mount hope Bay: Is the Brayton Point Power Station affecting fish stocks? American Fisheries Society Annual Meeting, Anchorage Ak.

Lawson, DeAlteris and others. 2007. Evaluation of turtle excluder devices in tow mid-Atlantic trawl fisheries. American Fisheries Society Annual Meeting, San Francisco, CA.

Riech and DeAlteris. 2007. A simulation study of the effects of spatially explicit complex population structure in Gulf of Maine cod. American Fisheries Society Annual Meeting, San Francisco, CA.

Schroder and DeAlteris. 2007. Effect of a long-term, weekly, fixed station trawl survey on the benthos of Narragansett Bay, RI. American Fisheries Society Annual Meeting, San Francisco, CA.

Reich and DeAlteris. 2008. A simulation study of the effects of spatially complex population structure in Gulf of Maine Atlantic cod. International Council for the Exploration of the Seas (ICES) Annual Meeting in Halifax, NS, Ca.

Non-Refereed Articles:

Byrne and DeAlteris, 1974. Channel stability in a tidal inlet. Proceedings of the Fourteenth Coastal Engineering Conference, American Society of Civil Engineers N.Y., pp. 1585-1604.

DeAlteris, Carr, Roney, and Stahl, 1975. A sediment transport study, offshore, New Jersey. Proceedings at Civil Engineering in the Oceans III, American Society of Civil Engineers, N.Y., pp. 225-244.

DeAlteris, 1976. Beach Haven and Little Egg Inlets, a case study. Proceedings of Fifteenth Coastal Engineering Conference, American Society of Civil Engineers, N.Y., pp. 1881-1898.

Mehta, Byrne and DeAlteris, 1976. Measurement of bed friction in tidal inlets. Proceedings of Fifteenth Coastal Engineering Conference, American Society of Civil Engineers, N.Y., pp. 1701-1720.

McKinney and DeAlteris, 1976. Offshore sedimentary processes and responses near Beach Haven and Little Egg Inlets, New Jersey. Proceedings of Fifteenth Coastal Engineering Conference, American Society of Civil Engineers, N.Y., pp. 1899-1918.

DeAlteris, 1977. Dynamics of the coastal boundary waters off Southern New Jersey, Proceedings of Hydraulics of the Coastal Zone Conference, American Society of Civil Engineers, N.Y. pp. 82-89.

Roney, McKinney, and DeAlteris, 1977. Erosion prediction for offshore nuclear power plants. Proceedings of Coastal Sediments '77 Conference, American Society of Civil Engineers, N.Y., pp. 867-884.

DeAlteris, 1986. Fisheries technology programs of the University of Rhode Island. Proceedings of the International Fisheries Conference. University of Quebec at Rimouski, Canada, pp. 823-830.

DeAlteris and Castro, 1987. The development of a swimming crab fishery in Ecuador.

Maritimes, a University of Rhode Island, Graduate School of Oceanography publication, Vol. 31, No. 4, pp 5-7.

Castro and DeAlteris, 1987. The development of a swimming crab fishery in Ecuador. Proceedings of the 1987 Tropical and Sub-Tropical Fisheries Conference, Florida Sea Grant College Program, pp. 107-120.

DeAlteris, Bullock, and Romey, 1988. Trapworms, a critical problem for the offshore lobster industry, Maritimes, University of Rhode Island, Graduate School of Oceanography Publication, Vol. 32, No. 2, pp. 14-15.

Castro and DeAlteris, 1988. Methodologies for the development of a new fishery: swimming crabs in Ecuador, a case study. Proceedings of the World Symposium on Fishing Gear Design and Performance, Newfoundland, Canada, pp. 228-231.

DeAlteris and Riefsteck, 1988. Selectivity of cod-ends on scup, *Stenotomus chrysops*, in Narragansett Bay, and the survivability of cod-end escapees: a preliminary report. Proceedings of the Square Mesh Workshop, Newfoundland, Canada, pp. 38-53.

DeAlteris, Wing, and Castro, 1989. The fishing vessel safety training program at the University of Rhode Island. Proceedings of the International Symposium of Fishing Vessel Safety. Rimouski, Canada, pp. 165-172.

Kenney, Blott, and DeAlteris, 1991. Shrimp separator trawl experiments in the Gulf of Maine shrimp fishery. Proceeding of the Fisheries Conservation Engineering Workshop. R.I. Sea Grant Publication RIU-W-90-002, pp. 6-11.

DeAlteris, Castro and Testaverde, 1991. Effect of mesh size in the body of a trawl on the catch retained in the codend. Proceeding of the Fisheries Conservation Engineering Workshop. RI Sea Grant Publication RIU-W-90-002, pp. 12-18.

Reifsteck and DeAlteris, 1991. A methodology for investigating the behavior and survival of bottom-trawl codend escapees and some preliminary results. Proceeding of the Fisheries Conservation Engineering Workshop. RI Sea Grant RIU-W-90-002, pp. 26-33.

DeAlteris and Castro, 1991. Experimental Designs and Data Analysis Methodology for the Evaluation of Bottom Trawl Performance Based on Catch Comparison. Proceedings of the Fisheries Conservation Engineering workshop. RIU-W-90-0002, pp. 60-70.

Morse, DeAlteris, and Christensen, 1992. A preliminary analysis of bottom trawl performance comparisons: models versus prototypes. Proceedings of Marine Technology Society '92, pp. 322-327.

Harris and DeAlteris, 1992. A preliminary analysis of selectivity of 14.0 cm (5.5 in) and 15.2 cm (6.0 in) square and diamond mesh codends on yellowtail flounder in New England commercial bottom trawls. Proceedings of Marine Technology Society '92, pp. 416-420.

Lazar and DeAlteris, 1992. A preliminary analysis of the demersal gillnet fishery in the Gulf of Maine and adjacent waters. Proceeding of Marine Technology Society '92, pp. 409-414.

Riedel and DeAlteris, 1992. A preliminary analysis of funnel design relative to optimization of the Nordmore Grate System: a by-catch reduction device used in Gulf of Maine Shrimp Fishery. Proceedings of Marine Technology Society '92, pp. 342-346.

Milliken, DeAlteris, and Castro, 1992. Underwater video camera and recording system for observing fishing gear performance. Proceedings of Marine Technology Society '92, pp. 389-393.

Castro, DeAlteris, and Milliken, 1992. The application of a methodology to quantify fish behavior in the vicinity of demersal trawls in the Northwest Atlantic, USA. Proceedings of Marine Technology Society '92, pp. 310-315.

DeAlteris, DeAlteris, Kaiser and Paquette, 1994. Factors affecting the design of a seabed installed instrument housing. Proceedings of Marine Technology Society Annual Meeting, pp. 13-19.

DeAlteris, 1994. Otter Trawling: A Fishery in Transition. Maritimes, University of Rhode Island Graduate School of Oceanography Publication, Vol. 37, No. 1, pp. 20-22.

DeAlteris, DeAlteris, Vincent and Kaiser, 1996. A seabed platform for long-term monitoring in the littoral environment. OCEANS 1996, MTS/IEEE Conference Proceedings, pp. 1237- 1241.

DeAlteris, 1996. The scientific challenge of the North Cape Spill. Maritimes Vol. 38, No. 4, pp. 3-5.

DeAlteris, Thompson, Mauseth and Erickson, 1999. Effects of the North Cape oil spill on the surf clam fishery resource off southern Rhode Island. Proceedings of 1999 International Oil Spill Conference, pp. 993-997.

Mauseth, Challenger, and DeAlteris, 2000. Restoration and compensation of the Rhode Island lobster-fishery following the North Cape oil spill. Proceeding of 2000 International Oil Spill Conference. Pp. 675-679.

Morrison, DeAlteris, Politis and others, Measurement of net-relative flow during a bottom trawl survey. Marine Technology Society, 2004 Annual Oceans Conference. Las Vegas NV.

#### Unpublished Technical Reports:

DeAlteris and others, 1974-1975, reports written to Public Service Electric and Gas Co. for Dames and Moore related to the design of the breakwater, cooling system and transmission cable alignment for two floating nuclear power plants (Atlantic Generating Station) proposed for Little Egg Harbor, NJ.

Mehta, Byrne and DeAlteris, 1975, Hydraulic constants of tidal entrances III: bed friction measurements at John's Pass and Blind Pass": University of Florida, C.O.E.L., Technical Report Number 26, p 86.

DeAlteris and others, 1975-1976, reports written to the Cape May County Municipal Utilities Authority for Pandullo Quirk Associates related to the site selection and design of three sewer outfalls for Cape May County, NJ

Byrne, Sovich and DeAlteris, 1977. Recent history and response characteristics of Wachapreague Inlet, Virginia, a Virginia Institute of Marine Science Final Report to the Office of Naval Research, Geography Programs, 127 pages plus appendices.

DeAlteris, 1977, Bathymetric Survey and Hydrographic Measurements, Bergen Generating Station, for Public Service Electric and Gas Company

DeAlteris, 1977, The Installation and Maintenance of Tide Gages in the Surf Zone, for NOS, NOAA

DeAlteris, 1978, Waves off Sea Isle City, New Jersey, Winter of 1977-78, for U.S. Army Corps of Engineers.

DeAlteris, 1978, Assessment of Dredging Induced Damage to Private Oyster Grounds in the James River, Virginia, for Crenshaw, Ware and Johnson, Attorneys at Law

DeAlteris, 1979, Results of Pre and Post Dredging Surveys of Selected Oyster Beds in the Back River, Virginia, for the U.S. Army, Corps of Engineers

DeAlteris, 1980, Nearshore Sediment Transport, New Jersey, for AMOL, NOAA

DeAlteris, 1980, Results of Hydrographic Survey of Diamond Shoals Light Tower, North Carolina, for U.S. Coast Guard

DeAlteris, 1980, Results of Macrobenthos and Sediment Survey of Metomkin Bay, Virginia, for U.S. Fish and Wildlife Service

DeAlteris, 1981, Study of the Beach Fauna of a Barrier Island, Duck, North Carolina, for CERC, U.S. Army, Corps of Engineers

DeAlteris, 1981, Assessment of Damage to Oyster Grounds by Tug and Barge Activity, Back River, Virginia, for Furniss, Davis and Rashkind, Attorneys at Law

DeAlteris, 1981, Results of Pre and Post Dredging Surveys of Oyster Beds in Back River, Virginia, for Corps of Engineers.

DeAlteris, 1981, Evaluation and Appraisal of Selected Oyster Beds in Lynnhaven Canal and Broad Bay, for City of Virginia Beach

DeAlteris, 1982, Assessment of Tug and Barge Damage to Oyster Beds in the Yeocomico River, Virginia, for Hutt and Robertson, Ltd.

DeAlteris, 1982, The Design and Operation of a Multi-Purpose Inshore Trawler in the MidAtlantic Region: a Comparison of Otter, Beam, and pair trawling; for the Mid-Atlantic Fisheries Development Foundation, Inc.

DeAlteris, 1983, Evaluation and Assessment of Oyster and Clam Beds in the Back River, Virginia, for the City of Hampton, Virginia.

DeAlteris, 1984, Pre and Post Dredging Surveys of Oyster Beds in the vicinity of Broad Creek and the Rappahannock River, Virginia, for the Middlesex County, Va., Board of Supervisors.

DeAlteris, 1985, Evaluation and Assessment of Alleged Damage to Oyster Grounds in the Wicomico River, Md., for U.S.P. and I.

DeAlteris, 1986, Pre and Post Dredging Surveys of Oyster Beds in the Elizabeth River, Va., for Lone Star Cement Co.

DeAlteris, 1986, Evaluation and Assessment of Oyster Beds in the Vicinity of the Proposed Gosnold Hope Park Channel, Back River, Va.; for the City of Hampton, Va.

DeAlteris, 1987, Assessment of the Impact of a Buried Transmission Line on the Oyster Reefs of the Lower York River, Va., for Virginia Power Company.

Diaz and DeAlteris, 1982. Long-term changes in the beach fauna at Duck, North Carolina, a final report to the U.S. Army Corps of Engineers, Coastal Engineering Research Center, CERC, MR No. 82-12, 48 p.

DeAlteris, 1985. A Review of the fisheries technology programs at the School of Fisheries, ESPOL, Guayaquil, Ecuador, ICMRD, URI, 42 p.

DeAlteris and Castro, 1986. Preliminary investigation of the Portunidae crab resources in the coastal and estuarine waters of Ecuador, ICMRD, URI, 28 p.

Castro and DeAlteris, 1988. The development of a swimming crab fishery in Ecuador, ICMRD Technical Report, 116 p.

DeAlteris and Buxton., 1991. Flow in midwater trawl nets as a function of mesh size, twine diameter, webbing taper, and towing speed. Final Report to National Marine Fisheries Service, Woods Hole, Mass.

DeAlteris and Riedel, 1992. Evaluation of factors affecting hydrodynamic performance of the Nordmore Grate System. Final Report to National Marine Fisheries Service, Woods Hole, Mass.

DeAlteris and Morse, 1994. The effects of sweep design on the species selectivity of trawls in the silver hake fisheries of New England. Final Report to National Marine Fisheries Service, Woods Hole, Mass.

DeAlteris, Kaiser and Vincent, 1994. Kwajalein Missile Impact Scanning System (KMISS), Marshall Island. Hydrophone Site Survey Report. Naval Undersea Warfare Center, Division Newport. NUWC Technical Report, 27 p.

Paquette, DeAlteris and DeAlteris, 1994. Environmental factors related to the selection of an underwater sound range on the continental shelf of the East Coast of the United States. Naval Undersea Warfare Center Division Newport, NUWC Technical Report, 80 p.

Paquette and DeAlteris, 1994. Environmental factors related to the selection of a site for an Underwater Sound Range on Tanner and Cortez Banks, California. Naval Undersea Warfare Center, Division Newport, NUWC Technical Report, 64 p.

DeAlteris and DeAlteris, 1994. Design of an instrument housing for use in a shallow water range on the United States continental shelf. Naval Undersea Warfare Center, Division Newport NUWC Technical Report, 54 p.

DeAlteris and Ward, 1995. Ocean circulation simulation model, offshore Onslow Bay, North Carolina. Naval Undersea Warfare Center, Division Newport, NUWC Technical Report, 85 p.

DeAlteris, 1996. Geology of Offshore Onslow Bay, North Carolina, Naval Undersea Warfare Center, Division West Point, NUWC Tech. Report. 46 p.

DeAlteris and DeAlteris, 1996. Results of half scale testing of a trawl resistant seabed mounted instrument housing. Naval Undersea Warfare Center, Division Newport, NUWC, Tech. Report, 35 p.

DeAlteris, 1996-2000. Studies of the impact of the North Cape oil spill on the fishery and aquaculture resources in the southern R.I. area., and the estimation of the restoration of those resources. Numerous reports to Beek Consultants, Polaris Consulting, and West of England.

DeAlteris and others, 1997. Estimation of the tractive force developed by large whales. A report to the National Marine Fisheries Service.

DeAlteris, 1997. Assessment of status of the stock of horseshoe crabs in Delaware Bay. A report to the Delaware Bay Waterman's Association.

DeAlteris, 1998. Assessment of Hard Clam (*Mercenaria mercenaria*) stocks New Bedford, Dartmouth and Fair Haven, Mass. A report to National Marine Fisheries Service, 34 p.

DeAlteris, 1998. Development of an acoustic release system for bouy lines used in the offshore lobster fishery. A report to the National Marine Fisheries Service, 27 p.

DeAlteris. 2000-2003. Bi-monthly reports on the dispersion and advective transport of fish wastes discharged into Rhode Island Sound. Submitted to EPA, 10-12 pages each

DeAlteris. 2001. Assessment and valuation of damages to oyster grounds in the Yeocamico River, Chesapeake Bay, Va. Report submitted to Bevens Oyster Company, Va. 14 pages.

DeAlteris. 2002-2005. Re-permitting of the Brayton Point Station, a four unit, fossil fuel power plant on Mount Hope Bay RI. Numerous reports summarizing the results of analyses of trends in fish abundance in Mount Hope Bay relative to Narragansett Bay.

DeAlteris, 2004, Results of Sea Turtle and Pound Net Interaction 2004 Project in Chesapeake Bay. A report submitted to NMFS, NEFSC.

DeAlteris, 2005, Results of Sea Turtle and Pound Net Interaction 2005 Project in Chesapeake Bay. A report submitted to NMFS, NEFSC.

DeAlteris, 2006. Results of Sea Turtle and Pot Gear Interaction Assessment in 2006 in Chesapeake Bay. A report submitted to NMFS, NEFSC.

DeAlteris and Lawson. 2007. Evaluation of turtle excluder devices (TEDs) in two U.S midAtlantic trawl fisheries. A report submitted to NMFS, NEFSC.

DeAlteris and others. 2007. Effect of fishing on deep water, marine habitats. A report submitted to FAO, UN. Rome.

DeAlteris and others. 2008. Evaluation of catch performance of a the northeast modified TED in the summer flounder trawl fishery. A report submitted to NMFS, NEFSC.

DeAlteris and others. 2009. Evaluation of the catch performance of the NMFS Flounder TED with a large opening in the Mid-Atlantic scallop trawl fishery. A report submitted to NMFS, NEFSC.

DeAlteris and others, 2010. Evaluation of a topless trawl in the Mid-Atlantic summer flounder bottom trawl fishery. A report submitted to NMFS, NEFSC.

#### Principal Research Activity:

1967-1968, Bureau of Sport Fisheries, Department of the Interior, employed as lab technician/diver in the construction and monitoring of artificial reefs offshore of the New Jersey coast.

1968-1969, Commonwealth of Virginia, participated in monthly oceanographic cruises in the Mid-Atlantic Bight collecting hydrographic data, also involved in data analysis requiring computer programming.

1969, Deep-sea Ventures, participated in cruises aboard R/V Prospector testing underwater TV and dredging systems for manganese nodules on the Blake Plateau, offshore Florida.

1972-1973, Office of Naval Research, Junior Investigator in a research study of the hydraulics of Wachapreague Inlet, Virginia. Responsibilities included experimental design, designing and planning field operations, including biweekly bathymetric surveys of the inlet gorge, implementation and maintenance of a taut-moor current meter system and the development of an instrument system to measure boundary layer velocity profiles. Data reduction included development and use of specialized computer programs.

1973, Potomac River Fisheries Commission, Diving Consultant, monthly observations of oyster bed response to siltation.

1974-1975, Public Service Electric and Gas Company, Project Manager of the Coastal Process Investigation for the proposed offshore nuclear power plant, the Atlantic Generating Station. Technical studies included an evaluation of current meters in coastal environment, analysis of oceanographic data, sediment transport studies using fluorescent tracers, studies of adjacent beach and inlet evolution, and an investigation into offshore structures similar to the proposed AGS. Responsibilities included management of field work, analysis and budgets, and report writing, annual budget in excess of \$500,000.

1973-1975, Dames and Moore, Project Oceanographer. Participated in various projects associated with coastal and estuarine processes in Alabama, Hudson River, Florida, and the Persian Gulf.

1974, University of Florida, Research Consultant, provided instrumentation to measure boundary layer velocity profiles in two tidal inlets on the West Coast of Florida. Also involved in field studies of inception of motion of sediment particles.

1975, Con Edison, Indian Point Nuclear Generating Station, thermal monitoring surveys, dye, and current studies.

1975, Alaska, State Department of Transportation, diving inspections of breakwater construction at the Sitka Alaska Airport Runway Extension Project.

1975-1977, Cape May County Municipal Utilities Authority, Principal Investigator of physical and geological oceanographic studies related to three wastewater outfalls proposed for Cape May County, New Jersey. The physical studies include three systems of insitu current meters and thermographs, monthly hydrographic surveys, drogue studies, dye studies and the collection and analysis of meteorological, wave and tide data. The geological studies include investigations of beach and sea floor stability and a precision bathymetric survey in the vicinity of the proposed outfall alignments. Also peripherally involved in biological and water quality studies. Responsibilities included initial experimental design and defense to EPA, procurement of equipment, implementation and management of field work, management of data analysis, report writing and public presentation. Annual budget in excess of \$500,000.

1977, Public Service Electric and Gas Company, precision bathymetric survey and hydrographic measurements, in the vicinity of Bergen Generating Station, New Jersey.

1977, National Ocean Survey, Co-Investigator in tidal datum studies in the North Atlantic region including Cape Cod, Nantucket, and Long Island. Responsible for installation and maintenance of tide observation structures and nitrogen bubble tide gauges in coastal environment for the determination of the boundary of two hundred mile limit. Budget approximate \$50,000.

1977, Tetra-Tech Corporation, Water Transport Studies, Jubail Industrial Complex, Saudi Arabia. Consultant: design of drogue and dye investigations in the Persian Gulf.

1977-1978, Coastal Engineering Research Center, U.S. Army, Corps of Engineers, Principal Investigator, wave data collection and analysis, offshore southern New Jersey. Designed and built insitu recording wave gage, installed mooring system, monthly field servicing of gage, computer analysis of data for significant wave height and zero crossing period. Budget approximately \$18,000.

1978, National Ocean Survey, Subcontractor to Shore Engineering for installation of nitrogen bubbler tide gages and supporting equipment at Assateague Island, VA and Cape Lookout, NC.

1978, Brown and Root, Subcontract to Normandeau Associates, Inc., installation, service and removal of oceanographic instrumentation, surficial sediment sampling, shallow coring, and patch release dye studies to investigate dispersion and advection at the Cape Charles development site, Chesapeake Bay, Virginia.

1978, Norfolk Dredging Company, assessment of dredging induced damage to private oyster grounds in the James River, Virginia and expert witness testimony in court, on subcontract to Crenshaw, Johnson and Ware, Attorneys at Law, Norfolk, Virginia.

1978, Virginia Institute of Marine Science, Research vessel charter, coastal environmental sampling in the tributaries of Chesapeake Bay by trawl net and grab sampler.

1978-1983, Ecological assessments of dredging and wetlands permits for commercial developments as to potential environmental impact, various locations in Virginia.

1979-1980, Atlantic Meteorological Oceanographic Laboratory, National Oceanographic Atmospheric Administration, Sediment transport study, offshore New Jersey, field data collection, beach profiles, offshore stake fields, sediment samples, statistical data analysis and interpretation. Annual budget approximately \$12,000.

1979, U.S. Army, Corps of Engineers, New York District, Hydrographic surveys at various locations, technical consultant and field supervisor on subcontract to Pandullo Quirk Associates.

1979, Virginia Institute of Marine Science, Research vessel charter, technical and diving services coastal environmental sampling to 60 miles offshore, longlining for shark, trawling, neuston and plankton sampling.

1979, Virginia Department of Highways, Pre and post construction environmental inventory of benthic invertebrate communities in the tributaries of Chesapeake Bay, subcontract to the Virginia Institute of Marine Science.

1979-1980, U.S. Geological Survey, Research vessel charter, technical and diving services, water quality surveys, conducting current meter system installation, retrieval and servicing, bottom sediment sampling and coring, in the Potomac River and Chesapeake Bay. Annual Budget approximately \$40,000.

1979, National Park Service, Environmental field survey and data analysis, Piscataway Creek, Maryland, related to dredging permits and marina design, subcontract to Anderson Coastal Consultants.

1980, U.S. Coast Guard, Hydrographic Survey of Diamond Shoals Light, North Carolina.

1980, U.S. Fish and Wildlife Service, Macrobenthos and Sediment Survey of Metomkin Bay, Eastern Shore, Virginia.

1980, Virginia Department of Highways, Pre-construction field sampling: survey of commercial shellfish beds, Hampton Roads, Virginia and oyster grounds survey, James River, subcontract to Virginia Institute of Marine Science.

1980, U.S. Environmental Protection Agency, Water quality survey, lower Chesapeake Bay transect, research vessel charter, subcontract to Virginia Institute of Marine Science.

1980, U.S. Coast Guard, Visual diving inspection of Diamond Shoals Light, North Carolina.

1980, Coastal Engineering Research Center, Nearshore and bottom profiles using sea sled and fathometer, Duck, North Carolina, research vessel charter, subcontract to Langley and McDonald Engineers.

1980-1981, Coastal Engineering Research Center, U.S. Corps of Engineers, Study of the Beach Fauna of a Barrier Island, Duck, North Carolina. Total Budget approximately \$35,000.

1980, Allied Chemical Corporation, Environmental field sampling in James River, subcontract to Bionomics Group, E.G. and G.

1980-1981, U.S. Fish and Wildlife Service, laboratory analysis of benthic samples, field sampling related to environmental impact studies.

1980-1981, U.S. Navy, Facilities Engineering Command, Hydroid distribution study, Hampton Roads, Virginia, subcontract to Virginia Institute of Marine Science.

1981, Furniss, Davis and Rashkind, Assessment of damage to oyster grounds in Back River by tug and barge activity, field work and expert witness testimony.

1981, U.S. Air Force, Langley Base, Pre and post dredging impact studies, Back River, Virginia.

1981-1982, Mid-Atlantic Fisheries Development Foundation, Inc., Principal Investigator. Comparative fuel efficiency study for pair, otter and beam trawling techniques, funding provided by National Marine Fisheries Service. Total Budget approximately \$25,000.

1981, City of Virginia Beach, Evaluation of selected oyster ground lease beds in Lynnhaven Inlet, canal and Broad Bay, related to a proposed dredging project.

1982, U.S. Navy, Facilities Engineering Command, Environmental sampling prior to a dredging project, a subcontract to Froehling and Robertson, Engineers.

1982, Hutt and Robertson, Ltd., attorneys for Bevans Oyster Company, Inc., Assessment of damage to 6 acres of cultivated oyster ground in the Yeocomico River due to tug and barge grounding.

1983, H.B. Kennerly Company, Salisbury, Maryland, Consultant, Evaluation of oyster grounds in the Nanticoke River, Maryland, assessment of damage due to barge grounding.

1983, Avis and Avis, attorneys for Mr. Walter Blount, Consultant Assessment of damage to oyster grounds in the Pagan River, Virginia.

1983, City of Hampton, Consultant, Oyster and clam ground assessment in the SW Branch of the Back River, Virginia, for a pre-dredging condemnation procedure including expert witness testimony in court.

1983, Langley and McDonald Engineers, Consultant, Survey of oyster and clam grounds in the Western Branch of the Elizabeth River, Virginia, re: marina development.

1984-1986, Virginia Institute of Marine Science, Principal Investigator, Doctorate Dissertation Research Project Research in sedimentation processes affecting oyster reefs in the James River, Virginia. Total Budget approximately \$50,000.

1983-1987, University of Rhode Island, Department of Fisheries, Principal Investigator, Basic research in mobile fishing gear, physical modeling in tow tanks, visual observations on a sled while SCUBA diving. Supported by URI, AES, and NMFS, for approximately \$5,000.

1984, Board of Supervisors, Middlesex County, Virginia, Consultant, pre and post dredging surveys of oyster beds in the vicinity of Broad Creek and the Rappahannock River, Virginia.

1985, U.S.P. and I., Consultant, Assessment of alleged damage to oyster grounds in the Wicomico River, Maryland, caused by commercial river traffic.

1985, Conner, Hooker, Smith and Wright, Attorneys at Law, Consultant Assessment of bottom conditions in the vicinity of the Public Landing at Walden Brothers Marina, Middlesex County, Virginia.

1985, University of Rhode Island, ICMRD, Consultant Review and recommendations of the Fisheries Technology Training Program at ESPOL, Guayaquil, Ecuador. Supported by U.S. AID for approximately \$5,000.

1986, Lone Star Cement Co., Norfolk, Va. Consultant, Pre and post dredging surveys of oyster beds in the Elizabeth River, Virginia.

1986, City of Hampton, Consultant, Assessment of oyster beds in the vicinity of a dredging project, Gosnold Hope Park, Back River, Virginia.

1986, City of Newport News, assessment of oyster grounds in the vicinity of a proposed dredging project, James River, Virginia.

1987-1990, Virginia Power Company, Assessment of the impact of a buried transmission line on the oyster reefs of the York River, Virginia.

1988-1990, U.S.P. and I, Consultant, Assessment of alleged damage to oyster grounds in the Wicomico River, Maryland, Caused by commercial river traffic 1988.

1986-1988, University of Rhode Island, ICMRD, Evaluation of the potential for developing a *Callinectes* crab fishery in the coastal and estuarine waters of Ecuador. Supported by U.S. Agency for International Development, Total budget approximately \$40,000.

1987-1989 University of Rhode Island, Evaluation and analysis of the fishing power and energy efficiency of the Rhode Island trawl fishing fleet. Supported by Governors Office of Energy Assistance for \$35,000 in 1987-88, Sea Grant for \$70,000 in 1987-89, and CRD/AES match for approximately \$20,000 1987-1989.

1987-1989, University of Rhode Island, The biology of *Xylophaga atlantica* and an evaluation of the tolerance of recently settled juveniles to various treatments, supported by Sea Grant for approximately \$70,000 in 1987-89, and CRD/AES match for approximately \$30,000.

1988-1991, University of Rhode Island, The selectivity of bottom trawl cod-ends and the survivability of escapees. Supported by NMFS, SK \$40,753, and by NMFS, N.E. Region for \$18,750, and URI Sea Grant for approximately \$60,000.

1989-1991, University of Rhode Island, The effect of bottom cultivation on the set, survival and recruitment of the hard clam, *Mercenaria mercenaria*. Supported by URI Agricultural Experiment Station for approximately \$40,000, and URI Sea Grant for about \$10,000.

1988-1990, University of Rhode Island, Fishing vessel safety training program. Supported by NMFS-SK for \$56,975 and CRD/CES match for \$60,000 to develop mobile based training program, rewrite Safety Manual for the Northeast Region and other activity.

1990-1992, University of Rhode Island, Fishing vessel safety training programs development of a standardized training curriculum. Supported by NMFS-SK for approximately \$35,000 and industry match for \$35,000.

1990-1992, University of Rhode Island. Factors affecting the selectivity of trawls and the survival of codend escapees. Supported by NMFS-SK for \$107,000 and URI Sea Grant for \$55,000.

1991-1993, University of Rhode Island. Fish behavior in the vicinity of fishing gear. Supported by NMFS-SK for \$30,000, URI Sea Grant for \$102,000, URI/NOAA CMER, for \$25,000, and CRD/AES match of approximately \$75,000.

1991-1992, University of Rhode Island. A study of groundfish gillnet fishery in the Gulf of Maine. Supported by the URI/NOAA CMER for \$20,000.

1990, New England Fishery Management Council, Design and analysis fishing gear performance evaluation studies.

1990, National Marine Fisheries Service, Design and analysis of shrimp separator trawl experiments.

1991, New England Fishery Management Council. Analysis and interpretation of Canadian trawl selectivity studies with application to the New England groundfish fishery.

1991, National Marine Fisheries Service, Southeast Fisheries Center. Analysis of swordfish catch data with regard to size selectivity of the various gears.

1992-1993, University of Rhode Island. The evaluation of selective trawl designs in the New England small mesh trawl fisheries. Supported by NMFS-SK for \$103,169, and CRD match for \$47,930.

1993-1997, U.S. Navy, Naval Undersea Warfare Center. Oceanographic studies related to the design of shallow water, acoustically equipped training ranges; design of seabed installed hydrophone mounts; geophysical surveys of shallow and deep acoustic range sites (North Carolina, Florida, Marshall Islands, Hawaiian Islands); scale model and prototype testing of seabed installed hydrophone mounts.

1994-1995, University of Rhode Island. Reduction of flatfish bycatch in the small mesh bottom trawls used in the New England whiting fishery: fish behavior in the vicinity of fishing gear. Supported by NMFS-SK for \$84,232 and \$15,000 CRD match and \$42,000 industry match.

1994, U.S.A.I.D., subcontract to Nathan Associates. Feasibility study on the development of a mid-Atlantic fishing operation base in Cape Verde.

1994-1995, University of Rhode Island. Effects of harvesting gear type and level of fishing mortality on the yield and spawning stock biomass per recruit for commercially important demersal species in the Northwest Atlantic Ocean. Supported by the URI/NOAA CMER Program for \$23,000.

1995-1996, University of Rhode Island. Characterization of the Mid-Atlantic Coastal Gillnet Fisheries. Supported by the URI/NOAA CMER Program for \$41,000.

1995-1997, University of Rhode Island. Species selectivity in New England groundfish fisheries: behavior of fish and fishers. Supported by R.I. Sea Grant for \$58,250, \$59,500 and \$34,708, and CRD match for \$29,500, \$29,500, and \$17,208.

1996, National Marine Fisheries Service. Site selection, design and construction oversight of an artificial reef for lobsters in Narragansett Bay, R.I.

1996, Ball Oyster Company. Evaluation of oyster grounds in Long Island Sound, Offshore, Conn.

1996, Beak Environmental Consultants. Sampling of fishery resources and aquaculture lease project in Rhode Island following the Cape North oil spill in Rhode Island waters.

1997-1998, University of Rhode Island. Aspects of bycatch in R.I. trawl fisheries. Supported by RIDEM for \$18,000.

1997-1998, University of Rhode Island. Estimation of the tractive force applied by large whales to entangled fishing gear. Supported by NMFS for \$6,500.

1997-1998, Beak Environmental Consultants. Assessment of the impacts of the North Cape Oil Spill on the surf clams off southern Rhode Island.

1998, National Marine Fisheries Service. Shellfish resource assessments in Dartmouth, Fairhaven, and New Bedford, Mass.

1998-1999, National Marine Fisheries Service. Development of an acoustic release system for lobster trap buoys.

1998-1999, Polaris Applied Sciences. Evaluation of the North Cape Oil Spill habitat restoration alternatives.

2000-2001, West of England. Implementation of North Cape Oil Spill Lobster Restoration Project - restocking 300,000 adult v-notched lobsters into Block Island Sound.

2000-2003, Point Judith Fishermen Co. -monitoring ocean disposal of fish waste, submission of reports to EPA.

2000-2001, Blue Crab Conservation Coalition – scientific advice on the status of blue crab stock in Chesapeake Bay and the future of the fishery.

2001, Bevans Oyster Co. Assessment of damage to oyster grounds in the Chesapeake Bay.

2001-2003, New Jersey D.E.P., Div. of Fish and Wildlife. Technical assistance with selection and training of stock assessment personnel.

2002-2003, Brayton Point Station (PG&E). Analyses of 30 year data set to assess the impact of the power plant on the fish distributions and abundance In Mount Hope Bay and Narragansett Bay.

2003, National Marine Fisheries Service, Evaluation of Factors Affecting the Performance of a Bottom Survey Trawl.

2002-2003, University of Rhode Island, Effects of Increasing Mesh Size on the Yield of the Northeast Groundfish Fisheries. Supported by the NMFS-SK Program for \$128,500.

2003-2005, University of Rhode Island, Effects of Weather on the Performance of the NMFS Bottom Survey Trawl. Supported by the NMFS-CMER Program for \$87,017.

2003-2005, City of New Bedford and NOAA NMFS, Assessment of Growth and Survival of Hard Clams Use in a Resource Stock Enhancement Project in Buzzards Bay, MA. 2003-2005, University of Rhode Island, Application of Acoustic Release Devices for Reducing Large Whale Entanglements. Supported by National Fish and Wildlife Foundation with a total budget of about \$115,000.

2003-2005, University of Rhode Island, Effects of Weather on the Performance of the NMFS Bottom Survey Trawl. Supported by the NMFS-CMER Program for \$87,017.

2004 Mid-Atlantic Fishery Management Council, Scup Stock Assessment.

2005-2007. University of Rhode Island. Small Scale Evaluation of Acoustic Pop-up Buoys in the Offshore Fixed Gear Fisheries. Supported by the National Fish and Wildlife Foundation for \$124,000.

2005-2006. University of Rhode Island. Understanding and Documenting Cetacean Behavior in Trawl Nets. Supported by the NMFS/NOAA CMER Program. \$87,000.

2005-2008. University of Rhode Island. Reducing Sea Turtle and Cetacean Bycatch in Trawls. Supported by the NMFS/NOAA CMER Program. \$74,000+ \$70,000+\$14,000.

2006-2008 University of Rhode Island. Preliminary Assessment of Fish Utilization of the Waters adjacent to the Cape Cod National Seashore. Supported by National Park Service. \$64,867.

2006-2008 University of Rhode Island. Reducing Cetacean and Sea Turtle Bycatch in Trawl Fisheries: Evaluating the Effectiveness of Bycatch Reduction Devices. Supported by the National Marine Fisheries Service. \$86,000.

2004-2005 National Marine Fisheries Service. Evaluation of the effect of alternative leader designs for pound nets in lower Chesapeake Bay, Va. on sea turtle interactions and target catch retention.

2006. National Marine Fisheries Service. Evaluation of the potential for sea turtle entanglement in crab pot buoy lines and gillnets in lower Chesapeake Bay, Va.

2007. Food and Agriculture Organization (FAO) of the United Nations. Evaluate the effect of fishing on deepwater habitats.
2007. Harbour, Smith, Harris and Merritt, LLC. Assessment of the likelihood of *Vibrio vulnificus* being transmitted from oysters consumed in a Galveston restaurant.
2008. Weaver's Cove Energy, (subcontract through Applied Science Associates), Assessment of the potential impacts of an offshore Liquefied Natural Gas (LNG) terminal on the benthic resources of Mount Hope Bay, MA.
- 2008-2009. Scientific Certification Systems. Marine Stewardship Council certification of US East Coast red crab fishery.
- 2009 National Marine Fisheries Service. Evaluation of a modified Turtle Excluder Device (TED) in the scallop trawl fishery.
- 2009-2010 EXXON MOBILE, subcontract through Natural Resource Group, Evaluation of the distribution of fishing activity in the New York Bight Apex and the relationship with fish distributions and habitat characteristics, as related site selection for an offshore LGN terminal. 2009-2011 University of Rhode Island. Evaluation of a modified Turtle Excluder Device (TED) in the summer flounder trawl fishery. Supported by National Marine Fisheries Service, through the Southern New England Commercial Fishermen's Research Foundation, with a total project budget about \$115,000, with about \$48,000 to URI for the project design, data collection, and data analysis.
- 2009-2011 University of Rhode Island. Abundance, distribution and life history characteristics of mantis shrimp in Narragansett Bay, RI. Supported by RI DEM with a total budget of about \$90,000.
- 2009-2010 US AID through a sub-contract to Academy of Educational Development, Development of a Curriculum for the Fisheries Training Program at URI.
2009. Pender and Coward LLC (attorneys for Virginia Department of Transportation). Evaluation of damages to oyster and clam aquaculture leases caused by bridge construction in Chincoteague VA.
- 2010 Friends of Goose Cove. Evaluation of the environmental impact of a proposed shellfish aquaculture farm on the ecology of Goose Cove, Maine.
- 2010 Friends of Blue Hill Bay. Evaluation of the environmental impact of a proposed salmon pen aquaculture farm on the ecology of Blue Hill Bay.
- 2010-2011 National Marine Fisheries Service. Evaluation of catch performance of a topless trawl in the summer flounder trawl fishery.

2010-2015 University of Rhode Island. Development of sustainable fisheries in Gambia, West Africa. Supported by USAID through URICRC, with the fisheries portion budget of about \$115,000 annually.

2011-2016 University of Rhode Island. Development of sustainable fisheries in Senegal, West Africa.. Supported by USAID through URI CRC, with the fisheries portion budget of about \$100,000 annually.

2011-2013 National Marine Fisheries Service. Technical Assistance with the evaluation of fishing gear performance

2010-2011 Global Trust. Pre-assessment of the sustainability of five fisheries in Louisiana with regard to Marine Stewardship Council principles.

2010-2011 Scientific Certification Systems. Marine Stewardship Council assessment of the Louisiana blue crab fishery for sustainability.

2011. Scientific Certification Systems. Marine Stewardship Council annual audits of Oregon Dungeness crab fishery, and east coast deep sea red crab fishery.

2011-2012 World Bank. Stock assessments of the fishery resources of Cape Verde.

2012. Global Trust. Peer reviews of the MSC certification reports for snow crab fisheries of eastern Canada.

#### Principal Outreach Activity:

1987-1989 - University of Rhode Island, Fisheries and Aquaculture Extension. Supported by R.I. Sea Grant for approximately \$40,000 annually and CRD match for \$40,000 annually.

1989-1991 - University of Rhode Island, Fisheries and Aquaculture Extension. Supported by R.I. Sea Grant for approximately \$65,000, CRD match for \$30,000, and industry match for \$15,000.

1990-1991 - University of Rhode Island, Fisheries and Aquaculture Extension. Supported by R.I. Sea Grant for \$73,653, CRD match \$30,000 and industry match \$10,000.

1991-1992 - University of Rhode Island, Fisheries and Aquaculture Extension. Supported by R.I. Sea Grant for \$59,903, CRD match \$30,000 and industry match \$15,000.

1992-1993 - University of Rhode Island, Fisheries and Aquaculture Extension. Supported by R.I. Sea Grant for \$69,930, CRD match \$30,000, and industry match \$20,000.

1993-1994 - University of Rhode Island, Fisheries and Aquaculture Extension. Supported by R.I. Sea Grant for approximately \$113,000, CRD match for \$10,000, and industry match for \$20,000.

1994-1995 - University of Rhode Island, Fisheries and Aquaculture Extension. Supported by R.I. Sea Grant for approximately \$116,000, CRD match for \$60,000, and industry match for \$20,000.

1995-1998 - University of Rhode Island, Fisheries and Aquaculture Extension. Supported annually by R.I. Sea Grant for approximately \$143,000, CRD match for \$60,000 annually, and industry match for \$20,000.

1995-1997 - University of Rhode Island, Outreach: the link between fisheries research and sustainable development of fishing resources. Supported by R.I. Sea Grant for \$27,300, \$22,100 and \$12,891 and CRD match for \$18,210, \$11,700 and \$6,850.

1995-1997. University of Rhode Island: Land-based summer flounder aquaculture: technical assistance to industry and a university demonstration project. Supported by R.I. Sea Grant for \$58,370, \$57,720+ and \$33,670 and CRD match for \$38,502, \$38,502, and \$22,400.

1995-1997. University of Rhode Island. Development and Implementation of the Transient Gear, Shellfish Aquaculture Training Course. Supported by Cooperative Extension for \$5,000 annually.

1996 and 1997. University of Rhode Island, Cooperative Extension. Fisheries and Aquaculture. About \$50,000.

1997-1998. University of Rhode Island. Development and publication of "Guide to East Coast Marine Mammals and Sea Turtles." Supported by NMFS for \$30,000 and RISG for \$20,000.

1997-1998. University of Rhode Island. Technical assistance with implementation of large whale take-reduction plan in the Mid-Atlantic region. Supported by NMFS for \$15,500.

1998 - NOAA. Development of a Training Manual in Fisheries Science and Technology for NOAA Corps officers.

1998-1999. University of Rhode Island, Fisheries and Aquaculture Extension. Supported by R.I. Sea Grant for \$200,000, CRD match for approximately \$80,000, and industry match for \$20,000.

1998-1999 - University of Rhode Island. Technical assistance with the implementation of the harbor porpoise take-reduction plan in the Gulf of Maine and Mid-Atlantic. Supported by NMFS for \$55,000.

1999-2000. University of Rhode Island, Fisheries and Aquaculture Extension. Supported by R.I. Sea Grant for \$220,000, CELS match for approximately \$80,000, and industry match for \$20,000.

2000-2001 University of Rhode Island, Fisheries and Aquaculture Extension. Support of R.I. Sea Grant for \$250,000, CELS match for approximately \$80,000, and industry match for \$20,000.

2001-2002 University of Rhode Island, Fisheries and Aquaculture Extension. Support of R.I. Sea Grant for \$250,000, CELS match for approximately \$80,000, and industry match for \$20,000.

1999-2009 Atlantic States Marine Fisheries Commission. Preparation of 10 individual chapters for a fish stock assessment training manual (1999-2000), presentation of lectures at quarterly meetings for commission members (1999-2001); presentation of two one-week workshops annually for state fishery biologists on quantitative methods in fish stock assessment (2000-2009).

2005-2006 University of Rhode Island. Conduct workshops for fishermen on reducing cetacean and sea turtle interactions with trawl fishing gear in Southern New England. Supported by National Marine Fisheries Service for \$35,000.

2010. National Marine Fisheries Service. Conduct a workshop on mitigating interactions between sea turtles and the bottom trawl fisheries in the Mid-Atlantic region.