

CURRICULUM VITAE

Richard A. Lutz

Present Position: Director, Center for Deep-Sea Ecology and Biotechnology
Associate Director, Institute of Marine & Coastal Sciences
Professor, Institute of Marine & Coastal Sciences
Rutgers University, New Brunswick, NJ 08903

Education

B.A., 1971, University of Virginia (Biology)
Ph.D., 1975, University of Maine (Oceanography)

Professional Experience:

1995-present	Director, Center for Deep-Sea Ecology and Biotechnology, Rutgers University
1989-present	Associate Director, Institute of Marine & Coastal Sciences
1989-present	Professor II, Department of Marine and Coastal Sciences, Rutgers University
1986-1997	Director, Fisheries & Aquaculture Technology Extension Center, Rutgers University
1985-1994	Director, Haskin Research Laboratory, Rutgers University
1985-1990	Department of Oyster Culture, Chair, Rutgers University
1980-present	Graduate Faculties: Ecology and Evolution; Geology; Cell and Developmental Biology (Zoology), Oceanography, Rutgers University
1987-1989	Professor, Department of Marine and Coastal Sciences, Rutgers University
1984-87	Associate Professor, Rutgers University
1979-84	Assistant Professor, Rutgers University (received tenure July, 1984)
1977-1979	Postdoctoral Fellow, Department of Geology and Geophysics, Yale University
1975-77	Postdoctoral Research Associate, Department of Oceanography, University of Maine
1971-75	Research Assistant, Department of Oceanography, University of Maine
1970	Research Assistant, Chesapeake Biological Laboratory,

University of Maryland (summer)

1969 NSF Undergraduate Research Participant, Chesapeake
Biological Laboratory, University of Maryland (summer)

Memberships and Offices Held in Professional Societies

World Mariculture Society
American Society of Zoologists
American Association for the Advancement of Science
Estuarine Research Federation
New England Estuarine Research Federation
American Geophysical Union
American Malacological Union
National Shellfisheries Association:
Honorary Membership Committee (1978-1979)
Publications Committee (1978-1979)
Member-At-Large (1979-1981)
Chairman, Publications Committee (1980-1981, 1985-1987)
Chairman, Program Committee (1981-1982)
Chairman, Honorary Membership Committee (1982-1983)
Chairman, Nominations Committee (1984-1985)
Vice President (1981-1982)
President-Elect (1982-1983)
President (1983-1984)

Editorial Boards

Associate Editor, Journal of Shellfish Research (1981-1986)
Editorial Board of Reviewers, American Malacological Bulletin (1984-2000)
Editorial Board, Critical Reviews in Marine Science (1986-2000)
Editorial Board, Estuaries (1987-1992)

Honorary Societies and Awards

Phi Sigma
Sigma Xi
Thurlow C. Nelson Award (National Shellfisheries Assoc. 65th Ann. Mtg.)
Board of Trustees Award for Excellence in Research, Rutgers University, May, 1988
Cook College Award for Excellence in Research, Rutgers University, 1995
Cook College Leadership Award, 1999, 2003
2005 Scientific Literacy Achievement Award, New Jersey Association for Biomedical Research, 2005

Miscellaneous

Chairman, Fisheries Program, New Jersey Sea Grant Program, New Jersey Marine Sciences Consortium (1982-1987)

Gubernatorial Appointment: Commissioner, Fisheries Development Commission, State of New Jersey (1984-1991)

Proposal Review Panel, Small Business Innovation Research (SBIR) Program, Ocean Sciences Research Section, National Science Foundation (1984)

Program Review Panel, NOAA's Undersea Research Program (1985)

Proposal Review Panel, Biological Oceanography Program, Division of Ocean Sciences, National Science Foundation (1985)

Chairman, Shellfisheries Subcommittee, Fisheries Development Commission, State of New Jersey (1985-1991)

Invited Participant, Workshop on Ocean Lithosphere Genesis and Ridge Crest Processes, National Research Council, National Academy of Sciences (1986)

Steering Committee, Marine Fisheries Research Forum II, New Jersey Marine Sciences Consortium (1986)

Steering Committee, Workshop on the Mid-Oceanic Ridge - A Dynamic Global System (RIDGE Steering Committee), National Research Council, National Academy of Sciences (1986-87)

Board of Directors, Northeast Aquaculture Center (1986-2000)

Member, Steering Committee, Workshop on the Mid-Oceanic Ridge - A Dynamic Global System, National Academy of Sciences (1986-1988)

Co-Chairman and Invited Participant, Approach-Oriented Working Group, Theoretical/Experimental/Analytical Workshop, RIDGE Initiative, National Research Council, National Academy of Sciences (1988)

Invited Participant, Workshop on At-Sea Experiments and Long-Term Observations, RIDGE Initiative, National Research Council, National Academy of Sciences (1988)

Proposal Review Panel, RIDGE Relevancy Review Panel, Division of Ocean Sciences, National Science Foundation (1988-1992)

Member, Steering Committee, RIDGE Initiative (funded from National Science Foundation) (1989-1992)

Member, Workshop - Future Paths of the Consortium, New Jersey Marine Sciences Consortium (1989)

Member, Coastal Accretion Variables Working Group, RIDGE Initiative, National Science Foundation, 1989

Member, City of New Brunswick Technology Resources Committee (1990-1995)

Invited Participant, Temporal Variability Workshop, RIDGE Initiative, National Science Foundation (1991)

Invited Participant, RIDGE 2000 Conference, National Science Foundation, 1999

Invited Participant, DESCEND (DEveloping Submergence SCIENCE for the Next Decade) Workshop, National Science Foundation, National Oceanic and Atmospheric Administration, Office of Naval Research, 1999

Invited Speaker, Discovery Biotechnology, Talented Youth Conference, Rutgers University, 1999

Delaware Sea Grant College Program, External Review Panel, 2000

Participant, RIDGE Exploratory Studies Workshop, Nashville, Tennessee, 2000

Invited Speaker, Advances in Therapeutic Agents Discovery and Development, University Industry Partnerships in Drug Discovery and Development Workshop sponsored by Cook College and the NJ Agricultural Experiment, Station, 2002

Symposium Organizer, Chair, Moderator, "Deep-Sea Hydrothermal Vents: Life at the Extreme", Friday, February 16, 2001, AAAS Annual Meeting and Science Innovation Exposition, February 15-20, 2001, San Francisco, CA

Committee Appointee, Committee on Exploration of the Seas, National Academy of Sciences, October, 2001-2004

Participant, LINK Symposium, Kennedy Space Center, May, 2002

NOAA Ocean Exploration National Education Workshop Meeting September 4-6, 2002, Keynote Speaker, "Voyage Into the Abyss", Charleston, South Carolina

Lutz, R.A., 2002, 1/2 hour TV program, "Tube Worms and Volcanoes in the Ocean Abyss" prepared for By the Book – Science Edition, Rutgers University Television Network.

Lutz, R.A., 2003, "Voyage into the Abyss", Leadership and Development Program, Cook College, Rutgers University.

Lutz, R.A., 2003, "Voyage into the Abyss: Journey to Deep Sea Hydrothermal Vents", Living World Lecture Series, State University of NY, Stony Brook, NY.

Lutz, R.A., 2003, "Voyage into the Abyss: Exciting New Discoveries in the Deep Sea", Annual Monmouth Junior Science Symposium, Monmouth University, NJ

Lutz, R.A., 2003, Presentation at the NJ Premier of the IMAX film, "Volcanoes of the Deep Sea", Liberty Science Center, NJ

Lutz, R.A., 2003, "Volcanoes of the Deep Sea", 50th Anniversary of the Graduate School, Rutgers University, New Brunswick, NJ.

R.A. Lutz, 2003, "Ecology of Deep Sea Hydrothermal Vents: Recent Advances", McGrath Lecture,

Long Island University, Southampton, NY.

R.A. Lutz, 2004, “Volcanoes of the Deep Sea”, Smithsonian Museum of Natural History, Recognition Week for the Presidential Awards for Excellence in Mathematics and Science Teaching.

R.A. Lutz, 2004, “Journey into the Abyss”, Keynote speaker, 2004 National Association of Geoscience Teachers Conference, Rutgers University, Newark and the Newark Museum.

R.A. Lutz, 2004, “Volcanoes of the Deep Sea” Office of Space Science, Astrobiology Conference, Ames Research Center, Moffet Field, CA.

R.A. Lutz, 2005, Invited Guest, “Coast to Coast”, MSNBC News, with Ron Reagan, Jr. and Monica Crawley.

R.A. Lutz, 2005, “Voyage into the Abyss”, Royal Society of Canada, United States Section, Rutgers University, New Brunswick, NJ

R.A. Lutz, 2005, “Volcanoes of the Deep Sea: An IMAX Film”, Rutgers and the North Jersey Section of the American Chemical Society, Middle Atlantic Regional Meeting, Science and Career Day, Rutgers University, New Brunswick, NJ.

Selected University Service

Director, Fisheries and Aquaculture Technology Extension Center, 1986-1997

Director, Haskin Research Laboratory, 1985-1994

Associate Director, Institute of Marine and Coastal Sciences, 1990-present

Acting Director, Center for Theoretical and Applied Genetics, 1999-present

Department Chair (Oyster Culture), 1985-1990

Chair, Search Committee, Dean of Research/Director of Research, NJAES, 1992

Member, Cook/NJAES Research Excellence Award Committee

Member, Program Committee, Design and Development Phase, Institute of Marine & Coastal Sciences, 1987-1992

Member, Search Committee, Ecosystem Ecologist, Institute of Marine and Coastal Sciences, 1991

Member, Search Committee, Water Column Microbiology Biogeochemist, Institute of Marine and Coastal Sciences, 1990

Member, Search Committee, Organism Flow Interaction, Institute of Marine and Coastal Sciences, 1990

Member, Peer Review Committee, Institute of Marine and Coastal Sciences, 1990

Member, Reading Committee, Institute of Marine and Coastal Sciences, 1990

Member, Search Committee, Ecosystem Ecologist, Institute of Marine & Coastal Sciences, 1989

Member, Search Committee, Physical Oceanographer, Institute of Marine & Coastal Sciences, 1989

Established formal collaborative agreements through interactions with the Rutgers Office of Corporate Liaison and Technology Transfer with: (1) American Cyanamid (now American Home Products); (2) the Research Triangle Institute (RTI) in Raleigh, N.C; (3) Xechem, Inc. of New Brunswick, NJ; and (4) ThermoPhyl, Inc. (a newly incorporated Rutgers' spin-off company).

Member, Dean's Advisory Council, 2000-present

Member, NJAES Research Committee, 2000-present

Member, Faculty Appeals Board, 2002-present

Member, PII Promotion Committee, Geology Department, 2002, 2005

Member, PII Promotion Advisory Committee, Cook College, 2003-present
Member, Planning Committee, Cook College, 2003-present

Chief Scientist on Numerous Oceanographic Cruises of:

R/V Atlantis II, R/V Seahawk, R/V Edwin Link, R/V Atlantis

Independently Refereed Publications

Lutz, R.A., H. Hidu, and K.G. Drobeck. 1970. Acute temperature increase as a stimulus to setting in the American oyster, Crassostrea virginica (Gmelin). Proc. Natn. Shellfish. Assoc. 60:68-71.

Lutz, R.A. 1976. Annual growth patterns in the inner shell layer of Mytilus edulis L. J. Mar. Biol. Assoc. U.K. 56:723-731.

de Schweinitz, E.H. and R.A. Lutz. 1976. Larval development of the northern horse mussel, Modiolus modiolus (L.), including a comparison with the larvae of Mytilus edulis L. as an aid in planktonic identification. Biol. Bull. 150:348-360.

Lutz, R.A. and D.C. Rhoads. 1977. Anaerobiosis and a theory of growth line formation. Science 198:1222-1227.

Lutz, R.A. and B. Porter. 1977. Experimental culture of blue mussels (Mytilus edulis L.) in heated effluent waters of a nuclear power plant. Proc. World Maricul. Soc. 8:427-445.

Lutz, R.A. 1978. Pearl incidence in Mytilus edulis L. and its commercial raft cultivation implications. Proc. World Maricul. Soc. 9:509-522.

Lutz, R.A. and H. Hidu. 1978. Some observations on the occurrence of pearls in the blue mussel, Mytilus edulis L. Proc. Natn. Shellfish. Assoc. 68:17-37.

Lutz, R.A. and D. Jablonski. 1978. Cretaceous bivalve larvae. Science 199:439-440.

Lutz, R.A. and D. Jablonski. 1978. Larval bivalve shell morphometry: A new paleoclimatic tool? Science 202:51-53.

Lutz, R.A. and D.C. Rhoads. 1978. Shell structure of the Atlantic ribbed mussel, Geukensia demissa (Dillwyn): A reevaluation. Bull. Am. Malac. Un. 1978:13-17.

Incze, L.S., B. Porter, and R.A. Lutz. 1978. Experimental culture of Mytilus edulis L. in a northern estuarine gradient: Growth, survival and recruitment. Proc. World Maricul. Soc. 9:523-541.

Lutz, R.A. and H. Hidu 1979. Hinge morphogenesis in the shells of larval and early post-larval mussels (Mytilus edulis L. and Modiolus modiolus (L.)). J. Mar. Biol. Assoc. U.K. 59:111-121.

Lutz, R.A. and C.T. Hess. 1979. Biological and radiological analysis of the potential of nuclear power plant effluent waters for shellfish culture. pp. 109-138. In: Power Plant Waste Heat Utilization in Aquaculture (eds. B.L. Godfriaux, A.F. Eble, A. Farmanfarmanian, C.R. Guerra, and C.A. Stephens). Montclair, New Jersey: Allenheld, Osmun and Co., 226 p.

- Lutz, R.A. and L.S. Incze. 1979. The impact of toxic dinoflagellate blooms on the North American shellfish industry. pp. 476-483. In: Toxic Dinoflagellate Blooms (eds. D.L. Taylor and H.H. Seliger). New York: Elsevier/North Holland, 503 p.
- Jablonski, D. and R.A. Lutz. 1979. Larval ecology of extinct molluscs: Comment on larval development of hyolithids. Lethaia 12:306.
- Lutz, R.A. 1979. Bivalve molluscan mariculture: A Mytilus perspective. Proc. World Maricul. Soc. 10:596-608.
- Grassle, J.F., C.J. Berg, J.J. Childress, J.P. Grassle, R.R. Hessler, H.J. Jannasch, D.M. Karl, R.A. Lutz, T.J. Mickel, D.C. Rhoads, H.L. Sanders, K.L. Smith, G.M. Somero, R.D. Turner, J.H. Tuttle, P.J. Walsh, and A.J. Williams. 1979. Galapagos '79: Initial findings of a deep-sea biological quest. Oceanus 22(2):2-10.
- Lutz, R.A. 1980. Introduction: Mussel Culture and Harvest in North America. pp. 1-17. In: Mussel Culture and Harvest: A North American Perspective (ed. R.A. Lutz). Amsterdam: Elsevier/North Holland, 350 p.
- Incze, L.S. and R.A. Lutz. 1980. Mussel Culture: An East Coast perspective. pp. 99-140. In: Mussel Culture and Harvest: A North American Perspective (ed. R.A. Lutz). Amsterdam: Elsevier/North Holland, 350 p.
- Lutz, R.A., L.S. Incze, and C.T. Hess. 1980. Mussel culture in heated effluents: Biological and radiological implications. pp. 166-192. In: Mussel Culture and Harvest: A North American Perspective (ed. R.A. Lutz). Amsterdam: Elsevier/North Holland, 350 p.
- Lutz, R.A. 1980. Pearl incidence: Mussel culture and harvest implications. pp. 193-122. In: Mussel Culture and Harvest: A North American Perspective (ed. R.A. Lutz). Amsterdam: Elsevier/North Holland, 350 p.
- Lutz, R.A. and M. Castagna. 1980. Age composition and growth rate of a mussel (Geukensia demissa) population in a Virginia salt marsh. J. Moll. Stud. 46:106-116.
- Clark, G.R. II and R.A. Lutz. 1980. Pyritization in the shells of living bivalves. Geology 8:268-271.
- Rhoads, D.C. and R.A. Lutz. 1980. Introduction: Skeletal records of environmental change. pp. 1-19. In: Skeletal Growth of Aquatic Organisms (eds. D.C. Rhoads and R.A. Lutz). New York: Plenum, 750 p.
- Lutz, R.A. and D.C. Rhoads. 1980. Growth patterns within the molluscan shell: An overview. pp. 203-254. In: Skeletal Growth of Aquatic Organisms (eds. D.C. Rhoads and R.A. Lutz). New York: Plenum, 750 p.
- Jablonski, D. and R.A. Lutz. 1980. Molluscan larval shell morphology: Ecological and paleontological applications. pp. 323-377. In: Skeletal Growth of Aquatic Organisms (eds. D.C. Rhoads and R.A. Lutz). New York: Plenum, 750 p.
- Kennish, M.J., R.A. Lutz, and D.C. Rhoads. 1980. Preparation of acetate peels and fractured sections for observation of growth patterns within the bivalve shell. pp. 597-601. In: Skeletal Growth

of Aquatic Organisms (eds. D.C. Rhoads and R.A. Lutz). New York: Plenum, 750 p.

Incze, L.S., R.A. Lutz, and L.E. Watling. 1980. Relationships between effects of environmental temperature and seston on growth and mortality of Mytilus edulis in a temperate northern estuary. Mar. Biol. 57:147-156.

Lutz, R.A., L.S. Incze, B. Porter, and J.K. Stotz. 1980. Seasonal variation in the condition of raft-cultivated mussels. Proc. World Maricul. Soc. 11:262-268.

Lutz, R.A., D. Jablonski, D.C. Rhoads, and R.D. Turner. 1980. Larval dispersal of a deep-sea hydrothermal vent bivalve from the Galapagos Rift. Mar. Biol. 57:127-133.

Rhoads, D.C., R.A. Lutz, E.C. Revelas, and R.M. Cerrato. 1981. Growth of bivalves at deep-sea hydrothermal vents along the Galapagos Rift. Science 214:911-913.

Incze, L.S., R.A. Lutz, and E. True. 1981. Modeling carrying capacities for bivalve molluscs in open, suspended-culture systems. J. World Maricul. Soc. 12:143-155.

Lutz, R.A. 1981. Electron probe analysis of strontium in mussel (Bivalvia, Mytilidae) shells: Feasibility of estimating water temperature. Hydrobiologia 83:377-382.

Lutz, R.A., R. Mann, J.G. Goodsell, and M. Castagna. 1981. Experimental culture of the ocean quahog, Arctica islandica. J. World Maricul. Soc. 12:196-205.

Lutz, R.A. and D. Jablonski. 1981. Identification of living and fossil bivalve larvae. Science 212:1419.

Rhoads, D.C., R.A. Lutz, R.M. Cerrato, and E.C. Revelas. 1982. Growth and predation activity at deep-sea hydrothermal vents along the Galapagos Rift. J. Mar. Res. 40:503-516.

Lutz, R.A. and D. Jablonski. 1982. L'utilisation de la morphologie des coquilles larvaires et postlarvaires de bivalves pour les etudes biogeographiques et paleobiogeographiques. Bull. Soc. Geol. France 5-6:901-906.

Lutz, R.A., R. Mann, J.G. Goodsell, and M. Castagna. 1982. Larval and early post-larval development of the ocean quahog, Arctica islandica. J. Mar. Biol. Assoc. U.K. 62:745-769.

Lutz, R.A., J. Goodsell, M. Castagna, S. Chapman, C. Newell, H. Hidu, R. Mann, D. Jablonski, V. Kennedy, S. Siddall, R. Goldberg, H. Beattie, C. Falmagne, A. Chestnut and A. Partridge. 1982. Preliminary observations on the usefulness of hinge structures for identification of bivalve larvae. J. Shellfish Res. 2:65-70.

Lutz, R.A., J. G. Goodsell, M. Castagna, and A.P. Stickney. 1983. Growth of experimentally-cultured ocean quahogs (Arctica islandica) in north temperate embayments. J. World Maricul. Soc. 14:185-190.

Lutz, R.A. and R.R. Hessler. 1983. Life without sunlight: Biological communities of deep-sea hydrothermal vents. Science Teacher 50:22-29.

Jablonski, D. and R.A. Lutz. 1983. Larval ecology of marine invertebrates: Paleobiologic

implications. *Biol. Rev.* 58:21-89.

Gibbons, M.C., J.G. Goodsell, M. Castagna, and R.A. Lutz. 1983. Chemical induction of spawning by serotonin in the ocean quahog *Arctica islandica* (Linne). *J. Shellfish Res.* 3:203-205.

Kennish, M.J., J.J. Vouglitois, D.J. Danila, and R.A. Lutz. 1984. Shellfish. pp. 171-200. In: *Ecology of Barnegat Bay, New Jersey* (eds. M.J. Kennish and R.A. Lutz). New York: Springer-Verlag, 396 p.

Lutz, R.A. 1984. Paleocological implications of environmentally- controlled variation in molluscan shell microstructure. *Geobios Memoire Special*, No. 8:93-99.

Lutz, R.A. 1984. Deep-sea hydrothermal vents: Oases on the ocean floor. pp. 227-242. In: 1985 Yearbook of Science and the Future. Chicago: Encyclopedia Britannica, 446 p.

Lutz, R.A. and G.R. Clark, II. 1984. Seasonal and geographic variation in the shell microstructure of a salt-marsh bivalve (*Geukensia demissa* (Dillwyn)). *J. Mar. Res.* 42:943-956.

Fritz, L.W., R.A. Lutz, M.A. Foote, C.L. Van Dover, and J.W. Ewart. 1984. Selective feeding and grazing rates of oyster (*Crassostrea virginica*) larvae on natural phytoplankton assemblages. *Estuaries* 7:513-518.

Turner, R.D. and R.A. Lutz. 1984. Growth and distribution of mollusks at deep-sea vents and seeps. *Oceanus* 27(3):54-62.

Lutz, R.A., R.D. Turner, and D. Jablonski. 1984. Larval development and dispersal at deep-sea hydrothermal vents. *Science* 226:1451-1454.

Lutz, R.A. 1985. Mussel aquaculture in the United States. pp. 311-363. In: *Crustacean and Mollusk Aquaculture in the United States* (eds. J.V. Huner and E.E. Brown). Westport, CT. AVI Publishing Company, 476 p.

Lutz, R.A. 1985. Identification of bivalve larvae and post-larvae: A review of recent advances. *Am. Malacol. Bull.*, Special Edition No. 1:59- 78.

Turner, R.D., R.A. Lutz, and D. Jablonski. 1985. Modes of molluscan larval development at deep-sea hydrothermal vents. *Bull. Biol. Soc. Wash.* 6:167-184.

Lutz, R.A., L.W. Fritz, and D.C. Rhoads. 1985. Molluscan growth at deep-sea hydrothermal vents. *Bull. Biol. Soc. Wash.* 6:199-210.

Fritz, L.W. and R.A. Lutz. 1986. Environmental perturbations reflected in internal shell growth patterns of *Corbicula fluminea* (Bivalvia). *Veliger* 28:401-417.

Lutz, R.A., P. Bouchet, D. Jablonski, R.D. Turner and A. Waren. 1986. Larval ecology of molluscs at deep-sea hydrothermal vents. *Am. Malacol. Bull.* 4:49-54.

Lutz, R.A. 1988. Dispersal of organisms at deep-sea hydrothermal vents: A review. *Oceanologica Acta* 8:23-29.

- Fuller, C.F. and R.A. Lutz. 1988. Early shell mineralogy, microstructure, and surface sculpture in five mytilid species. *Malacologia* 29:363-371.
- Lutz, R.A., L.W. Fritz, and R.M. Cerrato. 1988. A comparison of bivalve (*Calyplogena magnifica*) growth at two deep-sea hydrothermal vents in the eastern Pacific. *Deep-Sea Res.* 35:1793-1810.
- Hessler, R.R., W.M. Smithey, Jr., C. Keller, C. Van Dover, J.J. Childress, and R.A. Lutz. 1988. Temporal change in megafauna at the Rose Garden hydrothermal vent. *Deep-Sea Res.*, 35:1681-1709.
- Fisher, C.R., J.J. Childress, A.J. Arp, J.M. Brooks, D.L. Distel, J.A. Dugan, H. Felbeck, L.W. Fritz, R.R. Hessler, K.S. Johnson, R.A. Lutz, M.C. Kennicutt II, S.A. Macko, A. Newton, M.A. Powell, G.N. Somero, and T. Soto. 1988. Variation in the hydrothermal-vent clam, *Calyplogena magnifica*, at the Rose Garden vent on the Galapagos spreading center. *Deep-Sea Res.* 35:1811-1831.
- Grizzle, R.E. and R.A. Lutz. 1988. Descriptions of macroscopic banding patterns in sectioned polished shells of *Mercenaria mercenaria* from southern New Jersey. *J. Shellfish Res.* 7:367-370.
- Le Pennec, M., A. Herry, R. Lutz, and A. Fiala-Medioni. 1988. Premieres observations ultrastructurales de la branchie d'un Bivalve Pectinidae hydrothermal profond. *C. R. Acad. Sci. Paris, Ser. III*, 307:627-632.
- Fuller, S.C., R.A. Lutz. 1988. Shell morphology of larval and post-larval mytilids from the northwestern Atlantic. *J. Mar. Biol. Assoc. U.K.*, 69:181-218.
- Roux, M., M. Rio, E. Schein, R. A. Lutz, L. W. Fritz, and L. M. Ragone. 1988. Mesures in situ de la croissance des Bivalves, des Pogonophores, et de la corrosion des coquilles au site hydrothermal de 13° N (Pacifique oriental). *C. R. Acad. Sci. Paris, Ser. III*, 308:121-127.
- Grizzle, R.E. and R.A. Lutz. 1989. A statistical model relating horizontal seston fluxes and bottom sediment characteristics to growth of *Mercenaria mercenaria* (Linne). *Mar. Biol.*, 102:95-105.
- Kennedy, V.S., R.A. Lutz and S.C. Fuller. 1989. Larval and early postlarval development of *Macoma mitchelli* Dall (Bivalvia: Tellinidae). *Veliger* 32:29-38.
- Fuller, S.C., Y.-P. Hu, R.A. Lutz, and M. Castagna. 1989. Shell and pallet morphology in early developmental stages of *Teredo navalis* L. (Bivalvia: Teredinidae). *Nautilus* 103:24-35.
- Fuller, S.C., R.A. Lutz and Y-P. Hu. 1989. Bilateral asymmetry in the shell morphology and microstructure of early ontogenetic stages of *Anomia simplex*. *Biol. Bull.* 177:83-95.
- Chalermwat, K. and R.A. Lutz. 1989. Farming the green mussel in Thailand. *World Aquaculture* 20(4):41-46
- Fuller, S.C., R.A. Lutz, and A. Pooley. 1989. Procedures for accurate documentation of shapes and dimensions of larval bivalve shells with scanning electron microscopy. *Trans. Am. Microsc. Soc.* 108(1):58-63.
- Fritz, L.W., L.M. Ragone R.A. Lutz and S. Swapp. 1990. Biomineralization of barite in the shell of the freshwater Asiatic clam, *Corbicula fluminea* (Mollusca: bivalvia). *Limnol. & Oceanogr.* 35:756-

Fritz, L.W., L.M. Ragone, R.A. Lutz. 1990. Microstructure of the outer layer of Rangia cuneata (Sowerby, 1831) from the Delaware River: Applications in studies of population dynamics. J. Shellfish Res., 9:205-213.

Lima, G. and R.A. Lutz. 1990. The relationship of larval shell morphology to mode of development in marine prosobranch gastropods. J. Mar. Biol. Assoc., U.K., 70:611-637.

Carter, J.G., R.A. Lutz, M.J.S. Tevesz. 1990. Shell microstructural data for the Bivalvia. Part VI. Orders Modiomorphoidea and Mytiloidea. In: Skeletal Biomineralization: Patterns, Processes and Evolutionary Trends. Vol. I, J.G. Carter (Editor). Van Nostrand Reinhold, NY pp. 391-411.

Carter, J.G. and R.A. Lutz. 1990. Part 2. Bivalvia (Mollusca) Plates 1-121. In: Skeletal Biomineralization: Patterns, Processes and Evolutionary Trends. Vol. II. Atlas and Index. J.G. Carter (Editor). Van Nostrand Reinhold, NY pp. 5-28.

Swann, C.P., K. Mueller Hansen, K. Price, and R. Lutz. 1991. Application of PIXE in the study of shellfish. NIMPR, 57:683-686.

Gustafson, R.G., D.T.J. Littlewood, and R.A. Lutz. 1991. Gastropod egg capsules and their contents from deep-sea hydrothermal vent environments. Biological Bulletin, 180:34-55.

Fritz, L.W., L.M. Ragone, and R.A. Lutz. 1991. Seasonal changes in outer shell layer microstructure of Mytilus edulis in New Jersey, USA. Veliger, 34:222-228.

Lutz, R.A., K. Chalermwat, A. Figueras, R.G. Gustafson, and C. Newell. 1991. Mussel Aquaculture in Marine and Estuarine Environments Throughout the World. In: Culture of Estuarine and Marine Bivalve Mollusks in Temperate and Tropical Regions (ed. W. Menzel). Boca Raton, Florida: CRC Press, Inc., pp. 57-97.

Chalermwat, K., T. Jacobsen, and R.A. Lutz. 1991. Assimilation of bacteria by the dwarf surf clam, Mulinia lateralis (Bivalvia: Mactridae). Mar. Ecol. Prog. Ser., 71:27-35.

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"Multidisciplinary Studies of Biological Succession at 9°50' along the EPR", (with T. Shank) February 25-27, 2002, RIDGE Meeting, Long Beach, CA.

"Time-series Studies of Faunal Colonization and Microhabitat Structure at Diffuse-flow Hydrothermal Vent Sites near 9°50' N, East Pacific Rise", (with T. Shank, D. Fornari, D. Scheirer, G. Luther, K. von Damm, M. Lilley, R. Haymon), February 25-27, 2002. RIDGE Meeting, Long Beach, CA

"Distribution and Fatty Acid Composition of Non-vent Endemic Echinoderms at 9°N East Pacific Rise – Implications for Export of Chemosynthetically Derived Organic matter to the Deep Sea Benthos (with C.E. Allen, T. M. Shank, C. M. Young), February 25-27, 2002. RIDGE Meeting, Long Beach, CA.

"Stauromedusan populations inhabiting deep-sea hydrothermal vents along the southern East Pacific Rise", (with R.C. Vrijenhoek, E.R. Annis, A. Reed, K. Bennett, K.M. Halanych, A.G. Collins, September 11-16, 2005, RIDGE Meeting, La Jolla, California.

"Integrated Studies of Biological Community Structure at Deep-Sea Hydrothermal Vents: A Project Overview", (with C. Vetriani, G. Luther, T. Shank, M. Tolstoy), October 30-November 2, 2005,

RIDGE Planning Meeting, Vancouver, BC, Canada

External Grant Support

Associate Investigator, University of Maine, National Oceanic and Atmospheric Administration, "Edible Blue Mussel Mariculture Development. A Special Regional Program Proposal. In: Development of a Sustained Edible Blue Mussel Industry in the Gulf of Maine." January 1974-December 1974, \$59,120.

Principal Investigator, University of Maine, National Oceanic and Atmospheric Administration, "Experimental Culture of Mussels in Maine and New Hampshire. In: Development of a Sustained Edible Blue Mussel Industry in the Gulf of Maine." January 1975-December 1975, \$48,000 (renewal).

Principal Investigator, University of Maine, National Oceanic and Atmospheric Administration, "Experimental Culture of Mussels in Maine and New Hampshire. In: Development of a Sustained Blue Mussel Industry in the Gulf of Maine." January 1976-December 1976, \$59,459 (renewal).

Principal Investigator, University of Maine, National Marine Fisheries Service, "A Statement Concerning the Status of the Mussel Industry in the United States." September 1976-December 1976, \$25,000.

Principal Investigator, University of Maine, National Oceanic and Atmospheric Administration, "Development of a Sustained Edible Blue Mussel Industry in the Gulf of Maine. Part I. Experimental Culture of Mussels." January 1977-December 1977, \$48,870 (renewal).

Principal Investigator, University of Maine, National Oceanic and Atmospheric Administration, "Development of a Sustained Edible Blue Mussel Industry in the Gulf of Maine. Part I. Experimental Culture of Mussels." January 1978-December 1978, \$22,100 (renewal).

Principal Investigator (with D. Dean), University of Maine, National Oceanic and Atmospheric Administration, "Gulf of Maine Mussel Culture." April 1978-December 1978, \$13,060

Postdoctoral Fellow (with D.C. Rhoads), Yale University, Environmental Protection Agency, "Long-term Environmental Monitoring of Dredge-spoil Operations Using Molluscan Shell Growth and Life History Data." January 1977-December 1978.

Associate Investigator (with D.C. Rhoads), Yale University, National Oceanic and Atmospheric Administration, "Analysis of Growth-line and Structure Formation in the Shell of Arctica islandica." November 1978-March 1980, \$59,800.

Postdoctoral Fellow (with D.C. Rhoads), Yale University, National Science Foundation, "Biological Exploration of the Galapagos Rift Vents." July 1978-July 1980, \$37,419.

Principal Investigator (with J.W. Valentine and D. Jablonski), University of California, Santa Barbara, National Science Foundation, "Developmental Strategies in Benthic Marine Invertebrates: Application to Paleontological Problems." October 1978-January 1982, \$64,000.

Principal Investigator, Rutgers University, National Oceanic and Atmospheric Administration, "Biological Analysis of the Age and Growth Rate of the Ocean Quahog, Arctica islandica."

September 1979-March 1981, \$24,600.

Principal Investigator, Rutgers University, National Oceanic and Atmospheric Administration (discretionary funds), "Sea Grant Larval Identification." May 1980-April 1981, \$2,500.

Principal Investigator, Rutgers University, New Jersey Department of Environmental Protection, "A Study of the Effects of Environmental Stress on the Physiological Condition and Skeletal Growth of Bivalve Molluscs." August 1981-July 1982, \$15,000.

Principal Investigator, Rutgers University, National Oceanic and Atmospheric Administration, "Identification of Bivalve Larvae: A Multi-institutional Approach." May 1981-April 1982, \$31,000.

Principal Investigator, Rutgers University, National Oceanic and Atmospheric Administration, "Identification of Bivalve Larvae: A Multi-institutional Approach." May 1982-April 1983, \$29,900 (renewal).

Principal Investigator, Rutgers University, New Jersey Department of Environmental Protection, "The Relationship Between Environmental Perturbations and Growth Patterns Within the Bivalve Shell." March 1983-February 1984, \$17,000.

Principal Investigator (with H. Hidu), University of Maine, National Oceanic and Atmospheric Administration, "A Multi-institutional Approach to the Identification of Bivalve Larvae." January 1982-December 1982, \$9,782.

Principal Investigator, Rutgers University, Delaware River and Bay Authority, "Grazing by Shellfish Meroplankton and its Relationship to Primary Production in Delaware Bay." January 1982-September 1983, \$50,075.

Principal Investigator, Rutgers University, East Coast Sea Clam Industry, "Biological Analysis of the Age and Growth Rate of the Ocean Quahog, Arctica islandica." August 1981-1983, \$11,000.

Principal Investigator (with H. Hidu), University of Maine, National Oceanic and Atmospheric Administration, "A Multi-Institutional Approach to the Identification of Bivalve Larvae." January 1983-December 1983, \$9,928 (renewal).

Principal Investigator (with J.W. Valentine and D. Jablonski), University of California, Santa Barbara, National Science Foundation, "Developmental Strategies in Benthic Marine Invertebrates: Application to Paleontological Problems." February 1982-January 1984, \$39,500 (renewal).

Principal Investigator, Rutgers University, National Oceanic and Atmospheric Administration and the State of New Jersey, "Identification of Bivalve Larvae: A Multi-Institutional Approach." May 1983-April 1984, \$38,000.

Principal Investigator, Rutgers University, National Science Foundation, "Biological Analysis of Molluscan Shells from Deep-Sea Hydrothermal Vents." July 1981-July 1983, \$44,958.

Principal Investigator, Rutgers University, National Science Foundation, "Biological Analysis of Molluscan Shells from Deep-Sea Hydrothermal Vents." June 1983-May 1984, \$12,000 (renewal).

Principal Investigator (with M. Castagna), Rutgers University, National Oceanic and Atmospheric

Administration (discretionary funds), "In situ Studies of Ocean Quahog Growth in Natural Populations." March-August 1984, \$1,500.

Principal Investigator (with M. Castagna), Rutgers University, National Undersea Research Program, Southeastern Undersea Research Facility, "In situ Studies of Ocean Quahog Growth in Natural Populations." July-October 1984, awarded eight days of diving using R/V Seahawk and associated diving bell facilities.

Principal Investigator, Rutgers University, National Oceanic and Atmospheric Administration, "Identification of Bivalve Larvae: a Multi-Institutional Approach." May 1984-April 1985, \$39,000.

Principal Investigator, Rutgers University, National Science Foundation, "French-American Collaboration on Invertebrates at Deep-Sea Hydrothermal Vents." March 1984-April 1987, \$15,005.

Principal Investigator, Rutgers University, National Science Foundation, "Studies of Molluscan Shells from Deep-Sea Hydrothermal Vents." December 1983-May 1987, \$132,827.

Principal Investigator (with M. Castagna), Rutgers University, National Undersea Research Program, Southeastern Undersea Research Facility, "In situ Studies of Ocean Quahog Growth in Natural Populations." August- October, 1985, awarded 16 days of diving using R/V Seahawk and associated diving bell facilities (eight days, August 1985, and eight days, October 1985).

Principal Investigator, Rutgers University, National Oceanic and Atmospheric Administration, "In Situ Studies of Ocean Quahog (Arctica islandica) Growth in Natural Populations." May 1985-April 1986, \$33,500.

Principal Investigator, Rutgers University, National Oceanic and Atmospheric Administration, "Identification of Bivalve Larvae: A Multi-institutional Approach." May 1985-April 1986, \$40,000.

Principal Investigator (with P.J. Morin and R. Grizzle), Rutgers University, National Oceanic and Atmospheric Administration, "Factors Affecting Macrofaunal Benthos of Great Sound in Southern New Jersey with Emphasis on Hydrodynamics, Sedimentation, and Pollutants." May 1986-April 1987, \$12,200.

Principal Investigator, Rutgers University, National Undersea Research Program, "In Situ Studies of Ocean Quahog Growth in Natural Populations." August 1986, awarded 10 days of diving using the R/V Seahawk and associated diving capabilities.

Principal Investigator (with D. Jablonski and J.W. Valentine), University of Chicago, National Science Foundation, "Developmental Strategies in Benthic Marine Invertebrates: Evolutionary Effects." October 1984-October 1987, \$120,000.

Principal Investigator, Rutgers University, National Undersea Research Program, "In situ Studies of Ocean Quahog Growth in Natural Populations." August 1986, awarded 1 day of diving using the R/V Edwin Link and submersible DSRV Johnson Sea-Link.

Principal Investigator, Rutgers University, New Jersey Commission on Science and Technology, "Fisheries and Aquaculture Technology Extension Center." July 1985-June 1986, \$400,000.

Principal Investigator, Rutgers University, New Jersey Department of Environmental Protection,

"Utilization of Bivalve Shells for Assessment of Environmental Stress." April 1986-March 1987, \$32,713.

Principal Investigator, Rutgers University, National Oceanic and Atmospheric Administration. "In Situ Studies of Ocean Quahog (Arctica islandica) Growth in Natural Populations." May 1986-April 1987, \$43,700.

Principal Investigator, Rutgers University, New Jersey Department of Environmental Protection, "Revitalization of the Oyster Industry in Delaware Bay." July 1986-June 1987, \$90,000.

Principal Investigator, Rutgers University, New Jersey Commission on Science and Technology, "Fisheries and Aquaculture Technology Extension Center." July 1986-June 1987, \$400,000.

Principal Investigator, Rutgers University, New Jersey Department of Environmental Protection, "Revitalization of the Oyster Industry in Delaware Bay." July 1987-1988, \$90,000.

Principal Investigator, Rutgers University, New Jersey Department of Environmental Protection, "Investigations of Surf Clam Management." July 1985-July 1986, \$50,000.

Principal Investigator, Rutgers University, New Jersey Department of Environmental Protection, "Investigations of Surf Clam Management." July 1986-June 1987, \$30,000.

Principal Investigator/Chief Scientist, Rutgers University, National Science Foundation/UNOLS, "Studies of Molluscan Shells from Deep-Sea Hydrothermal Vents." March 1985-present, awarded total of 16 dives using the deep-sea submersible Alvin and R/V Atlantis II (at approximately \$25,000/dive), funding equivalent, \$400,000.

Principal Investigator/Chief Scientist, Rutgers University, National Science Foundation/UNOLS, "Gene Flow, Dispersal and Systematic Relationships of Molluscs Associated with Deep-Sea Hydrothermal Vents." January 1990-present, awarded total of 24 dives using the deep-sea submersible Alvin and R/V Atlantis II (at approximately \$25,000/dive), funding equivalent \$600,000.

Principal Investigator, Rutgers University, National Oceanic and Atmospheric Administration, "In Situ Studies of Ocean Quahog (Arctica islandica) Growth in Natural Populations." May 1987-April 1988, \$29,500.

Principal Investigator, Rutgers University, New Jersey Department of Environmental Protection, "Utilization of Bivalve Shells for Assessment of Environmental Stress." June 1987-June 1988, \$34,450.

Principal Investigator, Rutgers University, New Jersey Commission on Science and Technology, "Fisheries and Aquaculture Technology Extension Center." July 1987-June 1988 (third year), \$450,000.

Principal Investigator, Rutgers University, National Science Foundation, "Studies of Molluscan Shells from Deep-Sea Hydrothermal Vents and Cold- Water Seeps." December 1987-December 1990, \$140,000.

Principal Investigator, Rutgers University, New Jersey Commission on Science and Technology, "Fisheries and Aquaculture Technology Extension Center." July 1988-June 1989, \$519,000.

Principal Investigator, Rutgers University, New Jersey Commission on Science and Technology, "Fisheries and Aquaculture Technology Extension Center." July 1989-June 1990, \$297,000.

Principal Investigator (with R.C. Vrijenhoek), Rutgers University, National Science Foundation, "Gene Flow, Dispersal and Systematic Relationships on Molluscs Associated with Deep-Sea Hydrothermal Vents." January 1990-December 1992, \$300,000.

Principal Investigator, Rutgers University, New Jersey Commission on Science and Technology, "Fisheries and Aquaculture Technology Extension Center." July 1990-June 1991, \$300,000.

Principal Investigator (with D. Jablonski and J.W. Valentine) Rutgers University, National Science Foundation, "Developmental Strategies in Benthic Marine Invertebrates: Evolutionary Effects." July 1, 1990 - June 30, 1993, \$160,614.

Principal Investigator, Rutgers University, New Jersey Commission on Science and Technology, "Fisheries and Aquaculture Technology Extension Center." July 1991 - June 1992, \$268,000.

Principal Investigator, Rutgers University, New Jersey Commission on Science and Technology, "Fisheries and Aquaculture Technology Extension Center." July 1992 - June 1993, \$180,000.

Principal Investigator, Rutgers University, New Jersey Commission on Science and Technology, "Fisheries and Aquaculture Technology Extension Center". July 1993-June 1994, \$180,000.

Principal Investigator, Rutgers University, New Jersey Commission on Science and Technology, "Fisheries and Aquaculture Technology Extension Center". July 1994-June 1995, \$180,000.

Co-Principal Investigator (with S. Karl and R. C. Vrijenhoek), Rutgers University, National Science Foundation, "Population Genetics and Gene Flow in Hydrothermal Vent Communities", July 1992-June 1994, \$86,000.

Project Coordinator and Principal Investigator (with 3 co-investigators), Rutgers University, National Science Foundation, "Temporal Changes in Biological Community Structure and Associated Geological Features at Newly-Formed Hydrothermal Vents on the EPR Crest", January, 1993-December 1995, \$233,421.

Co-Principal Investigator (with B. Baldwin), Rutgers University, New Jersey Sea Grant College Program, "Species Identification of Early Life History Stages of Dreissenid Mussels and Other Co-occurring Bivalves in Freshwater and Oligohaline Habitats", August.1, 1993-July 31, 1995, \$138,353.

Co-Principal Investigator (with R. C. Vrijenhoek), Rutgers University, National Science Foundation, "Gene Flow, Dispersal, and Systematics of Deep-Sea Hydrothermal Vent Organisms", April 1, 1993-March 31, 1996, \$375,000.

Principal Investigator, Rutgers University, New Jersey Commission on Science and Technology, "Fisheries and Aquaculture Technology Extension Center". July 1995-June 1996, \$174,850.

Co-Principal Investigator (with R. C. Vrijenhoek), Rutgers University, New Jersey Commission on Science and Technology, "Culture of Microorganisms from Extreme Environments", July 1995-June 1996, \$97,115.

Principal Investigator, Rutgers University, New Jersey Commission on Science and Technology, "Fisheries and Aquaculture Technology Extension Center". July 1996-June 1997, \$180,000.

Principal Investigator, Rutgers University, National Science Foundation, "Temporal Changes in Biological Community Structure at Nascent Hydrothermal Vents on the EPR Crest", October 1, 1996-September 30, 2000, \$180,000.

Co-Principal Investigator (with R.C. Vrijenhoek), Rutgers University, National Science Foundation, "Gene Flow and Species Diversity in Deep-Sea Hydrothermal Vent Communities", August 1996 - July 1999, \$365,000.

Co-Principal Investigator (with R.C. Vrijenhoek), Rutgers University, National Institutes of Health "Bioprospecting in Extreme Deep-Sea Environments", October 1995-September 1998, \$103,492.

Co-Principal Investigator (with R. C. Vrijenhoek), Rutgers University, New Jersey Commission on Science and Technology, "Commercialization of Research Product Discoveries from Extreme Environments," January 1997-December 1997, \$100,000.

Principal Investigator, Rutgers University, New Jersey Commission on Science and Technology, An Industrial and Academic Partnership for the Commercialization of Natural Product Discoveries from Extreme Environments" , October 1, 1998-September 30, 1999, \$119,000.

Co-Principal Investigator (with A.L. Reysenbach, R.C. Vrijenhoek), Rutgers University, American Cyanamid Corporation, "An Industrial and Academic Partnership for the Commercialization of Natural Product Discoveries from Extreme Environments", March 1998-March 1999, \$59,500.

Co-Principal Investigator (with Ramesh Pandey, Xechem, Inc.), NIH Small Business Innovative Research Grant, "Bioactive Natural Products from Marine Extremophiles", September, 1999 - August, 2000, \$88,000 - subcontract to Rutgers University for \$25,000.

Co-Principal Investigator (with R.C. Vrijenhoek), Rutgers University, National Science Foundation, "Gene Flow and Species Diversity in Deep Sea Hydrothermal Vent Communities", September, 1999 - August 2002, \$375,000.

Principal Investigator (with A. Low and S. Low, Co-Principal Investigators), Rutgers University, National Science Foundation, "Volcanoes of the Abyss", January 1, 2001 - December 30, 2003, \$2,018,453

Principal Investigator (with C. Vetrani, Co-Principal Investigator), Rutgers University, National Science Foundation, "Integrated Studies of Biological Community Structure at Deep-Sea Hydrothermal Vents", October 1, 2003 – September 30, 2007, \$338,457.

Principal Investigator (with C. Vetrani, Co-Principal Investigator), Rutgers University, National Science Foundation, "Integrated Studies of Biological Community Structure at deep-Sea Hydrothermal Vents", Supplement to above grant, \$25,000.

Internal Grant Support

Rutgers University Research Council Travel Grant. Presentation of invited paper at international

meeting in Venezia, Italy. June 1981, \$600.

Principal Investigator, Rutgers University Research Council Grant, "Laboratory Culture and Identification of Bivalve Larvae." July 1981-April 1982, \$1,200.

Rutgers University Research Council Travel Grant. Presentation of invited paper at international meeting in Brest, France. February 1982, \$600.

Rutgers University Research Council Travel Grant. Presentation of invited paper at international meeting in Tralee, Ireland. October 1982, \$600.

Principal Investigator, Rutgers University Research Council Grant, "Laboratory Culture and Identification of Bivalve Larvae." July 1982-April 1983, \$1,350.

Principal Investigator, Rutgers University Research Council Grant, "Documentation of Larval and Early Postlarval Bivalve Development." July 1983-April 1984, \$1,500.

Principal Investigator, Rutgers University Research Council Grant, "In Situ Studies of Ocean Quahog Growth." July 1984-April 1985, \$1,500.

Rutgers University Research Council Symposium Grant (with R.K. Olsson) (additional support from FAS Dean, NJAES, Geology Museum and Vice President for Research and Academic Affairs), "Deep-Sea Technology and its Application in Scientific Research and Discovery." January, 1986, \$5,000.

Rutgers University, Academic Excellence Award, P.A. Falkowski and R.A. Lutz (Co-Principal Investigators), Center for Marine Biotechnology, \$160,000, April 2006-March 2007.

Support from Private Industries:

General Public Utilities Nuclear Corporation, Forked River, NJ. Funding in support of fisheries and aquaculture studies, 1987, \$75,000.

Suffern Plating Corporation, Saddle Brook, NJ. Funding in support of research on commercially important shellfish, 1988, \$30,043.

Public Service Electric and Gas Company, Newark, NJ. Funding in support of research on oysters in Delaware Bay, 1988, \$37,000.

Borden Corporation, Pennsauken, NJ. Funding in support of studies on quahog aging, 1989, \$100,000.

Borden Corporation, Pennsauken, NJ. Funding in support of studies on conservation of shellfish, 1989, \$63,500.

Invited Symposia (since arriving at Rutgers University) (formal paper presented)

Geological Society of America (San Jose State University, San Jose, California); Symposium title: "The W.H. Dall Symposium: The Quick and the Dead - Studies of Living and Fossil Organisms." Symposium Organizer, Dr. Judith Terry Smith, Department of Geology, Stanford University,

Stanford, California, 1979.

World Mariculture Society (Honolulu, Hawaii); Symposium Title: "Bivalve Molluscan Mariculture." Symposium Organizer, Dr. Gary D. Pruder, College of Marine Studies, University of Delaware, Lewes, Delaware, 1979.

Shellfish Institute of North America/National Shellfisheries Association (Hyannis, Massachusetts): Symposium Title: "Offshore Mollusks." Symposium Organizer, Dr. Frederic Serchuk, National Marine Fisheries Service, Woods Hole, Massachusetts, 1980.

Geological Society of America (Atlanta, Georgia); Symposium Title: "The Adaptive Potential of Bivalved Shells: Comparative Assessments of Brachiopods, Molluscs and Ostracods." Symposium Organizer, Dr. Roger D.K. Thomas, Department of Geology, Franklin and Marshall College, Lancaster, Pennsylvania, 1981.

World Mariculture Society (Venice, Italy); Conference Title: "World Conference on Aquaculture." Conference Organizer, Dr. Martin Bilio, European Mariculture Society, Padova, Italy, 1981.

American Malacological Union (New Orleans, Louisiana); Symposium Title: "Molluscan Shell Formation and Microstructure." Symposium Organizer, Dr. Robert S. Prezant, University of Southern Mississippi, Hattiesburg, Mississippi, 1982.

American Association for the Advancement of Science (Washington, DC); Symposium Title: "Biological Processes at Deep-Sea Hydrothermal Vents." Symposium Organizer, Dr. Holger J. Jannasch, Woods Hole Oceanographic Institution, Woods Hole, Massachusetts, 1982.

Irish Marine Farmers Association (Tralee, Ireland); Symposium Title: "Management of a Shellfish Resource." Symposium Organizer, Michael Crowley, Department of Fisheries, Fisheries Research Centre, Dublin, Ireland, 1982.

Societe Geologique de France (Brest, France); Symposium Title: "Biogeographie et Tectonique des Plaques." Symposium Organizer, Dr. Claude Babin, Laboratoire de Paleontologie, Universite de Bretagne, Occidentale, Brest, France, 1982.

Geological Society of America (Indianapolis, Indiana); Symposium Title: "Evolutionary Significance of Skeletal Growth Patterns." Symposium Organizers, Dr. Gary D. Rosenberg, Department of Geology, Purdue University, Indianapolis, Indiana and Dr. Richard A. Lutz, Department of Oyster Culture, Rutgers University, New Brunswick, New Jersey, 1983.

American Society of Zoologists (Philadelphia, Pennsylvania); Symposium Title: "Hydrothermal Vents of the Eastern Pacific." Symposium Organizer, Dr. Meredith L. Jones, Smithsonian Institution, Washington, DC, 1983.

Universite Claude Bernard (Lyon, France); Symposium Title: "Premier Congres International de Paleoeologie." Symposium Organizer, Dr. Louis David, Departement des Sciences de la Terre, Universite Claude Bernard, Lyon, France, 1983.

AGU/ASLO Ocean Sciences Meeting (New Orleans, Louisiana): Symposium Title: "Dynamics of Submarine Rift Vent Hydrothermal Systems: Biology, Geology and Chemistry." Symposium Organizer and Chairman, Dr. Richard A. Lutz, Department of Oyster Culture, Rutgers University,

New Brunswick, New Jersey, 1984.

American Malacological Union (Norfolk, Virginia): Symposium Title: "Molluscan Larval Ecology." Symposium Organizer, Dr. Michael Vecchione, McNeese State University, Lake Charles, Louisiana, 1984.

American Malacological Union (University of Rhode Island, Kingston, Rhode Island): Symposium Title: "Egg Encapsulation in Marine Invertebrates." Symposium Organizer, Dr. Jan Pechenik, Tufts University, Somerville, Massachusetts, 1985.

Institut Oceanographique de Paris (Paris, France): "Les Sources Hydrothermales de la Ride du Pacifique Oriental: Biologie et Ecologie." Symposium Organizers, Dr. Daniel Desbruyeres and Dr. Lucien Laubier, IFREMER, Centre de Brest, Brest, France, 1985.

Rutgers University (New Brunswick, New Jersey): "Deep-Sea Technology and Its Application in Scientific Research and Discovery." Symposium Organizers and Chairmen, Dr. Richard A. Lutz and Dr. Richard K. Olsson, Rutgers University, New Brunswick, New Jersey, 1986.

"Mexican-American Guaymas Basin Expedition." Symposium Organizers, Dr. J. Frederick Grassle, Woods Hole Oceanographic Institution, Woods Hole, Massachusetts and Dr. Agustin Ayala-Castanares, UNAM, Mexico City, 1987.

American Association for the Advancement of Science (Chicago, Illinois): Symposium Title: "Deep-Sea Hydrothermal Vents and Cold-Water Seeps: Recent Advances." Symposium Organizers and Chairmen, Dr. Richard A. Lutz, Rutgers University, New Brunswick, New Jersey and Dr. David Karl, University of Hawaii, Honolulu, Hawaii, 1987.

Le Ministere de l'Agriculture des Pecheries et de l'Alimentatin of Quebec and Conseil de l'Aquiculture et des Peches du Quebec, Department of Fisheries and Oceans of Canada. Symposium Title: "Mortality of Hanging-Cultured Mussels", Symposium Organizer, Dr. Marcel Frechette, Institut Maurice-Lamontagne, Canada, April, 1991.

American Geophysical Union (San Francisco, California): Symposium Title: "East Pacific Rise at 9-10°N." Symposium Organizers: Dr. Rachel Haymon, University of California, Santa Barbara and Dr. Michael Purdy, Woods Hole Oceanographic Institution, December, 1991.

American Society of Zoologists (Atlanta, Georgia); Symposium Title: "Reproduction, Larval Biology and Recruitment in the Deep-Sea Benthos." Symposium Organizers, Dr. Kevin L. Eckelbarger, University of Maine and Dr. C. M. Young, Harbor Branch Oceanographic Institute, December, 1991.

North American Paleontological Convention (Chicago, Illinois); Symposium Title: "Advances in Deep-Sea Paleoecology"; Symposium Organizer: Dr. William Miller, Humboldt State University, June, 1992

American Association for the Advancement of Science (Seattle, Washington); Symposium Title: "Submarine Volcanoes, Chemosynthetic Life, and Mineral Deposit Formation", Symposium Organizer: Robert Zierenberg, February, 1997.

Belle Baruch Institute (Georgetown, South Carolina): Symposium Title: "Organism-Sediment

Interactions", Symposium Organizer, J. Aller, SUNY, Stony Brook, NY, October, 1998.

American Malacological Union (Pittsburgh, PA), Symposium Title: "New Looks at Old Mollusks: Recent Perspectives of Molluscan Evolution", Symposium Organizer, Robert Prezant, July, 1999.

Malacological Society of London (Cambridge, England), Symposium Title: "Colonization of Bivalves at Nascent Hydrothermal Vents Along the East Pacific Rise", Symposium Organizers, Elizabeth Harper and John Tyler, September, 1999.

Ninth Deep-Sea Symposium, (Galway, Ireland), "Imaging the Deep-Sea: Recent Technological Advances Using SDV Alvin", June, 2000 (with W. Lange, S. Low)

AAAS Annual Meeting and Science Innovation Exposition (San Francisco, CA), Symposium Title: "Deep-Sea Hydrothermal Vents: Life at the Extreme", Symposium Organizer, Moderator, Chair, February 2001.

AAAS Annual Meeting and Science Innovation Exposition (San Francisco, CA), "Exciting New Technological Advances for Imaging Deep-Sea Hydrothermal Vent Communities" (with W. Lange, S. Low), February 2001.

Advances in Therapeutic Agents Discovery and Development, University Industry Partnerships in Drug Discovery and Development Workshop sponsored by Cook College and the NJ Agricultural Experiment Station, January 29, 2002. "Extreme environment organisms as a source of anticancer drugs".

Invited Lectures (since arriving at Rutgers)

Yale, 1979.

University of Delaware (Newark), 1980

University of Maine (Department of Oceanography), 1980

University of Maine (Department of Zoology), 1980

State University of New York at Stony Brook (Marine Sciences Research Center), 1980

University of Washington (Department of Fisheries), 1981

Memorial University (St. John's, Newfoundland), 1981

Kansas State University (Department of Geology), 1981

University of Delaware (College of Marine Studies, Lewes), 1981

Trenton State College, 1981.

University of Delaware (College of Marine Studies, Lewes), 1982

Bigelow Laboratory for Ocean Sciences, 1982

Horn Point Environmental Laboratories (University of Maryland), 1982

Universite de Bretagne Occidentale, Brest, France (presentation in French), 1982

Irish Marine Farmers Association, Tralee, Ireland, 1982

Cornell University, 1982.

Universite Claude-Bernard, Lyon, France, 1983

State University of New York at Stony Brook (Department of Ecology and Evolution), 1983.

Sandy Hook Marine Laboratory, 1984

Ramapo College (Department of Biology), 1984

Rider College (Advanced Placement Examination Readers), 1984

New Jersey Shell Club, 1984

Philadelphia Shell Club, 1984

University of Virginia (Department of Biology), 1984.

Virginia Institute of Marine Science, 1984.
Yale University (Department of Geology and Geophysics), 1985
Harbor Branch Foundation, 1985
American Littoral Society, 1985
Institut Oceanographique de Paris, 1985
Northeastern University (Marine Sciences Research Center), 1985.
Fairhaven Sailing Society, 1986
University of California at Santa Barbara (Marine Sciences Institute), 1986.
University of New Brunswick, Halifax, Nova Scotia, Canada, 1987.
Scripps Institution of Oceanography, 1987.
Rider College, 1988
Washington University, 1988.
University of Maine, 1989.
Rutgers Alumni College (Martha's Vineyard), 1990
Rutgers Alumni Club of Philadelphia, 1991.
Sigma Xi, Johnson and Johnson Chapter, 1992
Monterey Bay Aquarium Research Institute, 1994
University of Southern Maine, 1994
University of Maine, 1994
University of North Carolina at Wilmington, 1994
Bigelow Laboratory for Ocean Sciences, 1994
State University of New York at Stony Brook, 1995
Bates College, 1995
University of South Carolina, 1995
New Brunswick Scientific Co., 1996
NJ Sea Grant Biotechnology Seminar, Rider University, 1997
Rutgers University Junior Science and Humanities Program, 1997
Department of Geosciences, Princeton University, Princeton, NJ, 1999
American Malacological Society, 1999
Department of Biology, The College of NJ, Trenton, NJ 2000
Department of Biology, Wheaton, College, Norton, MA, 2000
Montclair Adult Evening School, Montclair, NJ, 2000
Natural Science Division, Southampton College, Long Island University, Southampton, NY, 2000
Liberty Science Center, Jersey City, NJ, 2000
U.S. Naval Observatory, Washington, DC, 2000
Museum of Natural History, Smithsonian Institution, Washington, D.C., 2000
Air and Space Museum, Smithsonian Institution, Washington, D.C., 2000
The Village School, West Windsor, NJ, 2000
Southampton College, Long Island University, 2000
Liberty Science Center, 2000
Explorer's Club, New York, NY, 2001
2nd International Symposium on Deep-Sea Hydrothermal Vent Biology, France, 2001
Montclair State University, 2001
South Branch Watershed Association, 2001
Museum of Science and Industry, St. Petersburg, FL, 2001
Office of Grant and Contract Accounting and ORSP, Rutgers University, 2001
Advances in Therapeutic Agents Discovery and Development, University Industry
Partnerships in Drug Discovery and Development Workshop sponsored by Cook
College and the NJ Agricultural Experiment Station, 2002
Philadelphia Academy of Natural Sciences, 2002

Geology Open House, Rutgers University, 2002
Liberty Science Center, 2002
Academy for Life Long Learning, Rutgers University, 2002
Montclair High School, Montclair, NJ, 2002
University of New England, Biddeford, Maine, 2002
Williams College, Williamstown, MA, 2002
University of Connecticut, Avery Point, CT 2002
Kennedy Space Center, Cape Canaveral, FL, 2002
Weston Science Scholars Program, Montclair State University, 2002
Franklin Institute, Philadelphia, PA, 2002
NOAA Ocean Exploration Workshop, Charleston, SC, 2002
NJAES Distinguished Lecture Series, Cook College, Rutgers University, NJ, 2002
Monmouth Regional High School, Tinton Falls, NJ, 2002
Cook College Parents Association, Rutgers University, NJ, 2002
Blair Academy, Blairstown, NJ, 2002
East Stroudsburg University, Pennsylvania, 2002
Society of Research Administrators, Orlando, Florida, 2002
Geophysical Information for Teachers (GIFT) Workshop, San Francisco, CA, 2002
Leadership and Development Program, Cook College, Rutgers University, NJ, 2003
University of New York, Stony Brook, NY, 2003
Monmouth Junior Science Symposium, Monmouth University, NJ, 2003
Scholarship Luncheon, Cook College, Rutgers University, NJ, 2003
Liberty Science Center, 2003
Southampton College of Long Island University, 2003
Woods Hole Oceanographic Institution, 2004
New England Aquarium, 2004
Carnegie Museum of Science, Pittsburgh, PA 2004
Rochester Museum of Science Center, Rochester, NY 2004
Syracuse Museum of Science of Technology, 2004
Smithsonian Museum of Natural History, 2004
NASA, Ames Research Center, Moffet Field, CA 2004
New England Aquarium, Boston, MA 2004
Montclair State University, Montclair, NJ, 2004
Tufts University, Woods Hole, MA, 2004
Center for Marine Science, University of North Carolina, Wilmington, 2005
Royal Society of Canada, U.S. Section, New Brunswick, NJ 2005
Chatham High School, Chatham, NJ 2005
Montclair Public Library, Montclair, NJ 2005
Princeton Plasma Physics Laboratory, Princeton, NJ 2006
Smithsonian Institution, Washington, DC 2006
The Science Station, Cedar Rapids, Iowa 2006
Washington High School, Cedar Rapids, Iowa, 2006
Cornell College, Mount Vernon, Iowa 2006
Coe College, Cedar Rapids, Iowa 2006
Exploration Strategy Workshop, NASA, Washington, DC 2006
Royal Society of Chemistry, Baltimore, Maryland 2006
Newark Museum, Newark, NJ 2006
Aztec on the River Science Center, San Antonio, Texas 2006
JUSTAP Symposium, Hilo, Hawaii 2006

Graduate Students on whose committees I have served, or am currently serving, since my arrival at Rutgers University.

(*indicates major advisor).

Rutgers University

*Kyle Bennett, Ph.D., Ecology and Evolution
*Andrew Reed, Ph.D., Ecology and Evolution
*Timothy Shank, Ph.D., Ecology and Evolution
*Gyongyver (Pearl) Levai, M.S., Oceanography
*Michael Black, Ph.D., Ecology and Evolution
*Ole Folmer, Ph.D. Ecology
*Clark Craddock, Ph.D., Ecology
*Phillip Ginkel, Ph.D., Ecology
*Ya Ping Hu, Ph.D., Ecology
*Jill Pecon, Ph.D., Ecology
*Kashane Chalermwat, Ph.D., Zoology
*Cynthia Fuller, Ph.D., Zoology
*Eric Moller, Ph.D., Ecology
*Ellen Suchow, Ph.D., Zoology
*Gail Lima, Ph.D., Zoology
*Raymond Grizzle, Ph.D., Ecology
*Derry Light, M.S., Ecology
*Michael Takacs, M.S., Zoology
Yon-Jin Won, Ecology and Evolution
Luis Hurtado, Ecology and Evolution
Gregory O'Mullan, Ecology and Evolution
Jill Gillard, Oceanography
Andrew Peek, Ph.D., Ecology and Evolution
Patricia Waidelich, M.S., Ecology
Mark Botton, Ph.D., Zoology
Michael Hruse, M.S., Zoology
Thomas Cathcart, M.S., Zoology
Dom Scapati, M.S., Zoology
Mark Kraus, Ph.D., Botany (Newark)
Michael Graven, Ph.D., Ecology
Robert Starcher, Ph.D., Geology
Robin Zimmer, Ph.D., Environmental Sciences
Eric Wagner, M.S., Zoology
Susan Sogard, Ph.D., Ecology

Other (Student committees on which I have served since my arrival at Rutgers).

John Ewart, M.S., University of Delaware, College of Marine Studies
E. Naum Kastuck, Ph.D., The Union for Experimenting College and Universities, Marine Education
Carter Newell, M.S., University of Maine, Department of Oceanography
Bruce A. MacDonald, Ph.D., Memorial University (St. Johns, Newfoundland), Marine Sciences
Research Laboratory
Bernardo Estupinan, M.S., University of Delaware, College of Marine Studies