

1. Jon D. Witman

May 2013

Professor of Biology
Department of Ecology and Evolutionary Biology
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2. Home Address:

40 Everett Ave., Providence, RI 02906

3. Education:

1970-1972 Franklin and Marshall College, Lancaster, PA
1973-1974 University of Otago, New Zealand (Independent study, Geology) thesis:
Sedimentological and ecological studies of Blueskin Bay Estuary
1977 B.A., University of New Hampshire, Durham (Zoology)
1982 M.S. University of New Hampshire, Durham (Zoology) thesis: *Disturbance and contrasting patterns of population structure in the brachiopod Terebratulina septentrionalis from two subtidal habitats*
1984 Ph.D, University of New Hampshire, Durham (Zoology) thesis:
Ecology of rocky subtidal communities: the role of Modiolus modiolus (L) and the influence of disturbance, competition and mutualism.

4. Professional Appointments:

1985 Instructor, Semester Program in Tropical Ecology, School for Field Studies
1986 - 1992 Assistant Professor of Marine Biology, Northeastern University
1992 - 1993 Visiting Scientist, Department of Marine Science, University of Otago, New Zealand
1992 - 1994 Associate Professor of Biology, Northeastern University
1994 - 2007 Associate Professor of Biology, Department of Ecology and Evolutionary Biology, Brown University
1998 - 2002 Editorial Board, Ecology and Ecological Monographs
2004 – present - Associate Scientist (Brown/MBL Partnership), Marine Biological Laboratory, Woods Hole
2007 – present- Professor of Biology, Department of Ecology and Evolutionary Biology, Brown University
2008- present - Collaborating Scientist, Charles Darwin Foundation, Galapagos Islands

5. Completed Publications

a. Books/Monographs

Witman, J.D, and K. Roy. 2009 Eds. *Marine Macroecology*. University of Chicago Press (edited volume). 448 pages

Coyer, J., D. Steller and J. Witman. 2011. *The Underwater Catalog: a guide to methods in underwater research*. 3rd Edition Shoals Marine Laboratory, Cornell Univ., Ithaca, NY

b. Chapters in Books:

Suchanek, T.H., R. Carpenter, J.D Witman, C. D. Harvell. 1983. Sponges as important space competitors in deep Caribbean coral reef communities. *NOAA Symposium Series for Undersea Research Reports: Coral Reefs V1: 55 – 67*

Witman, J. D. and K. P. Sebens. 1988. Benthic community structure at a subtidal rock pinnacle in the central Gulf of Maine. In. I. Babb and M. De Luca Eds *Benthic Productivity and Marine*

Resources of the Gulf of Maine. National Undersea Research Program Research Report 88-3: 67-104.

Sebens, K.P., J.D. Witman, R. Allmon, and E.J. Maney. 1988. Early community development experiments in rocky subtidal habitats (Gulf of Maine, 30 - 80 m). In. I. Babb and M. De Luca Eds *Benthic Productivity and Marine Resources of the Gulf of Maine*. National Undersea Research Program Research Report 88-3: 45 - 66.

Witman, J. D. and K. P. Sebens. 1990. Distribution and ecology of sponges at a subtidal rock ledge in the central Gulf of Maine. Pp. 391-396. In K. Rutzler, Ed, *New Perspectives in Sponge Biology*. Smithsonian Institution Press, Washington, D.C.

Witman, J.D., 1996. Dynamics of Gulf of Maine benthic communities. Pp 51-69 in, D. and E. Braasch Eds. *The health of the Gulf of Maine ecosystem: cumulative impacts of multiple stressors*. RARGOM Report 96-1. Dartmouth College, Hanover, NH.

Witman, J.D. 1998. Natural disturbance and colonization on subtidal hard substrates in the Gulf of Maine. Pp. 30-37 in. E. M. Dorsey and J. Pederson Eds. *Effects of fishing gear on the sea floor of New England*. MIT Sea Grant Publication 98-4.

Witman, J.D and P.K. Dayton. 2001 Rocky subtidal communities. Pp 339-366 in Bertness, M.D., S.D. Gaines and M. Hay Eds. *Marine Community Ecology*. Sinauer Press

Branch, G.M., J.D. Witman, R. Bensted-Smith, R.H. Bustamante, G.M. Wellington, F. Smith and G. Edgar. 2002 Conservation Criteria For The Marine Biome, Pp. 72-79 In *A Biodiversity vision for the Galapagos Islands*. Charles Darwin Foundation and World Wildlife Fund, Puerto Ayora, Galapagos.

Bensted-Smith, R., T. Allnut, G.M. Branch, R.H. Bustamante, C. Causton, E. Dinerstein, G. Powell, H. Snell, A. Tye, G.M. Wellington and J.D. Witman. 2002. Summary of the Vision For Conservation of Galapagos Biodiversity and the Issues Central to Its Achievement, Pp. 107-115. In *A Biodiversity vision for the Galapagos Islands*. Charles Darwin Foundation and World Wildlife Fund, Puerto Ayora, Galapagos.

Witman, J.D., M.R. Patterson and S.J. Genovese. 2004 Benthic pelagic linkages in subtidal communities: influence of food subsidy by internal waves. Pp 133-153 in Polis, G.A., M.E. Power and G.R. Huxel Ed. *Food webs at the landscape level*. University of Chicago Press.

Witman, J.D., J.C. Ellis and W.B. Anderson. 2004 The influence of physical processes, organisms and permeability on cross-ecosystem fluxes. Pp 335-349 in Polis, G.A., M.E. Power and G.R. Huxel Eds. *Food webs at the landscape level*. University of Chicago Press.

Witman, J.D. 2007 Benthic - pelagic coupling. Pp 68-71. In: *Encyclopedia of tidepools and rocky shores* M.W. Denny and S.D. Gaines (eds.) University of California Press, Berkeley, CA

Witman, J.D. and K. Roy 2009. Introduction. Chapter 1 in *Marine Macroecology*. University of Chicago Press. Pp. vii – xv. J.D. Witman and K. Roy editors

Roy, K.R. and J.D. Witman 2009. Species diversity of shallow marine invertebrates: patterns, processes and prospects. Chapter 4 in *Marine Macroecology* Pp. 101-121. University of Chicago Press. J.D. Witman and K. Roy editors

Leichter, J.J. and J.D. Witman. 2009 Basin-scale oceanographic influences on marine macroecological patterns. Chapter 8 in *Marine Macroecology*. Pp. 203-226. University of Chicago

Press. J.D. Witman and K. Roy editors

Witman, J. D. and K. R. Roy 2009. Experimental marine macroecology. Chapter 13 in *Marine Macroecology*. University of Chicago Press. Pp. 341-356 J.D. Witman and K. Roy editors

Kotta, J. and J.D. Witman 2009. Regional scale patterns Pp 89-99. In: *Hard Bottom Communities: patterns, scales, functions, shifts*. M. Wahl (Ed), Springer-Verlag, Berlin, Germany

Weissburg, M., B. Helmuth and J. Witman. *In press*. The physical context of marine communities. Chapter 2 in Bertness, M. J. Bruno, B. Silliman and J. Stachowicz eds. *Marine Community Ecology and Conservation* Sinauer Press

c. Refereed Journal Articles:

Witman, J.D. and R.A. Cooper. 1983. Disturbance and contrasting patterns of population structure in the brachiopod *Terebratulina septentrionalis* from two subtidal habitats. *Journal of Experimental Marine Biology and Ecology*. 73: 57-79.

Witman, J.D. and T.H. Suchanek. 1984. Mussels in flow: drag and dislodgment by epizoans. *Marine Ecology Progress Series*. 16: 259 - 268.

Witman, J. D. 1985. Refuges, biological disturbance, and rocky subtidal community structure in New England. *Ecological Monographs* 55: 421-445.

Witman, J. D. 1987. Subtidal coexistence: storms, grazing, mutualism, and the zonation of kelps and mussels. *Ecological Monographs* 57: 167-187.

Witman, J. D. 1988. Stability of Atlantic kelp forests. *Trends in Ecology and Evolution*. 3: 285-286.

Witman, J. D. 1988. Effects of predation by the fireworm *Hermodice carunculata* on milleporid hydrocorals. *Bulletin of Marine Science*. 42: 446-458.

Edmunds, P.J and J.D. Witman. 1991. Effect of Hurricane Hugo on the primary framework of a reef along the south shore of St. John, US Virgin Islands. *Marine Ecology Progress Series* 78: 201-204.

Witman, J. D. and K. P. Sebens. 1992. Regional variation in fish predation intensity: a historical perspective in the Gulf of Maine. *Oecologia* 90: 305 - 315.

Witman, J. D. 1992. Physical disturbance and community structure of exposed and protected reefs: a case study from St. John, U.S. Virgin Islands. *American Zoologist* 32: 641-634.

Dumas, J.V. and J.D. Witman 1993. Predation by gulls on two rocky intertidal crabs, *Cancer irroratus* and *Carcinus maenus*. *Journal of Experimental Marine Biology and Ecology* 169: 89 – 101

Witman, J.D., J.J. Leichter, S.J. Genovese, and D.A. Brooks. 1993 Pulsed phytoplankton supply to the rocky subtidal zone: influence of internal waves. *Proceedings of the National Academy of Sciences, USA* 90: 1686-1690.

Sheild, C.J. and J. D. Witman. 1993. The impact of *Henricia sanginolenta* predation on the finger sponges, *Isodictya* spp. *Journal of Experimental Marine Biology and Ecology* 166: 107 -133.

Lesser, M.P, J.D. Witman and K.P. Sebens. 1994. Effects of flow and seston availability on

scope for growth of benthic suspension feeding invertebrates from the Gulf of Maine. Biological Bulletin. 187:319335

Andres, N. G. and J.D. Witman 1995. Trends in community structure on a Jamaican reef. Marine Ecology Progress Series. 118: 305-310.

Pile, A.J., M.R. Patterson and J.D. Witman. 1996. In situ grazing on plankton < 10 um by the boreal sponge *Mycale lingua*. Marine Ecology Progress Series. 141: 95-102

Bruno, J.F. and J.D. Witman. 1996. Defensive mechanisms of scleractinian cup corals against overgrowth by colonial invertebrates. Journal of Experimental Marine Biology and Ecology. 207: 229-241.

Leichter, J.J. and J.D. Witman. 1997. Water flow over subtidal rock walls: effects on distribution and growth of suspension feeders. Journal of Experimental Marine Biology and Ecology 209: 293-307.

Witman, J.D and K.R. Grange. 1998. Links between rain, salinity and predation in a rocky subtidal community. Ecology 79: 2429-2447

Smith, F. and J.D. Witman. 1999. Species diversity in subtidal landscapes: maintenance by physical processes and larval recruitment. Ecology 80: 51-69

Genovese, S.J and J.D. Witman. 1999. Interactive effects of flow speed and particle concentration on growth rates of an active suspension feeder. Limnology and Oceanography. 44: 1120- 1131

Bruno, J.F., C. Siddon, J.D. Witman and P.L. Colin. 2001. El Niño related coral bleaching in Palau, Western Caroline Islands. Coral Reefs. 20: 127-136

Hill, M.F., J.D. Witman and H. Caswell 2002. Spatio-temporal variation in Markov Chain models of subtidal community succession. Ecology Letters, 5: 665-675

Lucky, A., T.L. Erwin and J.D. Witman 2002. Temporal and spatial diversity and distribution of arboreal Carabidae in a Western Amazonian Rain Forest. Biotropica 34: 376 – 386.

Witman, J.D., S.J. Genovese, J. F. Bruno, J. W. McLaughlin and B. I. Pavlin. 2003. Massive prey recruitment and the control of rocky subtidal communities on large spatial scales. Ecological Monographs 73: 441-462

Witman, J.D and F. Smith. 2003. Rapid community change at a tropical upwelling site in the Galapagos Marine Reserve. Biodiversity and Conservation 12: 25-45

Farina, J.M., S.Salazar, K.P. Wallem, J.D. Witman and J.C. Ellis. 2003. Nutrient exchanges between marine and terrestrial ecosystems: the case of the Galapagos sea lion *Zalophus wollebaecki*. Journal of Animal Ecology 72: 873-887

Byrnes, J.E. and J.D. Witman. 2003 Impact assessment of an invasive flatworm, *Convoluta convoluta*, in the Southern Gulf of Maine. Journal of Experimental Marine Biology and Ecology 293: 173-191

Siddon, C.E. and J.D. Witman. 2003 Influence of chronic, low-level hydrodynamic forces on subtidal community structure. Marine Ecology Progress Series 261: 99-110

Genovese, S.J. and J.D. Witman 2004. Wind mediated diel variation in flow speed in a Jamaican back reef environment: effects on ecological processes. Bulletin of Marine Science

75: 281-293

Witman, J.D, R.J. Etter and F. Smith. 2004. The relationship between regional and local species diversity in marine benthic communities: a global perspective. *Proceedings of the National Academy of Sciences USA* 101: 156644 – 15669.

Siddon, C.E and J.D.Witman 2004. Behavioral indirect interactions: multiple predator effects and prey switching in the shallow rocky subtidal. *Ecology* 85: 2398-2945.

Hill, M.F, J.D. Witman and H.Caswell 2004. Markov chain analysis of succession in a rocky subtidal community. *American Naturalist* 164: E46-E61

Ellis, J.C., Chen, W., O'Keefe, B., Shulman, M.J., and Witman, J.D. 2005. Predation by gulls on crabs in rocky intertidal and shallow subtidal zones of the Gulf of Maine. *Journal of Experimental Marine Biology and Ecology* 324:31-43.

Altieri, A.H and J.D. Witman. 2006. Local extinction of a foundation species in a hypoxic estuary: integrating individuals to ecosystem. *Ecology* 87: 717-730

Ellis, J.C., Fariña, J.M., and Witman, J.D. 2006. Nutrient transfer from sea to land: the case of gulls and cormorants in the Gulf of Maine. *Journal of Animal Ecology*.75: 565- 574.

Lindsey, E, L., Altieri, A.H. and J.D.Witman 2006. Influence of biogenic habitat on the recruitment and distribution of a subtidal xanthid crab. *Marine Ecology Progress Series* 306: 223-231.

Shelton, A O., D. A. Woodby, K. Hebert and J. D. Witman 2006. Evaluating age determination and spatial patterns of growth of the red sea urchin (*Strongylocentrotus franciscanus*) in southeast Alaska. *Transactions of American Fisheries Society* 135: 1670-1680.

Ellis, J.C., M. J. Shulman, M. Wood, J. D. Witman, and S. Lozyniak 2007. Regulation of intertidal food webs by avian predators on New England rocky shores . *Ecology* 88: 853-863.

Witman, J. D., M. Cusson, P. Archambault, A. J. Pershing and N. Mieszkowska. 2008. The relation between productivity and species diversity in temperate – Arctic marine ecosystems. *Ecology* 88: S66S80.

Irving, A. D. and J.D. Witman 2009. Positive effects of damselfish override negative effects of urchins to prevent a habitat switch. *Journal of Ecology* 97: 337-347.

Witman, J.D., M. Brandt and F. Smith 2010. Coupling between subtidal prey and consumers along a mesoscale upwelling gradient in the Galapagos Islands. *Ecological Monographs* 80: 153-177.

Lee, D. E., J.H. Robinson, J.D. Witman, S.E. Copeland, F. Smith, E.M. Harper and M. Lamare. 2010 Observations on recruitment, growth and ecology in a diverse living brachiopod community, Doubtful Sound, Fiordland, New Zealand. *Special Papers in Paleontology* 84:177-191.

Palardy, J. and J.D. Witman 2011. Water flow drives biodiversity by mediating rarity in marine benthic communities. *Ecology Letters* 14:63-68

Brandt, M., J.D. Witman and A. Chiriboga 2012. Influence of a dominant consumer species reverses at increased diversity. *Ecology* 93: 868-878.

Dee, L. E, J.D. Witman and M. Brandt. 2012 . Refugia and top-down control of the pencil urchin

Eucidaris galapagensis in the Galapagos Marine Reserve. *Journal of Experimental Marine Biology and Ecology*. 416-417: 135-143.

Witman, J.D., P.K. Dayton, S. Arnold, R.S. Steneck and C. Birkeland *in press*. Scuba revolutionizes marine science. *Smithsonian Contributions to Marine Science*.

Witman, J. D. 2013 Are regional effects on local diversity more important in marine than in terrestrial communities ? *Oikos*. 122: 301-305

5g. Invited Lectures and Papers Presented at Meetings (only Witman first author papers since 1994)

- 1994 Section of Ecology and Systematics, Cornell University
- 1994 Department of Marine Science, University of Alaska, Fairbanks
- 1994 Population Biologists of New England Annual Meeting, Smith College
- 1994 Hopkins Marine Station, Stanford University, Monterey, CA
- 1994, 1995 Harvard University, Cambridge, MA, Coral Reefs in Marine Biology Course
- 1995 Sigma Xi Invited Speaker, Marine Biological laboratory, Woods Hole, MA
- 1995 Keynote, Regional Association for Research on the Gulf of Maine Workshop, Dartmouth College
- 1995 American Society for Limnology and Oceanography, San Diego, CA
- 1995 Benthic Ecology Meetings, Rutgers University, NJ
- 1996 Fourth International Temperate Reef Symposium, Santiago, Chile
- 1996 Graduate School of Oceanography University of Rhode Island
- 1996 Biology Department, Woods Hole Oceanographic Institution
- 1996 Ecological Society of America Annual Meeting, Providence, RI
- 1997 Benthic Ecology Meetings, Portland ME
- 1997 Workshop on the Effect of Fishing Gear Disturbance on the Sea Floor of New England, MIT
- 1997 Symposium on Biomechanics and Marine Ecology: Is the Marriage Working? Western Society of Naturalists Annual Meeting, Monterey, CA
- 1997 Charles Darwin Research Station, Galapagos Islands
- 1998 Coral Reef Research Foundation, Palau Islands
- 1998 Biology Department, Mt. Holyoke College
- 1999 Workshop on Biodiversity Vision for the Galápagos Islands Eco-Region, sponsored by the World Wildlife Foundation and the Charles Darwin Foundation, Galápagos Islands
- 1998 Workshop on Cross -Ecosystem Exchanges of Nutrients, Prey and Consumers, VII International Congress of Ecology, Florence, Italy
- 2000 Department of Ecology and Evolutionary Biology, University of California, Davis
- 2000 FONDAP Workshop on Marine Macroecology and Conservation: Contrasting Patterns Between Hemispheres, Vina del Mar, Chile
- 2000 Biological Sciences Department, Stanford University
- 2000 School of Marine Science, Virginia Institute of Marine Science
- 2000 Benthic Ecology Meetings, University of North Carolina, Wilmington
- 2001 Biology Department, California State College at Northridge, Northridge, CA
- 2002 Zoology Department, University of Rhode Island
- 2003 Benthic Ecology Meetings, Groton, CT
- 2003 Large scale Ecology Symposium, Ecological Society of America Annual Meeting, Savannah, GA
- 2003 Biology Department, University of Laval, Quebec City, Canada
- 2004 Biology Department, Bowdoin College, Brunswick, ME
- 2004 Department of Marine Science, University of Connecticut, Avery Point Campus
- 2004 Symposium on Geographical Ecology, Ecological Society of America Annual Meeting, Portland, OR
- 2005 Benthic Ecology Meeting, Williamsburg, VA

2005 Symposium on Marine Macroecology, Ecological Society of America and International Congress of Ecology Annual Meeting, Montreal, Canada (symposium organizer)

2005 Symposium on Cross-Ecosystem Ecology, Western Society of Naturalists Annual Meeting, Monterey, CA (graduate student invited speaker)

2005 Leibniz-Institut für Meereswissenschaften IFM-GEOMAR Kiel, Germany

2005 Charles Darwin Research Station, Galapagos Islands

2006 Environmental Studies Center, Brown University

2007 Wake Forest University, Winston Salem, NC

2008 Benthic Ecology Meetings, Providence, RI

2008 Biology Department, Boston University, MA

2009 Gulf of Maine Research Institute, Portland, ME

2009 Galapagos Science Symposium, P. Ayora, Galapagos Islands, Ecuador

2009 CASEB, Pontificia Universidad Catolica de Chile

2010 Benthic Ecology Meetings, University of North Carolina, Wilmington, NC

2010 University of Rhode Island, Kingston, RI

2010 Symposium Research and Discoveries: Revolution of Science through Scuba, Washington, DC, Sponsored by NSF and Smithsonian Institution

2010 Symposium: ENSO in Galapagos: A Model System for Studying Ecological Effects of Climate Change in the Ocean, Ecological Society of America Annual Meeting, Pittsburgh, PA (symposium organizer)

2011 CSIRO/Australian University OCE Cutting Edge Science Symposium, Brisbane Australia. Leader of working group on human impacts on marine macroecological patterns

2011 The 3rd International Symposium for Marine Biology and Biotechnology at the National Museum of Marine Biology, Kenting, Taiwan, Keynote speaker

2011 School of Life Sciences, Arizona State University, Phoenix, AZ

2012 Charles Darwin Foundation, P. Ayora, Galapagos Islands, Dynamics of Galapagos subtidal communities

2013 Benthic Ecology Meetings, Savannah, GA

5i. Papers in Review:

Brandt, M., P.A. Flight, J.A. Mossman, R.W. Lamb, J.D. Witman and D. M. Rand *in review*, Gene flow in Darwin's baranacles: genetic structure of *Megabalanus peninsularis* and *Megabalanus coccopoma* in the Galapagos. *Journal of Heredity*

Palardy, J and J.D. Witman. *in review*, Flow, dispersal limitation, and the maintenance of diversity in marine benthic communities. *Ecology*.

5j: Work in Progress:

Journal papers:

Witman, J.D., S. Banks, F. Smith, M. Brandt, J. Palardy, A. Chiriboga, A. Altieri, O. K. Rhoades and L. Dee. Asymmetric community responses to climate oscillations in a large marine ecosystem.

Rhoades, O.K. J.D. Witman and M. Brandt, Tropical frost bite: effects of the 2007-2008 La Nina on finger corals and the diversity of their associated fauna

Brandt, M., J. D. Witman, S. Banks, D. Ruiz and M. Wolff. The influence of oceanographic climate shifts on the relationship between species and functional diversity in the Galapagos Marine Reserve

Palardy, JE, A.H. Altieri, J.D. Witman, A.G. Grotoli. Effects of upwelling on the stable carbon, oxygen, and nitrogen isotopes in coral skeleton and tissue.

6. Research Grants

6a. Current Grants:

National Science Foundation (Biological Oceanography) *Effects of predator diversity on the strength of trophic cascades in an oceanic benthic ecosystem*. (National Science Foundation , Biological Oceanography), PI, March 15, 2011 – Feb. 28, 2014, \$ 628,000

6b. Completed Grants: (since 1994, just Brown University)

National Science Foundation (Biological Oceanography) *Internal waves in the rocky subtidal zone: effects of pulsed food and larval supply on suspension feeding communities*, 1994 – 1997, Co-PI with M.R. Patterson, \$229,000 to Brown University and 21 days ship time

National Science Foundation (Biological Oceanography), *SGER: Effects of an unusual, large scale recruitment of blue mussels in the Gulf of Maine rocky subtidal zone*, 1996 – 1997, PI, \$25,000

National Science Foundation, *Development of a Variable Flow Speed Research Flume Facility*, 1995 – 1999, Lead PI with Co-PI's, G.E.Goslow, M.D.Bertness, and S.Swartz, \$108,000

National Oceanic and Atmospheric Administration's (NOAA) National Undersea Research Program, *Sampling a pulsed food and larval supply regime with replicate pumps: variation along depth gradients* 1997 – 1998, Co-PI with M.R. Patterson, \$ 16,000 to Brown University ,7 days ship time with NITROX dive support

National Science Foundation (Biological Oceanography), *How important are regional processes in determining the local species richness of marine communities?*, 1998 – 2001, Co-PI with R.Etter, \$217,768 to Brown University

National Science Foundation, *Supplement to Development of a Variable Flow Speed Research Flume Facility*, 1999, Co-PI with G.E.Goslow, \$43,000

Andrew Mellon Foundation, *The dynamics of marine ecosystems*, 1996 – 2001, Co-PI with M.D. Bertness, \$400,000

National Science Foundation, Research Opportunities at Undergraduate Universities, collaborator on multi-investigator grant submitted by Cornell University for marine research at Shoals Marine Laboratory, 2000 – 2001, no funds to Brown; leader of 2 undergraduate research projects per yr., and support for graduate students

National Sea Grant Program (NOAA), *Effects of hypoxia on benthic communities of Narragansett Bay*, 2003-2005, Co-PI with A. Altieri, graduate student research, \$50, 000

Andrew Mellon Foundation, Co-PI with M.D. Bertness, *Marine biogeography and ecology: contrasting patterns and processes between hemispheres*, 2000 – 2002, Co-PI with M.D. Bertness, \$250,000

National Oceanic and Atmospheric Administration, *Monitoring macrobenthic community change in the Stellwagen Bank National Marine Sanctuary*, 2002 – 2003, PI, \$45,000,

National Oceanic and Atmospheric Administration's (NOAA) National Undersea Research Program, *Assessing decadal -scale changes in biodiversity at Pigeon Hill, Gulf of Maine*, 2000 – 2001, PI, \$35,450, 7 days ship time with NITROX dive support

National Science Foundation (Biological Oceanography), *Developing a regional context for rocky subtidal communities: upwelling, biotic interactions and diversity regulation in the Galapagos Marine Reserve*, 2002 – 2006, PI, \$480,000

National Science Foundation, *Dissertation Research: Gulls as cross-ecosystem links in New England coastal communities* 2002 – 2004, Co-PI with J.C. Ellis, graduate student research, \$8,800.

National Sea Grant Program (NOAA), *Supplement to effects of hypoxia on benthic communities of Narragansett Bay*, 2005, Co-PI with A. Altieri, \$5,500

National Oceanic and Atmospheric Administration's (NOAA) National Undersea Research Program, *Investigating Alaskan epifaunal communities in the context of latitudinal diversity gradients*. 2005 – 2007, PI, \$77,433

Sloan Foundation/ Gulf of Maine Census of Marine Life, *Human impacts on cod-dominated trophic cascades in the Gulf of Maine*. 2006 – 2007, PI, \$31,999

NOAA National Estuarine Research Program, *The effects of flow on local and regional patterns of diversity and species invasions: an experimental approach*, 2006 – 2008, (20 K continuation): graduate fellowship and research, Co- PI with J. Palardy, graduate student research, \$60,000

National Science Foundation (Biological Oceanography), *SGER: Effects of the 2006-2007 El Nino on ecosystem functioning in the Galapagos Marine Reserve: impact and resistance*, Jan.1 -Aug. 31, 2008 PI, \$60, 038

National Science Foundation (Global Scientists and Engineers), *International Research Experiences for Students: Biodiversity and ecosystem functioning in the Galapagos Marine Reserve*. March 1, 2007 – March 1, 2010, PI, \$150,000

Conservation International, Inc. *Marine biodiversity in the Galápagos Marine Reserve: effects of conservation protection and oceanographic processes* Dec. 31, 2008 – Dec. 31 2009, PI , \$44,500, funding Margarita Brandt, PhD support

Conservation International, Inc. Support for ESA Symposium ENSO in Galapagos. May 28 - December 31, 2010, PI, \$5,000.

The Nature Conservancy, *Influence of El Niños on Long Term Change in the Galapagos Marine Reserve* \$15,000, Jan.1 2011- Jan. 31 2012.

7. Service

i. To the University

2011	Advisor to three Brown seniors on Science Education Improvement grant to develop animations of population models for Principles of Ecology course
2011	Participant and speaker, Workshop exploring an EEB, Archeology URI – IGERT NSF proposal
2010	Lecturer and Panelist, ECI workshop, December
2009 - Present	Departmental Faculty Liason for Brown Sheriden Center for Teaching
2008	Symposium Participant, Fishes and Loaves, sponsored by Brown Anthropology Department
2006 - Present	Member, Undergraduate EEB Curriculum Committee
2006 – 2010	Member, Environmental Change Initiative Advisory Board

2006 – 2007 Conservation Biologist Search Committee
 2006, 2007, 2008 Guest Lecturer, Human Impacts on Ecosystems course (2 lectures/yr)
 2005 – Present First Year Advisor Brown University
 2004 – Present Student Advisor, International Programs in Biology
 2003 - 2004 Morphologist Search Committee
 2003 – 2004 Wayland Collegium Environmental of Planet Earth Seminar Series (organized speakers with M.D. Bertness)
 2000 Forum participant, Post Doctoral opportunities in Science, Brown Graduate School
 1998 Forum participant, Graduate Programs in Biology, Brown Undergraduate Program
 1998 Brown Staff Day, Guest lecturer, Undersea Life of New England
 1997- Present Sophomore Biology Advisor
 1996 – 2004 Environmental Science Curriculum Committee
 1996 – 1997 Committee on Strategic Planning for Brown University, Facilities Committee
 1995 – 1996 Morphology Search Committee
 1995 –1996 Environmental Sciences Task Force

ii. To the Profession

multiple years Panelist, National Science Foundation (Biological Oceanography)

2010 Organizer, ENSO in Galapagos Symposium at ESA Annual Meeting
 2009 Gulf of Maine Biodiversity working group, RARGOM-COML
 2009 Panelist FONDECYT, Santiago, Chile
 2006 Workshop Participant, Approaches for researching the roles of marine and coastal biodiversity in maintaining ecosystem services, Census of Marine Life/NOAA Washington, DC 2008 Workshop Participant, Biodiversity of the Gulf of Maine, Census of Marine Life, Sloan Foundation
 2005-2007 Student Advisor for Henry David Thoreau Foundation
 2005 Proposal Review Panelist, West Coast National Undersea Research Program (NOAA), Monterey, CA
 2005 Organizer, Marine Macroecology Symposium at ESA Annual Meeting, Montreal
 2005 Co-Chair, Working Group on Connectivity, Workshop on Marine Ecosystem Based Management, Princeton University
 2004–2006 Leader, Working Group on Marine Productivity and Species Diversity, CORONA meetings in France and Portugal
 2003-2006 Science Advisory Committee, National Undersea Research Program (NOAA)
 2003 Advisor to 1st National Workshop on Census of Marine Life, Salem, MA
 2002 External Advisor, CONICYT Foundation, Santiago, Chile
 2002 Steering Committee Member, Workshop on Coordinating Research on the North Atlantic CORONA, (a NSF funded international research network)
 1999 Proposal Review Panelist, Marine Ecology and Conservation, CONICYT Foundation Santiago, Chile

- 1998, 2003 Tenure Review Committee, Woods Hole Oceanographic Institution
- 1998-2002 Editorial Board, Ecology and Ecological Monographs
- 1997, 1999 Proposal Review Panelist, West Coast National Undersea Research Program (NOAA), Monterey, CA
- 1995-2006 National Science Foundation, Washington, DC. Proposal Review Panelist, Biological Oceanography – 4 panels
- 1995-1996 Co – Host (with D. Morse), Ecological Society of America Annual Meeting, Providence, RI
- 1994-present Reviewer for major journals in Ecology and Marine Biology, Nature, Science, PNAS, Marine Ecology Progress Series, American Naturalist, Ecology Letters, etc.

iii. To the Community

- 2006 – present Advisor to Director and Head of Science, Charles Darwin Foundation, P. Ayora, Galapagos, on research and conservation priorities
- 1999–present Advisor to South American research students conducting research at BIOMAR marine lab, Charles Darwin Research Station, Galapagos
- 2009 -present Advisor to Conservation Law Foundation, Boston MA on siting of potential marine reserves in the Gulf of Maine (GOM), Testimony to establish Cashes Ledge as a Research Marine Reserve, New England Fisheries Council Meeting, Providence, RI
- 2009 Member, Working Group on Priorities for Marine Managed Areas in the Eastern Tropical Pacific, Conservation International, Boston, MA
- 2000–2006 Member, Science Advisory Board, Conservation Law Foundation, Boston
- 2003–2004 Appointed to the Governor’s Narragansett Bay and Watershed Planning Commission, Providence, RI

8. Academic Honors

- 1983 Best paper in Ecology Award, American Society of Zoologists Annual Meeting

9. Teaching (Brown University)

a. Courses

- BI 42 Principles of Ecology (undergraduate, enrollment 68 – 173 students/ yr) Semester II 1995, 1996, 1997, 1998, 1999, 2000, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2010, 2011, 2012, 2013
- BI 142 Experimental Design in Ecology (undergraduate, graduate enrollment 12- 26 students) Semester I, 1997, 1999, 2001, 2003, 2005, 2007, 2009 , 2010, 2011
- BI 243, 244 Topics in Ecology and Evolutionary Biology (graduate seminar) 1996 Taught as: *Experimental Design* (now BI 142), 1996 Co-taught with M. Bertness as: *Tropical Ecology* 2000 Co-taught with M. Bertness as: *Community Ecology of Induced Defenses*, 2001 Co-

taught with C. Janis as: *Macroecology Past and Present* 2007, Co-taught with D. Rand as: *Neutral Theory in Evolution and Ecology* 2009, Co-Taught with Dov Sax as *Island Ecology and Evolution* 2010

GISP Course in Underwater Research, Principal Instructor/ Advisor 2002

Geo 291 Biodiversity 1994 Co-taught with J. Mustard

BI 195 - 196 Independent Study in Biology (Honors) 1995 – present

Advised 25-undergraduate research projects by: Sofia Castello y Tickell, Natalie Low, Can Gencler, Leslie Howitt, Olivia Rhoades, Laura Dee, Skylar Bayer, Marc Carrel, Nicole Travis, Mihir Parikh, Miriam Goldstein, Emily Lindsey, Jarrett Byrnes (now Assistant Professor, UMASS Boston), Erika Brown, Nathan Kraft (now Assistant Professor, Univ. of Maryland), Pamela Flanagan, Andrea Lucky (co-advised), Jennifer Kane, Boris Pavlin, Kristen Michaelopoulus, Alison Hartman, Assaf Gordon, Tegan Blaine [co advised], Jennifer Diehl, Janka Flaska, Jon Harrison [co advised]

ES 195 – 196 Independent Study in Environmental Studies 1995 – present, Co – advised or advised 10 student projects, also advised C. Mattison on ES MS combining science and art

b. PhD Theses Directed (Brown University)

Christopher Siddon, *Trait and density mediated indirect interactions in the New England rocky subtidal zone* (PhD awarded May 2004)

Julie Ellis, *Gulls as cross-ecosystem links in New England coastal communities* (PhD awarded December 2005)

Andrew Altieri, *Dynamics of foundation species across estuarine environmental stress gradients* (PhD awarded May 2006)

James Palardy, *Flow and neutrality in marine epifaunal communities* (PhD awarded December 2009)

Margarita Brandt, *Functional roles of biodiversity in the Galapagos Marine Reserve* (PhD awarded December 2011)

c. PhD Committee Member (besides own students)

30 students in EEB Department since 1994

d. Post-Doctoral Students:

Franz Smith, 2002 – 2004, 2012

Jose Miguel Farina, 2001- 2003, now Associate Professor and Chair, Center for Advanced Studies in Ecology and Biodiversity, Pontificia Universidad Catolica de Chile

Douglas McNaught, 1999 – 2001, now Assistant Professor, University of Maine at Machias

Salvatore Genovese 1996 – 1997, now Director, Three Seas Marine Biology Program,
Northeastern University

Graduate Teaching (other than Brown University)

a. PhD Thesis Directed (Northeastern University)

Salvatore Genovese, *Regional and temporal variation in the ecology of an encrusting bryozoan in the Gulf of Maine* (Ph.D awarded June 1996)

b. External PhD Committee Member

18 students since 1994 at: University of Sydney, Universite de Laval, University of Tasmania, Woods Hole Oceanographic Institution, University of Massachusetts, Boston, College of William and Mary / Virginia Institute of Marine Science, Northeastern University, University of Melbourne, University of North Carolina, University of Bremen, Dalhousie University

c. Masters Theses Directed (Northeastern University)

John Fiorentino, 1994, now Massachusetts Department of Environmental Protection

Gregory Shellenbarger, 1994, now United States Geological Survey, CA

Nina Andres MS 1994

James Leichter MS 1993, now Associate Professor, Scripps Institution of Oceanography, CA

Timothy Loher MS 1992 , now International Pacific Halibut Commission, WA

Carolyn Sheild MS 1990 , now science teacher, Lexington High School, MA

Jeanette Dumas MS 1990 , PhD in Marine Ecology, 1996, Drexel University