

## Curriculum Vitae

### Joseph N. Boyer

Southeast Environmental Research Center  
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Florida International University  
Miami, FL 33199

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### Professional Experience

2003-present Associate Director, SERC, Florida International University  
2001-present Associate Scholar/Scientist, SERC, Florida International University  
1995-2001 Assistant Scholar/Scientist, SERC, Florida International University  
1992-1995 Postdoctoral Ecologist, Institute of Ecosystem Studies, Millbrook, NY  
Summer 1994 Instructor, Bard College, New York  
1990-1992 Aquatic Biologist, Waterline Ltd., Prince Edward Island, Canada  
1989-1990 Instructor, Biology Dept., East Carolina University, Greenville, NC  
1987-1990 Assistant Scientist, Institute for Coastal and Marine Resources, ECU  
1986-1987 Marine Scientist A, Virginia Institute of Marine Science, William & Mary  
Summer 1981 Microbiologist, EPA, Monticello Research Station, MN  
1979-1986 Graduate Research Assistant, Virginia Institute of Marine Science

### Education

Ph.D. Marine Science, 1987, College of William & Mary, Williamsburg, VA  
*Dissertation*: Degradation and Mineralization of Chitin in an Estuary  
B.S. Microbiology, 1978, The American University, Washington, DC

### Professional Activities

#### *Scientific Advisory Panel/Board Membership*

Florida Coastal Ocean Observing System Caucus (FLCOOS)  
Florida Keys National Marine Sanctuary Technical Advisory Committee  
Southeast Coastal Ocean Observing Regional Association (SEACORA)  
Gulf of Mexico Coastal Ocean Observing System Regional Association (GCOOS-RA)  
Rookery Bay NERR Research Advisory Committee  
Southeast Florida Coral Reef Initiative Technical Advisory Committee  
Florida Bay-Florida Keys Feasibility Model Advisory Group  
Association of Marine Laboratories of the Caribbean Organizing Board  
Big Cypress Basin Science Panel  
Science Group for Biscayne Bay Partnership Initiative  
Scientific Advisory Council for SeaKeepers International  
Southern Association of Marine Laboratories  
Minimum Flow and Levels for the Lower Peace River (2007)  
Minimum Flow and Levels for the Lower Hillsborough River (2006)  
EPA Technical Expert Panel on Gulf of Mexico Estuarine Hypoxia (2000)  
NOAA Gulf of Mexico Estuarine Eutrophication Assessment (1996)

### ***Science Team Membership***

Science Coordination Group – System-Wide Indicators Scientists Team  
RECOVER Southern Estuaries Module  
Southwest Florida Regional Water Quality Monitoring Consortium  
Florida Bay Nutrient/Biogeochemistry Team  
Florida Bay Physical Science Team  
Florida Bay Phytoplankton Team  
Florida Bay Modeling Evaluation Group

### ***Journal Reviewer***

Limnology and Oceanography, L&O: Methods, Estuaries and Coasts, Marine Ecology Progress Series, Marine Environmental Research, Estuarine, Coastal and Shelf Science, Water Resources Research Institute of UNC, Marine and Freshwater Research, Marine Pollution Bulletin, Journal of Environmental Quality, Soil Biology and Biochemistry, Cary Conference Proceedings, Journal of the World Aquaculture Society

### ***Proposal Reviewer***

NSF Biological Sciences, NSF Graduate Research Fellowship Program (panel 2002-2004)  
EPA ORD, NOAA COP and CSCOR, CICEET, National Undersea Research Program (panel), National Sea Grant Program, CALFED

### ***Ad hoc Reviewer***

EPA National Coastal Condition Report II, Comprehensive Everglades Restoration Plan – RECOVER, Army Corp of Engineers Water Quality Model of Florida Bay, Conservancy of Southwest Florida - Estuaries Report Card

### ***Professional Societies***

American Geophysical Union, American Institute of Biological Sciences, American Society of Limnology and Oceanography, American Society for Microbiology, Association of Marine Laboratories of the Caribbean, Ecological Society of America, Estuarine Research Federation, Southeast Estuarine Research Society

### ***Awards and Honors***

Helms Faculty Research Award presented by Sigma Xi (1994)  
FIU Excellence in Faculty Scholarship Award (2008)

## **Academic Activities**

### ***Courses Taught***

Florida International University  
Microbial Ecology (graduate)  
Institute of Ecosystem Studies  
Fundamentals of Ecosystem Ecology (graduate)  
Bard College  
Ecosystem Ecology (graduate)  
East Carolina University  
Environmental Biology (undergraduate)

Man and the Sea Seminar (graduate)  
Principles of Biology (undergraduate)  
Survey of the Coastal Marine Environment (undergraduate)  
Microbial Ecology (graduate) - lectures  
College of William & Mary  
Ecosystem Modeling (graduate) – selected lectures

***Graduate Students Supervised (FIU unless specified)***

Current Meilin Chen, M.S. (Chemistry)  
Current Lonnie Kaczmarzsky, Ph.D. (Biology)  
Current Chris Kelble, Ph.D. (University of Miami, Marine Science)  
Current Aaron Miller, Ph.D. (Biology)  
Current Jay Munyon, M.S. (Biology)  
Current Jun Shi, M.S. (Chemistry)  
Current Ania Wachnicka, Ph.D. (Earth Sciences)  
Current Clayton Williams, M.S. (Marine Biology)  
2007 Danielle L. Mir, M.S. (Biology)  
2005 Patrick Gibson, M.S. (Biology)  
2005 Matt Rogers, M.S. (Biology)  
2005 Kathryn Stanaway, M.S. (Environmental Studies)  
2003 Ralph Mead, Ph.D. (Chemistry)  
2003 Chris Kelble, M.S. (University of Miami, Marine Science)  
2002 Meredith Ferdie, M.S. (Biology)  
2001 Susan Dailey, Ph.D. (Biology)  
1992 Greg Lackey, M.S. (East Carolina University, Biology)  
1990 Wade Moore, M.S. (East Carolina University, Biology)

***Post Doctoral Investigators Supervised***

Dr. Valentina G. Caccia  
Dr. Susan K. Dailey  
Dr. Makoto Ikenaga  
Dr. Serge Thomas

***University Service Committees***

Radiation Control Committee  
Sponsored Research Management Council  
Arts & Sciences Council of Chairs and Directors  
Boating Safety Committee

***Other Activities***

Manager of SERC water quality monitoring network <http://serc.fiu.edu/wqmnetwork/>

**Refereed Publications (excluding abstracts)**

1. Authorship order unknown. (in prep.). The State of Coral Reef Ecosystems of Florida. In: The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated

- States: 2008. NOAA Technical Memorandum XXX. NOAA/NCCOS Center for Coastal Monitoring and Assessment's Biogeography Team. Silver Spring, MD.
2. BOYER, J. N. AND M. IKENAGA. (in prep.). Effects of nutrient fertilization on bacterial community structure in seagrass sediments. *Limnology and Oceanography*.
  3. WILLIAMS, C. J., J. N. BOYER, AND F. J. JOCHEM. (submitted). Resource level and microbial activity in a subtropical seagrass estuary (Florida Bay): Evidence for limited benthic-pelagic coupling. *Marine Biology*
  4. BOYER, J. N., C. R. KELBLE, P. B. ORTNER, AND D. T. RUDNICK. (submitted). Phytoplankton Bloom Status: An Indicator of Water Quality Condition in the Southern Estuaries of Florida, USA. *Ecological Indicators*.
  5. BRICEÑO, H. O., J. N. BOYER, AND A. F. CALLEJON. (submitted). Cumulative rate of variation (CRV): a graphical tool for exploration of time-series data. *Estuaries and Coasts*.
  6. STANAWAY, K., J. N. BOYER, J. W. LOUDA AND P. MONGKRON. (submitted). Effects of flocculent microbial mats and seagrass roots and rhizomes on sediment nutrient fluxes in a shallow estuary. *Estuaries and Coasts*.
  7. IKENAGA, M. AND J. N. BOYER. (submitted). Changes in sediment bacterial community structure along the Florida Coastal Everglades marsh-mangrove-seagrass gradient. *Environmental Microbiology*.
  8. JOCHEM, F. J., M. T. ROGERS, AND J. N. BOYER. (submitted). Bacterial abundance, growth rates, and grazing losses in Florida Bay as a function of nutrient status. *Aquatic Microbial Ecology*.
  9. BOYER, J. N., S. K. DAILEY, R. JAFFÉ, N. MAIE. (submitted). Biological Availability of Organic Nitrogen Along an Oligotrophic Marsh/Mangrove/Estuary Ecotone in South Florida, USA. *Hydrobiologia*.
  10. WILLIAMS, C. J., J. N. BOYER, AND F. J. JOCHEM. 2008. Indirect hurricane effects on resource availability and microbial communities in a subtropical wetland - estuary transition zone. *Estuaries and Coasts* 31: 204-214.
  11. GIBSON, P., J. N. BOYER, AND N. P. SMITH. 2007. Nutrient mass flux between Florida Bay and the Florida Keys National Marine Sanctuary. *Estuaries and Coasts* 31: 21-32.
  12. BOYER, J. N. 2007. What we know about water quality of the Florida Keys National Marine Sanctuary, pp.149-154. In Keller, B.D., and F.C. Wilmot, eds. 2008. Connectivity: science, people and policy in the Florida Keys National Marine Sanctuary. Colloquium proceedings, 19-21 August 2004, Marine Sanctuaries Conservation Series NMSP-08-02, Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Sanctuary Program, Silver Spring, MD. 263 pp.
  13. COLLADO-VIDES, L., V. GONZALEZ-CACCIA, J. N. BOYER, AND J. W. FOURQUREAN. 2007. Tropical seagrass-associated macroalgae distributions and trends relative to water quality. *Estuarine, Coastal and Shelf Science* 73: 680-694.
  14. CACCIA, V. G. AND J. N. BOYER. 2007. A nutrient loading budget for Biscayne Bay, Florida. *Marine Pollution Bulletin* 54: 994-1008.
  15. BOYER, J. N., AND B. KELLER. 2007. Nutrient Dynamics, p.55-76. In Hunt, J. H., and W. Nuttle (eds), Florida Bay Science Program: A Synthesis of Research on Florida Bay. Fish and Wildlife Research Institute Technical Report TR-11. Florida Fish and Wildlife Research Institute, St Petersburg, FL.

16. BOYER, J. N., S. K. DAILEY, P. J. GIBSON, M. T. ROGERS, D. MIR-GONZALEZ. 2006. The role of DOM bioavailability in promoting cyanobacterial blooms in Florida Bay: Competition between bacteria and phytoplankton. *Hydrobiologia* 269: 71-85.
17. MAIE, N., J. N. BOYER, C. YANG, AND R. JAFFÉ. 2006. Spatial, geomorphological, and seasonal variability of CDOM in estuaries of the Florida Coastal Everglades. *Hydrobiologia* 269: 135-150.
18. BOYER, J. N. 2006. Shifting N and P limitation along a north-south gradient of mangrove estuaries in South Florida. *Hydrobiologia* 269: 167-177.
19. CHILDERS, D. L., J. N. BOYER, S. E. DAVIS, C. J. MADDEN, D. T. RUDNICK, AND F. H. SKLAR. 2006. Relating precipitation and water management to nutrient concentrations in the oligotrophic “upside-down” estuaries of the Florida Everglades. *Limnology and Oceanography* 51: 602-616.
20. CACCIA, V. G. AND J. N. BOYER. 2005. Spatial patterning of water quality in Biscayne Bay, Florida as a function of land use and water management. *Marine Pollution Bulletin* 50: 1416-1429.
21. KELBLE, C. R., P. B. ORTNER, G. L. HITCHCOCK, AND J. N. BOYER. 2005. A re-examination of the light environment of Florida Bay. *Estuaries* 28: 560-571.
22. SCULLEY, N. M., N. MAIE, S. K. DAILEY, J. N. BOYER, AND R. JAFFÉ. 2004. Photochemical and microbial transformation of plant derived dissolved organic matter in the Florida Everglades. *Limnology and Oceanography* 49: 1667-1678.
23. JAFFÉ, R., J. N. BOYER, X. LU, N. MAIE, C. YANG, N. M. SCULLY AND S. MOCK. 2004. Source characterization of dissolved organic matter in a subtropical mangrove-dominated estuary by fluorescence analysis. *Marine Chemistry* 84: 195-210.
24. FOURQUREAN, J. W., J. N. BOYER, AND M. J. DURAKO. 2003. The influence of water quality on seagrass distribution and abundance in Florida Bay: predictive models from long-term monitoring programs. *Ecological Applications* 13: 474-489.
25. HU, C., F. E. MULLER-KARGER, Z.-P. LEE, K. L. CARDER, B. ROBERTS, J. J. WALSH, R. H. WEISBERG, R. HE, E. JOHNS, T. LEE, N. KURING, J. PATCH, J. IVEY, P. G. COBLE, C. HEIL, G. A. VARGO, R. G. ZEPP, K. STEIDINGER, G. MCRAE, J. BOYER, R. JONES, G. KIRKPATRICK, E. MUELLER, R. PIERCE, J. CULTER, B. KELLER, J. HUNT. 2002. Satellite images track “black water” event off Florida coast. *EOS* 83: 281, 285.
26. BOYER, J. N., AND R. D. JONES. 2001. A view from the bridge: External and internal forces affecting the ambient water quality of the Florida Keys National Marine Sanctuary, p. 601-620. *In* J. W. Porter and K. G. Porter (eds.), *The Everglades, Florida Bay, and Coral Reefs of the Florida Keys*. CRC Press, Boca Raton, FL.
27. CHILDERS, D. L., R. D. JONES, J. TREXLER, C. BUZZELLI, J. BOYER, A. EDWARDS, E. GAISER, K. JAYACHANDARAN, D. LEE, J. MEEDER, J. PECHMANN, J. RICHARDS AND L. SCINTO. 2001. Quantifying the effects of low level phosphorus enrichment on unimpacted Everglades wetlands with in situ flumes and phosphorus dosing, p. 127-152. *In* J. W. Porter and K. G. Porter (eds.), *The Everglades, Florida Bay, and Coral Reefs of the Florida Keys* CRC Press, Boca Raton, FL.
28. BOYER, J. N., P. STERLING, AND R. D. JONES. 2000. Maximizing information from estuarine and coastal water quality monitoring networks by diverse visualization approaches. *Estuarine, Coastal and Shelf Science* 50: 39-48.
29. BOYER, J. N., J. W. FOURQUREAN, AND R. D. JONES. 1999. Seasonal and long-term trends in water quality of Florida Bay (1989-97). *Estuaries* 22: 417-430.

30. RUDNICK, D., Z. CHEN, D. CHILDERS, T. FONTAINE, AND J. N. BOYER. 1999. Phosphorus and nitrogen inputs to Florida Bay: the importance of the Everglades watershed. *Estuaries* 22: 398-416.
31. BOYER, J. N., AND R. D. JONES. 1999. Effects of freshwater inputs and loading of phosphorus and nitrogen on the water quality of Eastern Florida Bay, p. 545-561. In K. R. Reddy, G. A. O'Connor, and C. L. Schelske (eds.) Phosphorus biogeochemistry in sub-tropical ecosystems. CRC/Lewis Publishers, Boca Raton, Florida.
32. PENNOCK, J. R., J. N. BOYER, J. A. HERERRA-SILVIERA, R. L. IVERSON, T. E. WHITLEDGE, B. MORTAZAVI, AND F. A. COMIN. 1999. Nutrient behavior and pelagic processes, p. 109-162. In T. S. Bianchi, J. R. Pennock, and R. R. Twilley (eds.), Biogeochemistry of Gulf of Mexico Estuaries. Wiley, New York.
33. BOYER, J. N., J. W. FOURQUREAN, AND R. D. JONES. 1997. Spatial characterization of water quality in Florida Bay and Whitewater Bay by principal component and cluster analyses: Zones of similar influence (ZSI). *Estuaries* 20:743-758.
34. BOYER, J. N., AND P. M. GROFFMAN. 1996. Bioavailability of water extractable organic carbon fractions in forest and agricultural soil profiles. *Soil Biology and Biochemistry* 28:783-790.
35. BOYER, J. N., D. W. STANLEY, AND R. R. CHRISTIAN. 1994. Dynamics of ammonium and nitrate uptake in the Neuse River estuary, NC. *Estuaries* 17:360-370.
36. BOYER, J. N. 1994. Aerobic and anaerobic degradation and mineralization of  $^{14}\text{C}$ -chitin in water column and sediments of the York River estuary, Virginia. *Applied and Environmental Microbiology* 60:174-179.
37. BOYER, J. N., AND W. VAN TOEVER. 1994. Effect of photoperiod on growth of Arctic char (*Salvelinus alpinus*) under commercial grow-out conditions. *Progressive Fish Culturist* 56:44-46.
38. BOYER, J. N., R. R. CHRISTIAN, AND D. W. STANLEY. 1993. Patterns of phytoplankton primary productivity in the Neuse River estuary, North Carolina. *Marine Ecology Progress Series* 97:287-297.
39. BOYER, J. N., AND W. VAN TOEVER. 1993. Reconditioning of Arctic char (*Salvelinus alpinus*) after spawning. *Aquaculture* 110:279-284.
40. CHRISTIAN, R. R., J. N. BOYER, D. W. STANLEY, AND W. M. RIZZO. 1992. Network analysis of nitrogen cycling in an estuary. p. 217-247. In C. Hurst (ed.), Modeling the Metabolic and Physiologic Activities of Microorganisms. Wiley.
41. CHRISTIAN, R. R., J. N. BOYER, AND D. W. STANLEY. 1991. Multi-year distributions of nutrients within the Neuse River estuary, North Carolina. *Marine Ecology Progress Series* 71: 259-274.
42. BOYER, J. N., D. W. STANLEY, R. R. CHRISTIAN, AND W. M. RIZZO. 1988. Modulation of nitrogen loading impacts within an estuary, p. 165-176. In W. L. Lyke and T. H. Hoban (eds.), Proceedings of the Symposium on Coastal Water Resources. American Water Resources Association, Wilmington, NC.
43. BOYER, J. N. 1986. Endproducts of anaerobic chitin degradation as substrates for dissimilatory sulfate reduction and methanogenesis by salt marsh bacteria. *Applied and Environmental Microbiology* 52: 1415-1418.
44. BOYER, J. N., AND H. I. KATOR. 1985. Method for measuring microbial degradation and mineralization of  $^{14}\text{C}$ -labeled chitin obtained from the blue crab, *Callinectes sapidus*. *Microbial Ecology* 11: 185-192.

## **Research Grants and Contracts**

### **Total Funded Projects – FY07-08 to date: \$1,466,688**

1. DOI/National Park Service – Assessment of natural water resources and watershed conditions for Biscayne National Park. \$212,688 (new).
2. DOI/NPS – Developing numeric criteria for adoption to the State of Florida Water quality standards for Biscayne National Park. NPS-ENP (continuing).
3. US-EPA – Water quality monitoring for the Florida Keys National Marine Sanctuary. \$450,000 (continuing).
4. NOAA/CSCOR - SFP 2006: Volume transport and nutrient loading to Florida Bay through Flamingo Channel. \$124,000 (continuing).
5. South Florida Water Management District – Coastal water quality monitoring network for South Florida waters. \$480,000 (continuing).
6. SFWMD – Water quality assessment of Little Venice. \$100,000 (new).
7. Florida Department of Environmental Protection – Water quality monitoring in Little Venice. \$100,000 (new).

### **Total Funded Projects – FY06-07: \$1,381,337**

1. NSF/LTER – Coastal oligotrophic ecosystems research - the Florida Coastal Everglades (FCE). Collaborator, \$41,046.
2. US-EPA – Water quality monitoring for the Florida Keys National Marine Sanctuary. \$450,000.
3. DOI/NPS – Developing numeric non-degradation water quality standards for Biscayne National Park.
4. SFWMD – Coastal water quality monitoring network. \$666,291.
5. NOAA/CSCOR - SFP 2006: Volume Transport and Nutrient Loading to Florida Bay through East Cape Channel. \$124,000.
6. SFWMD – Water quality monitoring in Little Venice. \$100,000.

### **Total Funded Projects – FY05-06: \$1,278,119**

1. NSF/Long Term Ecological Research – Coastal oligotrophic ecosystems research - the Florida Coastal Everglades (FCE). \$700,000 total, \$74,597 to JB.
2. NOAA/COP – CO<sub>2</sub> and O<sub>2</sub> air-water exchange in Florida Bay: Hydrodynamic controls on the gas transfer velocity (k) and linkages to biological production. \$31,510.
3. NOAA/COP – Seagrass derived dissolved organic matter in Florida Bay: Molecular biogeochemistry and microbial availability. \$73,000.
4. US-EPA – Water quality monitoring for the Florida Keys National Marine Sanctuary. \$350,000.
5. DOI/NPS – Developing numeric non-degradation water quality standards for Biscayne national Park. \$58,700.
6. SFWMD – An integrated water quality monitoring program for the South Florida coastal waters. \$676,662.
7. FDEP – Water quality monitoring in Little Venice. \$13,650.

**Total Funded Projects – FY04-05: \$1,516,592**

1. NOAA/COP – CO<sub>2</sub> and O<sub>2</sub> air-water exchange in Florida Bay: Hydrodynamic controls on the gas transfer velocity (k) and linkages to biological production. \$31,510.
2. NOAA/COP – Seagrass derived dissolved organic matter in Florida Bay: Molecular biogeochemistry and microbial availability. \$73,000.
3. NSF/LTER – Coastal oligotrophic ecosystems research - the Florida Coastal Everglades (FCE). \$700,000 total, \$57,138 to JB.
4. US-EPA – Water quality monitoring for the Florida Keys National Marine Sanctuary. \$375,000.
5. SFWMD – An integrated water quality monitoring program for the South Florida coastal waters. \$647,244.
6. US Congressional Appropriation (through EPA) for Research in restoration ecology of the Florida Everglades. \$200,000.
7. DOI/NPS – Developing numeric non-degradation water quality standards for Biscayne national Park. \$32,700.
8. FDEP – Water quality monitoring in Little Venice. \$100,000.

**Total Funded Projects – FY03-04: \$1,631,874**

1. SFWMD – Biological availability of organic nitrogen in Florida Bay. \$45,000 (new).
2. NSF/LTER – Coastal oligotrophic ecosystems research - the Florida coastal Everglades (FCE). \$700,000 total, \$62,984 to JB.
3. NOAA/COP – Dissolved organic nitrogen in the Florida Coastal Everglades: molecular biogeochemistry, bioavailability and potential contribution to the microbial loop. \$160,000.
4. NOAA/COP – Nutrient mass fluxes between Florida Bay and the Florida Keys National Marine Sanctuary through Florida Keys passes. \$114,002.
5. US-EPA – Water quality monitoring for the Florida Keys National Marine Sanctuary. \$350,000.
6. SFWMD – An integrated water quality monitoring program for the South Florida coastal waters. \$628,392.
7. SFWMD – Florida Keys National Marine Sanctuary water quality protection program monitoring project. \$100,000.
8. SFWMD – Benthic community monitoring for the Little Venice sewage collection and treatment project in Marathon, Florida. \$50,000.
9. Monroe County – Little Venice water quality monitoring. \$121,496.

**Total Funded Projects – FY02-03: \$1,400,092**

1. NOAA/COP – Coastal Ocean Program. Dissolved organic nitrogen in the Florida Coastal Everglades: molecular biogeochemistry, bioavailability and potential contribution to the microbial loop. \$160,000.
2. NOAA/COP – Coastal Ocean Program. Nutrient mass fluxes between Florida Bay and the Florida Keys National Marine Sanctuary through Florida Keys passes. \$114,002.
3. US-Fish and Wildlife Service – Survey of marine sponge distribution and biomass in the Florida Keys Wildlife Refuge. \$10,000.
4. NSF/LTER – Coastal oligotrophic ecosystems research - the Florida coastal Everglades (FCE). \$700,000 total, \$58,090 to JB.

5. NSF/LTER – A cross-site comparison of the relative importance of organic matter vs. local environmental conditions on microbial decomposer communities. \$299,959 (collaborator).
6. US-EPA – Water quality monitoring for the Florida Keys National Marine Sanctuary. \$250,000.
7. SFWMD – An integrated water quality monitoring program for the South Florida coastal waters. \$558,000.
8. SFWMD – Florida Keys National Marine Sanctuary water quality protection program monitoring project. \$100,000.
9. SFWMD – Benthic community monitoring for the Little Venice sewage collection and treatment project in Marathon, Florida. \$50,000.
10. Monroe County – Little Venice water quality monitoring. \$100,000.

**Total Funded Projects –FY01-02: \$1,143,176**

1. SFWMD – Florida Keys National Marine Sanctuary water quality protection program monitoring project. \$100,000.
2. SFWMD – Benthic community monitoring for the Little Venice sewage collection and treatment project in Marathon, Florida. \$50,000.
3. Monroe County – Little Venice water quality monitoring. \$100,000.
4. NSF/LTER – Coastal oligotrophic ecosystems research - the coastal Everglades (FCE). \$700,000 total, \$59,576 to JB.
5. NSF/LTER – A cross-site comparison of the relative importance of organic matter vs. local environmental conditions on microbial decomposer communities. \$299,959 (collaborator).
6. NOAA/COP – The importance of organic phosphorus in promoting cyanobacterial blooms in Florida Bay: competition between bacteria and phytoplankton. \$110,120.
7. US-EPA – Water quality monitoring for the Florida Keys National Marine Sanctuary. \$250,000.
8. SFWMD – An integrated water quality monitoring program for the South Florida coastal waters. \$473,480.

**Total Funded Projects – FY00-01: \$1,288,946**

1. NSF/LTER – Coastal oligotrophic ecosystems research - the coastal Everglades (FCE). \$672,915 total, \$48,896 to JB.
2. NSF/LTER – A cross-site comparison of the relative importance of organic matter vs. local environmental conditions on microbial decomposer communities. \$299,959.
3. NOAA/COP – The importance of organic phosphorus in promoting cyanobacterial blooms in Florida Bay: competition between bacteria and phytoplankton. \$110,120.
4. Collier County – Effects of increased urban and agricultural landuse on the anthropogenic loading to southwest Florida estuaries: baseline information to address changing watersheds. \$88,000.
5. FDEP – Water quality sampling program for the Little Venice sewage collection and treatment project in Marathon, Florida. \$91,000.
6. US-EPA – Water quality monitoring for the Florida Keys National Marine Sanctuary. \$400,000.
7. SFWMD – An integrated water quality monitoring program for the South Florida coastal waters. \$550,930.

**Total Funded Projects - FY99-00: \$1,096,323**

1. SFWMD – An integrated water quality monitoring program for the Cape Romano to Pine Island Sound region. \$128,000.
2. DOI/NPS – Total ammonia concentrations in soil, sediments, surface water, and groundwater along the western shoreline of Biscayne Bay with the focus on Black Point and a reference mangrove site. \$49,946.
3. DOI/NPS – Effects of the Flamingo wastewater treatment facility and Eco Pond on the water quality of Florida Bay. \$74,895.
4. DOI/NPS – The statistical relationship between benthic habitats and water quality in Florida Bay: an ecologically relevant performance measure for responding to the USACOE Restudy. \$28,942.
5. US-EPA – Water quality monitoring for the Florida Keys National Marine Sanctuary. \$450,000.
6. SFWMD – An integrated water quality monitoring program for the South Florida coastal waters. \$364,597.

**Total Funded Projects - FY98-99: \$833,540**

1. US-EPA – Water quality monitoring for the Florida Keys National Marine Sanctuary. \$490,000.
2. SFWMD – An integrated water quality monitoring program for the South Florida coastal waters. \$343,540.

**Total Funded Projects - FY97-98: \$789,030**

1. US-EPA – Water quality monitoring for the Florida Keys National Marine Sanctuary. \$450,000.
2. SFWMD – An integrated water quality monitoring program for the South Florida coastal waters. \$339,030.

**Total Funded Projects - FY96-97: \$769,022**

1. US-EPA – Water quality monitoring for the Florida Keys National Marine Sanctuary. \$400,000.
2. FDEP – Ambient water quality monitoring in Western Florida Bay. \$29,992.
3. SFWMD – An integrated water quality monitoring program for the South Florida coastal waters. \$339,030.

**Funded Projects - Prior to 1996**

1. Canadian Department of Fisheries and Oceans, Atlantic Fisheries Adjustment Program – Effect of light intensity on growth of Arctic char (*Salvelinus alpinus*) under commercial grow-out conditions. 1992 - \$14,000.
2. Canadian Department of Fisheries and Oceans, Atlantic Fisheries Adjustment Program – Reconditioning of Arctic char (*Salvelinus alpinus*) after spawning. 1991 - \$40,000.
3. Canadian Department of Fisheries and Oceans, Atlantic Fisheries Adjustment Program – Effect of photoperiod on growth of Arctic char (*Salvelinus alpinus*) under commercial grow-out conditions. 1991 - \$17,000.
4. National Research Council, Canada, Industrial Research Assistance Program – Development and evaluation of closed system technology for commercial aquaculture. 1990 - \$64,000.

5. Department of Fisheries and Oceans, Atlantic Fisheries Adjustment Program – Effect of feed type on low temperature growth and flesh quality of Arctic char. 1990 - \$31,000.
6. North Carolina Sea Grant College Program – Effects of increased nitrogen loading on estuarine primary productivity and microbial nitrogen cycling. 1990 - \$88,000
7. North Carolina Sea Grant College Program – Effect of increased nitrogen loading on estuarine primary productivity and nitrogen cycling: an experimental approach using the MERL mesocosms. 1988 - \$52,000.
8. Virginia Sea Grant College Program – Potential of fermenting crab waste for production of methane. 1984 - \$5,000.

### **Selected Technical Reports (of 40)**

1. BOYER, J. N. AND H. O. BRICENO. 2007. FY2006 Annual Report of the Water Quality Monitoring Project for the Florida Keys National Marine Sanctuary. EPA Agreement #X7-96410604-2. SERC Tech. Report #T-354. [2006FKNMS.pdf](#)
2. BOYER, J. N. AND H. O. BRICEÑO. 2007. FY2006 Annual Report of the South Florida Coastal Water Quality Monitoring Network. SFWMD/SERC Cooperative Agreement #4600000352. SERC Tech. Rep. T-351. [2006\\_CWQMN.pdf](#)
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### **Most Recent Scientific Presentations (of 92)**

1. A Tale of Two Estuaries: Hydrology and Nutrient Loading in Biscayne and Florida Bays, USA. Estuarine Research Conference, Providence, RI – Nov. 6, 2007.
2. Spatial and Temporal Trends of Water Quality in the South Florida Coastal Region. Chapman Conference on Long Time-Series Observations in Coastal Ecosystems: Comparative Analyses of Phytoplankton Dynamics on Regional to Global Scales. Rovinj, Croatia. Oct. 8-12, 2007.
3. Relationship between water management and cyanobacterial blooms in Florida Bay, USA. Association of Marine Laboratories of the Caribbean. USVI – June 6, 2007.
4. Compound Interest: The value of long-term coastal water quality monitoring in South Florida. Annual Science Meeting of the South Florida Caribbean Cooperative Ecosystem Studies Unit, Miami, FL – Feb. 23, 2007
5. Effects of nutrient enrichment on bacterial community structure in seagrass sediments. Gordon Conference on Marine Microbes, Biddeford, ME - July 23-28, 2006.
6. What is driving long-term declines in organic matter export from the Everglades mangrove forests? ASLO, Victoria, BC – June 4-9, 2006.
7. Bioavailability of dissolved organic nitrogen in Florida Bay. Florida Bay and Adjacent Marine Systems Science Conference – Duck Key, FL, 2006.
8. Bioavailability of DON from Everglades Marsh, Mangroves, and Florida Bay. ERF Meeting – Norfolk, VA, 2005.
9. Nutrient mass flux through Long Key Channel, Florida Bay. ERF Meeting – Norfolk, VA.
10. Spatial Changes in Sediment Bacterial Communities in the Everglades and Florida Bay. ERF Meeting – Norfolk, VA, 2005.

11. Effect of landuse and water management on water quality of Biscayne Bay, USA. ASLO Aquatic Sciences Meeting – Feb. 20-25, 2005.
12. Bacterial abundance, growth rates, and grazing losses in Florida Bay. ASLO Aquatic Sciences Meeting – Feb. 20-25, 2005.
13. The role of microbial mats in the internal nutrient cycling of Florida Bay. FCE-LTER All Scientists Meeting – Mar 25, 2005.
14. Long term water quality monitoring in South Florida. Coral Reef Joint Task Force Special Session, Miami Beach, FL. – Sept. 2004.
15. Water Quality Issues in the FKNMS. Keys Connectivity Meeting, Key West, FL. Aug. 2004
16. Biological availability of dissolved organic nitrogen entering Florida Bay from the Everglades and fringing mangroves. ASLO Meeting, Savannah, GA. - June 2004.
17. Microbial Dynamics in Florida Bay: A New Paradigm for the Microbial Loop in Oligotrophic Marine Waters. Joint Conference on the Science and Restoration of the Greater Everglades and Florida Bay Ecosystem, Palm Harbor, FL. - April 2003.
18. Uncoupling autotrophic and heterotrophic microbial response to increased DOM in Florida Bay. Joint Conference on the Science and Restoration of the Greater Everglades and Florida Bay Ecosystem, Palm Harbor, FL. - April 2003.

### **Most Recent Presentations at Regional Meetings (of 55)**

1. DOM bioavailability in Florida Bay. DOM Workshop (sponsored by SFWMD). Miami, FL – Jan. 18, 2008.
2. Water Quality Issues and Answers. Leadership Collier. Immokalee, FL – Jan. 10, 2007.
3. Update on the Florida Bay Bloom. FKNMS Sanctuary Advisory Committee. Marathon, FL – Aug. 21, 2007.
4. FKNMS Water Quality Protection Program Steering Committee Meeting, Key Colony Beach – July 25, 2006.
5. South Florida Estuarine Water Quality Monitoring Network Presentation, Big Cypress Basin Board Meeting, Naples – Mar. 11, 2006.
6. FKNMS Technical Advisory Committee, Marathon – May 4, 2005.
7. Southeast Florida Coral Reef Initiative TAC Meeting, St. Petersburg – Apr. 19, 2005.
8. Science Coordination Group Meeting, Miami – Apr. 6, 2005.
9. FKNMS WQPP Meeting, Key Colony Beach – Mar. 4, 2005.
10. South Florida Estuarine Water Quality Monitoring Network Presentation, Big Cypress Basin Board Meeting, Naples – Feb. 18, 2005.
11. Florida Bay – Florida Keys Feasibility Study modeling sub-team meeting. May. 4, 2004 – Key Largo.
12. FKNMS TAC Meeting. May. 25, 2004 – Marathon.
13. Big Cypress Basin Board Meeting, April 23, 2004 – Naples.
14. FKNMS WQPP Steering Committee Meeting. Marathon, FL - Mar. 2003.
15. Florida Keys National Marine Sanctuary, Steering Committee Meeting. Marathon, FL – Aug 21, 2002.
16. National Water Quality Monitoring Council. FMRI, St. Petersburg, Fl – Feb. 5, 2002.
17. RET Workshop on Hydrologic and Other Performance Measures for Biscayne and Florida Bays to Model for Alternative Evaluation. SFWMD, Davie, FL – Dec. 11, 2001.
18. FKNMS: An Ecological Report Card. NOAA, Silver Springs, MD – Dec. 6, 2001.