

## Summary Vitae

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**POSITION:** Professor  
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### EDUCATION:

<u>University</u>	<u>Major</u>	<u>Dates</u>	<u>Degree</u>
University of Miami, RSMAS	Marine Biology	1977-81	PhD
University of Miami, RSMAS	Biological Oceanogr.	1972-76	MS
University of California, SD	Biology	1968-72	BA

### PROFESSIONAL EXPERIENCE

#### (A) Positions:

<u>Dates</u>	<u>Organization</u>	<u>Position</u>
2004-current	University of Florida	Professor
2001-04	University of Florida	Professor & Graduate Coordinator
1994-00	University of Florida	Associate Professor & Graduate Coordinator
1988-93	University of Florida	Assistant Professor
1983-87	University of Florida	Assistant Research Scientist
1981-83	University of Miami (R.S.M.A.S.)	Post-doc

**TEACHING:** Graduate level classes on applied phycology and aquatic microbiology. Served on 71 graduate student committees, including 28 as Chair.

### CURRENT PROFESIONAL ACTIVITES:

Co-Editor-and-Chief of the Journal of Aquatic Biosystems

Co-Editor of special issue in the journal Estuaries and Coasts (Volume 33, Number 2) devoted to long time-scale studies of coastal phytoplankton, emphasizing the influence of eutrophication, land-use changes and climate change on plankton ecology.

A cooperative research program was initiated in 2010 with Aristotle University in Greece to study the impacts of cultural eutrophication in Greek lakes. The first year of the study focused on Lakes Volvi and Koronia in northern Greece.

Invited member of the National Harmful Algal Bloom Committee: 2009-present.

Invited member of the Florida Department of Agriculture and Consumer Services Transgenic Aquatic Species Task Force: 2009-present.

Member American Society of Limnology and Oceanography: 1981-present.

Technical Advisory Committee Member, Marine Numeric Nutrient Criteria (MTAC). Florida Department of Environmental Protection and U.S.E.P.A.

Science Expert. Task force on the affects of water withdrawal from St. Johns River. St. Johns River Water Management District and National Research Council.

### **PUBLICATIONS – Through January 2011.**

1. Phlips, E. J. 1976. Esterase and lactate dehydrogenase isozymes of the deep sea shrimp genus *Glyphocrangon*. Masters Thesis, University of Miami, 248pp.
2. Messing, C. and E. J. Phlips. 1976. Tongue-of-the-Ocean:one mile deep. *Bahamas Naturalist* 1(2):1-8.
3. Mitsui, A., E. Duerr, S. Kumazawa, E. J. Phlips and H. Skjoldal. 1979. Biological solar energy conversion: Hydrogen production and nitrogen fixation by marine blue-green algae. In *Sun II*. Pergamon Press, New York, 1979, pp. 31-35.
4. Phlips, E. J. 1981. The environmental regulation of hydrogen production in the marine cyanobacteria Miami BG7 *Oscillatoria* sp. Doctoral dissertation, University of Miami, Florida, 113 pp.
5. Phlips, E. J. 1982. Biological sources of energy from the sea. *Sea Frontiers* 28(1):36-46.
6. Phlips, E. J. and A. Mitsui. 1982. Temperature preference and tolerance of aquatic photosynthetic microorganisms. In C.C. Black and A. Mitsui (Eds.), *Handbook of Biosolar Resources*. CRC Press, Boca Raton, Florida, p. 335-362.
7. Phlips, E. J. and A. Mitsui. 1982. Light intensity preference and tolerance of aquatic photosynthetic microorganisms. In C.C. Black and A. Mitsui (Eds.), *Handbook of Biosolar Resources*. CRC Press, Boca Raton, Florida, p. 257-308.
8. Phlips, E. J. and A. Mitsui. 1982. Light intensity preference and tolerance of aquatic photosynthetic macroalgae. In C.C. Black and A. Mitsui (Eds.), *Handbook of Biosolar Resources*. CRC Press, Boca Raton, Florida, p. 309-334.
9. Phlips, E. J. and A. Mitsui. 1982. Temperature preference and tolerance of aquatic photosynthetic macroalgae. In C.C. Black and A. Mitsui (Eds.), *Handbook of Biosolar Resources*. CRC Press, Palm Beach, Florida, p. 363-378.
10. Phlips, E. J. and A. Mitsui. 1983. Role of light intensity and temperature in the regulation of hydrogen production by the marine cyanobacteria *Oscillatoria* sp. Miami BG7. *Applied and Environmental Microbiology* 45:1212-1220.

11. Mitsui, A., E. J. Phlips, S. Kumazawa, K. J. Reddy, S. Ramachandran, T. Matsunaga, L. Haynes and H. Ikemoto. 1983. Progress in research toward outdoor biological hydrogen production using solar energy, seawater and marine photosynthetic microorganisms. *Annals New York Academy of Sciences* 413:515-30.
12. Phlips, E. J. and A. Mitsui. 1984. Development of Hydrogen production activity in the marine blue-green alga Oscillatoria sp. Miami BG7 under natural sunlight conditions. In C. Sybesma (ed.), *Adv. Photosynthetic Research*. M. Nijhoff/Dr. W. Junk Publ., Amsterdam, p. 801-804.
13. Mitsui, A., S. Kumazawa, E. J. Phlips, K. J. Reddy, K. Gill, T. Matsunaga, B.R. Renuka, T. Kuzumi, G. Reyes-Vasquez, K. Miyazawa, L. Haynes, H. Ikemoto, E. Duerr, C. B. Leon, D. Rosner, R. SESCO and E. Moffat. 1984. Mass cultivation of algae and photosynthetic bacteria: concepts and application. *Proceedings of the International Biotechnology Symposium* 7:138-167.
14. Mitsui, A., D. Rosner, S. Kumazawa, S. Barciela, E. J. Phlips, K. Reddy, S. Ramachandran, A. Takahashi. 1984. Blue-green algae and solar radiation. *Proceedings of the 22nd Space Congress of NASA* 22:267-288.
15. Phlips, E. J. and A. Mitsui. 1986. Characterization and optimization of hydrogen production by a saltwater blue-green alga Oscillatoria sp. Miami, BG7. II. Use of immobilization for enhancement of hydrogen production. *International Journal of Hydrogen Energy* 11:83-89.
16. Phlips, E. J., M. Willis and A. Verchick. 1986. Aspects of nitrogen fixation in Sargassum communities off the coast of Florida. *Journal of Experimental Marine Biology and Ecology* 102:99-119.
17. Phlips, E. J. 1987. Nitrogen fixation in marine communities and its potential role in seaweed cultivation. In K. Bird and C. Benson (Eds.), *Seaweed Cultivation for Renewable Resources*. Elsevier Press, Amsterdam, 1987, p. 241-284.
18. Shanmugan, K. T., E. J. Phlips and H. Spiller. 1987. Nitrogen fixation in Sargassum Biomass Production Systems. In W. Smith and J. Frank (Eds.), *Methane from Biomass*. Elsevier. Amsterdam, p. 197-210.
19. Phlips, E. J., C. Zeman and P. Hansen. 1989. Growth, photosynthesis, nitrogen fixation and carbohydrate production by a unicellular cyanobacterium, Synechococcus sp. (Cyanophyta). *Journal of Applied Phycology* 1:137-145.
20. Canfield, D. E., E. J. Phlips and C. Duarte. 1989. Factors influencing the abundance of blue-green algae in Florida lakes. *Canadian Journal of Fisheries Aquatic Science* 46:1232-1237.

21. Phlips, E. J., R. L. Monegue and F. J. Aldridge. 1990. Cyanophages which impact bloom-forming cyanobacteria. *Journal of Aquatic Plant Management* 28:92-97.
22. Phlips, E. J. and C. Zeman. 1990. Photosynthesis, growth and nitrogen fixation by epiphytic forms of filamentous cyanobacteria from pelagic Sargassum. *Bulletin Marine Science* 47:613-621.
23. Polak, J. T., M. Balabon, A. Peplow and E. J. Phlips. 1990. Supercritical carbon dioxide extraction of lipids from algae. In K. P. Johnston and J. M. Penninger, *Supercritical Fluid Science and Technology*. ACS Symposium Series 406:449-467.
24. Polak, J. T., M. Balabon, A. Peplow and E. J. Phlips. 1990. Extraction of lipids from algae. In *Engineering and Food, Advanced Processes*. Elsevier Applied Sci., New York, 1990, p.166-182.
25. Monegue, R. L. and E. J. Phlips. 1991. The effect of cyanophages on the growth and survival of Lyngbya birgei, Anabaena flos-aquae, and Anabaena circinalis. *Journal of Aquatic Plant Management* 29:88-93.
26. Phlips, E. J., J. Ihnat and M. Conroy. 1992. Nitrogen fixation by the benthic freshwater cyanobacterium Lyngbya birgei. *Hydrobiologia* 234:59-64.
27. Agusti, S. and E. J. Phlips. 1992. Light absorption by cyanobacteria: Implications of the colonial growth form. *Limnology and Oceanography* 37:434-441.
28. Phlips, E. J., P. Hansen and T. Velardi. 1992. Effects of the herbicide Diquat on the growth of phytoplankton. *Bulletin of Environmental Contamination and Toxicology* 49:750-756.
29. Phlips, E. J., P. V. Zimba, M. S. Hopson and T. L. Crisman. 1993. Dynamics of the plankton community in submerged plant dominated regions of L. Okeechobee, Florida, USA. *Verh. Internat. Verein. Limnol.* 25:423-426.
30. Phlips, E. J., P. Hansen and T. Velardi. 1993. Enhancement of biomass crop production with nitrogen-fixing cyanobacteria. *Tropical Agriculture* 70:271-274.
31. Phlips, E. J., F. J. Aldridge, P. Hansen, P. V. Zimba, J. Ihnat, M. Conroy and P. Ritter. 1993. Spatial and temporal variability of trophic state parameters in a shallow subtropical lake (Lake Okeechobee, Florida, USA). *Archives Hydrobiologia* 128:437-458.
32. Newman, S., F. J. Aldridge, E. J. Phlips and K. R. Reddy. 1994. Assessment of phosphorus availability for plankton populations from a hypereutrophic lake. *Archives Hydrobiologia* 130:409-427.

33. Phlips, E. J., F. J. Aldridge and C. Hanlon. 1994. Review of a 17-year chlorophyll a record as it pertains to the trophic status of Lake Okeechobee. *Water Resources Bulletin*. 30:229-238.
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38. Mason, W. T., R. W. Brody and E. J. Phlips. 1995. Abundant benthic macroinvertebrates in the lower St. Johns River, Florida, pose nuisances and wildlife benefits. *National Biol. Survey Information Bulletin*. No. 26. U.S. Department of Interior, Washington, D.C. 3 pp.
39. Phlips, E. J., F. J. Aldridge and C. Hanlon. 1995. Potential limiting factors for phytoplankton standing crop in a shallow sub-tropical lake (Lake Okeechobee, Florida). *Arch. Hydrobiol. Beih. Ergebn. Limnol.* 45:137-155.
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41. Phlips, E. J. and J. Ihnat. 1995. Nitrogen fixation in a shallow sub-tropical lake (Lake Okeechobee, Florida). *Arch. Hydrobiol. Beih. Ergebn. Limnol.* 45:191-201.
42. Phlips, E. J., F. J. Aldridge, C. L. Schelske and T. L. Crisman. 1995. Relationship between light availability, chlorophyll *a* and tripton in a large shallow sub-tropical lake. *Limnology and Oceanography* 40:416-421.
43. Phlips, E. J., T. C. Lynch and S. Badylak. 1995. Chlorophyll *a*, tripton, color and light availability in a shallow tropical inner shelf lagoon, Florida Bay. *Marine Ecology Progress Series*. 127:223-234.

44. Phlips, E. J. and S. Badylak. 1996. Spatial distribution and composition of algal blooms in Florida Bay. *Bulletin of Marine Science*. 58(1):203-216.
45. Hallingse, M. and E. J. Phlips. 1996. Effects of the herbicide Cutrine and the surfactant Cide-Kick on the growth of algae and cyanobacteria. *Journal of Aquatic Plant Management*. 34:39-40.
46. Havens, K., L. Bull, G. Warren, T. L. Crisman, E. J. Phlips and J. Smith. 1996. Trophic interactions in a subtropical lake food web. *Oikos*. 75:20-32.
47. Phlips, E. J. and E. L. Bledsoe. 1997. Plankton community structure and dynamics in the Suwannee River Estuary. In Lindberg, W. J. (Ed.), *Proceedings of the Florida Big Bend Coastal Research Workshop, May 7-8, 1997*. Florida Sea Grant Technical Paper 88:47-49.
48. Phlips, E. J., M. Cichra, K. Havens, C. Hanlon, S. Badylak, B. Rueter, M. Randall and P. Hansen. 1997. The control of phytoplankton abundance and structure by nutrient and light availability in a shallow subtropical lake. *Journal of Plankton Research* 19:319-342.
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51. Hopson, M. S., P. V. Zimba, E. J. Phlips, C. A. Fernandes, and J. S. Davis. 1998. Temporal variations in biomass of the algal epiphytes associated with the dominant submersed macrophytes in Lake Okeechobee, Florida (USA). *Verh. Internat. Verein. Limnol.* 26: 1716-1720.
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53. Phlips, E. J., S. Badylak and T. L. Lynch. 1999. Blooms of the picoplanktonic cyanobacterium Synechococcus in Florida Bay. *Limnology and Oceanography* 44: 1166-1175.
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55. Lynch, T. C. and E. J. Phlips. 2000. Filtration of the bloom-forming cyanobacteria Synechococcus by three sponge species from Florida Bay. *Bulletin of Marine Science* 67:923-936.

56. Phlips, E. J., M. Cichra, F. J. Aldridge, J. Hendrickson, J. Jembeck<sup>1</sup> and R. Brody. 2000. Light availability and variations in phytoplankton standing crops in a nutrient-rich blackwater river. *Limnology and Oceanography* 45:916-929.
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58. Phlips, E. J. 2001. The toxic algae threat in Florida: A tempered view. *Waterworks* 5:1-5.
59. Phlips, E. J. 2001. The toxic algae threat in Florida. *Florida Lakewatch* 20: 1-3.
60. Baker, S. M., D. Heuberger, E. J. Phlips and L. N. Sturmer. 2002. Water quality and its role in hard clam production. Cooperative Extension Service Technical Bulletin 4-02. Institute of Flood and Agricultural Sciences, University of Florida, Gainesville, Florida. 6pp.
61. Moye, H. A., C. J. Miles, E. J. Phlips, B. Sargent and K. K. Merritt. 2002. Kinetics and uptake for monomethylmercury between freshwater algae and water. *Environmental Science and Technology* 36:3550-3555.
62. Phlips, E. J. 2002. Algae and eutrophication. In G. Bitton (Ed.), *Encyclopedia of Environmental Microbiology*. John Wiley and Sons.
63. Phlips, E. J. 2002. The state of toxic freshwater algae in Florida. *Aquatics* 24:8-19.
64. Phlips, E. J., S. Badylak and T. Grosskopf. 2002. Factors affecting the abundance of phytoplankton in a restricted subtropical lagoon, the Indian River Lagoon, Florida, USA. *Estuarine, Coastal and Shelf Science* 55:385-402.
65. Phlips, E. J., E. Bledsoe, M. Cichra and S. Badylak. 2003. The distribution of potentially toxic cyanobacteria in Florida. In Johnson, D. and Harbison, R. D. (Eds.), *Proceedings of Health Effects of Exposure to Cyanobacterial Toxins: State of the Science*. Florida Department of Health and the Center for Disease Control. St. Petersburg, Florida.
66. Phlips, E. J., G. Hitchcock, L. Brand and D. Morrison. 2003. Plankton blooms. In Nuttle, W. *A Synthesis of Research on Florida Bay*. U.S. Geological Survey, Florida Caribbean Science Center, Gainesville, Florida.
67. Phlips, E. J., S. Badylak, S. Youn and K. Kelley. 2004. The occurrence of potentially toxic dinoflagellates and diatoms in a subtropical lagoon, the Indian River Lagoon, Florida, USA. *Harmful Algae*. 3:39-49.

68. Bledsoe, E., E. J. Phlips, C. E. Jett and K. A. Donnelly. 2004. The relationships among phytoplankton biomass, nutrient loading and hydrodynamics in an inner-shelf estuary, the Suwannee River estuary, Florida, USA. *Ophelia* 58:29-47.
69. Badylak, S. and E. J. Phlips. 2004. Phytoplankton communities of a restricted subtropical lagoon, the Indian River Lagoon, Florida, USA. *Journal of Plankton Research* 26:1-22.
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71. Phlips, E. J., N. Love, S. Badylak, P. Hansen, C.V. John, R. Gleeson. 2004. A comparison of water quality and hydrodynamic characteristics of the Guana Tolomato Matanzas National Estuarine Research Reserve and the Indian River Lagoon in Florida. *Journal of Coastal Research, Special Issue* 45: 93-109.
72. Phlips, E.J., and C. Schelske. 2004. Assessment of Lake Griffin algal blooms. St. Johns River Water Management District. Special Publication SJ2004-SP3. Palatka, Florida.
73. Havens, K. and E. Phlips. 2005. Toxic blue-green algae blooms in Florida waters. *Water Works* 9 (4):1-4.
74. Phlips, E.J. J. Frost, M. Yilmaz, N. Steigerwalt and M. Cichra. 2005. Factors controlling the abundance and composition of blue-green algae in Lake Griffin. St. Johns River Water Management District. Special Publication SJ2005-SP4. Palatka, Florida.
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88. Badylak, S. and E. J. Phlips. 2008. Spatial and temporal patterns of zooplankton distribution in Tampa Bay, Florida, including observations during a HAB event. *Journal of Plankton Research* 30:449-465.
89. Phlips, E. J., Havens, K. E., and M. Lopes. 2008. Seasonal dynamics of phytoplankton in two Amazon flood plain lakes of varying hydrologic connectivity to the main river channel. *Fundamental and Applied Limnology* 172:99-109.
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91. Harr, K. E., N. J. Szabo, M. Cichra, and E. J. Phlips. 2008. Debromoaplysia toxin in Lyngbya-dominated mats growing on manatees in the Kings Bay ecosystem of Florida, USA. *Toxicon* 52:385-388.
92. Frost, J., E. J. Phlips, R. Fulton III, C. L. Schelske, W. Kenney, and M. Cichra. 2008. Changes in trophic state parameters over a 21-year period in a hypereutrophic lake, Lake Griffin, Florida, USA. *Fundamental and Applied Limnology* 172:263-271.
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121. Phlips, E.J., D. Parkyn and Erin Bledsoe. 2011. Water quality gradients associated with a point source outflow associated with a fringing reef habitat in Grand Cayman. In preparation for submission to *Marine Ecology Progress Series*.
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123. Phlips, E.J., S. Badylak and M. Yilmaz. 2011. Microcystin concentrations and *Microcystis aeruginosa* populations in Lake Saka, Uganda. In preparation for submission to *Harmful Algae*.

**CONTRACTS AND GRANTS – Total - \$7,967,329.**

<u>PROJECT – ROLE- STATUS</u>	<u>FUNDING AGENCY</u>	<u>FUNDING LEVEL</u>	<u>DURATION</u>
Development of Photo-Synthetic biorefinery – PI – New.	Sea Grant/U.S. Department of Commerce	\$5,900	2012-2013
Water Quality Monitoring Guana Tolomato Matanzas National Estuarine Research Reserve – PI – Continuing.	NOAA – National Estuarine Research Reserve Program	\$103,000	2009-2013
Zooplankton community structure in the middle St. Johns River basin – PI – Continuing.	St. Johns River Water Management District	\$130,500	2009-2013
Appalacicola National Estuarine Research Reserve Water Quality - PI – Continuing.	NOAA – National Estuarine Research Reserve Program	\$90,200	2009-2013
Biological monitoring of the lower St. Johns River: Temporal and spatial trends in freshwater plankton - PI - Continuing.	St. Johns River Water Management District	\$222,000	2008-2013
Phytoplankton of the Indian River Lagoon ecosystem – PI – Continuing.	St. Johns River Water	\$267,000	2004-2013
Biofuels from algae - PI – Completed.	Florida Energy Systems	\$15,000	2011-2012
Toxic Algae in the Indian River Lagoon – PI – Completed.	U.S. E.P.A.	\$206,000	2006-2012
Phytoplankton composition and dynamics in Lakes Volvi	Aristotle University, Greece	\$15,000	2010-2011

and Koronia, Greece – PI – Completed.

Biofuels from algae, through genetic engineering – PI – Completed.	Office of the Provost University of Florida Innovation Grant Program	\$50,000	2009-2010
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Biodiesel production by algae – Phase 1 – Experimental production system construction and testing – PI - Completed.	Exxon-Mobil Research Institute	\$54,000	2009
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An outdoor freshwater aquatic microcosm study of zinc contamination impacts – PI – Completed	International Zinc Institute	\$85,000	2009-2010
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Assessment of the attenuation crustacean zooplankton viability during cyanobacterial bloom conditions in Lake George, Florida – PI – Completed.	St. Johns River Water Management District	\$85,000	2009-2010
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Expert Assistance Minimum flow criteria for the St. Johns River – PI – Completed.	St. Johns River Water Management District	\$100,000	2008-2011
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Graduate education And Professorship Program award – PI – Completed.	NSF – SEAGEP program	\$20,000	2008-2010
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Phytoplankton of the Apalachicola River and Bay - PI – Completed.	U. S. Dept. Commerce NERR program	\$60,000	2008-2011
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How estuaries respond to nutrient load: GTMNERR as a model case – PI – Completed.	U. S. Dept. Commerce NERR program	\$60,000	2006-2009
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Control of Lyngbya using ultrasound – PI – Completed.	Florida DEP	\$16,000	2007-2009
Bioaccumulation, transfer and fate of algal toxins in freshwater and marine food chains – PI – Completed.	Office of the Provost University of Florida Innovation Grant Program	\$87,000	2007-2010
Impacts of the hepatotoxin microcystin on the health of fish – PI – Completed.	U.S. Fish and Wildlife Service	\$80,000	2006-2009
Zooplankton community structure in the middle St. Johns River basin – PI – Completed.	St. Johns River Water Management District	\$152,000	2006-2009
Appalachicola National Estuarine Research Reserve Water Quality - PI – Completed.	NOAA – National Estuarine Research Reserve Program	\$39,500	2007-2009
Water Quality Monitoring Guana Tolomato Matanzas National Estuarine Research Reserve – PI – Completed.	NOAA – National Estuarine Research Reserve Program	\$241,000	2002-2009
Biological monitoring of the lower St. Johns River: Temporal and spatial trends in plankton structure and abundance - PI - Completed.	St. Johns River Water Management District	\$1,105,000	1997-2008
Ecology of primary Producers in the St. Lucie Estuary – PI – Completed.	South Florida Water Management District	\$49,800	2007
Algal blooms in Ten-mile Creek and the St. Lucie Estuary – PI – Completed.	South Florida Water Management District	\$152,000	2005-2008

Phytoplankton nutrient limitation and community composition in the St. Lucie estuary – PI – Completed.	South Florida Water Management District	\$49,929	2007-2008
Synthesis of literature on the effects of nutrients on spring systems – Co-PI - Completed.	Florida DEP	\$5,500	2007
Examination of potentially toxic algae in Hillsborough County lakes – PI – Completed.	Hillsborough County	\$20,000	2005-2006
Water quality conditions of Alligator Harbor, Florida – PI – Completed.	Florida Dept. of Agriculture	\$15,000	2006
Zooplankton community structure in the middle St. Johns River basin – PI – Completed.	St. Johns River Water Management District	\$116,000	2003-2006
The ecology of the Silver Springs ecosystem – 50 years later – PI – Completed.	Department of Environmental Protection/ St. Johns River Water Management District	\$75,000	2004-2006
Commercial-scale cultured clam communities: Source or sink of nutrients? – PI – Completed.	Florida Dept. of Agriculture	\$38,000	2004-2005
Factors controlling the Abundance and composition of blue-green algae in Lake Griffin – PI – Completed.	St. Johns River Water Management District	\$115,000	2003-2004
Water quality monitoring of the Hillsborough River	USGS	\$21,000	2003-2004



Reservoir – PI – Completed.			
Algicide trial NC01BBP - PI – Completed.	Valent USA Corp.	\$4,000	2002
Evaluation of the potential for native submerged plant vegetation growth under post-dredge condition – PI – Completed.	City of Lakeland	\$18,000	2001-2003
EADIN – Expert Assistance distance and distance identification network for water quality – PI – Completed.	USDA	\$105,000	1999-2005
Use of biofiltration in the treatment of aquaculture effluent – PI – Completed.	USDA	\$90,000	1999-2005
Eutrophication effects on Clam and oyster production – PI – Completed.	USDA	\$450,000	1999-2005
Clam lease assessment, Monitoring and management – Co-PI – Completed.	USDA	\$105,000	2000-2005
Assessment of Lake Griffin algal blooms – PI - Completed.	St. Johns River Water Management District	\$75,000	1999-2002
Relationship between nutrient loading and algal community dynamics in the Suwannee River and Estuary - PI - Completed.	Suwannee River Water Management District	\$130,000	1999-2001
Nutrient uptake by seagrass communities in the Indian	St. Johns River Water	\$30,000	1999-2000

Rive Lagoon - Co-PI - Completed.			
Photosynthetically active radiation/submerged plant study in the Indian River - PI - Completed.	St. Johns River Water Manage. District	\$ 12,000	1999-2000
Mercury uptake by Everglades algae - Co-PI - Completed.	Florida Department of Environmental Protection	\$ 102,000	1998-2000
Nutrient limitation of phytoplankton production in the Indian River Lagoon - PI - Completed.	St. Johns River Water Management District	\$ 52,000	1997-1999
Effect of nitrate loading on Lyngbya growth in the Rainbow River - PI - Completed.	Southwest Florida Water Management District	\$ 33,000	1998-1999
Phytoplankton community structure in Lake Washington - PI - Completed.	St. Johns River Water Management District	\$ 7,000	1998-1999
Nutrient limitation of phytoplankton production in the Suwannee River Estuary - PI - Completed.	Suwannee River Water Management District	\$ 27,000	1998-1999
Hydrodynamics and the productivity of reef habitats - Co-PI - Completed.	Sea Grant	\$ 19,000	1998
Mercury in Marine Food Webs - Co-PI - Completed.	Dean of Research, UF	\$ 12,000	1996
Blue-green algal blooms in Florida Bay - PI - Completed.	U.S. Dept. Commerce - Sea Grant Program	\$180,000	1995-1997
Use of barley straw to	Anheuser-Busch Corp.	\$30,000	1995-1998

control algal growth  
in live animal systems -  
Co-PI - Completed.

Phytoplankton community structure in the St Johns River downstream of Jacksonville - PI - Completed.	City of Jacksonville	\$36,000	1994-1996
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Nutrient versus light limitation in Lake Okeechobee - PI - Completed.	South Florida Water Management District	\$105,000	1994-1995
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Effectiveness of new algicide in the control of bloom-forming algae - PI - Completed.	American Cyanimid	\$ 25,000	1994-1995
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Use of unionid mussels as bioindicators of water quality - PI - Completed.	U. S. National Biological Survey	\$ 65,000	1994-1995
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Relationship between benthic and planktonic communities and the quality of sediments and water in the lower St.Johns River - PI - Completed.	St. Johns River Water Management District	\$220,000	1993-1997
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Plankton primary producer communities in Florida Bay - PI - Completed.	U.S. Dept. Commerce Sea Grant Program	\$ 5,500	1993-1994
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Nutrient chemistry Indian River Lagoon Co-PI - Completed.	St. Johns River Water Management District	\$ 52,000	1993-1994
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Phytoplankton enumeration, pigment extraction, and their interrelationship - PI - Completed.	South Florida Water Management District	\$ 5,500	1993
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Photosynthetically active radiation/submerged plant	St. Johns River Water Manage.	\$ 52,000	1993-1994
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study in the Indian River - District Co-PI - Completed.			
Effect of the herbicideUSDA-ARS cutrine and adjuvant Side- Kick on the growth of algae - PI - Completed.		\$ 4,500	1993
Study of primary producer populations and algal blooms in Lake Okeechobee - PI - Completed.	South Florida Water Management District	\$ 1,800,000 Part of a \$ 3,500,000 multidis- ciplinary study of Lake Okeechobee entrophication	1988-1993
Carbohydrate Polymer Production by Blue-green algae - PI - Completed.	Sea Grant	\$ 89,500	1986-1988
Effect of the Herbicide Diquat on Freshwater Phytoplankton - PI - Completed.	Chevron Oil Company	\$ 20,000	1987
Production of commercial lipids by marine phyto- plankton species - PI - Completed.	Gulf & South Atlantic Fisheries Research Foundation	\$ 5,000	1987
Control of Lyngbya Blooms with Blue-green algae viruses - PI - Completed.	U.S.D.A.	\$ 45,000	1987-1991
Marine biomass production systems -	Gas Research Institute	\$200,000	1983-1987

PI - Completed.

Chicago, IL