

## Curriculum Vitae

### *General Data*

Name: John J. Walsh  
Electronic mail: jwalsh@seas.marine.usf.edu  
Telephone/fax: 727-553-1164/ 727-553-1189  
Initial date of USF employment: 10 August 1984  
Rank: Graduate Research Professor  
Present rank: Distinguished Research Professor (1991)  
Tenured: 10 August 1984  
College: Marine Science

### *Education*

<u>Institution</u>	<u>Field of Study</u>	<u>Degree</u>	<u>Date</u>
Harvard College	Biology	A.B.	1964
University of Miami	Marine Science	M.S.	1968
University of Tennessee	Systems Ecology	-	1967-68
University of Georgia	Zoology	-	1968
University of Miami	Marine Science	Ph.D.	1969

### *Professional Background*

1991-present Distinguished Research Professor, College of Marine Science,  
University of South Florida  
1995 Visiting Scientist, Harvard University  
1984-1991 Graduate Research Professor, Department of Marine Science,  
University of South Florida  
1982-1983 Visiting Scientist, Skidaway Institute of Oceanography and the  
University of South Florida  
1981-1984 Senior Oceanographer, Brookhaven National Laboratory  
1980-1983 Guest Investigator, Woods Hole Oceanographic Institution  
1979-1984 Adjunct Professor, Marine Sciences Research Center,  
S.U.N.Y. at Stony Brook  
1976-1981 Oceanographer with tenure, Brookhaven National Laboratory  
1975-1984 Head, Oceanographic Sciences Division, Brookhaven Nat. Lab.  
1975-1979 Adjunct Associate Professor, MSRC, S.U.N.Y. at Stony Brook

1970-1975	Research Assistant Professor, Department of Oceanography, University of Washington
1969-1970	Post-doctoral fellow, University of Washington
1967-1968	Pre-doctoral fellow, Oak Ridge National Laboratory

#### *Areas of specialization*

As a biological oceanographer, J. J. Walsh has focused on systems analyses of continental shelves over the last 40 years, publishing more than 100 books, papers, and reports. In addition to prior studies of coastal upwelling off Peru, Northwest Africa, Baja California, and Venezuela, the ecological components of global carbon and nitrogen budgets have been stressed. Satellite images have also been used to constrain coupled numerical models of biophysical processes effecting species succession of plankton within the food webs of the Southern Ocean, the Bering/Chukchi Seas, the Mid-Atlantic/South Atlantic Bights, the Sargasso/Caribbean Seas, and the Gulf of Mexico. As Co-director of the USF Center for Prediction of Red tides (CPR), emphasis is now placed on the applied aspects of plankton ecology, with development, validation, and implementation of coupled biophysical models for operational forecasts of the initiation, landfall, and demise of ichthyotoxic red tide asthma triggers, with implications for management of both fisheries and human asthma onsets, within coastal waters and on adjacent beaches of the southeastern United States from the Florida Panhandle to the outer banks off Cape Hatteras, North Carolina.

#### *Awards*

Pre-doctoral Fellowship, Ford Foundation	1967
Antarctic Service Medal, National Science Foundation	1969
Gold Medal of Science, University of Liege	1980
Fellow, American Association for the Advancement of Science	1990
USF Professorial Excellence Program	1996

#### *Professional Organizations and Offices*

American Association for the Advancement of Science  
 American Geophysical Union  
 Deputy Director IBP Upwelling Biome (1970-74)  
 Executive Committee of the “Coastal Upwelling Ecosystem Analysis” Program (1971-75)  
 U.S. National Academy Committee for the “International Biological Program” (1972-73)  
 Nominating Committee for Pacific ASLO Section (1975-76)  
 Executive Committee of the “Processes and Resources of the Bering Sea” Program (1975-82)  
 Editorial Board, *Journal of Plankton Research* (1979-1995)  
 Executive Committee of the “Shelf-Edge Exchange” Program (1981-1991)  
 U.S. National Academy Working Group on the Ecological Basis of Fisheries Management (1979-80),  
 Brookhaven National Laboratory Council (1979-82)  
 SCOR Working Group 56 (Equatorial Upwelling Processes)  
 U.S. National Academy Committee for Planetary Biology (1981-83)

Chairman, NASA Ocean Color Science Working Group (1981-88)  
Executive Committee of the “Shelf-Edge Exchange Processes” Program (1981-1992)  
Chairman, Scientific Committee on Antarctic Research (ICSU) BIOMASS Modeling Working Group (1983-85)  
Scientific Advisory Board for the “Mid-Atlantic Slope and Rise” Program (1983-86)  
Executive Committee of the “Inner Shelf Transfer and Recycling” Program (1983-91)  
Oceanography Panel, National Science Foundation (1986)  
Guest Editor, *Continental Shelf Research* (1986-88; 1991-93; 2007-2008)  
U.S. National Academy Committee on the MMS Outer Continental Shelf Program (1986-92)  
Steering Committee for the “Global Ocean Flux Study” Program (1987-90)  
Program Advisory Committee for the 1990 Dahlem Konferenzen on “Ocean Margin Processes in Global Change” (1989-90)  
Core Project Planning Committee for the “Land-Ocean Interactions in the Coastal Zone” Program of the IGBP (1991-93).  
NASA SeaWiFS Science Team (1992-96)  
Scientific Organizing Committee for the 26th International Liege Colloquium on Ocean Hydrodynamics - “Global Coastal Ocean” (1992-1994)  
Steering Committee for the “Biological Initiative in the Arctic: Shelf-Basin Interactions” Program (1995-2002)  
Steering Committee for the “Ecology and Oceanography of Harmful Algal Blooms: Florida” Program (1997-2002)  
Steering Committee for the “Hyperspectral Coastal Ocean Dynamics Experiment” Program (1998-2002)  
Local Organizing Committee for the 10<sup>th</sup> International Conference on Harmful Algae (2000-2002)

*Publications - books*

Cushing, D.H. and J.J. Walsh. 1976. “Ecology of the Seas”. Blackwell, Oxford, United Kingdom, and Saunders, Philadelphia, PA, pp 1-445.  
Walsh, J.J. 1988. "On the nature of continental shelves". Academic Press, San Diego, CA, pp 1-520.

*Publications - book reviews*

Walsh, J.J. 1974. “The structure of marine ecosystems” - J.H. Steele. *Limnol. Oceanogr.* 19:1015-1016.  
Walsh, J.J. 1976. “Marine photosynthesis” - E. Steeman Nielsen. *Limnol. Oceanogr.* 21:633-634.

*Publications - chapters in books and symposia*

- Walsh, J.J. 1971. Simulation analysis of trophic interaction in an upwelling ecosystem. In "Proceedings of the 1971 Summer Computer Simulation Conference", BSC, Denver, CO, pp 874-878.
- Walsh, J.J. and R.C. Dugdale. 1972. Nutrient submodels and simulation models of phytoplankton production in the sea. In "Nutrients in Natural Waters", eds. H.E. Allen and J.R. Kramer, Wiley Interscience, New York, NY, pp 171-191.
- Whitledge, T.E. and J.J. Walsh. 1973. Applications of numerical models to consequences of eutrophication in the Aegean Sea. In "Proceedings of the 23rd C.I.E.S.M. Congress", Journees Studies de Pollutions, Monaco, pp 99-101.
- Odum, W.E. and J.J. Walsh. 1974. Tropical blue-water coasts. In "Coastal Ecological Systems of the United States", eds. H.T. Odum, B.J. Copeland, and E.A. Mahan, Conservation Foundation, Washington, D.C., pp 514-533.
- Pavlou, S.P. T.E. Whitledge, J.J. Walsh, and J.C. Kelley. 1974. A system approach to marine pollution monitoring. In "Proceedings of a Seminar on Methodology for Monitoring the Marine Environment". E.P.A. Res. Pap. 60014-74-004, pp 72-107.
- Walsh, J.J. 1974. Primary production in the sea. In "Proceedings of the First International Congress of Ecology", PUDOC, Wageningen, Netherlands, pp 150-154.
- Walsh, J.J. and R.C. Dugdale. 1974. A simulation model for the nitrogen flow in the Peruvian upwelling system. Reprinted in "Cycles of Essential Elements", ed. L.R. Pomeroy, Dowden, Hutchinson, and Ross, Stroudsburg, PA, pp 339-360.
- O'Brien, J.J., T. Platt, P. LeBlond, R. Margalef, J.J. Walsh, W. Krauss, D.H. Cushing, W. Zahel, P. Liss, J.H. Steele, A. Pires, and A. Finza. 1975. Spatial inhomogeneity in the oceans. In "Modeling of Marine Systems", ed. J.J. Nihoul, Elsevier, Amsterdam, Netherlands, pp 235-236.
- Walsh, J.J. 1975. A biological interface for numerical models and the real world: An elegy for E.J. Ferguson Wood. In "Numerical Models of Ocean Circulation", Nat. Acad. Sci. Press, Washington, D.C., pp 5-9.
- Walsh, J.J. 1975. Utility of systems models: A consideration of some possible feedback loops of the Peruvian upwelling ecosystem. In "Estuarine Research, Vol. 1", ed. L.E. Cronin, Academic Press, New York, NY, pp 617-633.
- Walsh, J.J. 1976. Models of the sea. In "The Ecology of the Seas", eds. D.H. Cushing and J.J. Walsh, Blackwell, Oxford, United Kingdom, pp 388-407.
- Walsh, J.J. and A. Bakun. 1976. Species and productivity transients in upwelling oceans. In "The Study of Species Transients, Their Characteristics, and Significance for Natural Resource Systems", ed. O.L. Loucks, Institute for Ecology, Indianapolis, IN, pp 8-13.
- Walsh, J.J. and S.O. Howe. 1976. Protein from the sea: a comparison of the simulated nitrogen And carbon productivity of the Peru upwelling ecosystem, in "Systems analysis and simulation in ecology", ed. B.C. Patten, Academic Press, New York, pp 47-61.
- Walsh, J.J. and R.C. Dugdale. 1976. A simulation model for the nitrogen flow in the Peruvian upwelling system. Reprinted in "Marine Ecology: Selected Readings", eds. J.S. Cobb and M.M. Harlin, University Park Press, Baltimore, MD, pp 267-288.
- Walsh, J.J., J.C. Kelley, R.C. Dugdale, and B.C. Frost. 1976. Gross features of the Peruvian upwelling system with special reference to possible diel variation. Reprinted in "Marine

- Ecology: Selected Readings”, eds. J.S. Cobb and M.M. Harlin, University Park Press, Baltimore, MD, pp 37-54.
- Walsh, J.J. 1977. A biological sketchbook for an eastern boundary current. In "The Sea, Vol. 6", eds. J.H. Steele, J.J. O'Brien, E.D. Goldberg, and I.N. McCave, Wiley Interscience, New York, NY, pp 923-968.
- Tingle, A.G., D.A. Dieterle, and J.J. Walsh. 1979. Perturbation analysis of the New York Bight. In "Ecological Processes in Coastal and Marine Systems", ed. R.J. Livingston, Plenum Press, New York, NY, pp 395-435.
- Walsh, J.J. 1980. Consequences of natural upwelling in oligotrophic marine ecosystems. In "Proceedings of the Second DOE Environmental Control Symposium", NTIS, Springfield, VA, pp 437-448.
- Walsh, J.J. 1980. Concluding remarks: Marine photosynthesis and the global carbon cycle. In "Primary productivity in the Sea", ed. P.G. Falkowski, Plenum Press, New York, NY, pp 497-506.
- Walsh, J.J. 1981. Shelf-sea ecosystems. In "Analysis of Marine Ecosystems", ed. A.R. Longhurst, Academic Press, New York, NY, pp 159-196.
- Walsh, J.J., E.T. Premuzic, and T.E. Whitley. 1981. Fate of nutrient enrichment on continental shelves as indicated by the C/N content of bottom sediments. In, "Ecohydrodynamics" ed. J.J. Nihoul, Elsevier, Amsterdam, Netherlands, pp 13-50.
- Mearns, A.J., E. Haines, G.S. Kleppel, R.A. McGrath, J.J. McLaughlin, D.A. Segar, J.H. Sharp, J.J. Walsh, J.Q. Word, D.K. Young, and M.W. Young. 1982. Effects of nutrients and carbon loadings on communities and ecosystems. In "Ecological Stress and the New York Bight: Science and Management, ed. G.F. Mayer, Estuar. Res. Fed., Columbia, SC, pp 53-66.
- McRoy, C.P. and J.J. Walsh. 1984. Continental shelf carbon export: An organic sink of the global carbon dioxide cycle. In "The potential effects of Carbon Dioxide-Induced Climatic Changes in Alaska", ed. J.H. McBeath, Univ. Alaska Misc. Pub. 83-1, Fairbanks, AK, pp 49-58.
- Walsh, J.J. 1985. The role of the ocean biota in accelerated ecological cycles: a temporal view. Reprinted in "Global Ecology", ed. C.H. Southwick, Sinauer Assoc., Sunderland, MA, pp 84-94.
- Botkin, D.B., M.B. Davis, J.E. Estes, A.H. Knoll, R.V. O'Neill, L. Orgel, L.B. Slobodkin, J.C. Walker, J.J. Walsh, and D.C. White. 1986. "Remote sensing of the Biosphere". Nat. Acad. Sci., Washington, D.C., pp 1-135.
- Walsh, J.J. and D.A. Dieterle. 1986. Simulation analysis of plankton dynamics in the northern Bering Sea. In "Marine Interfaces Ecohydrodynamics", ed. J.J. Nihoul, Elsevier, Amsterdam, Netherlands, pp 401-428.
- Whitley, T.E. and J.J. Walsh. 1986. Biological processes associated with the pycnocline and surface fronts in the southeastern Bering Sea In "Marine Interfaces Ecohydrodynamics", ed. J.J. Nihoul, Elsevier, Amsterdam, Netherlands, pp 655-670.
- Walsh, J.J., T.E. Whitley, J.E. O'Reilly, W.C. Phoel, and A.F. Draxler. 1987. Nitrogen cycling on Georges Bank and the New York shelf : a comparison between well-mixed and seasonally stratified waters. In "Georges Bank and surrounding waters", ed. R.H. Backus, MIT Press, Cambridge, MA, pp 234-246.

- Stoddard, A. and J.J. Walsh. 1988. Modeling oxygen depletion in the New York Bight: the water quality impact of a potential increase of waste inputs. In "Oceanic Processes in Marine Pollution. V. Urban wastes in Coastal Marine Environments", eds. D.A. Wolfe and T.P. O'Connor, R.E. Krieger, Melbourne, FL, pp 91-102.
- Walsh, J.J. and D.A. Dieterle. 1988. Use of satellite ocean color observations to refine understanding of global geochemical cycles. In "Scale and Global Change. Spatial and Temporal Variability in Biospheric and Geospheric Processes. Scope 35.", eds. T. Rosswall, R.G. Woodmansee, and P.G. Risser, J. Wiley & Sons, Chichester, United Kingdom, pp 287-318.
- Muller-Karger, F.E., J.J. Walsh, K.L. Carder, and R.G. Zika. 1989. Rivers in the sea: Can we quantify pigments in the Amazon and Orinoco river plumes from space? In "Proceedings of IGARSS '89, 12th Canadian Symposium on Remote Sensing, Vancouver, BC, Canada, pp 339-342.
- Walsh, J.J. 1989. How much shelf production reaches the deep sea? In "Productivity of the ocean: Past and present", eds. W. Berger, G. Wefer, and V. Smetacek, J. Wiley & Sons, Chichester, United Kingdom, pp 175-191.
- Walsh, J.J., C.P. McRoy, T.H. Blackburn, L.K. Coachman, J.J. Goering, K. Henriksen, P. Andersen, J.J. Nihoul, P.L. Parker, A.M. Springer, R.D. Tripp, T.E. Whitledge, and C.D. Wirick. 1989. The role of Bering Strait in the carbon/nitrogen fluxes of polar marine ecosystems. In "Proceedings of the Sixth Conference of the Comite Arctique International, I. Ecosystems of Northern Seas", eds. L. Rey and V. Alexander, E.J. Brill, Leiden, Netherlands, pp 90-120.
- Walsh, J.J. 1995. DOC storage in Arctic seas: the role of continental shelves. In "Arctic Oceanography: Marginal ice zones and continental shelves", eds. W.O. Smith and J.M. Grebmeier, A.G.U. Press, Washington, D.C., pp 203-230.
- Denman, K., E.E. Hofmann, H. Marchant, etc., J.J. Walsh, and A.J. Watson. 1996. Marine biotic responses to environmental change and feedbacks to climate. In "Climate change 1995: The science of climate change", eds. J.T. Houghton, L.G. Meira Filho, B.A. Callander, N. Harris, A. Kattenberg, and K. Maskell", Cambridge Univ. Press, Cambridge, United Kingdom, pp 483-516.
- Sakshaug, E. and J.J. Walsh. 2000. Marine biology: Biomass, productivity distributions and their variability in the Barents and Bering Seas. In "The Arctic: Environment, people, policy", eds. M. Nuttall and T.V. Callaghan, Harwood Acad. Pub., Amsterdam, pp 163-196.
- Walsh, J.J. 2001. Regional and shelf sea models. In "Encyclopedia of Ocean Sciences", eds. J.H. Steele, S. Thorpe, and K.A. Turekian, Academic Press, London, pp. 2399-2408.
- Heil, C.A., G.A. Vargo, D.N. Spence, M.B. Neely, R. Merkt, K.M. Lester, and J.J. Walsh. 2002. Nutrient stoichiometry of a *Gymnodinium breve* bloom: what limits blooms in oligotrophic environments? Proc. IX Intern. Symp. Harmful Algal Blooms, Hobart, Australia, G.M. Hallegraeff, S. I. Blackburn, C.J. Bolch, and R.J. Lewis (eds.), pp 165-168.
- Vargo, G.A., C.A. Heil, D.N. Spence, M.B. Neely, R. Merkt, K.M. Lester, R.H. Weisberg, J.J. Walsh, and K.A. Fanning. 2002. The hydrographic regime, nutrient requirements, and transport of a *Gymnodinium breve* DAVIS red tide on the West Florida shelf. Proc. IX

- Intern. Symp. Harmful Algal Blooms, Hobart, Australia, G.M. Hallegraeff, S. I. Blackburn, C.J. Bolch, and R.J. Lewis (eds.), pp. 157-160.
- Lester, K.M., R. Merkt, C.A. Heil, G.A. Vargo, M.B. Neely, D.N. Spence, L. Melahan, and J.J. Walsh. 2002. Evolution of a *Gymnodinium breve* (Gymnodiniales, Dinophyceae) red tide bloom on the West Florida shelf: relationship with organic nitrogen and phosphorus. Proc. IX Intern. Symp. Harmful Algal Blooms, Feb 7-11, 2000, Hobart, Australia, G.M. Hallegraeff, S. I. Blackburn, C.J. Bolch, and R.J. Lewis (eds.), pp. 161-164.
- Cannizzaro, J.P., K.L. Carder, F.R. Chen, J.J. Walsh, Z. Lee, C. Heil, and T. Villareal. 2004. A novel optical classification technique for detection of red tides in the Gulf of Mexico. In "Harmful algae 2002", eds. K.A. Steidinger, J.H. Landsberg, C.R. Tomas, and G.A. Vargo, Florida Fish and Wildlife Commission, Florida Institute of Oceanography, and Intergovernmental Oceanographic Commission of UNESCO, St. Petersburg, FL, pp 282-284.
- Walsh, J.J., D.A. Dieterle, B.P. Darrow, S.P. Milroy, J.K. Jolliff, J.M. Lenes, R.H. Weisberg, and R. He. 2004. Coupled biophysical models of Florida red tides. In "Harmful algae 2002", eds. K.A. Steidinger, J.H. Landsberg, C.R. Tomas, and G.A. Vargo, Florida Fish and Wildlife Commission, Florida Institute of Oceanography, and Intergovernmental Oceanographic Commission of UNESCO, St. Petersburg, FL, pp 519-521.
- Walsh, J.J. and K.A. Steidinger. 2004. ECOHAB:Florida - a catalyst for recent multi-agency studies of the West Florida shelf. In "Harmful algae 2002", eds. K.A. Steidinger, J.H. Landsberg, C.R. Tomas, and G.A. Vargo, Florida Fish and Wildlife Commission, Florida Institute of Oceanography, and Intergovernmental Oceanographic Commission of UNESCO, St. Petersburg, FL, pp 519-521.
- Vargo, G.A., C.A. Heil, D.N. Ault, M.B. Neely, S. Murasko, J. Havens, K.M. Lester, K. Dixon, R. Merkt, J.J. Walsh, R.H. Weisberg, and K.A. Steidinger. 2004. Four *Karenia brevis* blooms: a comparative analysis. In "Harmful algae 2002", eds. K.A. Steidinger, J.H. Landsberg, C.R. Tomas, and G.A. Vargo, Florida Fish and Wildlife Commission, Florida Institute of Oceanography, and Intergovernmental Oceanographic Commission of UNESCO, St. Petersburg, FL, pp 14-16.
- Havens, J., C.A. Heil, D. Hollander, G.A. Vargo, D. Ault, S Murasko, and J.J. Walsh. 2004. Investigation of nutrient sources supporting a *Karenia brevis* bloom on the West Florida shelf, using d15N and d13C stable isotopic analyses. In "Harmful algae 2002", eds. K.A. Steidinger, J.H. Landsberg, C.R. Tomas, and G.A. Vargo, Florida Fish and Wildlife Commission, Florida Institute of Oceanography, and Intergovernmental Oceanographic Commission of UNESCO, St. Petersburg, FL, pg 123.
- Carder, K.L., J.J. Walsh, and J.P. Cannizzaro. 2007. Hunting red tides from space. In "Our changing planet", eds. M.D. King, C.L. Parkinson, K.C. Partington, and R.G. Williams, Cambridge Univ. Press, pp 187-190.
- Walsh, J.J., J.M. Lenes, B.P. Darrow, and F.R. Chen. 2012. Forecasting and modeling of harmful algal blooms in the coastal zone. In "Volume 9, Estuarine and Coastal Ecosystem Modeling, of the Treatise on Estuarine and Coastal Science", eds. D. Baird and A. Mehta, Elsevier, pp 217-330.

## Publications - Articles in refereed journals

Walsh, J.J. 1969. Vertical distribution of Antarctic phytoplankton. I. A comparison of phytoplankton standing crops in the Southern Ocean with that of the Florida Strait. *Limnol. Oceanogr.* 14:86-94.

Walsh, J.J. 1971. The relative importance of habitat variables in predicting the distribution of phytoplankton at the ecotone of the Antarctic upwelling ecosystem. *Ecol. Monogr.* 41:291-309.

Walsh, J.J. and R.C. Dugdale. 1971. A simulation model for the nitrogen flow in the Peruvian upwelling system. *Inv. Pesq.* 35: 309-330.

Walsh, J.J., J.C. Kelley, R.C. Dugdale, and B.C. Frost. 1971. Gross features of the Peruvian upwelling system with special reference to possible diel variation. *Inv. Pesq.* 35:25-42.

Walsh, J.J. 1972. Implications of a systems approach to oceanography. *Science* 176:969-975.

Walsh, J.J., J.C. Kelley, T.E. Whitley, J.J. MacIsaac, and S.A. Huntsman. 1974. Spin-up of the Baja California upwelling ecosystem. *Limnol. Oceanogr.* 19:553-572.

Walsh, J.J. 1975. A spatial simulation model of the Peru upwelling ecosystem. *Deep-Sea Res.* 22:201-236.

Walsh, J.J. 1976. Herbivory as a factor in patterns of nutrient utilization in the sea. *Limnol. Oceanogr.* 21:1-13.

Walsh, J.J., T.E. Whitley, S.O. Howe, C.D. Wirick, L.J. Castiglione, and L.A. Codispoti. 1976. Transient forcings of the lower trophic levels during the spring bloom within the New York Bight. *Limnol. Oceanogr. ASLO Spec. Symp.* 2:273-274.

Wang, D.P. and J.J. Walsh. 1976. Objective analysis of the upwelling ecosystem off Baja California. *J. Mar. Res.* 34:43-60.

Walsh, J.J., T.E. Whitley, J.C. Kelley, S.A. Huntsman, and R.D. Pillsbury. 1977. Further transition states of the Baja California upwelling ecosystem. *Limnol. Oceanogr.* 22:264-280.

Walsh, J.J. 1978. The biological consequences of the interaction of the climatic, El Nino, and event scales of variability in the Eastern Tropical Pacific. *Rapp. P.-V. Cons. Int. Explor. Mer* 173:182-192.

Walsh, J.J., T.E. Whitley, F.W. Barvenik, C.D. Wirick, and S.O. Howe, W.E. Esaias, and J.T. Scott. 1978. Wind events and food chain dynamics within the New York Bight. *Limnol. Oceanogr.* 23:659-683.

Falkowski, P.G., T.S. Hopkins, and J.J. Walsh. 1980. An analysis of factors affecting oxygen depletion in the New York Bight. *J. Mar. Res.* 38:479-506.

Walsh, J.J., T.E. Whitley, W.E. Esaias, R.L. Smith, S.A. Huntsman, H. Santander, and B.R. DeMendiola. 1980. The spawning habitat of the Peruvian anchovy, *Engraulis ringens*. *Deep-Sea Res.* 27:1-27.

Coachman, L. K., and J. J. Walsh. 1981. A diffusion model of cross-shelf exchange of nutrients in the Bering Sea. *Deep-Sea Res.* 28:819-837.

Walsh, J.J. 1981. A carbon budget for overfishing off Peru. *Nature* 290:300-304.  
Walsh, J.J., G.T. Rowe, R.L. Iversen, and C.P. McRoy. 1981. Biological export of shelf carbon is a neglected sink of the global CO<sub>2</sub> cycle. *Nature* 291:196-201.



- Walsh, J.J., C.D. Wirick, D.A. Dieterle, and A.G. Tingle. 1981. Environmental constraints on larval fish survival in the Bering Sea. *Rapp. Proc.-verb. Reun. Cons. Perm. Int. Explor. Mer* 178:24-27.
- Premuzic, E.T., J.S. Gaffney, C. Benkovitz, and J.J. Walsh. 1982. The distribution of carbon and nitrogen in surface sediments of the ocean. *Org. Geochem.* 4:63-77.
- Walsh, J.J. 1983. Death in the sea: enigmatic phytoplankton losses. *Progr. Oceanogr.* 12:1-86.
- Walsh, J.J. 1984. The role of the ocean biota in accelerated ecological cycles: A temporal view. *Bioscience* 34:499-507.
- Walsh, J.J., E.T. Premuzic, J.S. Gaffney, G.T. Rowe, G. Harbottle, R.W. Stoenner, W.L. Balsam, P.R. Betzer, and S.A. Macko. 1985. Organic storage of CO<sub>2</sub> on the continental slope off the Mid-Atlantic Bight, the southeastern Bering Sea, and the Peru coast. *Deep-Sea Res.* 32:853-883.
- McRoy, C.P., D.W. Hood, L.K. Coachman, J.J. Walsh, and J.J. Goering. 1986. Processes and resources of the Bering Sea shelf (PROBES): The development and accomplishments of the project. *Cont. Shelf Res.* 5:5-22.
- Walsh, J.J. and C.P. McRoy. 1986. Ecosystem analysis in the southeastern Bering Sea. *Cont. Shelf Res.* 5:259-288.
- Whitledge, T.E., W.S. Reeburgh, and J.J. Walsh. 1986. Seasonal inorganic nitrogen distributions and dynamics in the southeastern Bering Sea. *Cont. Shelf Res.* 5:109-132.
- Walsh, J.J., D.A. Dieterle, and W.E. Esaias. 1987. Satellite detection of phytoplankton export from the Mid-Atlantic Bight during the 1979 spring bloom. *Deep-Sea Res.* 34:675-703.
- Walsh, J.J., D.A. Dieterle, and M.B. Meyers. 1988. A simulation analysis of the fate of phytoplankton within the Mid-Atlantic Bight. *Cont. Shelf Res.* 8:757-787.
- Walsh, J.J., P.E. Biscaye, and G.T. Csanady. 1988. The 1983-84 Shelf Edge Exchange Processes (SEEP)-I experiment: Hypotheses and highlights. *Cont. Shelf Res.* 8:435-456.
- Walsh, J.J., C.D. Wirick, L.J. Pietrefesa, T.E. Whitledge, F.E. Hoge, and R.N. Swift. 1988. High frequency sampling of the 1984 spring bloom within the Mid-Atlantic Bight: synoptic shipboard, aircraft, and *in situ* perspectives of the SEEP-I experiment. *Cont. Shelf Res.* 8:529-563.
- Hansell, D. A., J.J. Goering, J.J. Walsh, C.P. McRoy, L.K. Coachman, and T.E. Whitledge. 1989. Summer phytoplankton production and transport along the shelf-break in the Bering Sea. *Cont. Shelf Res.* 9:1085-1104.
- Walsh, J.J. 1989. Arctic carbon sinks: present and future. *Glob. Biogeochem. Cycles* 3:393-411.
- Walsh, J.J., C.P. McRoy, L.K. Coachman, J.J. Goering, J.J. Nihoul, T.E. Whitledge, T.H. Blackburn, P.L. Parker, C.D. Wirick, P.G. Shuert, J.M. Grebmeier, A.M. Springer, R.D. Tripp, D.A. Hansell, S. Djenidi, E. Deleersnijder, K. Henriksen, B.A. Lund, P. Andersen, F.E. Muller-Karger, and K. Dean. 1989. Carbon and nitrogen cycling within the Bering/Chukchi Seas: Source regions of organic matter effecting AOU demands of the Arctic Ocean. *Progr. Oceanogr.* 22:279-361.
- Walsh, J.J., D.A. Dieterle, M.B. Meyers, and F.E. Muller-Karger. 1989. Nitrogen exchange at the continental margin: a numerical study of the Gulf of Mexico. *Prog. Oceanogr.* 23:245-301.

- Muller-Karger, J.J. Walsh, R.H. Evans, and M.B. Meyers. 1991. On the seasonal phytoplankton concentration and sea surface temperature cycles of the Gulf of Mexico as determined by satellites. *J. Geophys. Res.* 96:12645-12665.
- Walsh, J.J. 1991. Importance of continental margins in the marine biogeochemical cycling of carbon and nitrogen. *Nature* 350:53-55.
- Walsh, J.J., D.A. Dieterle, and J.R. Pribble. 1991. Organic debris on the continental margins: A simulation analysis of source and fate. *Deep-Sea Res.* 38:805-828.
- Gregg, W.W. and J.J. Walsh. 1992. Simulation of the 1979 spring bloom in the Mid-Atlantic Bight: A coupled physical/biological/optical model designed for Coastal Zone Color Scanner data. *J. Geophys. Res.* 97:5723-5743.
- Shuert, P.G. and J.J. Walsh. 1992. A time-dependent depth-integrated barotropic physical model of the Bering/Chukchi Seas for use in ecosystem analysis. *J. Mar. Syst.* 3:141-161.
- Walsh, J.J., K.L. Carder, and F.E. Muller-Karger. 1992. Meridional fluxes of dissolved organic matter in the North Atlantic. *J. Geophys. Res.* 97:15,625-15,637.
- Shuert, P.G. and J.J. Walsh. 1993. A coupled physical/biological ecosystem model of the Bering/Chukchi Seas. *Cont. Shelf Res.* 13:543-574.
- Bisset, W.P., M.B. Meyers, J.J. Walsh, and F.E. Muller-Karger. 1994. The effects of temporal variability of mixed layer depth on primary productivity around Bermuda. *J. Geophys. Res.* 99:7539-7553.
- Hochman, H.T., F.E. Muller-Karger, and J.J. Walsh. 1994. Interpretation of the coastal zone color scanner signature of the Orinoco River plume. *J. Geophys. Res.* 99:7443-7455.
- Pribble, J.R., J.J. Walsh, D.A. Dieterle, and F.E. Muller-Karger. 1994. A numerical analysis of shipboard and coastal zone color scanner time series of new production within Gulf Stream cyclonic eddies in the South Atlantic Bight. *J. Geophys. Res.* 99:7513-7538.
- Walsh, J.J. 1994. Particle export at Cape Hatteras. *Deep Sea Res. II* 41:603-628.
- Walsh, J.J. and D.A. Dieterle. 1994. CO<sub>2</sub> cycling in the coastal ocean. I. A numerical analysis of the southeastern Bering Sea, with applications to the Chukchi Sea and the northern Gulf of Mexico. *Progr. Oceanogr.* 34:335-392.
- Penta, B. and J.J. Walsh. 1995. A one-dimensional ecological model of summer oxygen distributions within the Chukchi Sea. *Cont. Shelf Res.* 15:337-356.
- Hochman, H.T., J.J. Walsh, K.L. Carder, A. Sournia, and F.E. Muller-Karger. 1995. Analysis of ocean color components within stratified and well-mixed waters of the western English Channel. *J. Geophys. Res.* 100:10,777-10,787.
- Gilbes, F., C. Tomas, J.J. Walsh, and F.E. Muller-Karger. 1996. An episodic chlorophyll plume on the west Florida shelf. *Cont. Shelf Res.* 16:1201-1224.
- Walsh, J.J. 1996. Nitrogen-fixation within a tropical upwelling ecosystem: evidence for a Redfield budget of carbon/nitrogen cycling by the total phytoplankton community. *J. Geophys. Res.* 101:20607-20616.
- Walsh, J.J., D.A. Dieterle, F.E. Muller-Karger, K. Aagaard, A.T. Roach, T.E. Whitledge, and D. Stockwell. 1997. CO<sub>2</sub> cycling in the coastal ocean. II. Seasonal organic loading to the Canadian Basin from source waters south of Bering Strait. *Cont. Shelf Res.* 17:1-36.
- Bissett, W.P., J.J. Walsh, D.A. Dieterle, and K.L. Carder. 1999. Carbon cycling in the upper waters of the Sargasso Sea. I. Numerical simulation of differential carbon and nitrogen fluxes. *Deep-Sea Res.* 46:205-269.

Bissett, W.P., K.L. Carder, J.J. Walsh, and D.A. Dieterle. 1999. Carbon cycling in the upper waters of the Sargasso Sea. II. Numerical simulation of apparent and inherent optical properties. *Deep-Sea Res.* 46:273-320.

Walsh, J.J., D.A. Dieterle, F.E. Muller-Karger, R. Bohrer, W.P. Bissett, R. Aparicio, R. J. Varela, H.T. Hochman, C. Schiller, R. Diaz, R. Thunell, G.T. Taylor, M.I. Scranton, K.A. Fanning, and E.T. Peltzer. 1999. A numerical simulation of carbon/nitrogen cycling during spring upwelling in the Cariaco Basin. *J. Geophys. Res.* 104:7807-7825.

Muller-Karger, F.E., R. J. Varela, R. Thunell, M.I. Scranton, R. Bohrer, G.T. Taylor, J. Capelo, Y. Astor, E. Tappa, T-Y Ho, M. Iabichella, J.J. Walsh, and J. R. Diaz. 2000. Sediment record linked to surface processes in the Cariaco Basin. *EOS* 81:529, 534-535.

Walsh, J.J., D.A. Dieterle, and J.M. Lenos. 2001. A numerical analysis of carbon dynamics of the Southern Ocean phytoplankton community: The roles of light and grazing in effecting both sequestration of atmospheric CO<sub>2</sub> and food availability to larval krill. *Deep-Sea Res.* 48:1-48.

Muller-Karger, F.E., R. J. Varela, R. Thunell, M.I. Scranton, R. Bohrer, G.T. Taylor, J. Capelo, Y. Astor, E. Tappa, T-Y Ho, and J.J. Walsh. 2001. Annual cycle of primary production in the Cariaco Basin: response to upwelling and implications for vertical export. *J. Geophys. Res.* 106:4527-4542.

Walsh, J.J. and K.A. Steidinger. 2001. Saharan dust and Florida red tides: the cyanophyte connection. *J. Geophys. Res.* 106:11597-11612.

Walsh, J.J., B. Penta, D.A. Dieterle, and W. P. Bissett. 2001. Predictive ecological modeling of harmful algal blooms. *Hum. Ecol. Risk Assess.* 7:1369-1383.

Lenos, J.M., B.P. Darrow, C. Catrall, C. Heil, G.A. Vargo, M. Callahan, R.H. Byrne, J.M. Prospero, D.E. Bates, K.A. Fanning, and J.J. Walsh. 2001. Iron fertilization and the *Trichodesmium* response on the West Florida shelf. *Limnol. Oceanogr.* 46:1261-1277.

Walsh, J. J., K.D. Haddad, D.A. Dieterle, R.H. Weisberg, Z. Li, H. Yang, F.E. Muller-Karger, C.A. Heil, and W.P. Bissett. 2002. A numerical analysis of landfall of the 1979 red tide of *Karenia brevis* along the west coast of Florida. *Cont. Shelf Res.* 22:15-38.

Hu, C., F. E. Muller-Karger, Z. Lee, K. L. Carder, B. Roberts, J. J. Walsh, C. Heil, P. G. Coble, K. Steidinger, G. McRae, R. H. Weisberg, R. He, E. Johns, T. Lee, B. Keller, N. Kuring, J. Cannizzaro, J. Ivey, G. A. Vargo, R. G. Zepp, J. Boyer, R. Jones, G. Kirkpatrick, R. P. Stumpf, E. Mueller, E. Bartels, R. Pierce, J. Culter, and J. Hunt. 2002. Satellite images track "black water" event off Florida coast. *EOS* 83:281, 285.

Walsh, J.J., R.H. Weisberg, D.A. Dieterle, R. He, B.P. Darrow, J.K. Jolliff, K.M. Lester, G.A. Vargo, G.J. Kirkpatrick, K.A. Fanning, T.T. Sutton, A. E. Jochens, D.C. Biggs, B. Nababan, C. Hu, and F. E. Muller-Karger. 2003. The phytoplankton response to intrusions of slope water on the West Florida shelf: models and observations. *J. Geophys. Res.* 108, 3190, doi: 10.1029/2002JC001406.

Jolliff, J.K., J.J. Walsh, R. He, R.H. Weisberg, A. Stovall-Leonard, R. Conmy, P.G. Coble, C.A. Heil, B. Nababan, H. Zhang, C. Hu, and F.E. Muller-Karger. 2003. Dispersal of the Suwannee River plume over the West Florida shelf: simulation and observation of the optical and biochemical consequences of a "flushing event". *Geophys. Res. Lett.* 30, doi:10.1029/2003GL016964.

Darrow, B.P., J.J. Walsh, G.A. Vargo, R.T. Masserini, K.A. Fanning, and J.-Z. Zhang.

2003. A simulation study of the growth of benthic microalgae following the decline of a surface phytoplankton bloom. *Cont. Shelf Res.* 23: 1265-1283.

Walsh, J.J., D.A. Dieterle, W. Maslowski, and T.E. Whitledge. 2004. Decadal shifts in biophysical forcing of marine food webs in the Arctic: numerical consequences. *J. Geophys. Res.* 109, C05031, doi:10.1029/2003JC001945.

Weisberg, R.H., R. He, G.J. Kirkpatrick, F.E. Muller-Karger, and J.J. Walsh. 2004. Coastal ocean circulation influences on remotely sensed optical properties: A West Florida shelf case study. *Oceanography* 17:68-75.

Walsh, J.J., D.A. Dieterle, W. Maslowski, J.M. Grebmeier, T.E. Whitledge, M. Flint, I.N. Sukhanova, N. Bates, G.F. Cota, D. Stockwell, S.B. Moran, D.A. Hansell, and C.P. McRoy. 2005. A numerical model of seasonal primary production within the Chukchi/Beaufort Seas. *Deep-Sea Res.* 52:3541-3576.

Moran, S.B. R. P. Kelly, K. Hagstrom, J. N. Smith, J.M. Grebmeier, L.W. Cooper, G. F. Cota, J.J. Walsh, N.R. Bates, and D. A. Hansell. 2005. Seasonal changes in POC export flux in the Chukchi Sea and implications for water column-benthic coupling on Arctic shelves. *Deep-Sea Res.* 52:3427-3451.

Muller-Karger, F.E., R. Varela, R. Thunell, R. Luerssen, C. Hu, and J.J. Walsh. 2005. Importance of continental margins in the global organic carbon flux to the ocean floor. *Geophys. Res. Lett.* 32, LO1602.

Lenes, J.M., J.J. Walsh, D.B. Otis, and K.L. Carder. 2005. Iron fertilization of *Trichodesmium* off the west coast of Barbados: A one-dimensional numerical model. *Deep-Sea Res.* 52:1021-1041.

Walsh, J.J., J.K. Jolliff, B.P. Darrow, J.M. Lenes, S.P. Milroy, D. Reimsen, D.A. Dieterle, K.L. Carder, F.R. Chen, G.A. Vargo, R.H. Weisberg, K.A. Fanning, F.E. Muller-Karger, E. Shinn, K.A. Steidinger, C.A. Heil, J.S. Prospero, T.N. Lee, G.J. Kirkpatrick, T.E. Whitledge, D.A. Stockwell, C.R. Tomas, T.A. Villareal, A.E. Jochens, and P.S. Bontempi. 2006. Red tides in the Gulf of Mexico: where, when, and why. *J. Geophys. Res.* 111, C11003, doi:10.1029/2004JC002813.

Hu, C., Z. Lee, F. E. Muller-Karger, K. L. Carder, and J. J. Walsh. 2006. Ocean color reveals phase shift between marine plants and yellow substance. *Geosci. Rem. Sens. Lett.* 3:262-266.

Walsh, J.J. and G.J. Kirkpatrick. 2008. "Ecology and oceanography of harmful algal blooms in Florida", guest editors - Special Issue. *Cont. Shelf Res.* 28:1-214.

Milroy, S.P., D.A. Dieterle, R. He, G.J. Kirkpatrick, K.M. Lester, K.A. Steidinger, G.A. Vargo, J.J. Walsh, and R.H. Weisberg. 2008. A three-dimensional biophysical model of *Karenia brevis* dynamics on the West Florida shelf: A look at physical transport and zooplankton grazing controls. *Cont. Shelf Res.* 28:112-136.

Lester, K.M., C.A. Heil, M.B. Neely, D.N. Spence, S. Murasko, T.L. Hopkins, T.T. Sutton, S.E. Burghart, R.N. Bohrer, A.W. Reimsen, G.A. Vargo, and J.J. Walsh. 2008. Zooplankton and *Karenia brevis* in the Gulf of Mexico. *Cont. Shelf Res.* 28:99-111.

Vargo, G.A., C.A. Heil, K.A. Fanning, L. K. Dixon, M.B. Neely, K.A. Lester, D. Ault, S. Murasko, J.A. Havens, J.J. Walsh, and S. Bell. 2008. Nutrient availability in support of *Karenia brevis* blooms on the central West Florida Shelf: What keeps *Karenia* blooming? *Cont. Shelf Res.*

28:73-98.

Serebrennikova, Y., K.A. Fanning, and J.J. Walsh. 2008. Modeling the nitrogen and carbon cycling in Marguerite Bay, Antarctica: annual variations in ammonium and net community production. *Deep-Sea Res.* 55:393-411.

Lenes, J.M., B.A. Darrow, J.J. Walsh, J.M. Prospero, R. He, J. Virmani, R.H. Weisberg, G.A. Vargo, and C.A. Heil. 2008. Saharan dust and phosphatic fidelity: a three dimensional biogeochemical model of *Trichodesmium* as a nutrient source for red tides on the West Florida shelf. *Cont. Shelf Res.* 28:1091-1115.

Walsh, J.J. R.H. Weisberg, J.M. Lenes, F.R. Chen, D.A. Dieterle, L. Zheng, K.L. Carder, G.A. Vargo, J.A. Havens, E. Peebles, D.J. Hollander, R. He, C.A. Heil, B. Mahmoudi, and J.H. Landsberg. 2009. Isotopic evidence for dead fish maintenance of Florida red tides, with implications for coastal fisheries over both source regions of the West Florida shelf and within downstream waters of the South Atlantic Bight. *Progr. Oceanogr.* 70:51-73.

Walsh, J.J. , D.A. Dieterle, F.R. Chen, J.M. Lenes, W. Maslowski, J.J. Cassano, T.E. Whitledge, D. Stockwell, M. Flint, I.N. Sukhanova, and J. Christensen. 2011. Trophic cascades and future harmful algal blooms within ice-free Arctic Seas north of Bering Strait: A simulation analysis. *Progr. Oceanogr.* 91:312-343.

Walsh, J.J., C.R. Tomas, K.A. Steidinger, J.M. Lenes, F.R. Chen, R.H. Weisberg, L. Zheng, J.H. Landsberg, G.A. Vargo, and C.A. Heil. 2011. Imprudent fishing harvests and consequent trophic cascades on the West Florida shelf over the last half century: A harbinger of increased human health incidents from paralytic shellfish poisoning, in relation to oligotrophication along the southeastern United States? *Cont. Shelf Res.* 31:891-911.

Lenes, J.M., J.M. Prospero, W.M. Landing, J.J. Virmani, and J.J. Walsh. 2012. A model of Saharan dust deposition to the eastern Gulf of Mexico. *Mar. Chem.* 134:1-9.

Lenes, J.M., D.P. Darrow, J.J. Walsh, J.K. Jolliff, F. R. Chen, R.H. Weisberg, and L. Zheng. 2012. A 1-D simulation analysis of the development and maintenance of the 2001 red tide on the West Florida shelf. *Cont. Shelf Res.* 41:92-110.

Weisberg, R.H., L. Zheng, Y. Liu, C. Lembke, J.M. Lenes, and J.J. Walsh. 2013. The lack of a 2010 *Karenia brevis* bloom in the eastern Gulf of Mexico: Influence of physical oceanography on bloom development. *Harm. Alg.* (in press).

Lenes, J.M., J.J. Walsh, and B.P. Darrow. 2013. Simulating cell death in the termination of *Karenia brevis* blooms: Implications for predicting aerosol toxicity vectors to humans. *Mar. Ecol. Progr. Ser.* (submitted).

Sensi, D., C. Hu, J. Wolny, J. Cannizzaro, L. Flewelling, and J.J. Walsh. 2013. Optical detection and classification of phytoplankton taxa through spectral analysis: A case study of two Florida estuaries. *Harm. Alg.* (submitted).

Walsh J.J., J.M. Lenes, B.P. Darrow, R.H. Weisberg, L. Zheng, C. Hu, K.L. Daly, Y. Liu, and K.A. Steidinger. 2013. A two-dimensional simulation analysis of increased red tide asthma triggers of *Karenia brevis*, after zoophagous oil spills and trophic cascades over the last half-century in the Gulf of Mexico: Global health impacts deduced from concurrent ISAAC asthma prevalences. *Progr. Oceanogr.* (in prep).

Zhao, J., C. Hu, J.M. Lenes, R.H. Weisberg, C. Lembke, D. English, J. Wolny, L. Zheng, J.J. Walsh, and G. Kirkpatrick. 2013. Three-dimensional structure of a *Karenia brevis* bloom:

Observations from gliders, satellites, field measurements, and numerical models. Harm. Alg. (in prep).

Walsh, J.J. and J.M. Lenes. 2013. Increased global marine sources of sea-shore and down-wind triggers of asthma among adjacent humans, from coastal harmful algal blooms no longer heavily grazed, after decreased herbivore populations subject to overfishing, oil spills, pesticide applications, and radioactive waste dispersals over the last half century. Nature (in prep).

#### *Publications - Technical reports*

Walsh, J.J. and P.B. Bass. 1971. OCEANS - a seagoing simulation program. A user's guide to the University of Washington's IBM 1130 spatial version of COMSYS 1. Upwelling Biome Tech. Ser. 1, Seattle, WA, pp 1-98.

Morishima, D.L., P.B. Bass, and J.J. Walsh. 1974. AUGUR, a three-dimensional simulation program for non-linear analysis of aquatic ecosystems. CUEA Tech. Rep. 7, Beaufort, NC, pp 1-239.

Walsh, J.J. 1980. Energy-related perturbations of the northeast coastal zone: Five years (1974-79) of oceanographic research at Brookhaven National Laboratory. BNL Rep. 51211, Upton, NY, pp 1-24.

Walsh, J.J., D.W. Pritchard, D.W. Menzel, and R.W. Eppley. 1981. The potential environmental consequences of Ocean Thermal Energy Conversion (OTEC) plants. Department of Energy Publ. 8000154, Springfield, VA, pp 1-60.

Walsh, J.J. W.B. Barnes, O.B. Brown, K.L. Carder, D.K. Clarke, W.E. Esaias, H.R. Gordon, R.C. Holyer, W.A. Hovis, R.J. Kirk, R. Lasker, J.J. McCarthy, M.A. McElroy, J.L. Mueller, M.J. Perry, and R.C. Smith. 1982. The MAREX (Marine Resources Experiment) program. Ocean Color Science Working Group Report, Goddard Space Flight Center, Greenbelt, MD, pp 1-102.

#### *University of South Florida Grants and Contracts*

"Inner Shelf Transfer and Recycling in the Bering-Chukchi Seas - ISHTAR Component 5 - Simulation Analysis". National Science Foundation via subcontract to the University of Alaska; \$150,000; September 1, 1984 to November 30, 1987.

"Inner Shelf Transfer and Recycling in the Bering-Chukchi Seas - ISHTAR Component 2 - Moored Fluorometer Measurements of Particle fluxes". National Science Foundation via subcontract to the University of Alaska; \$320,000; October 1, 1984 to November 30, 1987.

"Simulation Analysis of Moored Fluorometer Time Series from the Mid-Atlantic Bight". Department of Energy; \$1,362,900; November 19, 1984 to November 30, 1992.

"Simulation Analysis of CZCS Time Series of Continental Shelves". National Aeronautics and Space Administration; \$2,100,353; December 1, 1984 to November 30, 1993.

"Inner Shelf Transfer and Recycling in the Bering-Chukchi Seas. Phase II. Interannual variability". National Science Foundation via subcontract to the University of Alaska; \$618,661; December 1, 1986 to November 30, 1992.

- “Four-dimensional Analysis of Particle Dynamics at Ocean Margins”. Office of Naval Research; \$324,427; July 1, 1987 to June 30, 1992.
- “Simulation analysis of dissolved and particulate components of the SeaWiFS color signal within Case-II waters”. National Aeronautics and Space Administration; \$810,000; December 1, 1992 to June 30, 1997.
- “A multidisciplinary synthesis of the Chukchi Sea ecosystem: Biological Processes”. National Science Foundation; \$159, 896; January 15, 1993 to December 31, 1995.
- “Carbon retention in a colored ocean (CARIACO)”. National Science Foundation; \$243,000; June 1, 1995 to May 31, 1999.
- “A numerical analysis of the seasonal food resources of krill in relation to their larval survival around the Antarctic Peninsula”. National Science Foundation; \$306,674; June 1, 1996 to May 31, 2000.
- “ECO HAB: Florida”. National Oceanic and Atmospheric Administration; \$500,000; September 1, 1997 to March 31, 2002.
- “A numerical analysis of new nitrogen sources of NO<sub>3</sub> and N<sub>2</sub> effecting carbon cycling in the southern Caribbean Sea: a key to CDOC contamination of satellite color signals”. National Aeronautics and Space Administration; \$582,965; October 15, 1997 to October 14, 2001.
- “An AUV-based investigation of the role of nutrient variability in the predictive modeling of physical process in the littoral ocean”. Office of Naval Research; \$537,796; October 1, 1997 to December 31, 2003.
- “A simulation analysis of the time-dependent roles of phytoplankton and CDOM in effecting the 3-dimensional structure of inherent optical properties on the West Florida shelf. Office of Naval Research; \$681,257; January 1, 1999 to March 31, 2004.
- “Collaborative research: carbon cycling in the Chukchi and Beaufort Seas - field and modeling studies”. National Science Foundation; \$569,932; January 1, 2002 to December 31, 2007.
- “Data analysis and buoy maintenance for prediction of red tides”. Florida Marine Research Institute, Florida Fish and Wildlife Conservation Commission; \$100,000; January 1, 2002 to June 20, 2002.
- “MERHAB 2002: Eastern GOMx Sentinel Program”. NOAA; \$252,789; September 1, 2002 to August 31, 2008.
- “Iron fertilization of *Trichodesmium* on the West Florida Shelf: a three-dimensional numerical model.” - fellowship for Jason Lenos. National Aeronautics and Space Administration; \$72,000; September 1, 2002 - October 31, 2005.
- “An assessment of settling particulate organic carbon flux along global continental margins.” NASA; \$165,000; October 1, 2003 to September 30, 2006.
- “A comprehensive modeling approach towards understanding and prediction of the Alaskan coastal system response to changes in an ice-diminished Arctic”. NSF and ONR NOPP via US Naval Postgraduate School; \$325,405; September 1, 2007 to August 31, 2010.
- “Center for Prediction of Red tides (CPR)”. Florida Wildlife Research Institute (FWRI), Florida Fish and Wildlife Conservation Commission; \$500,000; September 1, 2007 to August 31, 2009, with R.H. Weisberg.
- “Plankton optical tracers of coastal circulation models”. ONR; \$240,000; May 1, 2010 to April 30, 2012, with R.H. Weisberg.

“ECO HAB: *Karenia* nutrient dynamics in the eastern Gulf of Mexico”. NOAA; \$1,295,207; September 1, 2006 to August 31, 2012, with R.H. Weisberg.

“Center for Integrated Modeling and Analysis of the Gulf Ecosystem (C-IMAGE): Phytoplankton-zooplankton models.” Gulf of Mexico Research Institute (GRI); \$416,214; September 1, 2011 to August 31, 2014, with S. Murawski, D. Hollander, K. Daly, T. Chavez, T. Greely, C. Hu, C. Ainsworth, and J. Lenos.

---

Cumulative total of NSF, DOE, NASA, ONR, NOAA, FWRI, and GRI awards at USF - \$13,383,537.

As co-Director of the CMS Center for Prediction of Red tides (CPR), during this past year I also initiated a collaborative research program with USF’s new Patel College of Global Sustainability on increased red tide triggers of local and regional asthma attacks within 100 km of world-wide sea shores over the past 4 decades.

*Graduate students - prior*

Over the last 40 years, I have served on over 50 M.S. and Ph.D. committees at the University of Washington, the State University of New York, New York University, Florida State University, the Naval Postgraduate School, and the University of South Florida. Past dissertations and theses, I have directly supervised are:

Howe, Steven O. 1979. Biological consequences of environmental changes related to coastal upwelling: a simulation study. Ph.D. dissertation, University of Washington, Seattle.

Wirick, Creighton D. 1981. Marine herbivores and the spatial distribution of phytoplankton. Ph.D. dissertation, University of Washington, Seattle.

Stoddard, Andrew. 1983. Mathematical model of oxygen depletion in the New York Bight: an analysis of biological, chemical and physical factors in 1975 and 1976. Ph.D. dissertation, University of Washington, Seattle.

Shuert, Paul G. 1990. Ecosystem analysis of the Bering/Chukchi Seas using a coupled time-dependent physical/biological simulation model. Ph.D. dissertation, University of South Florida, Tampa.

Gregg, Watson W. 1991. Simulation of the 1979 spring bloom in the mid-Atlantic Bight: a coupled physical/biological/optical model designed for CZCS data. Ph.D. dissertation, University of South Florida, Tampa.

Bissett, W. Paul. 1992. The effects of temporal and spatial variability of mixed layer depth on primary productivity around Bermuda. M.S. thesis, University of South Florida, Tampa.

Meyers, Mark B. 1993. The response of oceanic phytoplankton to nitrate flux in the eastern Gulf of Mexico: a simulation analysis. Ph.D. dissertation, University of South Florida, Tampa.

Penta, Bradley. 1993. A one-dimensional model of summer oxygen distribution within the Chukchi Sea. M.S. thesis, University of South Florida, Tampa.

Pribble, J. Raymond 1994. New production within Gulf Stream-induced cyclonic eddies in the South Atlantic Bight, and the resultant carbon flux to depth: results of a combined 3-



dimensional biological/physical simulation model. Ph.D. dissertation, University of South Florida, Tampa.

Bissett, W. Paul. 1997. Carbon cycling in the upper waters of the Sargasso Sea. Ph.D. dissertation, University of South Florida, Tampa.

Penta, Bradley. 2000. Phytoplankton competition in the West Florida plume: a simulation analysis with “red tide” implications. Ph.D. dissertation, University of South Florida, Tampa.

Darrow, Brian P. 2001. An analysis of factors effecting the growth of benthic microalgae following the decline of a surface phytoplankton bloom. M.S. thesis, University of South Florida, Tampa.

Lenes, Jason M. 2002. Iron fertilization of *Trichodesmium* off the west coast of Barbados: a one-dimensional numerical model. M.S. thesis, University of South Florida, Tampa.

Jolliff, Jason K. 2004. The relative influence of coastal effluent and deep water masses on surface optical signals and margin productivity in the northeastern Gulf of Mexico: a three-dimensional simulation analysis with implications for the West Florida Shelf plume. Ph.D. dissertation, University of South Florida, Tampa.

Lester, Kristen M., 2005. The mesozooplankton of the West Florida Shelf: relationships with *Karenia brevis* blooms. Ph.D. dissertation, University of South Florida, Tampa.

Lenes, Jason M. 2006. Saharan dust and phosphatic fidelity: a three dimensional biogeochemical model of *Trichodesmium* on the West Florida shelf. Ph.D. dissertation, University of South Florida, Tampa.

Milroy, Scott P. 2007. A three-dimensional biophysical model of red tide initiation, transport, and fate on the West Florida shelf: light, nutrient, and grazing controls on phytoplankton competition. Ph.D. dissertation, University of South Florida, Tampa.

Darrow, Brian P. 2008. Effects of nutrients from the water column on the growth of benthic micro-algae in permeable sediments. Ph.D. dissertation, University of South Florida, Tampa.

Kinney, Jaclyn C. 2011. The Bering Sea: Communication with the western subarctic gyre, mesoscale activity, shelf-basin exchange, and the flow through Bering Strait. Ph.D. dissertation, Naval Postgraduate School, Monterey.

Otis, Daniel B. 2012. Spatial and temporal variability of remotely sensed ocean color parameters in coral reef regions. Ph.D. dissertation, University of South Florida, Tampa.

With continuing external grant support over the last 28 years at USF, twelve of my students successfully defended their Ph.D. dissertations at USF. Another one recently matriculated at the Naval Postgraduate School in 2011. Additional direct mentoring of graduate students and junior faculty, besides annual classes on Global Ecology, Physical-Biological Interactions, and Harmful Algal Blooms, involved another 29 M.S. and Ph.D. committees thus far for:

Kump, Lee R. 1986. Ph.D. dissertation, University of South Florida, Tampa.

Conkright, Margarita E. 1989. Ph.D. dissertation, University of South Florida, Tampa.

Magley, Wayne C. 1990. Ph.D. dissertation, Florida State University, Tallahassee.

Hochman, Herschel T. 1992. M.S. thesis, University of South Florida, Tampa.

Conley, Walter J. 1993. Ph.D. dissertation, University of South Florida, Tampa.  
Vesley, Elizabeth L. 1993. M.S. thesis, University of South Florida, Tampa.  
Swaine, Richard M. 1996. M.S. thesis, University of South Florida, Tampa.  
Arnold, William S. 1996. Ph.D. dissertation, University of South Florida, Tampa  
Gilbes, Fernando 1996. Ph.D. dissertation, University of South Florida, Tampa  
Hou, Weilin 1997. Ph.D. dissertation, University of South Florida, Tampa  
Levy, Kelli H. 1998. M.S. thesis, University of South Florida, Tampa.  
Black, Bryan D. 1998. M.S. thesis, University of South Florida, Tampa.  
Siegel, Eric M. 1999. M.S. thesis, University of South Florida, Tampa.  
Callahan, Michael. 2001. Ph.D. dissertation, University of South Florida, Tampa.  
Cattrall, Christopher. 2002. Ph.D. dissertation, University of South Florida, Tampa  
He, Ruoying. 2002. Ph.D. dissertation, University of South Florida, Tampa  
Law, Jason. 2003. M.S. thesis, University of South Florida, Tampa.  
Stovall-Leonard, Antoya. 2004. M.S. thesis, University of South Florida, Tampa.  
Richardson, William. 2004. Ph.D. dissertation, University of South Florida, Tampa.  
Canizarro, Jennifer. 2004. M.S. thesis, University of South Florida, Tampa.  
Masserini, Rob. 2005. Ph.D. dissertation, University of South Florida, Tampa.  
Serebrennikova, Julia. 2006. Ph.D. dissertation, University of South Florida, Tampa.  
Liu, Yonggang. 2006. Ph.D. dissertation, University of South Florida, Tampa.  
Ault, Danielle. 2006. M.S. thesis, University of South Florida, Tampa.  
Vanderbloemen, Lisa. 2007. Ph.D. dissertation, University of South Florida, Tampa.  
Remsen, Andrew. 2008. Ph.D. dissertation, University of South Florida, Tampa.  
Dixon, L. Kellie 2009. Ph.D. dissertation, University of South Florida, Tampa.  
Anastasiou, Chris. 2009. Ph.D. dissertation, University of South Florida, Tampa.  
Sensi, Daniel. 2012. M.S. thesis, University of South Florida, Tampa

*Graduate students - present*

I am also a member of the M.S. committees for Ashley Yunker, with Kent Fanning as chairperson, and for Alisha Gray, with Cameron Ainsworth as chairperson.