Curriculum Vitae

General Data

Name: John J. Walsh

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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

Institution	Field of Study	Degree	Date
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 tides, with implications for management of both fisheries and underlying mesophotic coral reef ecosystems, within coastal waters 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 10th 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. Whitledge. 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.

Whitledge, 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. Whitledge, 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.

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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.

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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 an 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. 2010. Forecasting and modeling of harmful algal blooms in the coastal zone. In "Volume 9 of the Treatise on Estuarine and Coastal Science", eds. D. Baird and A. Mehta, Elsevier (in press).

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. Whitledge, 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. Whitledge, 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.

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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_2 cycle. Nature 291:196-201.

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Walsh, J.J. 1983. Death in the sea: enigmatic phytoplankton losses. Progr. Oceanogr. 12:1-86.

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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_2 on the continental slope off the Mid-Atlantic Bight, the southeastern Bering Sea, and the Peru coast. Deep-Sea Res. 32:853-883.

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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.

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Publications - Technical reports

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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.

"ECOHAB:Florida". National Oceanic and Atmospheric Administration; $500,000; September 1, 1997 to March 31, 2002.

"A numerical analysis of new nitrogen sources of NO_3 and N_2 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 Lenes. 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.

"ECOHAB: *Karenia* nutrient dynamics in the eastern Gulf of Mexico". NOAA; $1,295,207; September 1, 2006 to August 31, 2011, with R.H. Weisberg.

"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, 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, 2011, with R.H. Weisberg.

Cumulative total of NSF, DOE, NASA, ONR, NOAA, and FWRI awards at USF - $12,967,322.

Pending proposals:

"The effects of climate variation on *Pyrodinium* blooms in Tampa Bay". NASA; $1,997,565; 20 March 2011 to 19 March 2015, with J.M. Lenes, R,H, Weisberg, F.E. Muller-Karger, C. Hu, Q. Xiao, and C. Kovach.

"Understanding coral ecosystem connectivity in the Gulf of Mexico - Pulley Ridge to the Florida Keys". NOAA; $5,000,000; 1 September 2011 to 31 August 2016, with A. Hine, S. Locker, R.Z. Poore, R.H. Weisberg, E. Peebles, I. Kuffner, M. Tringali, D. Zawada, C. Kellogg, B. Shamblin, and K. Hart.

"ECOHAB:Coupled bio-physical models of *Pyrodinium* saxitoxic events in Florida waters". NOAA; $748,634; 1 September 2011 to 31 August 2014, with J.M. Lenes and R.H. Weisberg

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.

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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.

With continuing external grant support over the last 25 years at USF, eleven of my students successfully defended their PhD dissertations. Another one, co-directed with W. Maslowski at the Naval Postgraduate School, will soon matriculate in 2011. Additional direct mentoring, besides annual classes on Global Ecology, Physical-Biological Interactions, and Harmful Algal Blooms, involved another 31 MS and PhD 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.

Graduate students - present

Ph.D. committee: Dan Otis.
Directed research: Inia Soto Ramos
Co-Chairperson, Ph.D. committee of Jackie Clement Kinney, Naval Postgraduate School