

## **CURRICULUM VITAE**

### **Richard L. Iverson**

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### **Education**

Bachelor of Science, Iowa State University, Ames 1965  
Master of Science, Oregon State University, Corvallis, 1968  
Doctor of Philosophy, Oregon State University, Corvallis, 1972

### **Professional Experience**

Assistant Professor of Oceanography, Florida State University 1972 – 1977  
Associate Professor of Oceanography, Florida State University 1977 – 1983  
Professor of Oceanography, Florida State University 1983 – present  
Director Florida State University Marine Laboratory 2001 – 2005  
Florida State University SeaGrant Coordinator 2001 – 2005  
Editorial Board International Journal of Oceans and Oceanography 2005-

### **Professional and Honorary Societies**

American Society of Limnology and Oceanography  
American Geophysical Union  
Phi Kappa Phi  
Sigma Xi

### **Competitive Fellowship Awards**

NASA Summer Faculty Fellowship, Goddard Space Flight Center, 1988, 1989, 1992, 1993

### **Research Interests**

Ocean Bio-Mixing  
Coastal Biological Oceanography  
Estuarine Plankton Ecology  
Seagrass Ecology  
Ocean Color Remote Sensing Applications

### **Publications**

- 1) Patten, B.C. and **R.L. Iverson**. 1966. Photosynthesis and uptake of Strontium-85 in freshwater plankton. *Nature* **211**:96-97.
- 2) **Iverson, R.L.** and H.C. Curl, Jr. 1973. Action spectrum of photosynthesis of *Skeletonema costatum* obtained with carbon 14. *Physiologia Plantarum* **28**:498-502.
- 3) **Iverson, R.L.**, H.C. Curl, Jr., H.B. O'Connors, Jr., D. Kirk, and K. Zakar. 1974. Summer phytoplankton blooms in Auke Bay, Alaska driven by wind-mixing of the water column. *Limnology and Oceanography* **19**:271-278.
- 4) **Iverson, R.L.**, H.C. Curl, Jr., and J.L. Saugen. 1974. Simulation model for wind-driven summer phytoplankton dynamics in Auke Bay, Alaska. *Marine Biology* **28**:169-177.
- 5) Livingston, R.J., **R.L. Iverson**, R.H. Estabrook, V.E. Keys, and J. Taylor, Jr., 1974. Major features of the Apalachicola Bay System: Physiography, biota, and resource management. *Journal of the Florida Academy of Sciences* **37**:245-271. (Invited Paper).
- 6) Myers, V.B., **R.L. Iverson**, and R.C. Harriss. 1975. Salinity and dissolved organic matter effects on surface charge characteristics of selected euryhaline phytoplankton. *Journal of Experimental Marine Biology and Ecology* **17**:59-68.
- 7) **Iverson, R.L.**, H.F. Bittaker, and V.B. Myers. 1976. Loss of radiocarbon in direct use of Aquasol for liquid scintillation counting of solutions containing  $^{14}\text{C}$  -  $\text{NaHCO}_3$ . *Limnology and Oceanography* **21**:756-758.
- 8) Bittaker, H.F. and **R.L. Iverson**. 1976. *Thalassia testudinum* productivity: A field comparison of measurement methods. *Marine Biology* **37**:39-46.
- 9) DiDomenico, D.A. and **R.L. Iverson**. 1977. Uptake of glycolic acid by a marine bivalve. *Journal of Experimental Marine Biology and Ecology* **28**:243-245.
- 10) **Iverson, R.L.** 1977. Mesoscale oceanic phytoplankton patchiness caused by hurricane effects on nutrient distribution in the Gulf of Mexico: In: Anderson, N.R. and B.J. Zahuranec, eds. Oceanic Sound Scattering Prediction. Plenum Press, pp. 767-778. (Invited Paper).
- 11) Myers, V.B. and **R.L. Iverson**. 1977. Aspects of nutrient limitation of phytoplankton productivity in the Apalachicola Bay system. Proceedings of a Conference on the Apalachicola Drainage System. Florida Marine Research Publications No. 26, Florida Department of Natural Resources, pp. 68 -74. (Invited Paper).
- 12) Bowman, M. and **R.L. Iverson**. 1978. Estuarine and plume fronts. In: Bowman, M. and W.E. Esaias, eds. Oceanic Fronts in Coastal Processes. Springer-Verlag, pp. 87-104. (Invited Paper).
- 13) **Iverson, R.L.** 1978. Use of biological indicators for monitoring effects of pollutants on the marine environment. Proceedings of a Joint U.S.-U.S.S.R. Hydrobiological Seminar, Gulf Breeze, Florida, September, 1976, pp. 95-106. (Invited Paper).

- 14) Iverson, R.L.,** K.C. Burdin, V. Maximov, and M. Lymin. 1978. Intercalibration of carbon-14 phytoplankton productivity measurement methods. Report of the Joint American-Soviet Expedition on the Scientific Research Vessel Moscow University for the Hydrobiological Analysis of Aquatic Ecosystems, Proceedings of a Joint U.S.-U.S.S.R. Hydrobiological Seminar, Gulf Breeze, Florida, September, 1976, pp. 156-162. (Invited Paper).
- 15) Iverson, R.L.,** T.E. Whitedge, and J.J. Goering. 1979. Chlorophyll and nitrate fine structure in the southeastern Bering Sea shelf break front. *Nature* **281**:644-666.
- 16) Iverson, R.L.,** L.K. Coachman, R.T. Coonery, T.S. English, J.J. Goering, G.L. Hunt, Jr., M.C. McAulay, C.P. McRoy, W.S. Reeburgh, and T.E. Whitedge. 1979. Ecological significance of fronts in the southeastern Bering Sea. *In*: Livingston, R.J., ed. Ecological Processes in Coastal and Marine Systems. Plenum Press. pp. 437-466. (Invited Paper).
- 17) Goering, J. J. and R.L. Iverson.** 1981. Phytoplankton distribution on the southeast Bering Sea shelf. *In*: Hood, D.W., ed. Proceedings of a Symposium on Oceanography and Resources of the Bering Sea shelf. NOAA Office of Marine Pollution Assessment. Vol. 2:933-946. (Invited Paper).
- 18) Iverson, R.L.** and T.L. Hopkins. 1981. A summary of knowledge of plankton production in the Gulf of Mexico. Proceedings of a Symposium on Environmental Research Needs in the Gulf of Mexico (GOMEX). NOAA/ADML, Miami, pp. 147-211. (Invited Paper).
- 19) Myers, V.B. and R.L. Iverson.** 1981. Phosphorus and nitrogen limited phytoplankton productivity in northeastern Gulf of Mexico coastal waters. *In*: Neilson, B.J. and L.E. Cronin, eds. Estuaries and Nutrients. Humana Press, Clifton, New Jersey, pp. 569-582.
- 20) Walsh, J.J., G.T. Rowe, R.L. Iverson,** and C.P. McRoy. 1981. Biological export of shelf carbon is a sink of the global CO<sub>2</sub> cycle. *Nature* **291**:196-201.
- 21) Dagg, M.J., J. Vidal, T.E. Whitedge, R.L. Iverson,** and J.J. Goering. 1982. The feeding, respiration, and excretion of zooplankton in the Bering Sea during a spring bloom. *Deep-Sea Research* **29**:45-63.
- 22) Codispoti, L.A., G.E. Friederich, R.L. Iverson,** and D.W. Hood. 1982. Temporal changes in the inorganic carbon system of the southeastern Bering Sea during spring 1980. *Nature* **296**:242-245.
- 23) Zieman, J.C., R.L. Iverson,** and J.C. Ogden. 1984. Herbivory effects on *Thalassia testudinum* leaf growth and nitrogen content. *Marine Ecology Progress Series* **15**:151-158.
- 24) Barnard, W.R., M.O. Andreae, and R.L. Iverson.** 1984. Dimethylsulfide and *Pheocystis poucheti* in the southeastern Bering Sea. *Continental Shelf Research* **3**:103-113.
- 25) Savastano, K.J., K.H. Faller, and R.L. Iverson.** 1984. Submerged vegetation coverage in St. Joseph Bay, Florida estimated with an airborne multispectral scanner. *Photogrammetric Engineering and Remote Sensing* **50**:1159-1170.

- 26) Vairavamuthy, A., M.O. Andreae, and **R.L. Iverson**. 1985. Biosynthesis of dimethylsulfide and dimethylpropiothetin by *Hymenomonas carterae* in relation to sulfur source and salinity variations. *Limnology and Oceanography* **30**:59-70.
- 27) Sambrotto, R.N., H.J. Neibauer, J.J. Goering, and **R.L. Iverson**. 1986. Vertical mixing and the development of the spring plankton bloom on the southeast Bering Sea middle shelf. *Continental Shelf Research*. **18**:161-198.
- 28) **Iverson, R.L.** and H.F. Bittaker. 1986. Seagrass distribution in the eastern Gulf of Mexico. *Estuarine, Coastal and Shelf Science*. **22**:577-602.
- 29) Moriarty, D.J.W., **R.L. Iverson**, and P.C. Pollard. 1986. Exudation of organic carbon by the seagrass *Halodule wrightii* Aschers. and its effects on bacterial growth in the sediment. *Journal of Experimental Marine Biology and Ecology*. **96**:115-126.
- 30) Eslinger, D.L. and **R.L. Iverson**. 1986. Wind effects on CZCS chlorophyll patterns in the U.S. Mid-Atlantic Bight during spring, 1979. *Journal of Geophysical Research* **91**:12,985-12,992.
- 31) Morse, J.W., J.J. Zullig, **R.L. Iverson**, G.R. Choppin, A. Mucci, and F.J. Millero. 1987. The influence of seagrass beds on the chemistry of coarse-grained carbonate sediments in the Bahamas. *Marine Chemistry* **22**:71-83.
- 32) Zieman, J.C., J.W. Fourqurean, and **R.L. Iverson**. 1989. The distribution and abundance of seagrasses in Florida Bay. *Bulletin of Marine Science* **44**:292-311.
- 33) **Iverson, R.L.**, F.L. Nearhoof, and M.O. Andreae. 1989. Production of Dimethylsulfonium propionate and dimethylsulfide by marine phytoplankton. *Limnology and Oceanography* **34**:53-67.
- 34) Eslinger, D.L., J.J. O'Brien and **R.L. Iverson**. 1989. Empirical orthogonal function analysis of cloud-containing coastal zone color scanner images of northeastern North American coastal waters. *Journal of Geophysical Research* **94**:10,884-10,890.
- 35) **Iverson, R.L.** 1990. Control of marine fish production. *Limnology and Oceanography* **35**:1593-1604.
- 36) Thompson, A.M., W.E. Esaias and **R.L. Iverson**. 1990. Two approaches to determining the sea-to-air flux of dimethyl sulfide: Satellite ocean color and a photochemical model with atmospheric measurements. *Journal of Geophysical Research* **95**:20,551-20,558.
- 37) Berresheim, H., M.O. Andreae, **R.L. Iverson** and S.M. Li. 1991. Seasonal variations of dimethylsulfide emissions and atmospheric sulfur and nitrogen species over the western north Atlantic Ocean. *Tellus* **43B**:353-372.
- 38) Rutkoswski, C.M., J.P. Chanton, W.C. Burnett, and **R.L. Iverson**. 1999. Groundwater seepage, nutrients, and seagrasses in the Northeastern Gulf of Mexico. *Estuaries* **22**:1033-1040.

39) Pennock, J.R., J.N. Boyer, J.A. Herrera-Silveira, **R.L. Iverson**, T. Whitledge, B. Mortazavi, and F.A. Comin. 1999. Nutrient Behavior and phytoplankton production in Gulf of Mexico Estuaries. In : Pennock, J.R. and R. Twilley, eds. Biogeochemistry of Gulf of Mexico Estuaries, John Wiley & Sons. Pp. 109-162.

40) Esaias, W.E., **R. L. Iverson**, and K. Turpie. 2000\*. Ocean province classification using ocean color data: Observing biological signatures of variations in physical dynamics. *Global Change Biology* **6**:39-56.

41) **Iverson, R. L.**, W.E. Esaias, and K. Turpie. 2000\*. Ocean phytoplankton total carbon and new production, and export production estimated with empirical equations and CZCS data. *Global Change Biology* **6**: 57-72.

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Selected as among the best papers produced with the last 50 years of National Science Foundation funding for Ocean Science: R.T.Barber and K. Hilting. Achievements in Biological Oceanography. 2000. In. 50 Years of Ocean Discovery, National Science Foundation 1950- 2000. Ocean Studies Board, National Research Council, National Academy Press, Washington D.C. pp.11 – 21.

42) Mortazavi, B., **R. L. Iverson**, F. G. Lewis III, W. Huang, and J.M. Caffrey. 2000. Nitrogen Budget for Apalachicola Bay, USA. *Marine Ecology Progress Series*. **195**: 1-14.

43) Mortazavi, B., **R. L. Iverson**, F. G. Lewis III, and W. Huang. 2000. Control of Phytoplankton Biomass and Production in Apalachicola Bay, Fl, USA. *Marine Ecology Progress Series*, **198**: 19-31.

44) Mortazavi, B., **R. L. Iverson**, W. M. Landing, and W. Huang. 2000. Phosphorus Budget for Apalachicola Bay, USA. *Marine Ecology Progress Series*, **198**: 33-42

45) Eslinger, D.L. and **R.L. Iverson**. 2001. The effects of convective and wind-driven mixing on springtime phytoplankton dynamics in the southeastern Bering Sea Middle Shelf Domain. *Continental Shelf Research*, **21**: 627-650.

46) Mortazavi, B., **R. L. Iverson**, and W. Huang. 2001. The spatial distribution of nitrate and dissolved organic nitrogen in a bar-built estuary: Apalachicola Bay, Florida. *Marine Ecology Progress Series*, **214**: 79-91.

47) Campbell, J.W., D. Antoine, R. Armstrong, K. Arrigo, W. Balch, R. Barber, M. Behrenfeld, R. Bidigare, J. Bishop, M.-E. Carr, W. Esaias, P. Falkowski, N. Hoepffner, **R. Iverson**, D. Kiefer, S. Lohrenz, J. Marra, A. Morel, J. Ryan, V. Vedernikov, K. Waters, C. Yentsch, and J. Yoder. 2002. Comparison of algorithms for estimating ocean primary productivity from surface chlorophyll, temperature, and irradiance. *Global Biogeochemical Cycles*, **16**: 1029-1037.

48) R. E. McCown, F. B. Gross, **R. L. Iverson**, D. L. Lambert, and M.I. Latz. 2005 Exploring the Effect of Electromagnetic Fields on Dinoflagellate Bioluminescence. Proceedings of IEE Conference, pp. 1 – 4.

- 49) Dewar, W.K., R.J. Bingham, **R.L. Iverson**, D. P. Nowacek, L. C. St. Laurent, and P. H. Wiebe. Does the Marine Biosphere Mix the Ocean? *Journal of Marine Research* 64: 541-561.
- 50) J.N. Putland and **R.L. Iverson**. Ecology of *Acartia tonsa* in Apalachicola Bay and Implications of River Water Diversion. *Marine Ecology Progress Series* (In the Press).
- 51) J.N. Putland and **R.L. Iverson**. Microzooplankton: major herbivores in an economically and ecologically important estuary (Apalachicola Bay, Florida). *Marine Ecology Progress Series* (In the Press).
- 52) J.N. Putland and **R.L. Iverson**. Contrasting years in river discharge: Effect on nutrient concentrations and phytoplankton growth in a subtropical estuary. *Marine Ecology Progress Series* (Submitted).
- 53) R. L. Queiroz and **R. L. Iverson**. Sediment Microbenthic Inorganic Nitrogen Uptake in a shallow Estuary. *Limnology and Oceanography* (In Manuscript).

### **Technical Reports**

- 1) Curl, H.C., Jr., **R.L. Iverson** and H.B. O'Connors, Jr. 1971. Pelagic Ecology of Biological Production in Auke Bay, Alaska. Reference 71-35. Department of Oceanography, Oregon State University.
- 2) **Iverson, R.L.**, J.J. O'Brien and J.S. Wroblewski. 1974. Apalachicola Bay Simulation Models. Florida Department of Pollution Control, Tallahassee.
- 3) Byrdeen, K.C., Dybrpovin, V.H., Novekob, G.G, Zetena, P.S, Cheer, S. and **Iverson, R.L.** 1976. Report of the Joint Soviet-American Expedition on the R.V. Moscow University for the first stage of intercalibration of methods for the hydrobiological analysis of aquatic ecosystems. Moscow, U.S.S.R.
- 4) Niebauer, H.J., C.P. McRoy, J.J. Goering and **R.L. Iverson**. 1982. PROBES: Processes and Resources of the Bering Sea Shelf Data Report PDR 82-009: 1978-1981 Phytoplankton Productivity Data. University of Alaska, Fairbanks.
- 5) **Iverson, R.L.** 1983. PROBES: Processes and Resources of the Bering Sea Shelf Data Report PDR 82-016: 1979-1980 Phytoplankton Data Report. University of Alaska, Fairbanks.
- 6) **R.L. Iverson**, W. Landing, B. Mortazavi, J. Fulmer. 1997. Nutrient transport and primary productivity in the Apalachicola River and Bay. Final report to the Northwest Water Management District, Havana, Florida.
- 7) P.G. Falkowski, Behrenfeld, M.J., Esaias, W.E. , Balch, W., Campbell, J. W., **Iverson, R.L.**, Kiefer, D.A., Morel, A., and Yoder, J.A. 1998. In Hooker, S.B, and Firestone, E.R., eds. SeaWiFS Technical

Report Series. Satellite Primary Productivity Data and Algorithm Development: A Science Plan for Mission to Planet Earth. NASA/TM -1998-104566, Vol 42. 36 pp.

8) D. R. Corbett and **R. L. Iverson**. 1999. Groundwater and nutrient dynamics on a strip barrier island served by on-site sewage treatment and disposal systems in the northeastern Gulf of Mexico. Florida Department of Health, Tallahassee, FL. 120 pp.

### **Oral and Posted Presentations**

1) **Iverson, R.L.**, H.C. Curl, Jr., and J.L. Saugen. 1972. Computer simulation of wind-driven estuarine phytoplankton dynamics. American Society of Limnology and Oceanography, 35th Annual Meeting.

2) Bittaker, H.F. and **R.L. Iverson**. 1975. *Thalassia testudinum* productivity: A comparison of measurement methods. American Society of Limnology and Oceanography, 38th Annual Meeting.

3) **Iverson, R.L.** 1976. Phytoplankton standing crop and productivity of the northeastern Gulf of Mexico. Special Symposium on the MAFLA Study. Florida Academy of Sciences.\*

4) Bittaker, H.F. and **R.L. Iverson**. 1976. Distribution and primary production of seagrasses in the northeastern Gulf of Mexico. American Society of Limnology and Oceanography, 39th Annual Meeting.

5) **Iverson, R.L.** 1976. Mesoscale oceanic phytoplankton patchiness caused by hurricane effects on nutrient distribution in the Gulf of Mexico. American Society of Limnology and Oceanography, 39th Annual Meeting.

6) **Iverson, R.L.** 1976. Use of biological indicators for monitoring effects of pollutants on the marine environment. Joint U.S.-U.S.S.R. Hydrobiological Seminar, Gulf Breeze, Florida.\*

7) **Iverson, R.L.** 1976. Seagrasses of the northeastern Gulf of Mexico. Moscow State University, U.S.S.R.\*

8) Myers, V.B. and **R.L. Iverson**. 1977. The effect of wind-mixing upon phosphorus concentration and phytoplankton productivity in a shallow estuarine system. American Society of Limnology and Oceanography, 40th Annual Meeting.

9) Ednoff, M.E., **R.L. Iverson**, and G. Maule. 1977. Net phytoplankton maxima in the surface edge of the Gulf Lag Current. Chapman Conference on Oceanic Fronts, American Geophysical Union.

10) **Iverson, R.L.** 1977. Productivity of northeastern Gulf of Mexico seagrasses. University of Alaska, Fairbanks.\*

11) **Iverson, R.L.** 1978. Patterns of tropical seagrass productivity. Conference on Ecological Processes in Coastal and Marine Systems. Florida State University.\*

- 12) Wetzel, R. and **R. L. Iverson**. 1978. Primary productivity, carbon transport, and excretion of dissolved organic carbon in seagrasses. Second International Congress of Ecology. Israel, Jerusalem.\*
- 13) **Iverson, R.L.**, R.C. Harriss, H. Bittaker, and D. DiDomenico. 1979. Significance of seagrasses as a source of organic carbon for the eastern Gulf of Mexico coastal zone. American Society of Limnology and Oceanography first winter meeting.
- 14) **Iverson, R.L.** 1979. Biological, chemical and physical features of fronts in the Bering Sea. Workshop in the interaction of outer continental shelf waters and adjacent boundary currents. Skidaway Institute of Oceanography.\*
- 15) Meyers, V.B. and **R.L. Iverson**. 1979. Phosphorus limitation of phytoplankton productivity in nearshore Florida coastal estuaries. International Symposium on Effects of Nutrient Enrichment in Estuaries. Williamsburg, Va. \*
- 16) **Iverson, R.L.**, L.K. Coachman, R.T. Cooney, J.J. Goering, G.L. Hunt, C.P. McRoy, T. Nishiyama, W.S. Reeburg, and T.E. Whittedge. 1979. Ecological significance of fronts in the southeast Bering Sea. American Society of Oceanography and Limnology, 42nd Annual Meeting.
- 17) **Iverson, R.L.** and J.J. Goering. 1979. Bering Sea phytoplankton ecology. NOAA/BLM OCSEAPS Symposium on Oceanography and Resources of the Bering Sea Shelf. Anchorage, Alaska.\*
- 18) McRoy, C.P., J.J. Walsh, and **R.L. Iverson**. 1979. Foodwebs of the Southern Bering Sea. NOAA/BLM OCSEAPS Symposium on Oceanography and Resources of the Bering Sea Shelf. Anchorage, Alaska.\*
- 19) Osborne, N.M. and **R.L. Iverson**. 1980. The influence of seagrass species and sediment characteristics on the distribution and abundance of polychaetous annelids in north Florida seagrass beds. American Society of Limnology and Oceanography Second Winter Meeting.
- 20) **Iverson, R.L.** 1980. Biology of the southeast Bering Sea. NOAA/OMPA Conference on Resources of the Bering Sea. Asilomar.\*
- 21) **Iverson, R.L.**, J.J. Goering and J. Niebauer. 1980. Spring phytoplankton bloom in the southeastern Bering Sea. American Society of Limnology and Oceanography third winter meeting.
- 22) **Iverson, R.L.** 1981. Phytoplankton ecology of the southeastern Bering Sea. School of Oceanography, Oregon State University, Corvallis.
- 23) Zieman, J.C., J.C. Ogden, and **R.L. Iverson**. 1981. Herbivory effects on *Thalassia testudinum* leaf growth and nitrogen content. Australia Seagrass Symposium. University of Sydney.\*
- 24) Smith, S.L., L.K. Coachman, and **R.L. Iverson**. 1982. Copepods and the spring bloom of the Bering Sea shelf. AGU/ASLO Joint Oceanography Meeting. San Antonio.

- 25) Vidal, J., S.L. Smith, and **R.L. Iverson**. 1982. Growth and metabolism of oceanic copepods in relation to the spring bloom in the southeastern Bering Sea. AGU/ASLO Joint Oceanography Meeting, San Antonio.
- 26) **Iverson, R.L.**, C. Kocur, and T.E. Whitledge. 1982. Phytoplankton distribution in southeastern Bering Sea shelf waters during spring. AGU/ASLO Joint Oceanography Meeting, San Antonio.
- 27) Barnard, W.R., M.O. Andreae, and **R.L. Iverson**. 1983. *Pheocystis poucheti* and the production of dimethylsulfide in the southeast Bering Sea. Conference on Chemical Variability in Ocean Frontal Areas, Bay St. Louis, Ms.
- 28) Vairavamuthy, A., M.O. Andreae, and **R.L. Iverson**. 1984. Biosynthesis of dimethylsulfide and dimethylpropiothetin by *Hymenomonas cartarar*e in relation to sulfur source and salinity variation. Gordon Research Conference in Marine Chemistry.
- 29) Eslinger, D.L. and **R.L. Iverson**. 1986. Effects of wind speed on near surface chlorophyll as measured by CZCS imagery. American Geophysical Union Ocean Sciences Meeting.
- 30) **Iverson, R.L.** 1986. A parallel processing model for bioreactive element flux through marine food webs. American Geophysical Union Ocean Sciences meeting.
- 31) **Iverson, R.L.** 1988. Ocean fish production is based on food-chain transfer of phytoplankton new-nitrogen production. American Geophysical Union Ocean Sciences meeting.
- 32) **Iverson, R.L.** 1988. The role of satellite ocean color data in ocean fish production estimation. ASME/NASA Summer Fellowship Program, NASA Goddard Space Flight Center.
- 33) Eslinger, D.L., **R.L. Iverson** and J.J. O'Brien. 1989. Estimation of remote sensed pigment concentrations under clouds: A comparison of methods. NASA Headquarters Graduate Research Program.
- 34) Berresheim, H., M.O. Andreae, and **R.L. Iverson**. 1989. A seasonal study of the atmospheric sulfur cycle over the western Atlantic Ocean. Conference on Sulfur in the Troposphere, Beijing, China.
- 35) **Iverson, R.L.** 1989. Ocean primary production estimation using CZCS imagery. ASME/NASA Summer Fellowship Program, NASA Goddard Space Flight Center.
- 36) **Iverson, R.L.** 1989. Fish production is controlled by food-chain transfer of phytoplankton annual nitrogen new production in most coastal-ocean environments. Second Interdisciplinary Conference on Natural Resource Modeling and Analysis. Tallahassee, Florida.
- 37) Berresheim, H., M.O. Andreae, **R.L. Iverson** and S.M. Li. 1989. Seasonal studies of the atmospheric sulfur cycle over the western Atlantic Ocean. American Geophysical Union Meeting.
- 38) Thompson, A.M., W.E. Esaias, and **R.L. Iverson**. 1989. Marine DMS fluxes: Comparison of ocean color estimates and photochemical model calculations. American Geophysical Union Meeting.

- 39) Iverson, R.L.** 1991. The relation between phytoplankton annual carbon production and new nitrogen production. American Society of Limnology and Oceanography Special Symposium on Control of Primary Production in High Nutrient Environments. San Diego, California.
- 40) Eslinger, D.L. and R.L. Iverson.** 1991. The effects of convective and wind-driven mixing on springtime phytoplankton dynamics in the Mid Atlantic Bight. American Geophysical Union Meeting, Philadelphia.
- 41) Iverson, R.L. 1991.** The relationship between phytoplankton annual carbon production and new nitrogen production. Brookhaven Symposium on Primary Productivity and Biogeochemical Cycles in the Sea.
- 42) Eslinger, D.L., R.L. Iverson and S. Gennari.** 1992. Springtime primary production on the southeastern Bering Sea shelf: A comparison of values from field measurements, model calculations, and remote estimates. AGU/ASLO Ocean Science Meeting, New Orleans.
- 43) Iverson, R.L. 1992.** Apalachicola Bay primary production. Northwest Florida Regional Water Management District Technical Working Group.\*
- 44) Iverson, R.L. 1992.** An improved algorithm for calculating marine primary production from satellite CZCS data. NASA/ASME Summer Fellowship Program, NASA Goddard Space Flight Center.\*
- 45) Iverson, R.L.** 1992. Marine phytoplankton annual carbon production, new nitrogen production, and export production calculated from CZCS and SeaWiFS  $C_{SAT}$  data. SeaWiFS Science Team Annual Meeting, Washington, D.C.\*
- 46) Iverson, R.L. and W.E. Esaias,** 1993. Ocean primary production determined from CZCS imagery. SeaWiFS science Team meeting, Baltimore, MD.\*
- 47) Iverson, R.L. and W.E. Esaias.** 1994. An empirical algorithm for determining annual phytoplankton production in ocean environments. SeaWiFS Science Team Productivity Working Group, Brookhaven National Laboratory.\*
- 48) Iverson, R.L.** 1994. The ocean biogeochemical pump. Presented as part of a public lecture series on "Observing the Earth From Space: Biogeochemical Cycles", NASA Goddard Space Flight Center.\*
- 49) Iverson, R.L. and W.E. Esaias.** 1994. Primary production and new production determined from empirical algorithms and ocean color data. JGOFS Executive Committee Meeting, Phoenix, Arizona.\*
- 50) Iverson, R.L. and W.E. Esaias.** 1994. Primary production estimation using ocean color data. SeaWiFS Science Team Productivity Working Group, NASA Goodard Space Flight Center.\*
- 51) Esaias, W.E. and R.L. Iverson.** 1994. Global ocean phytoplankton production components determined using chlorophyll a derived from CZCS imagery. AGU/ASLO Ocean Science Meeting.

- 52) Iverson, R.L.** and W.E. Esaias. 1995. An empirical algorithm for determining annual phytoplankton production in ocean environments. SeaWiFS Science Team Productivity Working Group, Brookhaven National Laboratory.\*
- 53) Iverson, R.L.** and W.E. Esaias. 1995. Ocean primary production components determined using CZCS data. International Colloquium on Photosynthesis and Remote Sensing, Montpeliler, France.
- 54) Iverson, R.L.** and W.E. Esaias. 1996. Mechanistic basis for an empirical relation between phytoplankton production and  $C_K$ . Ocean Sciences Meeting, San Diego.
- 55) Mortazavi, B., R.L. Iverson,** G. Lewis. 1997. The effect of freshwater inflow on phytoplankton biomass and production in Apalachicola Florida, USA. 14th Biennial Estuarine Research Federation International Conference, Providence, Rhode Island.
- 56) Iverson, R.L.,** B. Mortazavi, and W. Huang. 1997. Phytoplankton Production related to nitrogen input in estuaries and marine systems. 14th Biennial Estuarine Research Federation International Conference, Providence, Rhode Island.
- 57) Rutkoswski, C.M., J.P. Chanton, W.C. Burnett, and R.L. Iverson.** 1998. Groundwater seepage, nutrients, and seagrasses in the Northeastern Gulf of Mexico. Ocean Sciences Meeting, San Diego.
- 58) Toner, M., R.L. Iverson,** and J.J. O'Brien. 1998. Oceanic planetary waves in the tropical Pacific evidenced through SeaWiFS chlorophyll data. American Geophysical Union Meeting, San Francisco.
- 59) Mortazavi, B., R.L. Iverson,** W. Huang, J.M. Caffrey. 1999. Nitrogen budget of a sub-tropical estuary: Apalachicola Bay, FL. Estuarine Research Federation 15<sup>th</sup> Biennial International Conference, New Orleans.
- 60) Iverson, R.L.,** W.E. Esaias, and F.C. Chavez. 2000. Global ocean primary and export production calculated with empirical equations and SeaWiFS chlorophyll data. 2000 Ocean Sciences Meeting, San Antonio, Texas.
- 61) Iverson, R.L.** 2001. Apalachicola Bay Nutrient Dynamics and Control of Phytoplankton Productivity and Biomass. Dauphin Island Marine Laboratory, Dauphin Island, Alabama. \*
- 62) Mortazavi, B., R. L. Iverson,** V.B. Myers, and J.M. Fulmer. 2001. Spatial variation in phytoplankton nutrient limitation in a northeastern Gulf of Mexico estuary: Apalachicola Bay. Estuarine Research Federation 16<sup>th</sup> Biennial Meeting, St. Petersburg, FL.
- 63) Putland, J.N. and R. L. Iverson.** 2003. Summertime herbivory and carnivory by micro- and mesozooplankton in Apalachicola Bay, Florida. Estuarine Research Federation Conference, Seattle.
- 64) Putland, J.N. and R. L. Iverson.** 2004. Micro and mesozooplankton grazing dynamics during summer in Apalachicola Bay, Florida. ASLO Summer Meeting, Savannah, Georgia.

65) R. E. McCown, F. B. Gross, **R. L. Iverson**, D. L. Lambert, and M.I. Latz. 2005. Exploring the Effect of Electromagnetic Fields on Dinoflagellate Bioluminescence. IEE Conference, Washington D.C.

**\*Invited Paper**

## **RESEARCH ACTIVITIES**

### **Completed Multi-disciplinary Research Program Participation**

U.S. - U.S.S.R. Joint Project VI-2.1 on Protection of the Marine Environment funded through the Environmental Protection Agency from 1974 through 1976.

Processes and Resources of the Bering Sea Shelf (PROBES) funded by the National Science Foundation Office of Polar Programs from 1977 through 1982. A sea-going investigation of plankton ecology of the southeastern Bering Sea.

Seagrass Ecosystem Studies (SES) funded by National Science Foundation International Decade of Ocean Exploration from 1978 through 1890. An investigation of seagrass distribution and physiological ecology at many global locations.

Sea-viewing wide field of view sensor (SeaWiFS) Program funded by the National Aeronautics and Space Administration from 1993 through 1996 (Phase I): Development of calibration algorithms for a new satellite sensor of ocean color. Application of the algorithms to determine phytoplankton production and biomass in various marine environments.

### **Completed Research Grant Titles and Funding Levels**

Chemical and biological study of the effect of the environmental improvement program conducted by the Buckeye Cellulose Corp. on the Fenholloway River and estuary system. 1973. (Co-investigator with R.J. Livingston.) Buckeye Cellulose Corp., 26 months. \$30,300.

Phytoplankton of the northeastern Gulf of Mexico. 1974. Bureau of Land Management, 8 months. \$28,427

Phytoplankton Dynamic Measurements for the BLM/MALA Study. 1975. Bureau of Land Management, 12 months. \$29,560.

Energy relationships and the role of dissolved nutrients and detritus in the productivity of the Apalachicola Bay System. 1975. (Co-investigator with R.J. Livingston and D.C. White.) The Florida Sea Grant Program - National Oceanic and Atmospheric Administration #043-158-43, 12 months. \$40,000

Energy relationships and the role of dissolved nutrients and detritus in the productivity of the Apalachicola Bay System. 1976. (Co-investigator with R.J. Livingston and D.C. White.) The Florida Sea Grant Program - National Oceanic and Atmospheric Administration #043-158-43, 12 months. \$40,000.

PROBES: Component 3, Primary Production and Phytoplankton Species Composition in the Bering Sea. Office of Polar Programs, National Science Foundation. 1977. 12 months. \$16,000.

Primary Production Studies in Seagrass Ecosystems. International Decade of Ocean Exploration, National Science Foundation. 1977. 12 months. \$58,300.

Seagrass Ecosystem Study (SeagrassIII): Environmental Control of Seagrass Productivity. International Decade of Ocean Exploration, National Science Foundation. 1978. 12 months. \$58,300.

PROBES: Component 3, Primary Production and Phytoplankton Species Composition in the Bering Sea. Office of Polar Programs, National Science Foundation. 1978. 12 months. \$17,000

Seagrass Ecosystem Study (Seagrass III): Environmental Control of Seagrass Productivity. International Decade of Ocean Exploration, National Science Foundation. 1979. 12 months. \$64,276.

PROBES: Component 3, Primary Production and Phytoplankton Species Composition in the Bering Sea. Office of Polar Programs, National Science Foundation. 1979. 12 months. \$69,219.

PROBES: Component 3, Primary Production and Phytoplankton Species Composition in the Bering Sea. Office of Polar Programs, National Science Foundation. 1980. 12 months. \$75,000.

Seagrass Ecosystem Study (Seagrass III): Environmental Control of Seagrass Productivity. International Decade of Ocean Exploration, National Science Foundation. 1980. 24 months. \$69,100.

PROBES: Component 3, Primary Production and Phytoplankton Species Composition in the Bering Sea. Office of Polar Programs, National Science Foundation. 1981. 12 months. \$80,300.

PROBES: Component 3, Primary Production and Phytoplankton Species Composition in the Bering Sea. Office of Polar Programs, National Science Foundation. 1982. 12 months. \$80,000.

The production of dimethylsulfide and acrylic acid by marine phytoplankton. National Science Foundation. (Co-investigator with M.O. Andreae.) 1984. 36 months. \$276,633.

Estimating chlorophyll concentrations in cloudy regions, and errors in ship board chlorophyll measurements through statistical analysis of remotely sensed chlorophyll concentration. NASA. 1986. 36 months. \$54,000.

The design of a Florida-based satellite earth station. Florida TRDA. (Co-Investigator with E.A. Smith, J.C. Cain, M. Horanyi and J.J. O'Brien). 1988. 12 months. \$75,000.

Marine phytoplankton annual carbon production, new nitrogen production, and export production calculated from CZCS and SeaWiFS  $C_{sat}$  data. 1993. NASA Headquarters. 1 January, 1993 - 30 June, 1998. \$195,000.

Examination of nutrient transport and primary productivity in the Apalachicola River and Bay. W. Landing Co-investigator. Northwest Florida Water Management District. 1 March, 1993 - 30 September, 1998. \$327,592.

Significance of submarine groundwater discharge on seagrass distribution, biomass and productivity. Co-investigator with Jeffrey Chanton and William Burnett. Florida Sea Grant College Program. 1 February, 1995. \$152,331.

Use of natural and artificial tracers to detect subsurface flow of contaminated groundwater in the Florida Keys National Marine Sanctuary. Co-investigator with William Burnett and Jeffrey Chanton. Environmental Protection Agency. 1 October, 1995 - 29 May, 1998. \$ 174,888.

R.L. Iverson and D.R. Corbett, Co-investigators. Apalachicola National Estuarine Reserve. 30 December, 1997 -30 December, 1999. \$111,288.

R.L. Iverson. Annual marine primary production algorithm development and application to MODIS data. National Aeronautics and Space Administration, Goddard Space Flight Center. 1 August, 1998 - 31 July, 2000. \$156,053.

R.L. Iverson and Jennifer Putland. Planktonic Food Web Variations related to salinity and nutrient patterns in Apalachicola Bay. 1 June ,2002 – 31 May, 2005. \$150,000.

### **Current Research Grant Titles and Funding Levels**

W. Landing, R.L. Iverson, and J. Kostka. Surface Water Management Program Nutrient Analyses. NOAA NERR. 1 July, 2004 – 1 July, 2007. \$70,000.

F. B. Gross, R.L. Iverson, and M. Weatherspoon. Dinoflagellate bioluminescence mitigation using electromagnetic fields. 1 June 2003 – 30 June, 2007. \$600,000.

## Research Cruises

<u>Year</u>	<u>Vessel</u>	<u>Home Port</u>	<u>Dates</u>	<u>Area of Operation</u>
1972	R/V Tursiops	Carabelle, FL	* 15-20 May	Gulf of Mexico
"	"	"	* 10-14 Aug	Gulf of Mexico
"	"	"	* 1- 5 Nov	Gulf of Mexico
1973	"	"	* 24-29 Mar	Gulf of Mexico
"	"	"	* 23-28 Apr	Gulf of Mexico
"	"	"	* 18-24 Jun	Gulf of Mexico
"	"	"	* 10-20 Aug	Cayman Islands
1974	R/V Bellows	St. Petersburg, FL	* 10-13 May	Gulf of Mexico
"	R/V Tursiops	Carabelle, FL	* 5-10 Aug	Gulf of Mexico
1975	R/V Longhorn	Pt. Aransas, TX	* 9-14 Jul	Apalachicola Bay
"	R/V Moscow Univ.	Sevastipole, USSR	28 Jul-12 Aug	Atlantic Ocean
"	R/V Tursiops	Carabelle, FL	* 22-28 Oct	Gulf of Mexico
1976	R/V Longhorn	Pt. Aransas, TX	* 9-17 Aug	Gulf of Mexico
1977	R/V Bellows	St. Petersburg, FL	* 7- 9 Jun	Gulf of Mexico
"	R/V Longhorn	Pt. Aransas, TX	11-15 Aug	Laguna Madre
"	R/V Acona	Seward, AL	19-30 Sep	Bering Sea
"	R/V Alpha Helix	San Diego, CA	15-30 Nov	West Caribbean
1978	R/V Bellows	St. Petersburg, FL	* 18-20 Feb	Apalachicola Bay
"	R/V T. Thompson	Seattle, WA	* 25 May-24 Jun	Bering Sea
"	R/V Longhorn	Pt. Aransas, TX	* 14-19 Oct	Florida Bay
1979	R/V T. Thompson	Seattle, WA	2-22 May	Bering Sea
"	R/V Longhorn	Pt. Aransas, TX	12-30 Sep	Florida Bay
1980	R/V T. Thompson	Seattle, WA	26 Apr-20 May	Bering Sea
1981	R/V T. Thompson	Seattle, WA	* 28 Apr-29 May	Bering Sea
1985	R/V Cape Florida	Miami, FL	* 26 Sept-16 Oct	Atlantic Ocean
1986	R/V Cape Florida	Miami, FL	* 3 Feb-15 Feb	Atlantic Ocean
1986	R/V Columbus Iselin	Miami, FL	* 23 Apr-3 May	Atlantic Ocean
1986	R/V Columbus Iselin	Miami, FL	* 2-13 Sept	Atlantic Ocean

\* Chief Scientist

### **Masters Degree Student Programs Supervised as Major Professor**

- 1) Robert Hiskey, M.S., 1973 (Committee Chairman). Thesis title: Indirect estimate of biomass in polychaetous annelids by allometry. Brunswick Jr. College, Brunswick, Georgia.
- 2) Jacqueline Jennings, M.S., 1973. Thesis title: Effects of nutrient enrichment on <sup>14</sup>C uptake by different size classes of phytoplankton in the northeast Gulf of Mexico. Marine Mammals Program, National Oceanic and Atmospheric Administration, La Jolla, California.
- 3) Robert Estabrook, M.S., 1973. Thesis title: Hydrography and phytoplankton ecology of Apalachicola Bay, Florida. New Hampshire Water Supply and Pollution Control Commission, Concord, New Hampshire.
- 4) Vernon Myers, M.S., 1974. Thesis title: The effects of salinity and dissolved organic matter upon surface charge characteristics of selected euryhaline phytoplankton. Environmental Protection Agency, Washington, D.C.
- 5) Michael Ednoff, M.S., 1974. Thesis title: Surface phytoplankton communities and their relationship to the Loop Current in the Gulf of Mexico. Integrated Aquatic Systems, Inc., Immokalee, Florida.
- 6) Henry Bittaker, M.S., 1975. Thesis title: A comparative study of the marine phytoplankton and macrophyte - epiphyte productivity in a polluted versus unpolluted coastal area. State of Florida Department of Community Affairs, Tallahassee, Florida.
- 7) Gordon Wells, M.S., 1975. Thesis title: The effects of aromatic constituents of petroleum and water soluble extracts of oils on marine phytoplankton. Instructor, Key West Community College, Key West, Florida.
- 8) Dante DiDomenico, M.S., 1976. Thesis title: Uptake of glycolic acid by a marine bivalve. State of Florida, Department of Environmental Regulation.
- 9) David Connally, M.S., 1978. Thesis title: The effects of temperature and cell concentration on the grazing of *Acartia tonsa* in Apalachicola Bay, Florida. Univ. of Texas Marine Laboratory, Galveston, Texas.
- 10) Lee Edmiston, M.S., 1979. Thesis title: Zooplankton of the Apalachicola Bay System. Research Coordinator, Apalachicola National Estuarine Research Reserve.
- 11) Cynthia Bell, M.S., 1979. Thesis title: Nitrogen fixation (acetylene reduction) of seagrasses. Defense Aerospace Center, St. Louis, Mo.
- 12) Nathaniel Osborne, M.S., 1979. Thesis title: The influence of seagrass species and sediment characteristics on the distribution and abundance of polychaetous Annelids in North Florida seagrass beds. Eli Lilly and Co.

- 13) Charles Kocur. M.S. 1982. Phytoplankton distribution in the Southeastern Bering Sea shelf waters during spring. M.S. Thesis. 47 pp. Environmental Quality Laboratory, Inc. Port Charlotte, Florida.
- 14) Nyawira Muthiga, M.S. 1984. The effects of salinity stream on the respiration and photosynthesis of the hermatypic coral Siderastrea sidero. 59 pp. Government of Kenya.
- 15) David Eslinger, M.S. 1986. Wind effects on spring phytoplankton chlorophyll in the mid-Atlantic Bight region of the U.S. east coast. NOAA Coastal Service Center, Charleston, S.C.
- 16) Frank Nearhoof, M.S. 1987. Dimethylsulfonium propionate and dimethylsulfide production by phytoplankton in estuarine, coastal, and oligotrophic open ocean waters and in laboratory cultures as a response to salinity changes. 64 pp. Florida Department of Environmental Regulation.
- 17) John Fulmer, M.S. 1997. Thesis Title: Nutrient enrichment of phytoplankton in Apalachicola Bay, Florida. Computer Software Co., Atlanta Georgia.
- 18) Diana Lambert. M.S. 2006. Dinoflagellate Bioluminescence Limitation: Effects of Formaldehyde and other Compounds. National High Magnetic Laboratory, Florida State University.

#### **Doctor of Philosophy Student Programs Supervised as Major Professor**

- 1) Vernon B. Myers, Ph.D., 1977. Nutrient limitation of phytoplankton productivity in North Florida coastal waters: technical consideration, spatial patterns, and wind mixing effects. Environmental Protection Agency, Washington D.C.
- 2) Wayne Magley, Ph.D. 1990. Dissertation Title: A phytoplankton-zooplankton model of the middle and outer shelf domains of the southeastern Bering Sea during spring bloom conditions. Florida Department of Environmental Regulation.
- 3) David Eslinger, Ph.D. 1990. Dissertation Title: The effects of convective and wind-driven mixing on springtime phytoplankton dynamics as simulated by a mixed-layer model. NOAA Coastal Service Center, Charleston, S.C.
- 4) Bezhad Mortazavi, Ph. D. 1998. Dissertation Title: Nitrogen input and cycling within Apalachicola Bay, Florida. Associate in Research, Florida State University.
- 5) Ricardo Queiroz. Ph. D. 2002. Dissertation Title: Estuarine sediment microalgal kinetics and productivity. Government of Brazil.
- 6) Jennifer Putland. Ph.D. 2005. Dissertation Title: Ecology of microzooplankton, *Acartia tonsa*, and phytoplankton in Apalachicola Bay. Post Doctoral Fellow, Harbor Branch Oceanographic Institute.

#### **Current Student**

Linda Fitzhugh. Ph. D. Student. (Co-Director) Dissertation subject. Seagrass ecology of Pensacola Bay.

### **Current Classroom Teaching Activities**

OCE 1001, Elementary Oceanography: Physics, chemical and life processes.

OCE 4011, Principles of Oceanography: Physics, chemical and life processes.

OCE 5009, Advanced General Oceanography: Physics, chemical and life processes.

OCB 5565, Marine Primary Production: Ecology of marine phytoplankton and macrophytes.

### **Current Service**

Conservation Sub-Committee Member, Florida Aquarium