

## CURRICULUM VITAE

### **WINDOM, HERBERT L.**

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### **SUMMARY OF EXPERIENCE**

For more than 5 decades Dr. Windom has carried out scientific research and education at the graduate level aimed at developing a better understanding of riverine, coastal and marine environments. Research projects have focused on the effects of natural processes as well as human intervention on these environments and their natural resources. Funding for his work has come from a number of national agencies (U.S. Department of Energy, U.S. EPA, the U.S. National Science Foundation, U.S. Army Corps of Engineers, U.S. Office of Naval Research, and the National Oceanic and Atmospheric Agency) as well as from several international organizations such as the United Nations Environmental Program and the International Atomic Energy Agency. Dr. Windom has served as member/chairman of numerous panels and boards of national and international agencies including all of those mentioned above, as well as the International Maritime Organization, the United Nations Food and Agricultural Organizations, UNESCO, the World Health Organization, the International Council for the Exploration of the Seas, the United Nations Program for Human Settlements and others. Examples include: Executive Committee of EPA's Board of Scientific Counselors and Chairman of UN Group of Experts on Scientific Aspects of Marine Pollution (GESAMP).

Dr. Windom has also provided advice on environmental issues to many agencies of States (Georgia, Florida, Alabama, Texas, New Jersey), countries (Antigua, Mexico, Thailand, Malaysia, Philippines, etc.), and industry. Examples include: South Florida Water Management District, Total Petroleum, Exxon, and Alcoa.

### **Education:**

1963	B.S.	Geology, Florida State University
1965	M.S.	Marine Geochemistry, University of California, San Diego (Scripps Institution of Oceanography)
1968	Ph.D.	Marine Geochemistry, University of California, San Diego (Scripps Institution of Oceanography)

### **Experience:**

1968-1972	Assistant Professor, Skidaway Institute of Oceanography
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1972-1978	Associate Professor, Skidaway Institute of Oceanography
1977-1979	Adjunct Professor, Marine Science Curriculum, University of North Carolina
1978-2001	Professor, School of Earth and Atmospheric Sciences, Georgia Institute of Technology, Atlanta, Georgia; Adjunct Professor, School of Marine Sciences, University of Georgia, Athens, Georgia
1978 - 2001	Professor, Skidaway Institute of Oceanography;
1994 - 2001	Director, Skidaway Institute of Oceanography
2001 - 2006	Professor Emeritus, Skidaway Institute of Oceanography
2006 -	Professor Emeritus, UGA Department of Marine Science and Skidaway Institute of Oceanography

### Research Interests:

Riverine, estuarine and continental shelf and slope geochemical processes. Land-sea transport. Trace metal biogeochemistry; riverine, marine, estuarine and coastal environmental quality.

### Publications:

- \*1965 Osmond, J.K., J.R. Carpenter, and H.L. Windom. Th<sup>230/234</sup> age of Pleistocene corals and oolites of Florida. *J. Geophys. Res.* 70(8):1843-1847.
- \*1967 Windom, H.L., J. Griffin and E.D. Goldberg. Talc in atmospheric dusts. *Environ. Sci. Technol.* 1:923-926.
- \*1968 Dymond, J.R. and H.L. Windom. Cretaceous K-Ar ages from Pacific Ocean seamounts. *Earth and Planetary Science Letter* 4:47-52.
- \*1968 Griffin, J. J., H. L. Windom, H. L. and E. D. Goldberg. The distribution of clay minerals in the World Ocean. *Deep-Sea Research*, 15: 433-459.
- \*1969 Windom, H.L. Atmospheric dust record in permanent snowfields: Implications to marine sedimentation. *G.S.A. Bulletin* 80:761-782.
- \*1970 Windom, H.L. Contribution of atmospherically transported trace metals to South Pacific sediments. *Geochim. Cosmochim. Acta* 34:509-514.
- 1971 Windom, H.L., K. Beck and R. Smith. Transport of trace metals to the Atlantic Ocean by three southeastern rivers. *Southeast Geol.* 12:169-181.
- 1971 Windom, H.L., W.J. Neal and K.C. Beck. Mineralogy of sediments in three Georgia estuaries. *J. Sed. Pet.* 41:497-504.
- 1971 Windom, H.L. and K.C. Beck. Diurnal variations in the chemical characteristics of the Ogeechee estuary in Georgia. *Bull. Ga. Acad. Sci.* 29:65-75.

- 1971 Windom, H.L. Dispersion of pollutants in the coastal water of the southeastern United States. Colloque Internat. Sur. l'Exploit. des Oceans, Bordeaux (France). Th. I-T.2-03, p. 1-12.
- \*1971 Windom, H.L. Fluoride concentration in coastal and estuarine waters of Georgia. *Limnol. Oceanogr.* 16:806-810.
- 1971 Windom, H.L., R. Smith and F. Bousquet. Distribution of K, Mg, Sr, Fe, Mn and Zn in *Crassostrea virginica* shells. *Southeast. Geol.* 13:275-281.
- 1972 Windom, H.L. and R. Smith. Distribution of Fe, Mn, Cu, An, and Ag in oysters along the Georgia coast. *J. Fish. Res. Bd. Can.* 29:450-452.
- 1972 Windom, H.L., F. Taylor and R. Stickney. Mercury in North Atlantic plankton. *J. Cons. Int. Explor. Mer.* 35:18-21.
- 1972 Windom, H.L. Mercury distribution in the estuarine-nearshore environment. *J. of the Waterways, Harbors and Coastal Engineering Div. ASCE* 99:257-264.
- 1972 Windom, H.L. Environmental aspects of dredging in estuaries. *J. Waterways, Harbors and Coastal Engineering, Div. ASCE* 98:475-487.
- \*1972 Windom, H.L. and R.G. Smith. Distribution of cadmium, cobalt, nickel and zinc in southeastern United States continental shelf waters. *Deep-Sea Res.* 19:727-730.
- 1973 Windom, H.L., R. Stickney, R. Smith, D. White and F. Taylor. Arsenic, cadmium, copper, mercury and zinc in some species of North Atlantic finfish. *J. Fish. Res. Bd. Can.* 30:275-279.
- 1973 Barnes, S.S., T.F. Craft and H.L. Windom. Iron-scandium budget in sediments of two Georgia salt marshes. *Bull. Ga. Acad. Sci.* 31:23-30.
- 1973 Windom, H.L. Processes responsible for water quality changes during pipeline dredging in marine environments. Pages 761-806 in Proc. World Dredging Conf., Hamburg, Germany.
- 1973 Stickney, R.R., H.L. Windom, D.B. White and F. Taylor. Mercury concentrations in various tissues of the bottlenose dolphin (*Tursiops truncatus*). Pages 634-686 in Proc. 26th Ann. Conf. SE Assoc. Game and Fish Comm.
- 1973 Gibbs, R.H., E. Jarosewich, and H.L. Windom. Heavy metal concentrations in museum fish specimens: Effect of preservatives and time. *Science* 184:475-477.
- 1974 Brewer, P., N. Frew, N. Cutshall, J. Warner, R. Duce, P. Walsh, G. Hofmann, J. Dutton, W. Fitzgerald, C. Hunt, D. Girvin, R. Clem, C. Patterson, D. Settle, B. Glover, B. Presley, J. Trefry, H. Windom, and R. Smith. Interlaboratory lead analyses of standardized samples of sea water. *Mar. Chem.* 2:69-84.

- 1975 Windom, H.L. Heavy metal fluxes through salt marsh estuaries. Pages 137-152 in L.E. Cronin (ed.), Estuarine Research, Vol. I, Academic Press, New York, San Francisco, London.
- 1975 Windom, H.L. Water quality aspects of dredging and dredge spoil disposal in estuarine environments. Pages 559-57 in L.E. Cronin (ed.), Estuarine Research, Vol. II, Academic Press, New York, San Francisco, London.
- \*1975 Windom, H.L. Eolian contributions to marine sediments. *J. Sed. Pet.* 45:520-529.
- 1975 Windom, H.L., W.M. Dunstan and W.S. Gardner. River input of inorganic phosphorus and nitrogen to the southeastern salt marsh estuarine environment. Pages 309-313 in F.G. Howell, J.B. Gentry and M.H. Smith (eds.), Mineral Cycling in Southeastern Ecosystems, ERDA Symposium Series (CONF-740513).
- 1975 Dunstan, W.M. and H.L. Windom. The influence of environmental changes in heavy metal concentrations on *Spartina alterniflora*. Pages 393-404 in L.E. Cronin (ed.), Estuarine Research, Vol. II.
- 1975 Dunstan, W.M., G.L. McIntire and H.L. Windom. Revegetation on dredge spoil in the S.E. *Spartina* marshes. *J. Waterways and Harbors, Div. ASCE* 101 (WW3):269-276.
- 1975 Dunstan, W.M., H.L. Windom and G.L. McIntire. The role of *Spartina alterniflora* in the flow of Pb, Cd, Cu through the salt marsh ecosystem. Pages 250-256 in F.B. Howell, J.B. Gentry and M.H. Smith (eds.), Mineral Cycling in Southeastern Ecosystem, ERDA Symposium Series (CONF-740513).
- 1975 Gardner, W.S., H.L. Windom, J.A. Stephens, F.E. Taylor and R.R. Stickney. Concentrations of total mercury and methylmercury in fish and other organisms: Implications to mercury cycling. Pags 268-278 in F.G. Howell, J.B. Gentry and M.H. Smith (eds.), Mineral Cycling in Southeastern Ecosystems, ERDA Symposium Series (CONF-740513).
- 1975 Stickney, R.R., H.L. Windom, D.B. White and F.E. Taylor. Heavy metal concentrations in selected Georgia estuarine organisms with comparative food-habit data. Pages 257-267 in F.G. Howell, J.B. Gentry and M.H. Smith (eds.), Mineral Cycling in Southeastern Ecosystems, ERDA Symposium Series (CONF-740513).
- 1975 Sick, L.V. and H.L. Windom. Effects of environmental levels of mercury and cadmium on rates of metal uptake and growth physiology of selected genera of marine phytoplankton. Pages 239-249 in F.G. Howell, J.B. Gentry and M.H. Smith (eds.), Mineral Cycling in Southeastern Ecosystems, ERDA Symposium Series (CONF-740513).
- \*1975 Windom, H.L., F.E. Taylor and E.M. Waiters. Possible influence of atmospheric transport on the total mercury content of southeastern Atlantic continental shelf surface waters. *Deep-Sea Res.* 22:629-633.



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- \*1976 Windom, H.L., W. Gardner, J. Stephens and F. Taylor. The role of methylmercury production in the transfer of mercury in a salt marsh ecosystem. Estuarine and Coastal Mar. Sci. 4:579-583.
- 1976 Windom, H.L. Geochemical interactions of heavy metals in southeastern salt marsh environments. EPA-600/3-76-023, Ecological Res. Series, U.S. Environmental Protection Agency, Corvallis, Oregon.
- \*1976 Windom, H.L. Lithogenous material in marine sediments. Pages 103-135 in J.P. Riley and R. Chester (eds.), Chemical Oceanography, Academic Press.
- 1976 Windom, H.L. and N. Cutshall. Atomic adsorption spectrophotometry. Pages 161-184 in E.D. Goldberg (ed.), Strategies for Marine Pollution Monitoring, Wiley Interscience.
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- 1977 Topping, G. and H.L. Windom. Biological transport of copper in experimental enclosures at Loch Ewe and Saanich Inlet. Bull. Mar. Sci. 27(1):135-141.
- 1978 Gardner, W.S., D.R. Kendall, R.R. Odum, H.L. Windom and J.A. Stephens. The distribution of methyl mercury in a contaminated salt marsh ecosystem. Environ. Pollut. 15:243-251.
- \*1978 Windom, H.L. and C.F. Chamberlain. Dust-storm transport of sediments to the North Atlantic Ocean. J. Sed. Pet. 48:385-388.
- \*1978 Waslenchuk, D.G. and H.L. Windom. Factors controlling the estuarine chemistry of arsenic. Estuarine Coastal Mar. Sci. 7:455-462.
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- \*1979 Windom, H.L. and R.G. Smith, Jr. Copper concentrations in surface waters off the southeastern Atlantic coast, U.S.A. Mar. Chem. 7:157-163.
- \*1979 Windom, H.L. and F.E. Taylor. The flux of mercury in the South Atlantic Bight. Deep-Sea Res. 26A:283-292.

- \*1979 Goldberg, E.D., J.J. Griffin, V. Hodge, M. Koide, and H. Windom. Pollution history of the Savannah River estuary. *Environ. Sci. Tech.* 13:588-594.
- 1979 Windom, H.L. and D.R. Kendall. Accumulation and biotransformation of mercury in coastal and marine biota. Pages 303-323 in J.O. Nriagu (ed.), *Biogeochemistry of Mercury*, Elsevier/North-Holland Biomedical Press.
- \*1980 Sanders, J.G. and H.L. Windom. The uptake and reduction of arsenic species by marine algae. *Estuarine and Coastal Mar. Sci.* 10:555-567.
- 1980 Smith, R.G., Jr. and H.L. Windom. A solvent extraction technique for determining nanogram per liter concentrations of cadmium, copper, nickel, and zinc in sea water. *Anal. Chim. Acta* 113:39-46.
- \*1981 Rice, D.L., K.R. Tenore and H.L. Windom. The effects of detritus ration on metal transfer to deposit feeding benthos. *Mar. Ecol. Prog. Ser.* 5:135-140.
- \*1981 Windom, H.L. and J.G. Sanders. Arsenic geochemistry in a controlled marine ecosystem. *Indian Journal of Marine Science* 10:309-313.
- 1981 Windom, H.L. Comparison of atmospheric and riverine transport of trace elements to the continental shelf environment. Pages 360-369 in *River Inputs to Ocean Systems*, UNESCO.
- \*1982 Windom, H.L., K.R. Tenore, and D.L. Rice. Metal accumulation by the polychaete *Capitella capitata*: Influences of metal content and nutritional quality of detritus. *Canadian Journal of Fisheries and Aquatic Sciences* 39:191-196.
- \*1982 Bowers, J.M. and H.L. Windom. Comparison of sampling devices for trace metal determinations in seawater. *Mar. Chem.* 11:71-86.
- \*1982 Rice, D.L. and H.L. Windom. Trace metal transfer associated with the decomposition of detritus derived from estuarine macrophytes. *Botanica Marina* 25:213-223.
- 1982 Maeda, M. and H.L. Windom. Behavior of uranium in two estuaries of the southeastern United States. *Mar. Chem.* 11:427-436.
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- \*1983 Windom, H.L., G. Wallace, R. Smith, N. Dudek, M. Maeda, R. Dulmage and F. Storti.

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- 1984 Blanton, J.O., J.A. Yoder, L.P. Atkinson, T.N. Lee, C.R. McClain, D.W. Menzel, G-A. Paffenhofer, L.J. Pietrafesa, L.R. Pomeroy and H.L. Windom. A multidisciplinary oceanography program on the Southeastern U.S. Continental Shelf. *EOS* 65:1202-1203.
- \*1984 Hungspreugs, M., S. Silpipat, C. Tonapong, R.F. Lee, H.L. Windom, and K.R. Tenore. Heavy metals and polycyclic hydrocarbon compounds in benthic organisms of the Upper Gulf of Thailand. *Mar. Poll. Bull.* 15:213-218.
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- \*1985 Windom, H.L., R.G. Smith and M. Maeda. The geochemistry of lead in rivers, estuaries and the continental shelf of the southeastern United States. *Mar. Chem.* 17:43-56.
- 1985 Bowers, J.M., P.A. Yeats, S. Westerlund, B. Magnusson, D. Schmidt, H. Zehle, S.S. Berman, A. Mykytiuk, J.C. Duniker, R.F. Nolting, R.G. Smith and H.L. Windom. An intercomparison of seawater filtration procedures. *Mar. Poll. Bull.* 16:277-281.
- 1985 Windom, H.L. and R.G. Smith. Factors influencing the concentration and distribution of trace metals in the South Atlantic Bight. Pages 141-152 in L.P. Atkinson, D.W. Menzel and K.A. Bush (eds.), *Oceanography of the Southeastern U.S. Continental Shelf*. AGU, Washington, DC.
- \*1987 Windom, H., D. Stein, R. Sheldon and R. Smith, Jr. Comparison of trace metal concentrations in muscle tissue of a benthopelagic fish (*Coryphaenoides armatus*) from the Atlantic and Pacific Oceans. *Deep-Sea Res.* 34:213-220.
- 1988 Ryan, J.D. and H.L. Windom. A geochemical and statistical approach for assessing metal pollution in coastal sediments. Pages 47-58 in U. Seelinger, L.D. de Lacerda, S.R. Patchineelam (eds.), *Metals in Coastal Environments of Latin America*. Springer-Verlag, Berlin.
- \*1988 Windom, H., R. Smith, Jr., C. Rawlinson, M. Hungspreugs, S. Dharmvanij and G. Wattaykorn. Trace metal transport in a tropical estuary. *Mar. Chem.* 24:293-305.
- \*1989 Windom, H.L., S.J. Schropp, F.D. Calder, J.D. Ryan, R.G. Smith, Jr., L.C. Burney, F.G. Lewis and C.H. Rawlinson. Natural trace metal concentrations in estuarine and coastal marine sediments of the southeastern United States. *Environ. Sci. Technol.* 23:314-320.
- \*1989 Windom, H.L. and T.F. Gross. Flux of particulate aluminum across the southeastern U.S. continental shelf. *Estuarine, Coastal and Shelf Science* 28:327-338.
- \*1989 Windom, H.L., R.G. Smith, Jr., and C. Rawlinson. Particulate trace metal composition and flux across the southeastern U.S. continental shelf. *Marine Chemistry* 27:283-297.

- 1989 Olsen, C.R., M. Thein, I.L. Larsen, P.D. Lowry, P.J. Mulholland, N.H. Cutshall, J.T. Byrd, and H.L. Windom. Plutonium, Lead-210, and Carbon Isotopes in the Savannah Estuary: Riverborne versus Marine Sources, *Environ. Sci. Technol.*, Vol. 23, 1475-1481.
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- 1990 Schropp, S.J., F.G. Lewis, H.L. Windom, J.D. Ryan, F.D. Calder and L.C. Burney. Interpretation of metal concentrations in estuarine sediments of Florida using aluminum as a reference element. *Estuaries* 13:227-235.
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- 1993 Pomeroy, L.R., J.O. Blanton, G.-A. Paffenhöfer, K.L. Von Damm, P.G. Verity, H.L. Windom, and T.N. Lee. Inner shelf processes, pp. 9-43. *In: Menzel, D.W., ed., Ocean Processes: U.S. Southeast Continental Shelf.* Oak Ridge, Tenn.: Office of Scientific and Technical Information, U.S. Department of Energy (DOE/OSTI-11674).
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