

Curriculum Vitae

Gary J. Whiting
Department of Biology, Chemistry and Environmental Science
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Education

National Research Council Postdoctoral Fellowship, 1987-1989
Ph.D. 1985, Biology, University of South Carolina
Dissertation Title: Nitrogen Cycling in a Salt Marsh Ecosystem.
B.S. 1975, Biology, University of Cincinnati

Academic Experience

1997-Present Associate Professor, CNU
1993-1997 Assistant Professor, CNU
1989-1992 Research Associate, NASA Langley Research Center
1987-1989 NRC Research Associate, NASA Langley Research Center
1985-1986 Research Assistant Professor, University of South Carolina

Courses Taught

Ugrad: General Biology Lab, General Ecology, Environmental Application of GIS, Senior Seminar
Grad: Terrestrial Ecology, Wetlands Ecology, Environ. Apps of GIS, Global Change, Biometry

Related Work Experience or Specialized Skills

Professional Development

NSF Sponsored Workshop on utilizing stream sampling and GIS applications in teaching problem/inquiry-based lab exercises. This was a competitive application/review process and 25 professors/individuals from the NE USA were selected. Rochester, NY August, 2005

Ecological Society of America international annual meeting. Montreal, Quebec, Canada. August 2005. Gary J. Whiting*, Rebecca Deeley, Whitney Carroll & Craig Doolittle. A Comparison of Remote Sensing, Net Carbon Dioxide Exchange, and Methane Emission Relationships in the Subtropical Wetlands of Florida Everglades and the Peatlands of Northern Alberta, Canada.

Research/Scholarly Activities

Deeley R.M. and G.J. Whiting. (2003) "Remote Sensing, Methane Emission, and Net Carbon Dioxide Exchange Relationships Within Stands of *Cladium jamaicense* (Browne) in the Florida Everglades. Proceedings of International Remote Sensing of the Environment.

Whiting, G.J. & Chanton, J.P. (2001) Greenhouse Carbon Balance of Wetlands: Methane Emission versus Carbon Sequestration. *Tellus* 53B 521-528, 2001.

Popp, T.J., J. P. Chanton, G.J. Whiting, & N. Grant (2000) Evaluation of methane oxidation in the rhizosphere of a *Carex* dominated fen in north central Alberta, Canada. *Biogeochemistry* 51, 259-281.

- Popp, T.J., J. P. Chanton, G.J. Whiting, & N. Grant (1999) The Methane Stable Isotope Distribution at a *Carex* Dominated Fen In North Central Alberta. *Global Biogeochemical Cycles*, 13(4), 1063-1078.
- Frolking, S.E., Bubier, J.L., Moore, T.R., Ball, T., Bellisario, L.M., Bhardwaj, A., Carroll, P., Crill, P.M., Lafleur, P.M., McCaughey, J.H., Roulet, N.T., Suyker, A.E., Verma, S.B., Waddington, J.M., & Whiting, G.J. (1998). The Relationship between Ecosystem Productivity and photosynthetically active radiation for northern peatlands. *Global Biogeochem. Cycles*, 12(1), 115-126.
- Chanton, J.P., Whiting, G.J., Blair, N.E., Lindau, C.W., Bollich, P.K. (1997). Methane emission from rice: stable isotopes, diurnal variations and CO₂ exchange. *Global Biogeochem. Cycles* 11,15-28.
- Whiting, G. J. and J.P. Chanton (1996) Control of diurnal pattern of methane emission from emergent aquatic macrophytes by gas transport mechanisms. *Aquatic Botany*, 54, 237-253.
- Chanton, J.P. and G.J. Whiting (1996) Methane stable isotopic distributions as indicators of gas transport mechanisms in emergent aquatic plants. *Aquatic Botany*, 54, 227-236.
- Anderson, B.E., G.L. Gregory, J.E. Collins, G.W. Sachse, T.J. Conway, and G. J. Whiting (1996) Airborne observations of Spatial and temporal variability of tropospheric carbon dioxide. *J.Geophys. Res. Atmospheres*, 101, 1985-1997.
- Chanton, J.P. and G. J. Whiting (1995) Chapter: "Trace gas exchange in freshwater and coastal marine systems" in *Methods in Ecology: Trace Gases*. Eds. P. Matson and R. Harriss. Blackwell Scientific Publ. pp. 98-125.
- Whiting, G.J. (1994) CO₂ exchange in the Hudson Bay lowlands: Community characteristics and multispectral reflectance properties. *J. Geophys. Res. Atmospheres*, 99, 1519-1528.
- Anderson, B.E., J.E. Collins, G.W. Sachse, G.W. Whiting, R.D. Blake, & F.S. Rowland (1993) AASE-II observations of trace carbon species distributions in the mid to upper troposphere. *Geophysical Res. Letters* 20, 2539-2542.
- Whiting, G.J. & J.P. Chanton (1993) Primary production control of methane emission from wetlands. *Nature* 364, 794-795.
- Happell, J.D., J.P. Chanton, G.J. Whiting & W.J. Showers (1993) Stable isotopes as tracers of methane dynamics in Everglades marshes with and without active populations of methane oxidizing bacteria. *J. Geophys. Res. Atmospheres*, 98, 14771-14782.
- Chanton, J.P., G.J. Whiting, J.D. Happell & G. Gerard (1993) Contrasting rates and diurnal patterns of methane emission from emergent aquatic macrophytes. *Aquatic Botany*, 46, 111-128.
- Whiting, G.J. & J.P. Chanton (1992) Plant-dependent CH₄ emission in a subarctic Canadian fen. *Global Biogeo. Cycles* 6, 225-231
- Whiting, G.J., D. Bartlett, M.Fan, P.Bakwin, and S.Wofsy, (1992) Biosphere/atmosphere CO₂ exchange in tundra ecosystems: community characteristics and relationships with multispectral surface reflectance, *J. Geophys. Res. Atmospheres* 97, 16671-16680.
- Chanton, J.P., Whiting, G.J., Showers, W.J. and Crill, P.M. (1992) Methane flux from *Peltandra virginica*: Stable Isotope tracing and Chamber effects. *Global Bio. Cycles* 6, 15-32.

Whiting, G.J., J.P. Chanton, D.S. Bartlett, & J.D. Happell, (1991), Relationships between CH₄ emission, biomass, and CO₂ exchange in a subtropical grassland. *JGR Atmospheres* 96, 13067-13071.

Bartlett, D.S., Whiting, G.J. and J.M. Hartmann. (1990) Use of vegetation indices to estimate intercepted solar radiation and net carbon dioxide exchange of a grass canopy. *Remote Sens. Environ.* 30:115-128.

Whiting, G.J., McKellar, H.N., Wolaver, T.G., & Spurrier, J.D. (1989) Nitrogen exchange between a portion of vegetated salt marsh and the adjoining creek. *Limnology & Oceanography* 34, 463-473.

Whiting, G.J. and D.L. Childers (1989) Subtidal advective water flux as a potentially important nutrient input to southeastern USA saltmarsh estuaries. *Estuarine, Coastal & Shelf Science* 28, 417-431.

Wolaver, T.G., Whiting, G.J., Dame, R.F., Williams, T.M., and Spurrier, J.D. (1988) Bly Creek ecosystem study- nitrogen exchange within a euhaline salt marsh basin of North Inlet, South Carolina. *Marine Ecology Progress Series* 49, 107-116.

Morris, J.T., Whiting, G.J. & Chapelle, F.H. (1988) Potential denitrification rates in deep sediments from the southeastern coastal plain. *Environmental Sci. & Technology* 22,832-836.

Whiting, G.J, McKellar, H.N., B. Kjerfve, & Spurrier, J.D. (1987) Nitrogen exchange between a southeastern USA salt marsh ecosystem and the coastal ocean. *Marine Biology* 95, 173-182.

Whiting, G.J., Gandy, E.L. & Yoch, D.C. (1986) Tight coupling of root-associated nitrogen fixation and plant photosynthesis in the salt marsh grass *Spartina alterniflora* and carbon dioxide enhancement of nitrogenase activity. *Applied and Environ. Microbiol.* 52, 108-113.

Morris, J.T. & Whiting, G.J. (1986) Emission of gaseous carbon dioxide from salt marsh sediments and its relation to other carbon losses. *Estuaries* 9, 9-19.

Whiting, G.J. & Morris, J.T. (1986) Nitrogen fixation (C₂H₂ reduction) in a salt marsh: Its relationship to temperature and an evaluation of an in situ chamber technique. *Soil Biology & Biochemistry* 18, 515-521.

Morris, J.T. & Whiting, G.J. (1985) Gas advection in salt marsh sediments. *Marine Ecol. Prog. Ser.* 27, 187-194.

Whiting, G.J., H.N. McKellar, B. Kjerfve & J.D. Spurrier. (1985) Sampling and computational design of nutrient flux from a southeastern U.S. salt marsh. *Estuarine, Coastal and Shelf Science* 21, 273-286. Wolaver, T., Whiting, G.J., Kjerfve, B., Spurrier, J., McKellar, H., Dame, R., Chrzanowski, T., Zingmark, R., & T. Williams (1985). The flume design- a methodology for evaluating material fluxes between a vegetated salt marsh and the adjacent tidal creek. *J. Exp. Mar. Biol. & Ecology* 91, 281-291.

Yoch, D.C. & Whiting, G.J. (1985) Nitrogen fixation in salt marsh sediments and roots of the C₄ grass, *Spartina alterniflora*: evidence for NH₄⁺ switch-off regulation. *Applied and Environmental Microbiology* 51, 143-149.

***Grants**

NSF, Ecosystems 2001-2003. Effect of climate change on carbon cycling within the discontinuous permafrost zone of Canada. \$628,000. PI with Co-PI J. Chanton.

EPA, 1997-2000. Atlantic White Cedar swamp restoration: Monitoring ecosystem services and self maintenance. \$700,000. Co-PI with R. Atkinson & F. Day.

NSF, Ecosystems 1996-1999. Methane emission, net ecosystem CO₂ exchange and remote sensing relationships in subtropical to boreal wetlands. \$350,000. PI.

NASA Terrestrial Ecology Program, 1993-1996. Controls on Methane Emissions from Vegetated Wetlands: Substrate, Oxidation, and Transport. PI with J. Chanton. \$495,000.

DOE, National Institute for Global Environmental Change. 10/92-11/94 Control of methane flux from vegetated wetlands. Co-PI with J. Chanton. \$198,600.

NASA Biospherics 10/91-9/92. Gas Exchange in Wetlands: Controls and Remote Sensing. \$82,000. PI

NOAA, Climate and Global Change Program, Trace Gas Studies. 10/90-9/92. The role of vegetation - biomass, leaf surface area, and carbon fixation rate - in controlling methane flux from terrestrial wetlands. Co-PI with J. Chanton. \$171,000.

NASA Biospherics 10/89-9/91. Biosphere/Atmosphere carbon dioxide exchange in wetland ecosystems: Relationships with multispectral surface reflectance, vegetation, and environmental variables. Co-PI with D. Bartlett. \$157,000.

Professional or Academic Honors and Awards

Professional Affiliations and Memberships

American Geophysical Union
Estuarine Research Society
Society of Wetland Scientists
Ecological Society of America

Service (most recent 5 years)

- a. University - Faculty Review Committee
- b. University - Graduate Faculty Council (ENVS MS Coordinator)
- c. University - Senator on Faculty Senate (elected as Vice-President in S05)
- d. Department - Coordinator of Graduate Studies for Environmental Science MS program. Program design, develop/revise graduate student handbook, set personnel goals for future hires, and redesign the curriculum offered.