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## **PROFESSIONAL PREPARATION**

B. A., 1987, University of Texas at Austin (**Microbiology**)  
Ph.D., 1995, University of Texas at Austin (**Marine Science**)  
Dissertation: "Sources, Transformations and Fates of Vascular Plant-Derived Organic Matter in Marine Environments" Ph.D. Advisor, Dr. Ronald Benner

## **APPOINTMENTS**

2010-present	Hydrologist, U. S. Geological Survey
2007-present	Associate Editor, <i>Limnology and Oceanography</i>
2007-present	Associate Scientist, Jones Ecological Research Center
2007-present	Adjunct Assistant Professor U. Georgia/ Ecology
2005-present	Courtesy Assistant Professor, U. Florida/Soil and Water
2001-present	Courtesy Assistant Scholar, Florida State U./Oceanography
2000-present	Assistant Scientist, Jones Ecological Research Center
1998-2000:	National Research Council Research Associate/U.S. EPA
1995-1998:	Post-Doctoral Associate, University of Texas at Austin

## **RESEARCH INTERESTS**

### **1) Aquatic biogeochemistry**

Anthropogenic tracers (e.g. caffeine) in freshwater and marine systems  
Stream/aquifer interactions  
Reservoir assimilation of excess nutrients  
Trace chemical and biological contaminants (PCPs, Pharmaceuticals, etc)  
Inland and coastal eutrophication  
Photochemical and microbial degradation of organic compounds  
Molecular biomarkers (e.g. lignin) as tracers of carbon and nitrogen flow

### **2) Microbial Ecology**

Microbial oxygen consumption  
Bacterial indicators of impairment  
Groundwater ecology and subterranean chemosynthetic communities  
Microbial cycling of DOM and POM  
Microbial contributions to food webs

## **AFFILIATIONS**

American Society of Limnology and Oceanography  
American Geophysical Union  
Lake Seminole Association

## **PEER REVIEWED FOR THE FOLLOWING**

Journals: *Limnology and Oceanography*, *American Journal of Science*, *Ecosystems*, *Biogeochemistry*, *Global Biogeochemical Cycles*, *Environmental Science and Technology*, *Aquatic Microbial Ecology*, *Geochimica et Cosmochimica Acta*, *Nature Geoscience*, *Geophysical Research Letters*, *Aquatic Science*, *Soil Science Society of America Journal*, *Journal of Geophysical Research Biogeosciences*, *Analytical Chemistry*, *Organic Geochemistry*, *Marine Chemistry*, *Limnology and Oceanography Methods*, *Wetlands*, *Estuaries*, *Federation of European Microbiological Societies*, *Proceedings in Marine Science*, *Deep Sea Research*, *Aquatic Biology*, *Southeastern Naturalist*, *Biogeochemistry of Wetlands (book chapter for Handbook of Soil Science)*

Programs: *National Science Foundation Ecosystems*, *NSF Chemical Oceanography*, *NSF Hydrologic Sciences*, *NSF Office of Polar Programs*, *Sea Grant*, *Kearney Foundation*, *National Institute for Water Resources (NIWR)*

## **GRADUATE STUDENTS**

Mr. Stephen Shivers, MS (2010), University of Georgia Odum School of Ecology, *Impacts of submerged aquatic vegetation on nutrient and organic matter cycling in freshwater aquatic systems*

Ms. Julie McEntire, MS (2009), University of Georgia Institute of Ecology, *Sources and cycling of nutrients in a shallow subtropical reservoir*

Ms. Carla Atkinson, MS (2008), University of Georgia Institute of Ecology. *Flow regime effects on basal resources and niche overlap of filtering bivalves in a low-gradient coastal plain stream.*

Ms. Kelly Peeler, MS (2004), Florida State University Department of Oceanography, *Caffeine as an anthropogenic tracer in freshwater and marine systems.*

## **RESEARCH ASSOCIATES**

Alan Covich (U. Georgia), Jeff Chanton (Florida State U.), Patrick Inglett (U. Florida), Jim Happell (U. Miami), Brian Katz (USGS), Dale Griffin (USGS), Richard Zepp (US EPA), Jennifer Cherrier (Florida A&M), Susan Ziegler (Memorial University), Ron Benner (U. South Carolina), Woody Hicks (Jones Research Center), Robert Mitchell (Jones Research Center)

## RESEARCH SUPPORT

- Opsahl, S. (PI) and P. Inglett (Co-PI, UF) Collaborative Research: Does Carbon Quality Regulate Hot Spots and Hot Moments of Denitrification in Reservoirs? NSF: Ecosystems. Opsahl component, \$398,000. 1<sup>st</sup> submission not funded. 2<sup>nd</sup> submission planned for July 2009.
- University of Florida Research Innovation Fund, Patrick Inglett and Steve Opsahl, October 08-October 09, Excess Nitrogen Removal in Landscapes: Using Advanced Techniques to Determine the Role of Aquatic Plants on Denitrification in Shallow Lake Systems. \$50,000
- Robert W. Woodruff Foundation, May 2005-December 2010. Hydrologic variation and human development in the lower Flint River basin: An ongoing landscape-scale experiment, Co-PI with S.W. Golladay, D.W. Hicks, and L.L. Smith.
- Robert W. Woodruff Foundation, March 2005-December 2010. Depressional wetlands in the coastal plain landscape: Maintenance of regional biological diversity, Co-PI with L.K. Kirkman (PI), L.L. Smith, S.W. Golladay, and D.W. Hicks.
- U. S. Fish and Wildlife Service, September 2004-March 2006, \$19,000. Assessment of stream habitat in the ACF basin, PI with S. W. Golladay, and D. W. Hicks
- Hicks, D.W., S.W. Golladay, and S.P. Opsahl. 2002. Evaluation of groundwater and surface-water exchanges in the lower Flint River Basin. Georgia Environmental Protection Division. Budget \$96,674 June 1, 2002 – June 30, 2003.
- Robert W. Woodruff Foundation, May 2000-December 2004. Independent research projects with a collective operating budget of \$50,000-\$70,000/year plus a full time technician, laboratory facilities, and equipment.

## PUBLICATIONS

- Allums, S.E., S.P. Opsahl, S.W. Golladay, and D.W. Hicks. Accepted. *Influence of land use on groundwater quality in Upper Floridan aquifer springheds in the lower Flint River Basin, Georgia, USA. **Journal of the American Water Resources Association.***
- Atkinson, C.L., M. First, M., A.P. Covich, S.P. Opsahl, and S. W. Golladay. *Suspended material availability and filtration-biodeposition processes performed by a native and invasive bivalve species in streams. **Hydrobiologia**, 667: 191-204, DOI 10.1007/s10750-011-0640-5.*
- Sargent, L. W., S. W. Golladay, A. P. Covich, and S. P. Opsahl. *Physicochemical habitat association of a native and a non-native crayfish in the lower Flint river, Georgia: implications for invasion success. **Biological Invasions** 10.1007/s10530-010-9844-2.*
- Opsahl, S. P., S. W. Golladay, L. L. Smith, and S. E. Allums. (2010). *A stable isotope study of resource-consumer relationships and baseline isotopic signatures of food webs in three types of isolated wetlands in the southeastern coastal plain (USA). **Wetlands** 30: 1213-1224.*

- L.K. Kirkman, L. L. Smith, S.W. Golladay and S. Opsahl. *A research framework for identifying potential linkages between isolated wetlands and disease ecology* **Ecological Research** DOI 10.1007/s11284-010-0770-7.
- Atkinson, C.L., S.P. Opsahl, A.P. Covich, and S.W. Golladay. (2010). *Stable isotopic signatures, tissue stoichiometry, and nutrient cycling (C and N) of a native and invasive bivalve.* **Journal of the North American Benthological Society** 29: 496-505.
- Atkinson, C., S. Golladay, S. Opsahl, and A. Covich. *Stream discharge and floodplain connections affect seston quality and stable isotopic signatures in a coastal plain stream.* **Journal of the North American Benthological Society** 28:360-370.
- Opsahl, S. P., Chapal, S. E., Hicks, D. W., and Wheeler, C. K. (2007). Evaluation of Ground-water and surface-water exchanges using a streamflow difference analysis. **Journal of the American Water Resources Association** 43: 1132-1141.
- Peeler, K. A., Opsahl, S. P., Chanton, J. P. (2006). Tracking Anthropogenic Inputs Using Caffeine, Indicator Bacteria, and Nutrients in Rural Freshwater and Urban Marine Systems. **Environmental Science and Technology** 40, 7616-7622. \*\*from student thesis\*\*
- Opsahl, S. P. and Chanton, J. P. (2006) Isotopic evidence for methane-based chemosynthesis in the Upper Floridan aquifer food web. **Oecologia** 150, 89-96.
- Happell, J. D., Opsahl, S. P., Top, Z., and Chanton, J. P. (2006). CFC and  $^3\text{H}/^3\text{He}$  age dating of water from Floridan Aquifer springs. **Journal of Hydrology** 319, 410-426.
- Opsahl, S. P. (2005). Organic carbon composition and oxygen metabolism across a gradient of seasonally inundated limesink and riparian wetlands in the southeast coastal plain. **Biogeochemistry** 76, 47-68.
- Purvis, K., and Opsahl, S. P. (2005). A novel technique for invertebrate trapping in groundwater wells identifies new populations of the troglobitic crayfish, *Cambarus cryptodytes*, in southwest Georgia, USA. **Journal of Freshwater Ecology** 20, 361-365.
- Miller, W., Moran, M. A., Sheldon, W, Zepp, R. G., Opsahl, S. (2002). Determination of apparent quantum yield spectra for the formation of biologically labile photoproducts. **Limnology and Oceanography** 47, 343-352.
- Kisselle, K., Zepp, R. G., Burke, R. A., Pinto, Alexandre, Opsahl, S., Bustamante, M., Varella, R. F. and Viana, L. T. (2002). Seasonal soil fluxes of carbon monoxide in burned and unburned Brazilian Savannas. **Journal of Geophysical Research**
- Opsahl, S. and Zepp, R. G. (2001). Photochemically-induced alterations of stable carbon isotope ratios ( $\delta^{13}\text{C}$ ) in terrigenous dissolved organic carbon. **Geophysical Research Letters** 28, 2417-2420.
- Benner, R., and Opsahl, S. (2001). Molecular indicators of the sources and transformations of dissolved organic matter in the Mississippi River Plume. **Organic Geochemistry** 32, 597-607.
- Yager, P. L., Connelly, T. L., Mortazavi, B., Wommack, K. E., Bano, N., Bauer, J. E., Opsahl, S., Hollibaugh, J. T. (2001). Dynamic bacterial and viral response

- to an algal bloom at sub-zero temperatures. *Limnology and Oceanography* 46, 790-801.
- Hedges, J. I., Mayorga, E., Tsamakis, E., McClain, M. E., Aufdenkampe, A., Quay, P., Richey, J. E., Benner, R., Opsahl, S., Black, B., Pimentel, T., Aguirre, J. Q., Maurice, L. (2000). Organic matter in Bolivian tributaries of the Amazon River: A comparison to the lower mainstem. *Limnology and Oceanography* 45, 1449-1466.
- Loucharoun, P., Opsahl, S., Benner, R. (2000) Isolation and Quantification of dissolved lignin from natural waters using solid-phase extraction (SPE) and GC/MS. *Analytical Chemistry*, 13, p. 2780-2787.
- Opsahl, S., Amon, R.M.W., Benner, R. (1999) Major flux of terrigenous dissolved organic matter through the Arctic Ocean. *Limnology and Oceanography* 44, 2017-2023.
- Opsahl, S., Benner, R. (1999) Characterization of carbohydrates during early diagenesis of five vascular plant tissues. *Organic Geochemistry* 30, 83-94.
- Opsahl, S., Benner, R. (1998) Photochemical reactivity of dissolved lignin in riverine and ocean waters. *Limnology and Oceanography* 43, 1297-1304.
- Opsahl, S., Benner, R. (1997). Distribution and cycling of terrigenous dissolved organic matter in the ocean. *Nature*: 386, 480-482.
- Benner, R., Opsahl, S., Chin-Leo, G., Richey, J., Forsburg, B. (1995). Bacterial carbon metabolism in the Amazon River system. *Limnol. Oceanogr.* 40:1262-1270.
- Opsahl, S., Benner, R. (1995). Early diagenesis of vascular plant tissues: Lignin and cutin decomposition and biogeochemical implications. *Geochim. Cosmochim. Acta*: 59: 4889-4904.
- Biddanda, B., Opsahl, S., Benner, R. (1994) Plankton respiration and carbon flux through bacterioplankton on the Louisiana shelf. *Limnol. Oceanogr.* 39: 1259-1275.
- Opsahl, S., Benner, R. (1993). Decomposition of senescent blades of the seagrass *Halodule wrightii* in a subtropical lagoon. *Mar. Ecol. Prog. Ser.* 94: 191-205.

## WATER RESOURCES PUBLICATIONS AND REPORTS

- Opsahl, S., and P. Inglett. 2009. Nitrogen sources and sinks in Lake Seminole: implications for the Apalachicola-Chattahoochee-Flint (ACF) nutrient budget. Pages 199-202 In: *Proceedings of the 2009 Georgia Water Resources Conference*, T.C. Rasmussen, G.D. Carroll, and A. Georgakakos (eds.). Institute of Ecology, University of Georgia, Athens, Georgia.
- Allums, S.E., S.P. Opsahl, S.W. Golladay, and D.W. Hicks. 2009. Effects of land-use on groundwater quality in springs of the Upper Floridan Aquifer. In: *Proceedings of the 2009 Georgia Water Resources Conference*, T.C. Rasmussen, G.D. Carroll, and A. Georgakakos (eds.). Institute of Ecology, University of Georgia, Athens, Georgia.
- McEntire, J. M., S. Opsahl, and A. P. Covich. 2009. Sources and cycling of nutrients of a subtropical reservoir. In: *Proceedings of the 2009 Georgia Water Resources Conference*, T.C. Rasmussen, G.D. Carroll, and A. Georgakakos (eds.). Institute of Ecology, University of Georgia, Athens,

Georgia.

- Opsahl, S. P., Happell, J. D. and Chanton, J. P. (2007). Unusual Chemistry and Anthropogenic Contaminants in Upper Floridan aquifer groundwater Underneath the Chickasawhatchee Swamp. Pages 483-486 in ***Proceedings of the 2007 Georgia Water Resources Conference***, T. C. Rasmussen, G. D. Carroll, and A. Georgakakos (eds.), Institute of Ecology, The University of Georgia, Athens.
- Muenz, T.K., Opsahl, S. P., and Golladay, S. W. (2007). Current conditions of historical mussel habitat in the Flint River Basin. Pages 475-478 in ***Proceedings of the 2007 Georgia Water Resources Conference***, T. C. Rasmussen, G. D. Carroll, and A. Georgakakos (eds.), Institute of Ecology, The University of Georgia, Athens.
- Sims, S. and S. P. Opsahl. (2007). Long-term trends in nitrate contamination in four Flint River Springs, in ***Proceedings of the 2007 Georgia Water Resources Conference***, T. C. Rasmussen, G. D. Carroll, and A. Georgakakos (eds.), Institute of Ecology, The University of Georgia, Athens.
- Muenz, T., Opsahl, S. P., Golladay, S. W., Hicks, D. W., Clayton, B., and Cressman, K. (2006). Assessment of Stream Habitat in the Flint River Basin. ***Final Report submitted the U. S. Department of the Interior, Fish and Wildlife Service.***
- Opsahl, S. P., Chapal, S. E. and Wheeler, K. (2005). Using stream gage data to quantify surface water/groundwater exchanges between the Upper Floridan aquifer and the lower Flint River, Georgia USA, 1989-2004. Pages 764-768 in ***Proceedings of the 2005 Georgia Water Resources Conference***, Kathryn J. Hatcher (ed.), Institute of Ecology, The University of Georgia, Athens.
- Opsahl, S. P., Wheeler, K., Lane, R. L., and Jenkins, J. C. (2003). Effects of the Upper Floridan aquifer on water chemistry and oxygen metabolism in the lower Flint River during drought. Pages 614-618 in ***Proceedings of the 2003 Georgia Water Resources Conference***, Kathryn J. Hatcher (ed.), Institute of Ecology, The University of Georgia, Athens.
- Jenkins, J. C., Hicks, D. W., and S.P. Opsahl. 2003. Nitrogen chemistry in the Upper Floridan aquifer in wells on the Ichauway Ecological Reserve, Newton, GA. In K.J. Hatcher (ed.). ***Proceedings of the 2003 Georgia Water Resources Conference***. University of Georgia, Athens.
- Wheeler, K. and Opsahl, S. P. (2003). Hydrologic controls on water chemistry and microbial activity in a small coastal plain stream. Pages 610-613 in ***Proceedings of the 2003 Georgia Water Resources Conference***, Kathryn J. Hatcher (ed.), Institute of Ecology, The University of Georgia, Athens.

## PRESENTATIONS

- U.S. Geological Survey, Texas Water Science Center, San Antonio, TX, October 15, 2010, *Internal cycling of nutrients and dissolved organic carbon in a shallow subtropical reservoir: Implications for watershed delivery to the Gulf of Mexico.*
- Coastal Carolina University, April 2, 2010. *Surface water/Groundwater Interactions and Reservoir Influences on Coastal Nutrient Delivery.*
- University of Florida, Sustainable Water Resources Conference, February 23-25,

2010. *Sources and cycling of nutrients and dissolved organic carbon in the lower ACF basin.*
- Seminar, US Army Corps of Engineers Engineer Research and Development Center, Vicksburg MS, October 23, 2008. *The Significance of Surface Water/Groundwater Interactions to Nutrient Cycling in the lower ACF: Issues of Quantity and Quality.*
- Environmental Flows, Water for People and Nature in the Southeast, October 27, 2008. *Ground Water Contributions to Streamflow and Flow Reversals in the Lower Flint River.*
- University of Florida, Sustainable Water Resources Conference, February 22-24, 2008. *Lake Seminole: A Sentinel of Upstream and Downstream Water Quality in the ACF Basin.*
- ASLO, Aquatic Sciences Meeting, Santa Fe, NM, Feb. 4-10, 2007, *Denizens of the Deep Right Under Our Feet. But what do they eat?*
- Seminar, University of Georgia Institute of Ecology, January 30, 2007. *The Significance of Surface Water/Groundwater Interactions to Nutrient Cycling and Subterranean Biology in the Lower Flint River Basin.*
- Seminar, Skidaway Institute Departmental Seminar, December 1, 2006. *The Importance of Surface Water/Groundwater Interactions to Water Quality and Subterranean Biology in the Lower Flint River Basin.*
- Seminar, Valdosta State University, March 9, 2006, *Understanding Surface Water/Groundwater Interactions in the Lower Flint River Basin: An integrated Approach.*
- Lower Apalachicola-Chattahoochee-Flint Research Conference, October 23-25, 2006, *Evaluation of ground-water and surface water exchanges in the lower Flint River basin using a streamflow difference analysis.* S. Opsahl, S. Chapal, Woody Hicks, and Kit Wheeler.
- Joint Assembly of the American Geophysical Union and the North American Benthological Society, May 22-27, 2005, *Isotopic Evidence for Chemosynthetic Contributions to the Subterranean Food Web of the Upper Floridan Aquifer.* S. Opsahl and J. Chanton.
- Georgia Water Resources Conference, Athens, Georgia, April 24-27, 2005, *Using stream gage data to quantify surface water/groundwater exchanges between the Upper Floridan aquifer and the lower Flint River, Georgia USA, 1989-2004.* Opsahl, S. P., Chapal, S. E. and Wheeler, K.
- Seminar, University of Florida Soil and Water Sciences Department, January 28, 2005, *Limesink Depressional Wetlands in the Southeast Coastal Plain: Consistent Trends in Microbial Processes and Food Web Structure Across an Ecological Gradient.*
- ASLO, Aquatic Sciences Meeting, Savannah, GA, June 13-18, 2004, *Elucidating the subterranean food web of the Upper Floridan aquifer using a combined isotopic approach.*
- Lower Flint River Research Conference, Albany Georgia, May 10-12, 2004, *Surface water/groundwater interactions in the lower Flint River basin.*
- Lower Flint River Research Conference, Albany Georgia, May 10-12, 2004, *Abundance and distribution of two troglobitic species in the Dougherty Plain region.*
- Seminar (invited), Florida A&M University Environmental Sciences Institute, 7

- November 2003, *Microbes, mixing, and some important organic matters in the Upper Floridan aquifershed.*
- Flint River Basin Workshop, September 10-11, 2003, *Aquifer-stream-wetland interactions and water quality in the lower Flint River basin.*
- Frontiers in Marine Organic Geochemistry, Friday Harbor Laboratory, WA, August 28-30, 2003, *Freshwater DOM: Some light and dark matters.*
- J. W. Jones Ecological Research Center Independent Review, Ichauway, August 12-16, 2003, *Caffeine as an anthropogenic tracer*, Peeler, K., Chanton, J. and Opsahl, S.
- J. W. Jones Ecological Research Center Independent Review, Ichauway, August 12-16, 2003, *Analysis of historical trends in groundwater discharge to the lower Flint River*, Wheeler, K. and Opsahl, S.
- J. W. Jones Ecological Research Center Independent Review, Ichauway, August 12-16, 2003, *Preliminary findings on the distribution of the Dougherty Plain Cave Crawfish, Cambarus Cryptodytes*, Purvis, K. and Opsahl, S.
- Georgia Water Resources Conference, Athens, Georgia, April 22-24, 2003, *Hydrologic controls on water chemistry and microbial activity in a small coastal plain stream.* Wheeler, K. and Opsahl, S. P.
- Georgia Water Resources Conference, Athens, Georgia, April 22-24, 2003, *Nitrogen chemistry in the Upper Floridan aquifer in wells on the Ichauway ecological reserve*, Newton, Georgia. Jenkins, J. C., Hicks, D. W., and Opsahl, S. P.
- Georgia Water Resources Conference, Athens, Georgia, April 22-24, 2003 *Effects of the Upper Floridan aquifer on water chemistry and oxygen metabolism in the lower Flint River during drought.* Opsahl, S. P., Wheeler, K., Lane, R., and Jenkins, J. C.
- ASLO, Aquatic Sciences Meeting, Salt Lake City, Utah, February 9-14, 2003, *Sources and biogeochemical transformations of organic matter and nitrogen at Karst surface water/groundwater interfaces.*
- Guest Lecture, FSU geochemistry class, 24 October 2002. *Groundwater biogeochemistry in the Upper Floridan aquifer.*
- Lower Flint River Research Conference, Albany Georgia, January 14-16, 2002, *Biogeochemistry and microbial ecology of water in the lower Flint River basin.*
- Seminar, University of Arkansas, Department of Biological Sciences, 4 April 2002, *Surface water/groundwater mixing and microbial metabolism of dissolved organic matter in a shallow karst ecosystem.*
- Seminar, University of South Carolina, Department of Biological Sciences, 22 March 2002, *Surface water/groundwater mixing and microbial metabolism of dissolved organic matter in a shallow karst ecosystem.*
- Seminar, Florida State University, Department of Oceanography, 31 August, 2001, *Exploring sunlight-driven biogeochemistry in aquatic ecosystems.*
- ASLO, Aquatic Sciences Meeting, Albuquerque, NM, 12-16 February 2001. *Photochemically-induced transformations of dissolved organic matter in riverine waters.*
- Large-Scale Biosphere/Atmosphere Experiment in Amazonia Science Team Meeting, June 2000. *Impacts of Land Use Change and Fire on Nutrient and Carbon Cycles and Trace Gas Exchange in Soils of the Cerrado in*

- Central Brazil.* A. Pinto, R. Varella, G. Nardoto, L. Viana, L. Andrade, R. Chiba, R. Santos, M. Bustamante, R. Burke, K. Kisselle, M. Molina, S. Opsahl, R. Zepp.
- American Geophysical Union (AGU)/American Society of Limnology and Oceanography (ASLO) meeting, 22-29 January 2000. *Photochemical Transformations of Dissolved Organic Matter in 2 Georgia Rivers.*  
Jones Ecological Research Center, Newton, GA, 13 January 2000. *Exploring biogeochemical cycles and microbial activities in aquatic ecosystems.*
- Estuarine Research Federation (ERF) meeting, New Orleans, LA, 26 Sept.-1 Oct. 1999. *Application of dissolved lignin as a tracer of terrigenous dissolved organic matter in aquatic ecosystems.*
- Skidaway Institute of Oceanography, Skidaway, GA, 2 April 1999. *Large-Scale Flow of Terrigenous Material Through the Arctic Ecosystem: Rivers in the Sea.*
- ASLO, Aquatic Sciences Meeting, Santa Fe, NM, 1-5 February 1999. *Major flux of terrigenous dissolved organic matter through the Arctic Ocean.*
- Society of Environmental Toxicology and Chemistry (SETAC) meeting, Charlotte, North Carolina, 16-20 November 1998. *Photochemical reactivity of dissolved lignin in river and ocean waters.*
- Seminar, University of Georgia, 29 October 1998. *Major flux of terrigenous dissolved organic matter through the Arctic Ocean: Rivers in the Sea.*
- Seminar, Louisiana State University, 9 March 1998. *The fate of riverine dissolved organic matter in the marine environment.*
- Seminar, Texas A&M University, 27 October 1997. *Distribution and cycling of terrigenous dissolved organic matter in the ocean*
- Seminar, Florida State University, 7 March 1997. *Distribution and cycling of terrigenous dissolved organic matter in the ocean.*
- Special session co-chair with Lars Tranvik: *Origin, formation and degradation of recalcitrant DOM*; American Society of Limnology and Oceanography, Aquatic Sciences Meeting, Santa Fe, NM, 10-14 February 1997.
- ASLO, Aquatic Sciences Meeting, Santa Fe, NM, 9-14 February 1997. *Photochemical and microbial alteration of riverine DOM.*
- DISCO XIII, Dissertation Symposium on Chemical Oceanography, Honolulu, Hawaii, May 5-10, 1996. Sponsors: NSF, NOAA and ONR. *Sources, transformations and fates of terrestrial organic matter in marine environments.*
- American Geophysical Union/ASLO, Ocean Sciences Meeting, San Diego, CA, 12-16 February 1996. *Concentration and distribution of terrestrial organic matter in oceanic DOM examined using lignin phenols as molecular biomarkers.*
- Seminar, University of North Carolina at Chapel Hill. 20 October 1994. *Early diagenesis of vascular plant tissues: Biochemical inventories and molecular biomarker applications.*
- American Geophysical Union/ASLO, Ocean Sciences Meeting, San Diego, CA, 21-25 February 1994. *Long-term degradation patterns of vascular plant tissues.*
- ASLO, Aquatic Sciences Meeting, Santa Fe, NM, 9-14 February 1992. *Transformations of seagrass-derived POM and DOM.*

Seminar, University of Texas Marine Science Institute in Port Aransas. 10 April  
1991. *Vascular plant carbon in marine systems.*  
South Texas Bays and Estuaries Meeting, Port Aransas, TX, 25 February 1991.  
*Seagrass decomposition in the Laguna Madre.*  
Southern Regional Geochemistry Meeting, Port Aransas, TX, 28-29 September