SYBIL PUTNAM SEITZINGER

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Professional Experience

Director, Rutgers/NOAA CMER Program, Rutgers University (1994-present)
Visiting Professor, Institute of Marine and Coastal Sciences, Rutgers University (1994-present)
Distinguished Patrick Scholar, Assistant/Associate Curator,and Senior Scientist, Academy of Natural Sciences of Philadelphia (1982-1994)
Instructor in Marine Sciences, International Sea Grant Program, University of Pertanian, Malaysia (1980)

Education

Ph.D., Biological Oceanography; University of Rhode Island, Kingston, RI. (1982)
B.Sc., Biology; Boston University, Boston, MA (1974)

Professional Interests

To understand land-atmosphere-ocean biogeochemical interactions within the context of environmental change. The spatial scales of my research ranges from measurements at molecular scales to models at global scales. Current research projects include: global modeling of N, P and C transport by world rivers; coastal eutrophication and Harmful Algal Blooms; nitrogen removal by denitrification in terrestrial, freshwater and coastal marine systems; development and application of advanced analytical mass spectrometry approaches to chemically characterize dissolved organic matter; secondary organic aerosol formation (SOA) in cloud water.

Selected Leadership Roles (further listings in Appendix)

President, American Society of Limnology and Oceanography, 2006-2008.
Director, Rutgers/NOAA Cooperative Marine Education and Research Program, 1994-present.
International Geosphere-Biosphere Program, Scientific Committee, member 2003-present.
Evaluation Panel of Finnish Water Research, Finnish Academy of Sciences, 2007-present.
U.S. National Committee for Intergovernmental Oceanographic Commission of UNESCO, member 2006-present.
Expert Panel on Baltic Eutrophication, Sweden Environmental Protection Agency, 2005-2006.
International Nitrogen Initiative (INI) Steering Committee, member 2002-present.
UNESCO-IOC International Working Group, Global Modeling of Nutrient Export from Watersheds (Global NEWS), Chair 2002-present.
Board of Trustees, Bermuda Biological Station for Research, 2001-present.
Institute for Ecosystem Studies, Scientific Advisory Committee, member 1998-2002.
United Nations, Organization for Economic Cooperation and Development, Intergovernmental Panel on Climate Change. Nitrous Oxide and Carbon Dioxide in Agriculture, Expert Work Group, member 1995-1997.

Journal Editorships
Editorial Board of *Ecosystems* (1999-2005)
Editorial Board of *Estuaries* (2000-2004)
Editorial Board of *Marine Pollution Bulletin* (1996-2000)
Editorial Board of FEMS *Microbiology Ecology* (1991-1997)

Rutgers University Teaching
Marine Biogeochemistry; Chemical Oceanography; Science Communication Skills

Student Committees
Major Advisor: 5 Ph.D., 9 Post-Docs
Committee Member: 10 Ph.D., 4 M.Sc.

Publications (*indicates co-author who is my student, post doc, or research assistant)

Submitted, Accepted or In Press

Calleja, M., C.M. Duarte, S.P. Seitzinger, and S.L. McCallister. (Submitted). Electrospray-ionization mass spectrometry evaluation of dissovled organic matter in the northeast subtropical Atlantic ocean

Lee, R.Y., and S.P. Seitzinger. (In prep). Land-based dissolved inorganic nitrogen export to Large Marine Ecosystems

Carlton, A.G., B.J. Turpin, K. Altieri, S. Seitzinger, R. Mathur, S. Roselle, R.J. Weber (In review) "In-Cloud SOA Formation: Possible Climate Feedbacks and Air Quality Implications", *Geophysical Research Letters.*

Galloway, J., F. Dentener, M. Burke, E. Dumont, L. Bouwman, R. Kohn, H. Mooney, S. Seitzinger and C. Kroeze. (In review) "The impact of animal production systems on the nitrogen cycle." Livestock in a Changing Landscape, Integrated Analysis and Global Consultation.

Glibert, P.M., E. Mayorga and S. Seitzinger. (In review). Prorocentrum minimum tracks anthropogenic nitrogen and phosphorus inputs on a global basis: application of spatially explicit nutrient export models. *Harmful Algae*

Seitzinger, S.P., J.N. Galloway, J.W. Erisman, and E. Davidson. (Submitted) Updated Nitrogen Report. United Nations Enviromental Programme. March 2008

Harrison, J.A., R. Maranger, R.B. Alexander, J. Cornwell, A. Giblin, P.-A. Jacinthe, E. Mayorga, S.P. Seitzinger, and W. Wollheim. (Submitted). Controls and significance of N retention in lakes and reservoirs. *Biogeochemistry*.

Hood, R., W. Naqvi, J. Goes,V. Coles, J. McCreary, N. Bates, J. Wiggert, G. Meyers, N. Mahowald and S. Seitzinger. (Accepted) Research Opportunities and Challenges in the Indian Ocean, *EOS.*

*Sipler, R. and S.P. Seitzinger. (Accepted). The use of ESI-MS to investigate complex dissolved organic matter (DOM) and its potential applications in HAB research. *Harmful Algae.*

Liu, K.-K. Seitzinger, S. P., *Mayorga, E., *Harrison, J., Ittekkot V. (Accepted). Fluxes of nutrients and selected organic pollutants carried by rivers. Chpt. Xx. *In*: P.. Rizzoli, J.

Mellilo, B. Sundby, and E.R. Urban Jr. (eds.). Dynamics and Vulnerability of Semi-enclosed Marine Systems: The Integrated Effects of Changes in Sediment and Nutrient Input from Land. Island Press, Washington, D.C.

Hood, R. R., J. D. Wiggert, N. R. Bates and S. Seitzinger (In press) Carbon cycling and biogeochemical variability in the Indian Ocean. CLIVAR Exchanges.

Seitzinger, S.P., and J.A. Harrison*. (In Press). Sources and delivery of N to coastal systems. Chapter III. *In:* C. Capone, D.A. Bronk, M.R. Mullholland, E. Carpenter (eds.), Nitrogen in the Marine Environment. *2nd edition*. Academic Press, New York.

Published

Duce, R.A., J. LaRoche, *K.Altieri, K. Arrigo, A. Baker, D. Capone, S. Cornell, F. Dentener, J. Galloway, R. Ganeshram, R.Geider, T. Jickells, M. Kuypers, R. Langlois, P. S. Liss, S. M. Liu, J. Middelburg, C.M. Moore, S. Nickovic, A. Oschlies, T. Pedersen, J. Prospero, R. Schlitzer, S. Seitzinger, L.L. Sorensen, M. Uematsu, O. Ulloa, M. Voss, B. Ward, and L. Zamora. (2008). The impacts of atmospheric anthropogenic nitrogen on the open ocean. *Science.* 320:893-897.

Galloway, J.N., A.R. Townsend, J.W. Erisman, M. Bekunda, Z. Cai, J.R. Freney, L.A. Martinelli, S.P. Seitzinger, and M.A. Sutton. (2008). Transformation of the nitrogen cycle: Recent trends, questions, and potential solutions. *Science.* 320:889-892.

Wolheim, W.M., C.J. Vorosmarty, A.F. Bouwman, P. Green, J.A. Harrison, E. Linder, B.J. Peterson, S.P. Seitzinger, and J.P. M. Syvitski (2008) Global N removal by freshwater aquatic systems using a spatically distributed, within-basin approach. Global Biogeochemical Cycles. 22: GB2026-GB2040. doi: 10:10.1029/2007GB002963,2008.

Glibert, P.M., R. Azanza, M. Burford, K. Furuya, E. Abal, A. Al-Azri, F. Al-Yamani, P. Andersen, D.M. Anderson, J. Beardall, G.M. Berg, L. Brand, D. Bronk, J. Brookes, J.M. Burkholder, A. Cembella, W.P. Cochlan, J.L. Collier, Y. Collos, R. Diaz, M. Doblin, T. Drennen, S. Dyhrman, Y. fukuyo, M. Furnas, J. Galloway, E. Graneli, D.V. Ha, G. Hallegraeff, J. Harrison, P.J. Harrison, C.A. Heil, K. Heimann, R. Howarth, C. Jauzein, A.A. Kana, T.M. Kana, J. Kim, R. Kudela, C. Legrand, M. Mallin, M. Mulholland, S. Murray, J.O'Niel, G. Pitcher, Y. Qi, N. Rabalais, R. Raine, S. Seitzinger, P.S. Salomon, C. Solomon, D.K. Stoecker, G. Usup, J. Willson, K. Yin, M. Zhou, and M. Zhu. 2008. Ocean urea fertilization for carbon credits poses high ecological risks. Marine Pollution Bulletin. 56:1049-1056

Seitzinger, S.P. and E. Mayorga. 2008. Linking Watersheds to Coastal Systems: A Global Perspective on River Inputs of N, P and C. Ocean Carbon and Biogeochemistry Program Newsletter 1(1):8-11.

Hoffman, E., J.N. Druon, K. Fennel, M. Friedrichs, D. Haidvogel, C. Lee, A. Mannino, C. McClain, R. Najjar, J. O'Reilly, D. Pollard, M. Previdi, S. Seitzinger, J. Siewert, S. Signorini, and J. Wilkin. 2008. Eastern US Continental Shelf Carbon Budget, Integrating models, data assimilation, and analysis. Oceanography 1(1): 86-104.

Seitzinger, S.P. 2008. Nitrogen Cycle: Out of Reach. Nature. 452:(7184):162 doi:10.1038/452162a http://www.nature.com/nature/journal/v452/n7184/pdf/452162a.pdf

Altieri, K.E., Seitzinger, S.P., Carlton, A.G., Turpin, B.J., Klein, G.C., and Marshall, A.G. 2008. Oligomers formed through in-cloud methylglyoxal reactions: Chemical composition, Properties, and mechanisms investigated by ultra-high resolution FT-ICR Mass

Spectrometry. *Atmospheric Environment,* 42 (7), 1476-1490

Seitzinger, S.P. and R.Y. Lee. 2007. Eutrophication: Filling gaps in nitrogen loading forecasts for LMEs, component three in GEF MSP promoting ecosystem-based approaches to fisheries conservation and LMEs. Final report to United Nations Environment Programme, Global Environmental Facility.

Carlton, A.G., B.J. Turpin, K.E. Altieri*, S. Seitzinger. A. Reff, H.-J. Lim, and B. Ervens. 2007. Atmospheric oxalic acid and SOA production from glyoxal: Results of aqueous photooxidation experiments. *Atmospheric Environment* 41:7588-7602.

Kennish M.J., S.B. Bricker, W.C. Dennison, P.M. Glibert, R.J. Livingston, K.A. Moore, R.T. Noble, H.W. Paerl, J.M. Ramstack, S.P. Seitzinger, D.A. Tomasko, I. Valiela. 2007. Barnegat Bay-Little Egg Harbor Estuary: Case study of a highly eutrophic coastal bay system. *Ecological Applications* 17 (5): S3-S16 Suppl. S.

Seitzinger, S.P., J. Harrison*, J. Bohlke, A. Bouwman, R. Lowrance, B. Peterson, C. Tobias, and G. Van Drecht. 2006. Denitrification across landscapes and waterscapes: a synthesis. *Ecological Applications* 16(6):2064-2090.

Davidson, E. and Seitzinger, S.P. 2006. The enigma of progress in denitrification research. *Ecological Applications* 16(6):2057-2063.

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Carlton, A.G., H. Lim, K.E. Altieri*, B.J. Turpin and S. P. Seitzinger. 2006. Link between isoprene and secondary organic aerosol (SOA): Pyruvic acid oxidation yields low volatility organic acids in clouds. *Geophysical Research Letters* 33: L06822 DOI 10.1029/2005GL025374

*Wiegner, T.N., S.P. Seitzinger, P.M. Glibert, and D.A. Bronk. 2006. Bioavailability of dissolved organic nitrogen and carbon from nine rivers in the eastern United States. *Aquatic Microbial Ecology* 43:277-287.

Wollheim, W. M., C. J. Vorosmarty, B. J. Peterson, S. P. Seitzinger, and C. S. Hopkinson. 2006. Relationship between river size and nutrient removal. *Geophysical Research Letters* 33: L06410.

Glibert, P.M., J. Harrison*, C. Heil, and S. P. Seitzinger. 2006. Escalating worldwide use of urea – a global change contributing to coastal eutrophication. *Biogeochemistry*, 77:441-463 DOI 10.1007/s10533-3070-0.

Gruber, D.F., J.P. Simjouw*, S.P. Seitzinger and G.L. Taghon. 2006. Dynamics and characterization of refractory dissolved organic matter produced by a pure bacterial culture in an experimental predator-prey system. *Applied and Environmental Microbiology*. 72(6):4184-4191 DOI 101128/AEM02882-05.

Glibert, P.M., S.P. Seitzinger, C.A. Heil, J. Burkholder, M. Parrow, L.A. Codispoti, and V. Kelly. 2005. Eutrophication – new perspectives on its role in the global proliferation of HABs. *Oceanography* 18:198.

Seitzinger, S.P., J.A. Harrison*, E. Dumont, A.H.W. Beusen, and A.F. Bouwman. 2005. Sources and delivery of carbon, nitrogen and phosphorous to the coastal zone: An overview of global nutrient export from watersheds (NEWS) models and their application. *Global Biogeochemical Cycles* 19(4):GB4S01.

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from a spatially explicit, global model. *Global Biogeochemical Cycles* 19:19(4): GB4S02.

*Harrison, J., S. P. Seitzinger, N. Caraco, A.F. Bouwman, A. Beusen, and C. Vörösmarty. 2005. Dissolved inorganic phosphorous export to the coastal zone: results from a new, spatially explicit, global model (NEWS-SRP). *Global Biogeochemical Cycle*s 19(4): GB4S03.

*Harrison, J.H., N.F. Caraco, and S.P. Seitzinger. 2005. Global patterns and sources of dissolved organic matter export to the coastal zone: results from a spatially explicit, global model. *Global Biogeochemical Cycles* 19(4): GBS406.

Sherman, K., M. Sissenwine, V. Christensen, A. Duda, G. Hempel, C. Ibe, S. Levin, D. Lluch-Belda, G. Matishov, J. McGlade, M. O'Toole, S.P. Seitzinger, R. Serra, H.R. Skjoldal, Q. Tang, J. Thulin, V. Vandeweerd, and K. Zwanenburg. 2005. A global movement toward an ecosystem approach to management of marine resources. *Marine Ecology Progress Series* 300: 241-296.

Kroeze, C., E. Dumont, and S.P. Seitzinger. 2005. New estimates of global emissions of N_2O from rivers and estuaries. *Environmental Sciences*: 2(2-3): 159-165.

*Laursen, A., and S.P. Seitzinger. 2005. Limitations to measuring riverine denitrification at the whole reach scale: effects of channel geometry, wind velocity, sampling interval, and temperature inputs of N_2-enriching groundwater. *Hydrobiologia* 545:225-236.

Seitzinger, S.P., H. Hartnett*, R. Lauck*, M. Mazurek, T. Minegishi*, G. Spyres*, and R. Styles*. 2005. Molecular level chemical characterization and bioavailability of dissolved organic matter in streamwater using ESI mass spectrometry. *Limnology & Oceanography* 50(1):1-12.

Galloway, J.N., F.J. Dentener, D.G. Capone, E.W. Boyer, R.W. Howarth, S.P. Seitzinger, G.P. Asner, C. Cleveland, P. Green, E. Holland, D. M. Karl, A.F. Michaels, J.H. Porter, A. Townsend, and C. Vorosmarty. 2004. Nitrogen cycles: past, present and future. *Biogeochemistry* 70:153-226.

*Laursen, A. E. and S.P. Seitzinger. 2004. Diurnal patterns of denitrification, oxygen consumption, and nitrous oxide production in rivers. *Freshwater Biology* 49:1448-1458.

Sharp, J.H., A.Y. Beauregard, D. Burdige, G. Cauwet, S.E. Curless, R. Lauck, K. Nagel, H. Ogawa, A.E. Parker, O. Primm, M. Pujo-Pay, W.B. Savidge, S. P. Seitzinger, G. Spyres*, and R. Styles*. 2004. A direct instrument comparison for measurement of total dissolved nitrogen in seawater. *Marine Chemistry* 84: 81-193.

*Wiegner, T. N., and S. P. Seitzinger. 2004. Seasonal bioavailability of dissolved organic carbon and nitrogen from pristine and polluted freshwater wetlands. *Limnology and Oceanography* 49(5):1703-1712.

Yan, W., A.E. Laursen*, F. Wang, P. Sun, and S.P. Seitzinger. 2004. Measurement of Dentrification in the Changjiang River. *Environmental Chemistry* 1:95-98.

Galloway, J.N., J.D. Aber, J.W. Erisman, S.P. Seitzinger, R.W. Howarth, E. B. Cowling, and B.J. Cosby. 2003. The nitrogen cascade. *BioScience* 53:341-356.

*Hartnett, H.A., and S.P. Seitzinger. 2003. High-resolution nitrogen gas profiles in sediment porewaters using a new membrane probe for membrane-inlet mass spectrometry (MIMS). *Marine Chemistry* 67:247-264.

Moldan, F., S.P. Seitzinger, V. Eviner, J. Galloway, X. Han, M. Keller, P. Nannipieri, W. Smith, and H. Tiessen. 2003. Potential for deliberate management of element interactions to address major environmental issues. *In*: J.M. Melillo, B. Field, and B. Moldan, (editor),

Interactions of the major biogeochemical cycles – global change and human impacts – SCOPE 61, 5: 93-114.

Seitzinger, S.P., R.M. Styles*, R. Lauck*, and M.A. Mazurek. 2003. Atmospheric pressure mass spectrometry: a new analytical chemical characterization method for dissolved organic matter in rainwater. *Environmental Science and Technology* 37:131-137.

*Wiegner, T.N., and S.P. Seitzinger. 2003. The effect of multiple stressors on the balance between autotrophic and heterot2. Multiple stressors in an estuarine system: Effects of nutrients, trace metals, and trophic complexity on benthic photosynthesis and respiration. *Estuaries* 25(1):57-69.

Yan,W.J., S. Zhang, P. Sun, and S.P. Seitzinger. 2003. How do nitrogen inputs to the Changjiang basin impact the Changjiang River nitrate: A temporal analysis for 1968-1997. *Global Biogeochemical Cycles* 17(4)1091-1100.

*Laursen, A.E., and S.P. Seitzinger. 2002. Measurement of denitrification in rivers: an integrated, whole reach approach. *Hydrobiologia* 485:67-81.

Laursen, A.E., S.P. Seitzinger, R. Dekorsey, J.G. Sanders, D.L. Breitburg, and R.W. Osman. 2002. Multiple stressors in an estuarine system: Effects of nutrients, trace metals, and trophic complexity on benthic photosynthesis and respiration. *Estuaries* 25(1):57-69.

Mayer, B., E.W. Boyer, C. Goodale, N.A. Jaworski, N. van Breemen, R.W. Howarth, S.P. Seitzinger, G. Billen, K. Lajtha, K. Nadelhoffer, D. Van Dam, L.J. Hetling, M. Nosil, K. Paustian, and R. Alexander. 2002. Sources of nitrate in rivers draining sixteen watersheds in the northeastern U.S.: Isotopic constraints. *Biogeochemistry* 57/58:171-197.

Seitzinger, S.P., C. Kroeze, A.F. Bouwman, N. Caraco, F. Dentener, and R.V. Styles*. 2002. Global patterns of dissolved inorganic and particulate nitrogen inputs to coastal systems: Recent conditions and future projections. *Estuaries* 25(4b):640-655.

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Seitzinger, S.P., R.V. Styles*, E.W. Boyer, R.B. Alexander, G. Billen, R. Howarth, B. Mayer, and N. van Breemen. 2002. Nitrogen retention in rivers: model development and application to watersheds in the northeastern U.S.A. *Biogeochemistry* 57:199-237.

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Kroeze, C., S.P. Seitzinger, and R. Domingues. 2001. Future trends in worldwide river nitrogen transport and related nitrous oxide emissions: a scenario analysis. Optimizing nitrogen management in food and energy production and environmental protection: Proceedings of the 2nd International Nitrogen Conference on Science and Policy. *The Scientific World Journal* 1(S2): 328-335.

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*Wiegner, T.N., and S.P. Seitzinger. 2001. Photochemical and microbial degradation of external dissolved organic matter inputs to rivers. *Aquatic Microbial Ecology* 24(1):27-40.

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Seitzinger, S.P., M.E.Q. Pilson, and S.W. Nixon. 1983. Nitrous oxide production in nearshore sediments. *Science* 222:1244-1246.

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Valiela, I., D. Babiec, W. Atherton, S.P. Seitzinger, and C. Krebs. 1974. Some consequences of 4sexual dimorphism: feeding in male and female fiddler crabs, *Uca pugnax*. *Biological Bulletin* 147:652-660.

Other

Approximately 15 articles for the lay public in various newsletters and other media.

APPENDIX

Professional Activities

Professional Society Affiliations

American Association for the Advancement of Science
American Geophysical Union
American Society of Limnology and Oceanography
Estuarine Research Federation

Offices Held, Committees Chaired, and Committee Membership in Scientific Societies (selected) (+=Invited or Elected)

+Elected – President, American Society of Limnology and Oceanography (President-elect 2004-2006; President 2006-2008; Past-President 2008-2010)

+Co-Chair, Committee on Energy, Population and Environment for the Council of Scientific Society Presidents (2005-2006)

+Member, Finance Committee, American Society of Limnology and Oceanography (2005 – 2006)

+Member, New Awards Ad Hoc Committee, American Society of Limnology and Oceanography (2003-present)

+Chair, Publications Committee, American Society of Limnology and Oceanography (2000-2002)

+Chair, *Limnology and Oceanography* Journal Evaluation Committee, American Society of Limnology and Oceanography (1997-2000)

+Chair, Committee to Establish a New Award in Environmental Problem Solving, American Society of Limnology and Oceanography (1997-1998)

+Chair, Ruth Patrick Award in Environmental Problem Solving, American Society of Limnology and Oceanography (1998-2000)

+Chair, Awards and Citations Committee, American Society of Limnology and Oceanography (1996-1997)

+Chair, Lindeman Award Subcommittee, American Society of Limnology and Oceanography (1996-1997)

+Member, Ethics Committee, American Society of Limnology and Oceanography, (1996-1998)

+Elected Member, Governing Board, American Society of Limnology and Oceanography (1994-1997)

+Elected Member, Governing Board, Estuarine Research Federation (1992-1994)

Reviewer for Funding Agencies and Journals

Approximately 10-15 research proposals per year for national and international funding agencies (e.g., US National Science Foundation, U.S. Environmental Protection Agency, U.S. Department of Agriculture, NOAA, Hudson River Foundation; funding agencies in New Zealand, Australia, England, and others)

Approximately 15 manuscripts per year for scientific journals (e.g., *Limnology and Oceanography, Global Biogeochemical Cycles, Science, Nature, Estuarine, Coastal and Shelf Science, Marine Ecology Progress Series, Estuaries, Reviews in Aquatic Sciences, Biogeochemistry, FEMS-Microbiology, Ecology, Applied and Environmental Microbiology, Aquatic Microbial Ecology, American Naturalist; Marine Chemistry; Journal Geophysical Research;* etc.)

Reviewer for promotion of numerous university faculty from outside Rutgers to Full Professor status.

Membership on Panels and Advisory Services (selected) (+=Invited or Elected)

+Member, U.S. National Committee for the Intergovernmental Oceanographic Commission of UNESCO (ASLO representative 2006-present)

+Advisor, Evaluation Panel of Finnish Water Research (2007-present)

+Advisor, Sweden Environmental Protection Agency; Expert Panel on Baltic Eutrophication (2005-2006)

+Member, Scientific Committee, International Geosphere Biosphere Program (IGBP) (2003-present)

+Member, Scientific Advisory Committee, International Nitrogen Initiative (INI) (2002-present)

+Board of Trustees, Bermuda Biological Station for Research (2001-present)

+Chair, UNESCO-IOC International Working Group, Development of Global Models of Nutrient Export from Watersheds (Global NEWS) (2002-present)

+Chair, IGPB Nitrogen Fast-Track Project (2002-2005)

+Member, Global Water Science Working Group (2005)

+Member, NSF BioGeoSciences Working Group (2003-2004)

+Member of the Visiting Team at NSF "Water in Complex Environmental Systems (Washington, D.C., July 2003)

+Member, Program Advisory Council, New York Sea Grant (2002-present)

+Scientific Advisory Committee, Institute for Ecosystem Studies, Millbrook, NY (1998-2002)

+Panel Member, Center for Marine Conservation (development of science-based findings and recommendations concerning reauthorization of the Clean Water Act) (1998)

+Member, Expert Group, United Nations, Organization for Economic and Co-operation and Development, Intergovernmental Panel on Climate Change. Nitrous Oxide and Carbon Dioxide in Agriculture Work Group (developed methodology currently used by the IPCC to estimate nitrous oxide production in aquatic ecosystems associated with agricultural N loading) (1995-1997)

+Advisory Panel, The Royal Swedish Academy of Sciences and Swedish Environmental Agency (management and research options for the Baltic) (1997)

+Member, International Geosphere Biosphere Program, Global Environmental Inventory Activity, Nitrous Oxide Workgroup (1992-1997)

+Member, Scientific and Technical Advisory Committee, U.S. EPA National Estuaries Program, Barnegat Bay Program (1996-1998)

+Member, Scientific and Technical Advisory Committee, U.S. EPA National Estuaries Program, Delaware Inland Bays Program (1990-1995)

+Member, Subcommittee on Modeling and Research, U.S. EPA Chesapeake Bay Program (1986-1995)

+Member, Nutrient Workgroup, U.S. EPA National Estuaries Program, NY-NJ Harbor Program (1991-1995)

+Member, Scientific Review Panel, National Oceanic Atmospheric Administration, Coastal Ocean Program, Nutrient Enrichment of Coastal Ocean Productivity

+Member, Selection Panel for the Pennsylvania Governor's Awards for Excellence in Sciences (1991)

+Member, Selection Committee, President Bush's Environment and Conservation Challenge Awards (1991)

Professional Meetings - Organizer and/or Chair of Workshops and Special Sessions (selected)

Member, Planning Committee, American Society of Limnology and Oceanography Meeting (Santiago de Compostela, Spain, Summer 2005)

Co-convened session on Nutrients and River Run-off at IGBP Land-Ocean Interactions in the Coastal Zone (LOICZ) Inaugural Open Science Meeting (Egmond aan Zee, The Netherlands, June, 2005)

Co-chair and Co-organizer, International Workshop on Denitrification in Terrestrial and Aquatic Ecosystems: Towards an Integrated Global Perspective (Woods Hole, MA, Spring 2004)

Member, Science and Policy Program Committee, Third International Nitrogen Conference (China, 2004) (2002-2004)

Co-chair, Barnegat Bay Eutrophication Workshop (Rutgers University, NJ, April 2004)

Steering Committee member, The Second International Nitrogen Conference (N2001) (2000-2001)

Co-organized 3-day workshop for plenary speakers for Second International Conference on Nitrogen, National Academy of Sciences (Woods Hole, MA, 2001)

Co-organized and Chaired session, Atmosphere-Biosphere: N_2O and NO Emissions. Second International Conference on Nitrogen (Potomac, MD, 2001)

Organized and Chaired, Special Session, Regional and Global Scale Biogeochemical Patterns Altered by Human Activities: Changes and Consequences, Annual Meeting American Society of Limnology and Oceanography (1999)

Co-organizer, National Workshop in Dissolved Organic Nitrogen in Atmospheric Deposition (College Park, MD, May 1998)

Co-organized and Co-chaired, Special Session, Effects of Multiple Stressors in Freshwater and Marine Ecosystems, Annual Meeting American Society of Limnology and Oceanography (1997); (also co-edited Special Symposium volume of *L&O* resulting from this session)

Organized and Chaired, Special Session, Dissolved Organic Matter in Estuaries, Biennial Estuarine Research Federation Meeting (1995)

Member, U.S. Steering Committee, Estuarine Research Federation International Conference on "Changes in Fluxes to Estuaries" (Plymouth, England, 1992)

Organized and Chaired Session, Sediment-water Interactions, Gordon Conference on Estuarine Processes at Strong Interfaces (1991)

Co-organized and Chaired, Workshop on Reduced Gases in the Hydrosphere, International Association of Theoretical and Applied Limnology Congress (Munich, W. Germany 1989)

National/International Symposia/Workshops/Lecture Series (selected; Invited +)

+Keynote Speaker, NitroEurope IP Open Science Conference. (February 2008)

+Distinguished Visiting Ecologist. Colorado State University. Invited series of lectures. (March 2007)

+Lecturer, Global Environmental Change International Summer School. Research School for Socio-Economic and Natural Sciences of the Environment (SENSE) (Netherlands, May 2007)

Chair and Co-organizer, International Workshop on Denitrification Modeling across Terrestrial, Freshwater and Marine Systems. 40 university and government agency scientists from 6 countries participated (Institute of Ecosystem Studies, November 2006).

+Participant, International Nitrogen Workshop on Anthropogenic Nitrogen Impacts on the Open Ocean. Joint SOLAS and INI workshop. (Univ. East Anglia, UK, November 2006)

Chair and Organizer, Global Nutrient Export from Watersheds *(Global NEWS)* Working Group Workshops. Approx. 25 university and government agency scientists from North America, Europe and Asia meet to develop models and run scenarios for GIS-based watershed N, P and C export models (UNESCO- IOC, Paris, France, 2001, 2002, 2003, 2004, 2006, 2007)

Chair and Organizer, International Training Workshop on the use of GIS-based Watershed Nutrient Export Models. Scientists from university and government agencies in China, India, Nigeria, Namibia, Ghana, Latvia, Chile and Mexico participated in this 2 workshop series. Supported by the Global Environmental Facility/Large Marine Ecosystems (GEF/LME) MSP on Promoting Ecosystem-based Approaches to Fisheries Conservation and LME's. Component 3 – Eutrophication: Filling Gaps in Nitrogen Loading Forecasts for LME's. (UNESCO-IOC, Paris, January and September 2006)

+Participant, Large Marine Ecosystems Consultative Meeting (Paris, France, July 2005)

+Speaker, Young Investigators Forum on Coastal Biogeochemistry, National Center for Atmospheric Research (Boulder, Colorado, June 2004).

+Participant, Community Surface Dynamics Modeling System Workshop (Minneapolis, MN, May 2004)

+Lecturer, Laura Randall Schweppe Endowed Lecture Series in Marine Science, University of Texas Marine Science Institute (Port Aransas, February 2003)

+Participant, Global Water System Project, Open Science Conference (New Hampshire, October 2003)

+Speaker, NJ Department Environmental Protection Symposium on Harmful Algal Blooms (October 2003)

+Participant, IGBP Third Congress (Banff, Canada, June 2003)

+Participant, Black Sea Environmental Program (BSERP) workshop (Sophia, Bulgaria, February. 2003)

+Participant, IGBP, OCEANS workgroup meeting (Paris, January 2003)

+Special Lecturer, International Conference in Support of European Water Policies – Sustainability of Aquatic Ecosystems (European Commission Joint Research Center, Ispra, Italy, Nov. 2002)

+Participant, European Union-US Workshop on Harmful Algal Blooms (Trieste, Italy, Sept. 2002)

+Chair of Workgroup and Participant, Scientific Committee on Problems of the Environment (SCOPE), Element Interactions Project (Prague, Czech Republic, October 2002)

+ Keynote speaker, Baltic Sea Science Congress 2001: Past, Present and Future – A Joint Venture (Stockholm, Sweden, November 2001)

+Keynote speaker, Symposium on Nutrient Over-Enrichment in Coastal Waters: Global Patterns of Cause and Effect (National Academy of Sciences, Washington, DC, October 2000)

+Speaker, Assises Internationales Envirobio, Gestion du Risque, Santé et Environnement: le Cas des Nitrates (information meeting for the French Senate on nitrogen enrichment of surface waters, Paris, France, November 2000)

+Participant, Dissolved Organic Matter Workshop, Institute for Ecosystem Studies (Millbrook, NY, May 2000)

+Speaker, Nutrient Constraints on the Carbon Cycle, International Geosphere Biosphere Program (IGBP) Synthesis Workshop (Stockholm, Sweden, October 1999)

+Participant, International Scientific Committee on Problems in the Environment (SCOPE), Nitrogen Project, Nitrogen Transport Workgroup (National Center for Ecological Analysis and Synthesis, Santa Barbara, CA, 1999)

+Speaker and Panel Member, International Workshop on the Atmospheric Nitrous Oxide Budget: An Analysis of the State of our Understanding of Sources and Sinks of Atmospheric Nitrous Oxide (Tsukuba, Japan, 1999)

+Participant and Rapporteur, Workshop on Scaling of Global Trace Gas Fluxes (The Netherlands, 1998)

+Speaker, International Workshop on Dissipation of N from the Human N-cycle, and its Role in the Present and Future N_2O Emissions to the Atmosphere (Oslo, Norway, 1997)

+Participant, NOAA's Assessment Team for Nitrogen in Atmospheric Deposition (1997-2000)

+Participant, Workshop on Atmospheric Nitrogen Deposition, Ecological Society of America (Narragansett, RI, 1997)

+Speaker, Workshop on Estuarine Synthesis, International Scientific Committee On Problems in the Environment (SCOPE) (Irvine, CA, 1995)

+Participant, International Scientific Committee on Problems in the Environment (SCOPE), Nitrogen Project, North Atlantic Workgroup (Block Island, RI, 1994)

Talks Presented at Professional Meetings

I and my students regularly attend and present contributed and invited talks at professional meetings such as: American Society of Limnology and Oceanography, Estuarine Research Federation, ASLO/AGU/TOS Ocean Sciences, American Association for Aerosol Research, and other selected meetings. I do not maintain a record of these, but estimate that in the past 5 years I have given or been a co-author on over 40 presentations at professional meetings.

Invited Lectures (selected)

Boston University (Marine Program, Woods Hole)
Colorado State University (Ecology)
Cornell University (Department of Ecology and Systematics)
Delft University of Technology, The Netherlands (Dept. Microbiology)
Institute of Ecosystems Studies
Marine Biological Laboratory (Ecosystems Center, Woods Hole)
National Center for Atmospheric Research (Boulder, Colorado)
Netherlands Institute for Sea Research, The Netherlands
NOAA, Great Lakes Environmental Research Laboratory
Old Dominion University (Center for Coastal Physical Oceanography)
Stanford University (Dept. Geological and Environmental Sciences)
State University of New York, Stony Brook (Marine Sciences)
The Royal Swedish Academy of Sciences
United Nations Food and Agriculture Organization (FAO)
University of Aarhus, Denmark (Dept. Genetics and Ecology)
University of Delaware (College of Marine Studies)
University of Maryland (Chesapeake Biological Laboratory)
University of Maryland (Department of Geology)
University of Maryland (Horn Point Environmental Laboratory)
University of Massachusetts (Environmental Sciences Program)
University of Pennsylvania (Depts. of Biology and Geology)
University of Puerto Rico (Marine Science Center)
University of Rhode Island (Graduate School of Oceanography)
University of Stockholm, Sweden (Dept. Zoology)
University of Texas (University of Texas Marine Science Institute, Port Aransas)
University of Virginia (Environmental Sciences)
University of Wageningen, The Netherlands (Center for Climate Change Research)
University of Wisconsin-Milwaukee (Center for Great Lakes Research)
Virginia Institute of Marine Science

Student Advising and Courses Taught

Rutgers University Faculty member Graduate Program in Oceanography (1994-present); Graduate Program in Environmental Sciences Faculty (since 2006)

Students Supervised

Ph.D. Advisor:
S. Watts (co-advisor; completed 1997)
T. Wiegner (completed 2001)

Steve Litvin (completed 2005)
Rachel Sipler
Katye Altieri

Ph.D. committee member:
F. Moser (completed 1997)
D. Scala (completed 1999)
L. Windom (completed 1999)
B. Phelan (completed 2000)
K. Stocks (completed 2000)
T. Komada (completed 2001)
A. Carlton (completed 2006)
D. Gruber (completed 2007)
J. Sylvan (completed 2007)
C. Fraser

M.S. committee member:
S. Sangameswaran (completed 1995)
T. Komada (completed 1996)
J. Sylvan (completed 2005)
A. McGuirk (completed 2005)

Undergraduates: supervised approximately 26 undergraduate students doing special projects, internships, or work study in my laboratory during the past twelve years

Post-doctoral Fellows

Andrew Laursen (1998-1999; 2001-2002)
Hilairy Hartnett (1999-2001)
Georgina Spyres (2002-2005)
John Harrison (2003- 2005)
Jean-Paul Simjouw (2004-2005)
Rosalynn Lee (2005-present)
Leigh McCallister (2005-2007)
Mark Perri (2007-present)
Emilio Mayorga (2007-present)

Other

Approximately 20 graduate students from countries outside the U.S. and/or universities other than Rutgers have received training in my laboratory.

Courses Taught

Marine Biogeochemistry (16:712:698 Topics in Oceanography 52120 02) 50% effort; 3 credits; grad/um/unm; lec/rec/lab (1997, 2001)

Chemical Oceanography (11:628:472/16:712:540) (Lectures for nutrient biogeochemistry sections) 15% effort, 3 credits;grad/um/unm; lec/rec (1999, 2000, 2002, 2003, 2004, 2006, 2007)

Science Communication Skills (11:16:712:595) 25% effort, 3 credits; grad; lec/rec (2007)

Developed Graduate Student Seminar Series at IMCS; continues to be component of the Oceanography Graduate student program. Oceanography graduate students give a seminar, annually, on their research (initiated 1996)

Special Topics in Marine Biogeochemistry, 2 credits; (1995, 1996)

University and Agency Service

Member, National Committee on Scientific Stature (NFCSS), NOAA Fisheries (2003-present)

Chair and Member, IMCS Space Committee, Rutgers (Member 2004-2006; Chair 2006-present)

Member, Search Committee for the next Director of the Institute of Marine and Coastal Sciences, Rutgers University (2006-present)

Chair, Review and Promotion Committee for Northeast Fisheries Science Center (1997-1998)

Member, Review and Promotion Committee for Northeast Fisheries Science Center (Factor IV and CSSP) (1995-1997)

Member, Search committees for approximately 8 research scientists Northeast Fisheries Science Center (1994-2006)

Member, Search committees for numerous Rutgers University faculty positions in IMCS and Environmental Sciences (1994-present)

Administration

Director, Rutgers/NOAA Cooperative Marine Education and Research Program (CMER). The Rutgers/NOAA CMER program is intended to foster enhanced interactions between all elements of NOAA and Rutgers University with special emphasis on projects of mutual interest to the University and the Northeast Region of the National Marine Fisheries Service. The funding level for the past six years has been approximately $1.1 million/year from sources both inside and outside the Northeast Fisheries Science Center. During the first thirteen years of the program (1993-2006) approximately $13 million has funded eighty-one projects. Twenty-eight faculty members from nine University departments, sixty-six graduate students, ten post-doctoral fellows, and numerous undergraduate students participated during the first thirteen years. Numerous NOAA scientists serve as co-principal investigators or advisors on these projects. Projects funded by the Rutgers/NOAA CMER program generally fall into one or more of the following six broad categories: habitat studies, socioeconomics, fishery products, biology and life history, pollutants, and education and training. As Director of the CMER program I am responsible for overall program administration, management of proposal solicitation, review, selection and award processing, and fostering interaction between university and government agency scientists.