

Curriculum Vitae
Sybil Putnam Seitzinger

Position: Director, Rutgers/NOAA Cooperative Marine Education and Research Program, and Visiting Professor, Rutgers University, Institute of Marine and Coastal Sciences, New Brunswick, NJ

Address: Rutgers University, Institute of Marine and Coastal Sciences, 71 Dudley Road, New Brunswick, NJ; 08901
Phone: 732-932-6555 x342
Email: sybil@marine.rutgers.edu

Education

1982 Ph.D., Biological Oceanography; University of Rhode Island, Kingston, R.I., under the direction of S.W. Nixon.
1974 B.S., Biology; Boston University, Boston, MA.

Professional Experience

2001-2002 Scientific Expert, UNESCO-Intergovernmental Oceanographic Commission, Paris, France
1994-present Director, Rutgers/NOAA CMER Program, Rutgers University
1994-present Visiting Professor, Rutgers University, and Graduate Oceanography Program Faculty
1990-94 Associate Curator, Academy of Natural Sciences of Philadelphia.
1990 Visiting Scientist, University of Aarhus, Denmark.
1986-90 Assistant Curator, Academy of Natural Sciences of Philadelphia.
1984-86 Senior Scientist, Academy of Natural Sciences of Philadelphia.
1982-84 Distinguished Patrick Scholar, Academy of Natural Sciences of Philadelphia.
1981 Research Associate, School of Oceanography, University of Rhode Island.
1980 Instructor in Marine Sciences, International Sea Grant Program, University of Pertanian, Malaysia.

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

Submitted

Carlton, A.G., B.J. Turpin, K. E. Altieri*, S. Seitzinger, A. Reff, H. Lim, and B. Evans.
Submitted. Atmospheric Oxalic Acid and SOA Production from Glyoxal: Results of Aqueous Photooxidation Experiments. *Atmospheric Environment*. February 2007

Accepted or In Press

Seitzinger, S.P., and J.A. Harrison*. Accepted. Sources and delivery of N to coastal systems. Chapter III. *In:*, D.A. Bronk, M.R. Mullholland, E. Carpenter (editors), Nitrogen in the marine environment.

Published

- 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
- 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.
- Davidson, E.A., and S. Seitzinger. 2006. The Enigma of Progress in Denitrification Research. *Ecological Applications*.16(6):2057-2063.
- 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 10.1128/AEM02882-05.
- *Altieri, K. E., A. G. Carlton, B. J. Turpin, and S. P. Seitzinger. 2006. Formation of oligomers in cloud processing: reactions of isoprene oxidation products. *Environmental Science and Technology*. 40: 4956-4960.
- *Carlton, A.G., B.J. Turpin, H. Lim, K.E. Altieri*, and S. 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
- 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 DOI:10.1029/2006GL025845.
- 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.
- 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.
- Dumont, E., J.A. Harrison*, C. Kroeze, E.J. Bakker, and S.P. Seitzinger. 2005. Global distribution and sources of dissolved inorganic nitrogen export to the coastal zone: results 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 Cycles* 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.
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- Belda, G. Matishov, J. McGlade, M. O'Toole, S.P. Seitzinger, R. Serra, H.R. Skjoldal, Q. Tang, J. Thulin, V. Vandeweerdt, 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 N₂O from rivers and estuaries. *Environmental Sciences*: 2(2-3): 159-165.
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- *Wiegner, T.N., and S.P. Seitzinger. 2003. The effect of multiple stressors on the balance between autotrophic and heterotrophic. Multiple stressors in an estuarine system: Effects of nutrients, trace metals, and trophic complexity on benthic photosynthesis and respiration. *Estuaries* 25(1):57-69.
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- *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.
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- Seitzinger, S.P., and S.W. Nixon. 1985. Eutrophication and the rate of denitrification and N_2O production in coastal marine sediments. *Limnology and Oceanography* 30:1332-1339.
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Other

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

Web Site - Description of ongoing research projects:

<http://www.marine.rutgers.edu/BGC/projects/index.htm>

Professional Activities (=Invited or Elected)

Professional Societies/Organizations

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

+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-present)

+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)

Editorial Positions for Scientific Journals

+Editorial Board, *Ecosystems* (1999-2005)

+Editorial Board, *Estuaries* (2000-2004)

- +Editorial Board, Marine Pollution Bulletin (1996-2000)
- +Editorial Board, FEMS Microbiology Ecology (1991-1997)

Membership on Panels and Advisory Services (selected)

- +Advisor, Sweden Environmental Protection Agency; Panel on Baltic Eutrophication (2005-present)
- +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 (2002-present)
- +Chair, IGPB Nitrogen Fast-Track Project (2002-present)
- +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)

Scientific Symposia and Workshops (+=Invited)

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

+Chair and Organizer, Global Environmental Facility/Large Marine Ecosystems (GEF/LME) Nutrient Modeling International Training Workshop (UNESCO-IOC, Paris, France, January 2006)

+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, Workshop on Denitrification in Terrestrial and Aquatic Ecosystems: Towards an Integrated Global Perspective (Woods Hole, MA, Spring 2004)

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

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

Chair and Organizer, Global Nutrient Export from Watersheds (*Global NEWS*) Workshop (UNESCO- IOC, Paris, France, March 2003)

+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: N₂O 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)

Participant in National/International Symposia/Workshops (selected)

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

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

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

+Speaker, NJDEP 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, IGPB, 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 N₂O 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)

Invited Lectures (selected)

- Boston University (Marine Program, Woods Hole)
- 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

Students Supervised

- Ph.D. Advisor:*
- S. Watts (co-advisor; completed 1997)

T. Wiegner (completed 2001)
Steve Litvin (completed 2005)
Rachel Sipler
Katy 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)
D. Gruber

M.S. committee member:

S. Sangameswaran (completed 1995)
T. Komada (completed 1996)
J. Sylvan (completed 2005)
A. McGuirk (completed 2005)

Undergraduates: supervised approximately 23 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-present)

Other

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

Rutgers and NOAA Committees (Recent)

Member, Faculty Search Committee (Ecosystem Modeler)(2005-present)

Department Marine Sciences Space Committee (2005-present)

NOAA Committee on Scientific Stature (national preview and promotion committee)

Current Research Projects

Contribution of Dissolved Organic Nitrogen (DON) to Estuarine Eutrophication

The Effect of Human Activities and Natural Processes on Nutrient (N, P and C) Export to the Coastal Ocean: A Global Modeling Project

Dissolved Organic Nitrogen in Atmospheric Deposition: Chemical Characterization, Sources and Impacts on Coastal Ecosystems

Secondary Organic Aerosol Formation in Cloud Water.

Cycling of Dissolved Organic Matter: Biocomplexity Implications

Global Modeling of Greenhouse Gas (Nitrous Oxide) Production from Aquatic Systems

Denitrification in Rivers, Estuaries and Continental Shelf Ecosystems: Measurements and
Models

Research Coordination Network for Denitrification: Integration Landscapes to Waterscapes

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 Twelve years has been approximately \$1 million/year from sources both inside and outside the Northeast Fisheries Science Center. During the first twelve years of the program (1993-2006) over \$9 million has funded over sixty five projects. Eighteen faculty members from seven University departments, nineteen students from six graduate programs, seven post-doctoral fellows, and numerous undergraduate students participated during the first twelve 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, socioeconomic, fishery products, biology and life history, pollutants, and education and training. For a full description of the program, including the Rutgers/NOAA CMER Annual Report, visit our web site <http://www.nefsc.noaa.gov/nefsc/publications/cmer/cmer.htm>.