

## **Curriculum Vita**

### **Robert M. Sherrell**

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### **Academic Degrees**

- Ph.D. Massachusetts Institute of Technology -Woods Hole Oceanographic Institution  
Oceanography, 1989  
Thesis title: The trace metal geochemistry of suspended oceanic particulate matter.  
B.A. Oberlin College, 1979, Chemistry (with High Honors and Phi Beta Kappa)

### **Professional Experience**

- 2000- Associate Professor, Department of Marine and Coastal Sciences, Rutgers University  
1993-00 Assistant Professor, Department of Marine and Coastal Sciences, Rutgers University  
1992-93 Assistant Research Professor, Institute of Marine and Coastal Sciences, Rutgers University  
1991-92 Research Associate, Earth, Atmospheric and Planetary Sciences, MIT.  
1989-91 Postdoctoral Fellow, Earth, Atmospheric and Planetary Sciences, MIT.  
1983-89 Dissertation research, MIT-WHOI  
1981-83 Research assistant, Geochemistry Department, Lamont-Doherty Geological Observatory, Columbia University.  
1979-81 Research technician, Physiology Department, College of Physicians and Surgeons, Columbia University.

### **Honors**

- Phi Beta Kappa, Oberlin College Chapter, 1979  
Johnson and Johnson Discovery Award for Innovative Research, with S. Shapses, 1997

### **Professional Societies**

American Geophysical Union, ASLO, The Oceanography Society, AAAS

### **Research Interests**

Marine geochemistry of trace metals and natural radionuclides, solid/solution reactions and particle dynamics in aquatic and marine systems, phytoplankton-metal interactions, trace metal proxies in biogenic carbonate, polar ice core chemistry, development of novel techniques for ultra-trace elemental and isotopic analysis by Inductively Coupled Plasma Mass Spectrometry.

### **Field Experience**

Date, Chief Scientist, Vessel/Cruise, location, objectives, duration.

- June 1990, R. Sherrell, central Greenland, ice and snow chemistry, 6 weeks.  
June 1991, K. Smith, New Horizon, benthic processes and particle chem., 2 weeks.  
Oct. 1991, K. Smith, New Horizon, benthic processes and particle chem., 2 weeks.  
Feb. 1992, K. Smith, New Horizon, benthic processes and particle chem., 2 weeks.  
Jun. 1992, K. Smith, New Horizon, benthic processes and particle chem., 2 weeks.  
May 1993, J. Bishop, Columbus Iselin, particle dynamics and chem., 1 week.  
Nov. 1993, K. Smith, New Horizon, NE Pacific, benthic processes and particle chem., 2 weeks.  
1993-1998, R. Sherrell, R/V Caleta, coastal NJ, chemical oceanography, 14 trips, 1 day each.  
June 1999, R. Sherrell, R/V Cape Henlopen, NW Atlantic, metal/plankton chem/bio., 7 days

July 1999, R. Sherrell, R/V New Horizon, NE Pacific, metal/phytoplankton chem/bio., 17 days  
April 2000, R. Sherrell, R/V Cape Henlopen, NW Atlantic, metal/plankton chem/bio., 7 days  
June 2000, R. Sterner, R/V Blue Heron, L. Superior, metal/plankton chem/bio., 4 days  
May 2001, R. Sherrell, R/V Blue Heron, L. Superior, metal/plankton chem/bio., 5 days  
Sept 2004, M. McKay, R/V Blue Heron, L. Superior, metal/plankton chem/bio., 2 days  
July 2005, R. Sherrell, R/V Blue Heron, L. Superior, metal/plankton chem/bio., 5 days  
July 2006, R. Sherrell, R/V Blue Heron, L. Superior, metal/plankton chem/bio., 5 days

### **Teaching**

#### **Undergraduate courses:**

Marine Science  
Introduction to Oceanography  
Exploration of the Oceans  
Marine Isotope Geochemistry  
Environmental Geochemistry

#### **Graduate courses:**

Chemical Oceanography  
Advanced Biogeochemistry  
Applied Marine Inorganic Chemistry

### **Graduate students supervised**

2004- Michele LaVigne, Ph.D. thesis in progress, Graduate Program in Oceanography

2004- Eleni Anagnostou, Environmental Sciences, Primary Advisor, MS Thesis title: A novel method for detecting nanomolar levels of orthophosphate in freshwater systems: Implications for phosphorus cycling in Lake Superior, defended August 2005. Currently Ph.D. thesis in progress, Graduate Program in Oceanography

2000-06 Yongcheng Ji, Ph.D. thesis title: Effects of phosphorus availability on cellular metals in phytoplankton: Lake Superior as a model system, Graduate Program in Oceanography

1996-2001 Jay Cullen, Ph.D. thesis title: The biogeochemistry of cadmium and iron in the ocean: uptake by marine phytoplankton, Graduate Program in Oceanography

1993-1996 James Ross, M.S. Thesis title: Geochemistry of trace metals in New Jersey Pinelands streams, Graduate Program in Environmental Sciences.

1993-1995 Hao-Jan Hsing, M.S. Critical Essay title: Temporal variability of particulate trace metals in New Jersey coastal water, Graduate Program in Environmental Sciences.

### **Postdoctoral Advisees**

2003-2004 Dr. Linda Godfrey (Research Associate)

2003-2006 Dr. Liping Wei

2002-2003 Dr. Doriane Delanghe-Sabatier

1997-99 Dr. Yair Rosenthal

1994-96 Dr. Jing-feng Wu (co-advisor with Dr. Ed Boyle, MIT).

1994-96 Dr. Yuan Gao

### **Undergraduate Advising**

Advised 20 undergraduate students in laboratory research, including three honors projects.

**Academics and Professional Service**

- 2005 Search committee, Editor-in-Chief, J. Geophys. Res. – Oceans.
- 2005 Session leader, Marine Geochemistry of Iron, Gordon Research Conference in Chemical Oceanography, Aug. 2005.
- 2004 Rutgers Univ. representative, UNOLS National Meeting, Washington, D.C. 15 October.
- 2003 Invited Participant, GEOTRACES International Workshop on Trace Metals and Isotopes in the Ocean, Toulouse, FR, April.
- 2003 Panel Member, NSF Chemical Oceanography
- 2000- Design Committee member, replacement for UNOLS research vessel, R/V Cape  
pres. Henlopen, University of Delaware.
- 1995- Associate Editor, *Marine Chemistry*.  
pres.
- 1998- Member, Admissions and Scholastic Standing Committee, Cook College, Rutgers Univ.  
2001
- 1999 Peer reviewer: NSF Major Research Instrumentation program, internal Rutgers  
competition, for D. Pramer, Office of Research and Sponsored Programs.
- 1997 Panel Member, NSF Polar Programs, Glaciology section.
- 1997 Peer reviewer: NSF Major Research Instrumentation program, internal Rutgers  
competition, for D. Pramer, Office of Research and Sponsored Programs.
- 1997- Faculty supervisor, Inst. of Marine and Coastal Sciences Inorganic Analytical Facility.  
pres.
- 1997 Search Committee member, Isotope Stratigrapher, Dept. of Geological Sciences.
- 1995- Admissions Committee, Grad. Program in Oceanography, Marine and Coastal Sciences  
pres.
- 1995 Search Committee member, Aquatic Geochemist, Dept. of Environmental Sciences.
- 1995 Member, Committee to elect Outstanding Senior Award, Dept. of Marine and Coastal  
Sciences.
- 1994- Panel Member, NSF Chemical Oceanography.  
1995
- 1993- Peer reviewer of grant proposals for NSF, SeaGrant, NOAA.  
pres.
- 1993 Member, Program Description Team in Marine and Coastal Resources as part of  
strategic planning initiative “Looking Forward”(wrote section on new instrumentation).

- 1993 Search Committee member, Biological Oceanographer, Dept. of Marine and Coastal Sciences.
- 1992- Peer reviewer of manuscripts for the journals  
pres. Nature, Geochimica et Cosmochimica Acta, Limnology and Oceanography, Marine Chemistry, Deep-Sea Research, Earth and Planetary Science Letters, Geophysical Research Letters, Environmental Science and Technology, Environmental Contamination and Toxicology.

### **Invited Seminars**

- A new dual proxy of oceanic weathering inputs: Rare Earth Element Patterns and Nd Isotopes from Metalliferous Sediment Cores, invited seminar, Southampton Oceanography Center, Southampton, England, 28 May, 2002.
- A new dual proxy of oceanic weathering inputs: Rare Earth Element Patterns and Nd Isotopes from Metalliferous Sediment Cores, invited seminar, Cambridge University Earth Sciences Department, Cambridge, England, 29 May, 2002.
- A new dual proxy of oceanic weathering inputs: Rare Earth Element Patterns and Nd Isotopes from Metalliferous Sediment Cores, invited seminar, ETH, Zurich, Switzerland, 30 May, 2002.
- Rare earth pattern and Nd isotope variations in Pleistocene and Cenozoic Pacific Deepwater: Two REE methods are better than one, invited seminar, Lamont-Doherty Earth Observatory, Geochemistry Department, Nov. 3, 2000.
- Rare earth elements in hydrothermal metalliferous sediments: clues to ancient ocean chemistry, invited seminar, Lafayette College, Department of Geology and Environmental Geosciences, March 22, 2000.
- What controls cadmium uptake by marine phytoplankton?, University of Connecticut, Department of Marine Sciences, Nov. 11, 1999.
- Rare earth element patterns and Nd isotopes in ancient seawater: the record from metalliferous sediments on the East Pacific Rise, Rutgers University, Department of Geological Sciences, Oct. 6, 1999.
- Trace metal and particle dynamics in a deep ocean hydrothermal plume on the East Pacific Rise at 9°45'N, Invited seminar, Department of Geology, University of Maryland, Nov. 6, 1998.
- Trace metals and phytoplankton: a bicoastal view, Invited seminar, SUNY Stony Brook, March 13, 1998.
- Trace Metal Dynamics off Southern New Jersey: Seasonal Variations and Evidence of Pollutant Input, Invited seminar, Department of Environmental Sciences, Rutgers University, Nov. 7, 1997.
- Particles, Plankton, and Metals: Temporal Variability in the Northeast Pacific Water Column, Institute of Marine and Coastal Sciences, Rutgers University, April 15, 1995.
- Particle dynamics and trace metal scavenging: A time-series study in the Northeast Pacific, Invited seminar, Lamont-Doherty Earth Observatory, Geochemistry Division, May 4, 1994.
- Metal scavenging processes and the role of small suspended particles in oceanic chemical scavenging: Particle dynamics and lead scavenging in the N.E. Pacific, Invited seminar, Ocean Research Institute, Tokyo, Japan, June 6, 1994.
- Trace metal scavenging in the N. Atlantic and NE Pacific: Lessons from lead, Invited seminar, University of Rhode Island, Marine Geochemistry Lecture Series, Narragansett, RI. April 23, 1993.
- Sherrell, R.M. 1991. Invited. Distribution of trace metals between solution and suspended particles in the open ocean: Implications for metal toxicity in aquatic systems, Invited seminar, University of California, June 19, 1991.

Trace Metal Geochemistry in the North Atlantic and Northeast Pacific: The Role of Suspended Particles, presented at Gordon Conference in Chemical Oceanography, Meriden, NH, Aug. 10, 1991.

### **Funding History**

- 2007- \$405,832, NSF Chemical Oceanography, Collaborative Research: US GEOTRACES  
2010 sampling systems and intercalibration. (35% effort; Co-PI with G. Cutter and K. Bruland).  
Award notification Dec. 2006.
- 2004- \$452,514, NSF MRI: Acquisition of a Laser Ablation High Resolution Inductively  
2006 Coupled Plasma Mass Spectrometer. (50% effort; Lead PI with C. Swisher, M.P. Field  
and Y. Rosenthal).
- 2004 \$175,000, Rutgers Academic Excellence Fund, Acquisition of Triple Quadrupole GC/MS  
For Analysis of Trace Organics in Environmental Matrixes. (10% effort: Co-PI with L.  
Totten, D. Fennel, J. Reinfelder, W. Huang, B.J. Turpin, E.L. Sikes, and L.A. White).
- 2004- \$702,370, NSF Chemical Oceanography, Collaborative Research: The nitrifying of Lake  
2007 Superior and its interactions with the P and Fe cycles. (25% effort; \$194,198 to Sherrell;  
Co-PI with R. Sterner, J. Finlay, M. McKay, G. Bullerjahn).
- 2003- ~\$56,000, NOAA/CMER, Manganese in lobsters as an indicator of hypoxia-associated  
2005 stress. (80% effort; Full funding to Sherrell, with co-PI Andy Draxler, NOAA NMFS).
- 2002- ~\$298,898, NSF Chemical oceanography, Fractionation of Cd and P by marine  
2005 phytoplankton (100% effort;).
- 2000- \$183,197, NSF Marine Geology and Geophysics, Rare earth elements and Nd isotopes  
2005 in hydrothermal metalliferous sediments: Pleistocene and Cenozoic paleoceanography  
(80% effort; with co=PI Jim Wright).
- 2002- \$171,128, New Jersey Sea Grant, Uptake of toxic metals by natural phytoplankton  
2005 assemblages in the Mid-Atlantic Bight (100% effort).
- 2000- \$224,497, Hudson River Foundation: Toxic metal inputs to the lower Hudson River  
2002 during sediment resuspension events. (50% effort, Co-PI with Y. Rosenthal).
- 1999- ~\$791,568, NSF US-Canada: Fluorometric analysis of iron limitation in the open  
2002 ocean, (25% effort, Co-PI with M. Behrenfeld, Z. Kolber, P. Falkowski, and D. Bruce,  
\$115,000 Sherrell share).
- 1999- \$100,000, NSF Chemistry Instrumentation to support the revision of analytical  
2000 chemistry for today's students: Aqueous systems with environmental significance.  
(15% effort, Co-PI with G. Herzog, C. Reimers, J. Reinfelder, O. Schofield, and T.  
Chase)
- 1999- \$339,970, NSF Chemical Oceanography and Coastal Ocean Processes,  
2002 Trace metal limitation of phytoplankton productivity: Combined immunological,  
geochemical and growth assay approaches in Lake Superior (30% effort; co-PI with B.  
Sterner, E. Brown, and R. McKay, \$93,506 Sherrell share).
- 1998- \$199,152, NSF Chemical Oceanography, Cadmium uptake by phytoplankton in  
2001 productive ocean margins (100% effort).

- 1998- \$20,000, Johnson and Johnson Foundation (Discovery Award for Innovative Research),  
2000 Fractional calcium absorption during caloric restriction: application of a new stable  
isotope mass spectrometric technique, (25% effort; Co-PI with S. Shapses, \$8000  
Sherrell share)
- 1998- \$90,000, Camille and Henry Dreyfus Foundation, Chemical reactivity in environmental  
1999 systems (to support postdoctoral fellow), Co-PI with S. Eisenreich, J. Reinfelder, and M.  
Cheney (25% effort).
- 1996- \$404,907, NSF Advanced Research Instrumentation, Acquisition of analytical  
1998 instrumentation in support of research on environmental change, Lead PI with co-PIs S.  
Wainright, S. Boehme, C. Reimers, and B. Buckley (30% effort; \$247,060 Sherrell  
share).
- 1995- \$359,997, Office of Naval Reserch, Trinitrotoluene (TNT) in seawater: Physico-chemical  
1997 state implications for sampling strategies in the littoral zone (100% effort).
- 1995- \$54,000, NOAA Cooperative Marine Education and Research Program, Assimilation of  
1997 metals by phytoplankton in the Mid-Atlantic Bight: Controls on introduction to the coastal  
marine food web (100% effort).
- 1994- \$85,000, NSF Geology and Paleontology, Iridium deposition in central Greenland ice:  
1998 Temporal variability of cosmic and volcanic sources, 7/1/94-6/30/98 (100% effort).
- 1994- \$221,000, NOAA National Undersea Research Project, Variability and sources of trace  
1997 metals in the inner shelf water column, New York Bight (100% effort).
- 1994- \$40,000, USGS New Jersey Water Resources Research Authority, Transport and fate of  
1996 nonpoint pollutant phosphate and trace metals in the Mullica River/Estuary system: The  
role of colloids (100% effort).
- 1994- \$78,156, NSF Earth Sciences, Acquisition of an Inductively Coupled Plasma Mass  
1995 Spectrometer (ICP-MS), Co-PI with M. Carr, M. Feigenson, G. Hall, C. Herzberg, G.  
Herzog, (20% effort).
- 1993- \$71,647, NSF Division of Instrumentation and Resources, Equipment improvements in  
1995 support of research at the Rutgers University Marine Field Station, Co-PI with K. Able, S.  
Glenn, J. Grassle, J. Grassle, G. Taghon, S. Wainright (15% effort).
- 1993- \$112,075, NSF Polar Programs, Cosmic and volcanic Ir deposition at the Greenland  
1995 Summit, parallel proposal with Ed Boyle, MIT (100% effort).
- 1992- \$134,348, NSF Chemical Oceanography, Chemical scavenging in the N. Atlantic and N.  
1995 Pacific: The rare earth elements (100% effort).