

CVs
Workshop Participants
RiOMar 2004
15-18 November 2004

ROLF AALTO: CURRICULUM VITAE

Research Associate Faculty, Quaternary Research Center and Department of Earth and Space Sciences
University of Washington, Seattle, WA 98195-1310. Tel: 206-979-0439. Email: aalto@u.washington.edu

PROFESSIONAL PREPARATION

- 2002- **Research Associate Faculty (post-doctoral)**, Department of Earth and Space Sciences,
2004 University of Washington, Seattle. Application of the NASA SRTM DEM to geomorphology.
2002 **Ph.D., Geological Sciences**, University of Washington, Seattle. 4.0 GPA.
Dissertation: Geomorphic Form and Process of Sediment Flux within an Active Orogen: Denudation of the Bolivian Andes and Sediment Conveyance across the Beni Foreland. 365 p.
Committee: T. Dunne (chair), D.R. Montgomery (co-chair), C. Nittrouer, and A. Gillespie.
1995 **M.S., Geological Sciences**, University of Washington, Seattle. 4.0 GPA.
Thesis: Discordance between suspended sediment diffusion theory and observed sediment concentration profiles in rivers. Committee: Thomas Dunne (chair) and David R. Montgomery.
1993 **B.A., Geology and Applied Mathematics (Double Major)**,
University of California, Berkeley. 3.8 GPA in Geology. Honors Thesis: Mechanics of river meandering in a low-density medium. Advisor: William E. Dietrich.
High School, The Loomis Chaffee School, Windsor, CT. Top science, language, and overall scholar.

APPOINTMENTS: Research Assistant Professor, UW (pending); Visiting Post-Doctoral Researcher, UC Berkeley (2004); Research Associate Faculty (post-doc), UW (2002-2004); Research Assistant, UW (1999-2002); NASA Earth System Science Fellow, UW (1996-1999); Teaching Assistant, UW (1996); Research Assistant, UW (1993-1995); Teaching Assistant (Undergraduate), UC Berkeley (1991-1992).

SELECTED PUBLICATIONS (5 applicable to current research)

- Aalto, R., Maurice-Bourgoin, L., Dunne, T., Montgomery, D.R., Nittrouer, C.A., and Guyot, J.L., 2003, Episodic sediment accumulation on Amazonian floodplains influenced by ENSO: *Nature*, 425, 493-497.
Aalto, R., Dunne, T., and Guyot, J.L., Geomorphic controls on Andean denudation rates: *J. Geology*, in press.
Aalto, R., Dunne, T., Nittrouer, C.A., Maurice-Bourgoin, L., and Montgomery, D.R., 2002, Fluvial transport of sediment across a pristine tropical foreland basin: channel-flood plain interaction and episodic flood plain deposition, *in* Dyer, F.J., Thoms, M.C., and Olley, J.M., eds., *The Structure, Function and Management Implications of Fluvial Sedimentary Systems*: Wallingford, UK, IAHS Press, p. 339-344.
Maurice-Bourgoin, L., Aalto, R., and Guyot, J.L., 2002, Sediment-associated mercury distribution within a major Amazonian tributary: century-scale contamination history and importance of flood plain accumulation, *in* Dyer, F.J., Thoms, M.C., and Olley, J.M., eds., *The Structure, Function and Management Implications of Fluvial Sedimentary Systems*: Wallingford, UK, IAHS Press, p. 161-168.
Aalto, R., Montgomery, D.R., Hallet, B., Abbe, T.B., Buffington, J.M., Cuffey, K., and Schmidt, K.M., 1997, A Hill of Beans: *Science*, v. 277, p. 1911-1912.

SUBMITTED PAPERS AND OTHERS (5 out of 20)

- Aalto, R., and Nittrouer, C.A., Application of fallout ²¹⁰Pb geochronology to river-floodplain systems, in second-round review at *Sedimentary Geology*.
Aalto, R., Global effects of C4 grass emergence on terrestrial C_{org} sequestration and Plio-Pleistocene climate, in second-round review at *Nature*.
Aalto, R., Dunne, T., Maurice-Bourgoin, L., Nittrouer, C.A., and Montgomery, D.R., Beni River morphology, migration, and sediment exchange between the river and its floodplain, submitted to *GSA Bulletin*.
Aalto, R., Greenberg, H., Montgomery, D.R., Farr, T., How large is the mother of all rivers? New dimensions for the Amazon River Basin determined with spaceborne radar topography, submitted to *Nature*.
Aalto, K.R., Aalto, R., Garrison-Laney, C.E., and Abramson, H.F., 1999, Tsunami (?) Sculpturing of the Pebble Beach Wave-cut Platform: *Journal of Geology*, v. 107, p. 607-622.

CURRENT RESEARCH INTERESTS

Field studies of sediment transport, floodplain sedimentation, erosion, and neotectonic geomorphology in Bolivia, Brazil, Peru, California, Papua New Guinea, and Southeast Asia.

Floodplain, fluvial, and lacustrine geochronology with ^{210}Pb , ^{137}Cs , ^7Be , ^{14}C , OSL, and meteoric ^{10}Be .

Measurement of millennial-scale denudation rates in large, complex river basins with cosmogenic ^{10}Be .

Modeling of floodplain evolution, hillslope mass wasting, and river-basin sediment budgets.

Application of remote sensing and GIS analysis (SRTM, ASTER, Landsat, Topex/Posidon, etc.) to problems of erosion, flooding, and sediment transport.

Carbon transport and burial with sediment, the geomorphic and carbon-cycle effects of C4 grasses, and the entrainment, fluvial transport, and preservation of particulate organic matter and black carbon by floods.

PROFESSIONAL ACTIVITIES

Member: American Geophysical Union (1995), Geological Society of America (1994), American Association for the Advancement of Science (1995), Int. Association of Hydrological Sciences (1999).

Qualifications: Certified Engineering Geologist (E.G.) and Registered Geologist (R.G.), WA # 1651.

Founder: A² Consulting, specializing in fluvial and hillslope geomorphology.

SYNERGISTIC ACTIVITIES

Supervision of applied scientific research by undergraduates (6 to date, including one senior thesis).

Public presentation of research (30+ occasions: 12 invited, 6 international).

Review of proposals and manuscripts for: J. Geology, J. South American Earth Sciences, Geographical Analysis, IAHS, Quaternary Research, Geology, Science, and Nature.

Co-chair of several AGU sessions.

Pro bono consulting in geomorphology in support of local environmental issues: floodplain management, river restoration, and to provide training in habitat surveying to unemployed timber workers.

Providing navigation maps and scientific advice to the Bolivian Hydrological Service, the Bolivian Geological Survey, Bolivian educational institutions, and various international aid NGOs.

RECENT COLLABORATORS: C.A. Nittrouer (UW), T. Dunne (UCSB), D.R. Montgomery (UW), L. Maurice-Bourgoin (IRD), J.L. Guyot (IRD), W.E. Dietrich (UCB), P. Bierman (UVM), M.B. Singer (UCSB), E.B. Safran (Lewis and Clark), J. Richey (UW), and A. Aufdenkampe (Stroud).

ADVISORS: Undergraduate (Honors Thesis), William E. Dietrich (UC Berkeley).

Doctoral, Thomas Dunne (UW and UC Santa Barbara). Post-Doctoral, David R. Montgomery (UW).

NOTEWORTHY ACCOMPLISHMENTS

Research Professor, Post-doctoral, and graduate research-assistant positions funded by grants that I conceived and wrote. Invited speaker, Gilbert Club (UC Berkeley), SAFL/NCED (National Center for Earth-Surface Dynamics), Stanford University, LBA (Brazil), UC Colorado, and RIOMAR (Tulane). Earth System Science Fellowship (NASA). Chancellor's Scholarship (UC Berkeley). Perfect scores on GRE logic test (100th percentile), AP mathematics level II test (99th percentile), and many others, with I.Q. tested at 182. Married for 12 years with 3 children.

CURRICULUM VITAE

Mead A. Allison

Address: Department of Earth & Environmental Sciences
Tulane University
207B Dinwiddie Hall
New Orleans, LA 70118
email – malliso@tulane.edu
voice – 504-862-3197
fax – 504-865-5199

Education

B.S. (*Geology*) 1985, College of William & Mary, Williamsburg, Virginia
M.S. (*Geology*) 1988, East Carolina University, Greenville, North Carolina
Ph.D. (*Oceanography*) 1993, State University of New York, Stony Brook, New York
Dissertation: "Mechanisms of coastal progradation and muddy strata formation adjacent to the Amazon River"

Research Interests

Sedimentary processes of upper continental margin environments, processes of strata formation, high-concentration suspended sediment/cohesive seabed interactions, acoustic and optical seafloor mapping, microfabric of modern sediments, use of GIS/remote sensing analysis for examining coastal geological processes

Professional Experience

2002 - Associate Professor, Department of EES, Tulane University
2004 J. William Fulbright Fellow, University of Paris, France
1999-2002 Assistant Professor, Department of EES, Tulane University
1995-1999 Assistant Professor, Department of Oceanography, Texas A&M University
1993-1994 Postdoctoral Scholar, Woods Hole Oceanographic Institution, Department of Geology & Geophysics
1985-1993 Graduate Research/Teaching Assistant

GRADUATE ADVISORS: Stanley Riggs (M.S.), Charles Nittrouer (PhD), David Aubrey (Postdoctoral)

Some Relevant RIOMAR Publications

Allison, M.A., Sheremet, A., Gõni, M.A., Stone, G.W., submitted. Storm layer deposition on the Mississippi-Atchafalaya subaqueous delta generated by Hurricane Lili in 2002. *Continental Shelf Research*.
Galler, J.J. and Allison, M.A., submitted. Estuarine controls on fine-grained sediment storage in the lower Mississippi and Atchafalaya Rivers. *Geological Society of America Bulletin*.
Kuehl, S.A., Allison, M.A., Goodbred, S.L., and Kudrass, H. in press. Sedimentary processes and products of the modern Ganges-Brahmaputra delta. *Society for Sedimentary Geology (SEPM) Special Volume on Deltas*.
Neill, C.F. and Allison, M.A., in press. Subaqueous deltaic formation on the Atchafalaya Shelf, Louisiana. *Marine Geology*.
McKee, B.A., Aller, R.C., Allison, M.A., Bianchi, T.S., and Kineke, G.C., 2004. Transport

and transformation of dissolved and particulate materials on continental margins influenced by major rivers: benthic boundary layer and seabed processes. *Continental Shelf Research*, 24:899-926.

- Allison, M.A. and Lee, M.T. 2004. Sediment exchange between Amazon mudbanks and shore-fringing mangroves in French Guiana. *Marine Geology* 208:169-190.
- Galler, J.J., Bianchi, T.S., Allison, M.A., Campanella, R., and Wysocki, L., 2003. Sources of aged terrestrial organic carbon to the Gulf of Mexico from relict strata in the Mississippi River. *EOS, Transactions of the American Geophysical Union*, 84:469-476.
- Allison, M.A., Khan, S.R., Goodbred, S.L., and Kuehl, S.A., 2003. Stratigraphic evolution of the late Holocene Ganges-Brahmaputra lower delta plain. *Sedimentary Geology* 155:317-342.
- Allison, M.A. and Kepple, E.B., 2001. Modern sediment supply to the lower delta plain of the Ganges-Brahmaputra River in Bangladesh. *Geo-Marine Letters*, 21:66-74.
- Allison, M.A., Kineke, G.C., Gordon, E.S., and Goñi, M.A., 2000. Development and reworking of an annual flood deposit on the inner continental shelf off the Atchafalaya River. *Continental Shelf Research* 20:2267-2294.
- Allison, M.A., Lee, M.T., Ogston, A.S., and Aller, R.C., 2000. Origin of mudbanks along the northeast coast of South America. *Marine Geology* 163:241-256.
- Allison, M.A., 1998. Historical changes in the Ganges-Brahmaputra delta front. *Journal of Coastal Research*, 14(4):1269-1275.
- Allison, M.A., Kuehl, S.A., Martin, T.D., and Hassan, A., 1998. The importance of floodplain sedimentation for river sediment budgets and terrigenous input to the oceans: insights from the Brahmaputra-Jamuna River. *Geology*, 26:175-178
- Kuehl, S.A., Levy, B.M., Moore, W.S., and Allison, M.A., 1997. Subaqueous delta of the Ganges-Brahmaputra river system. *Marine Geology*, 144:81-96.
- Kuehl, S.A., Nittrouer, C.A., Allison, M.A., Faria, L.E.C., Dukat, D.A., Jaeger, J.M., Pacioni, T.D., Figueiredo, A.G., and Underkoffler, E.C., 1996. Sediment deposition, accumulation, and seabed dynamics in an energetic fine-grained coastal environment. *Continental Shelf Research*, 16:787-815.

VIVEK ARORA

Canadian Centre for Climate Modelling
and Analysis, Meteorological Service of
Canada, University of Victoria, PO Box
1700, Victoria, BC, V8W 2Y2,
Canada

Ph: (250) 363 8246
Fax: (250) 363 8247
Email: vivek.arora@ec.gc.ca
Webpage: <http://www.cccma.bc.ec.gc.ca/people/varora.shtml>

Education

Bachelor of Civil Engineering	Jamia University, New Delhi, India	1990
Master of Science (Hydrology)	Dept. of Eng. Hydrology, University College Galway, National University of Ireland	1993
Doctor of Philosophy (Environmental Engineering)	Dept. of Civil and Environmental Eng., University of Melbourne, Australia	1997

Professional Experience

May 2001	– present	Research Scientist at the Canadian Centre for Climate Modelling and Analysis (CCCma)
Dec. 1999	– April 2001	Research Associate at the Canadian Centre for Climate Modelling and Analysis (CCCma)
Oct. 1997	– Nov. 1999	Post-doctoral fellow at the Canadian Centre for Climate Modelling and Analysis (CCCma)
Feb. 1994	– Sep. 1997	Post-graduate scholar at the CSIRO, Division of Atmospheric Research, Australia
Aug. 1995	– Sep. 1997	Casual Tutor at the Dept. of Civil and Environmental Engineering, University of Melbourne, and Resident Tutor at St. Hilda's College, University of Melbourne
Jan. 1996	– March 1996	Experimental Scientist at CSIRO, Land and Water, Canberra, Australia
Aug. 1990	– Sep. 1992	Junior Engineer at the Dept. of Telecommunications, Civil Engineering Wing, Govt. of India

Research Interests

- Modelling of the terrestrial carbon and nitrogen cycles,
- Land surface carbon budget,
- Impact of climate change and variability on hydrology of rivers,
- Earth's energy and water balance at global and continental scales,
- Land surface-atmosphere interactions, and
- Interactions between climate, vegetation, and hydrology.

Referred Publications

- Arora, V.K.** and G.J. Boer (2004) A parameterization of leaf phenology for the terrestrial ecosystem component of climate models, *Global Change Biology*, in press.
- Whitfield, P.H., P.J. Pilon, D.H. Burn, V. **Arora**, H.F. Lins, T. Ouarda, C.D. Sellars, and C. Spence (2004) Climate Variability and Change – Rivers and Streams, in *Threats to Water Availability in Canada*, NWRI Scientific Assessment Report Series No. 3 and ACSD Scientific Assessment Series No. 1, National Water Research Institute, Meteorological Service of Canada, 85–90 pp.
- Arora, V.K.** and G. J. Boer (2003) A representation of variable root distribution in dynamic vegetation models, *Earth Interactions*, Vol. 7, Paper 6, 19 pp.
- Lucas-Picher, P., V.K. **Arora**, D. Caya, and R. Laprise (2003) Implementation of a large-scale variable velocity river flow routing algorithm in the Canadian Regional Climate Model, *Atmosphere-Ocean*, 41(2), 139-153.
- Arora, V.K.** (2003) Simulating energy and carbon fluxes using coupled land surface and terrestrial ecosystem models, *Agricultural and Forest Meteorology*, 118(1-2), 21-47.
- Arora, V.K.**, and G. J. Boer (2002) A GCM-based assessment of simulated global moisture budget and the role of land-surface moisture reservoirs in processing precipitation, *Clim. Dyn.*, 20(1), 13-29.

- Arora, V.K.** (2002) The use of aridity index to assess climate change effect on annual runoff, *J. Hydrol.*, 265(1-4), 164-177.
- Arora, V. K.** (2002) Modelling vegetation as a dynamic component in soil-vegetation-atmosphere-transfer schemes and hydrological models, *Rev. Geophys.*, 40(2), 1006, 10.1029/2001RG000103.
- Arora, V.K., F.H.S. Chiew, and R.B. Grayson** (2001) Effect of sub-grid scale variability of soil moisture and precipitation intensity on surface runoff and streamflow, *J. Geophys. Res.*, 106(D15), 17073-17091.
- Arora, V.K.** (2001) Streamflow simulations for continental scale river basins in a global atmospheric general circulation model, *Adv. Water Resour.*, 24(7), 775-791.
- Arora, V.K.** (2001) Assessment of simulated water balance for continental-scale river basins in an AMIP II simulation, *J. Geophys. Res.*, 106(D14), 14827-14842.
- Arora, V.K., F. Seglenieks, N. Kouwen, and E. Soulis** (2001) Scaling aspects of river flow routing, *Hydrol. Process.*, 15(3), 461-477.
- Arora, V.K., and Boer, G.J.** (2001) Effect of simulated climate change on the hydrology of major river basins, *J. Geophys. Res.*, 106(D4), 3335-3348.
- Arora, V.K., Chiew, F.H.S. and Grayson, R.B.** (2000) The use of river runoff to test the CSIRO9 land surface scheme in the Amazon and Mississippi River basins, *Intl. J. Climatology*, 20(10), 1077-1096.
- Arora, V.K., and Boer, G.J.** (1999) A variable velocity flow routing algorithm for GCMs, *J. Geophys. Res.*, 104, D24, 30965-30979.
- Arora, V.K., Chiew, F.H.S. and Grayson, R.B.** (1999) A river flow routing scheme for general circulation models, *J. Geophys. Res.*, 104, D12, 14347-14357.

Work As A Reviewer

Reviewed manuscripts and grant proposals for following scientific journals and magazines, research councils and foundations.

- Advances in Water Resources
- Canadian Water Resources Journal
- Geophysical Research Letters
- Hydrological Processes
- Hydrological Sciences Journal
- International Journal of Climatology
- Journal of American Water Resources Association
- Journal of Climate
- Journal of Geophysical Research
- Journal of Hydrology
- Journal of Hydrometeorology
- National Environment Research Council (NERC), UK
- National Science Foundation, USA
- Nature
- National Scientific and Engineering Research Council (NSERC), Canada
- Water International

CURRICULUM VITAE

RONALD BENNER

Department of Biological Sciences and
Marine Science Program
University of South Carolina
Columbia, SC 29208

Phone: (803) 777-9561
Fax: (803) 777-4002
Email: benner@biol.sc.edu

EDUCATION:

B.S.	1979	Biology	Florida International University
Ph.D.	1984	Microbiology	University of Georgia

EMPLOYMENT HISTORY:

1999 - present Professor, Department of Biological Sciences and Marine Science Program,
Univ. of South Carolina
2000 – 2001 Assistant Director of the Marine Science Program, Univ. of South Carolina
1998 - 1999 Professor and Senior Research Scientist, Department of Marine Science and
Marine Science Institute, Univ. of Texas at Austin
1993 - 1998 Associate Professor, Department of Marine Science, Univ. of Texas at Austin
1990 - 1993 Assistant Professor, Department of Marine Science, Univ. of Texas at Austin
1987 - 1998 Research Scientist, Univ. of Texas Marine Science Institute, Port Aransas, TX
1986 - 1987 Research Scientist, U.S. Environmental Protection Agency, Athens, Georgia
1985 - 1986 Assistant Research Scientist, Department of Microbiology, Univ. of Georgia
1984 - 1985 Postdoctoral Associate, Institute of Ecology, Univ. of Georgia

RiOMar-RELATED PUBLICATIONS:

Benner, R., B. Benitez-Nelson, K. Kaiser, and R. M. W. Amon. 2004. Export of young terrigenous dissolved organic carbon from rivers to the Arctic Ocean. **Geophys. Res. Lett.**, 31, L05305, doi:10.1029/2003GL019251.

Dagg, M., R. Benner, S. Lohrenz, and D. Lawrence. 2004. Transformation of dissolved and particulate materials on continental shelves influenced by large rivers: plume processes. **Cont. Shelf Res.** 24: 833-858.

Benner, R. 2003. Molecular indicators of the bioavailability of dissolved organic matter, pp. 121-137, *In*: Aquatic Ecosystems: Interactivity of Dissolved Organic Matter, S.E.G. Findlay and R.L. Sinsabaugh (eds.), **Academic Press**.

Hernes, P. J., and R. Benner. 2003. Photooxidation and microbial degradation of dissolved lignin phenols: Implications for the fate of terrigenous dissolved organic matter in marine environments. **J. Geophys. Res.**, 108 (C9), doi: 10.1029/2002JC001421, 2003.

Benner, R. 2002. Chemical composition and reactivity, pp. 59-90, *In*: Biogeochemistry of Marine Dissolved Organic Matter, D. Hansell and C. Carlson (eds), **Academic Press**.

Hernes, P. J., and R. Benner. 2002. Transport and diagenesis of dissolved and particulate terrigenous organic matter in the North Pacific Ocean. **Deep-Sea Res. I** 49: 2119-2132.

Benner, R., and S. Opsahl. 2001. Molecular indicators of the sources and transformations of dissolved organic matter in the Mississippi River plume. **Org. Geochem.** 32: 597-611.

Pakulski, J. D., R. Benner, T. Whitledge, R. Amon, B. Eadie, L. Cifuentes, J. Ammerman, and D. Stockwell. 2000. Microbial metabolism and nutrient cycling in the Mississippi and Atchafalaya River plumes. **Estuar. Coast. Shelf Sci.** 50: 173-184

- Hedges, J. I., E. Mayorga, E. Tsamakis, M. E. McClain, P. Quay, J. E. Richey, R. Benner, S. Opsahl, B. Black, T. Pimentel, J. Q. Aguirre, and L. Maurice. 2000. Organic matter in Bolivian tributaries of the Amazon River: A comparison to the lower mainstream. **Limnol. Oceanogr.** 45: 1449-1466.
- Opsahl, S., R. Benner, and R. M. W. Amon. 1999. Major flux of terrigenous dissolved organic matter through the Arctic Ocean. **Limnol. Oceanogr.** 44: 2017-2023.
- Guay, C. K., G. P. Klinkhammer, K. K. Falkner, R. Benner, P. G. Coble, T. E. Whitledge, B. Black, F. J. Bussell, and T. A. Wagner. 1999. High-resolution measurements of dissolved organic carbon in the Arctic Ocean by in-situ fiber-optic spectrometry. **Geophys. Res. Lett.** 26: 1007-1010.
- Amon, R. M. W., and R. Benner. 1998. Seasonal patterns of bacterial abundance and production in the Mississippi River plume and their importance for the fate of enhanced primary production. **Microb. Ecol.** 35: 289-300.
- Opsahl, S., and R. Benner. 1998. Photochemical reactivity of dissolved lignin in river and ocean waters. **Limnol. Oceanogr.** 43: 1297-1304.
- Opsahl, S., and R. Benner. 1997. Distribution and cycling of terrigenous dissolved organic matter in the ocean. **Nature** 386: 480-482.
- Hedges, J. I., R. Keil, and R. Benner. 1997. What happens to terrestrial organic matter in the ocean? **Org. Geochem.** 27: 195-212.
- Amon, R. M. W., and R. Benner. 1996. Bacterial utilization of different size classes of dissolved organic matter. **Limnol. Oceanogr.** 41: 41-51.
- Gardner, W.S., R. Benner, R. Amon, J. B. Cotner, J. F. Cavaletto, and J. R. Johnson. 1996. Effects of high molecular weight dissolved organic matter on nitrogen dynamics in the Mississippi River plume. **Mar. Ecol. Prog. Ser.** 133: 287-297.
- Amon, R. M. W., and R. Benner. 1996. Photochemical and microbial consumption of dissolved organic carbon and dissolved oxygen in the Amazon River system. **Geochim. Cosmochim. Acta** 60: 1783-1792.
- Benner, R., S. Opsahl, G. Chin-Leo, J. E. Richey, and B. Forsberg. 1995. Bacterial carbon metabolism in the Amazon River system. **Limnol. Oceanogr.** 40: 1262-1270.
- Pakulski, J. D., R. Benner, R. Amon, B. Eadie, and T. Whitledge. 1995. Community metabolism and nutrient cycling in the Mississippi River plume: Evidence for intense nitrification at intermediate salinities. **Mar. Ecol. Prog. Ser.** 117: 207-218.
- Hedges, J. I., G. L. Cowie, J. E. Richey, P. D. Quay, R. Benner, and M. Strom. 1994. Origins and processing of organic matter in the Amazon River as indicated by carbohydrates and amino acids. **Limnol. Oceanogr.** 39: 743-761.
- Gardner, W. S., R. Benner, G. Chin-Leo, J. B. Cotner, B. J. Eadie, J. F. Cavaletto, and M. B. Lansing. 1994. Mineralization of organic material and bacterial dynamics in dark bottle experiments with Mississippi River plume water. **Estuaries** 7: 816-828.
- Chin-Leo, G., and R. Benner. 1992. Enhanced bacterioplankton production and respiration at intermediate salinities in the Mississippi River plume. **Mar. Ecol. Prog. Ser.** 87: 87-103.

Biographical Sketch
THOMAS S. BIANCHI

Thomas Stephen Bianchi
Dept. of Earth and Environmental Sciences
Tulane University
New Orleans, LA 70118

Born: November 24, 1956
Richmond Hill, New York

A. PROFESSIONAL PREPARATION

1978	B.A. (Biology)	Dowling College, Oakdale, N.Y.
1981	M.S. (Marine Ecology)	S.U.N.Y at Stony Brook, NY.
1987	Ph.D (Marine Science)	University of Maryland, CBL
1988-1990	Postdoctoral Fellow	IES, Millbrook, NY

B. APPOINTMENTS

1990-1994	Assistant Professor , Department of Biology, Lamar University, Beaumont, Texas.
1994-1998	Assistant Professor , Ecology, Evolution, and Organismal Biology Dept., Tulane University, New Orleans, Louisiana.
1998-2001	Associate Professor , Institute for Earth and Ecosystem Sciences, Dept. of EE Biology, Tulane University, New Orleans, Louisiana.
2002-PRESENT	Professor , Dept. of Earth and Environmental Sciences, Tulane University, New Orleans, Louisiana

C. SELECTED PUBLICATIONS (Total 71)

Five Relevant:

- Bianchi, T.S.**, Filley, T, Dria, K., and P. Hatcher. 2004. Temporal variability in sources of dissolved organic carbon in the lower Mississippi River. *Geochim. Cosmochim. Acta* 68: 959 – 967.
- McKee, B.A., Aller, R.C., Allison, M.A., **Bianchi, T.S.** and G.C. Kineke. 2004. Transport and Transformation of Dissolved and Particulate Materials on Continental Margins Influenced by Major Rivers: Benthic Boundary Layer and Seabed Processes. *Cont. Shelf Res.* 24: 899-926.
- Chen, N., **T.S. Bianchi**, and J. M. Bland, 2003. Fate of chlorophyll-a in the lower Mississippi River and Louisiana shelf: Implications for pre- versus post-depositional decay. *Mar. Chem.* 81:37-55.
- Chen, N., **T.S. Bianchi**, and J.M. Bland. 2003. Novel carotenoid chlorin esters in Louisiana shelf sediments: formation and transformation of CCEs. *Geochim. Cosmochim. Acta* 67:2027-2042.
- Bianchi, T.S.**, S. Mitra, and B. McKee. 2002. Sources of terrestrially-derived carbon in the Lower Mississippi River and Louisiana shelf: Implications for differential sedimentation and transport at the coastal margin. *Mar. Chem.* 77: 211-223.

Five Other:

- Bianchi, T.S.**, E. Engelhaupt, B.A. McKee, S. Miles, R. Elmgren, S. Hajdu, C. Savage, and M. Baskaran. 2002 Do sediments from coastal sites accurately reflect time trends in water column phytoplankton? A test from Himmerfjarden Bay (Baltic Sea proper). *Limnol. Oceanogr.* 47: 1537-1544.
- Engelhaupt, E., **T.S. Bianchi**, R.G. Wetzel, and M.A.Tarr. 2002. Photochemical transformations and bacterial utilization of high-molecular-weight dissolved organic carbon in a southern Louisiana tidal stream (Bayou Trepagnier). *Biogeochemistry* 62: 39-58.

- Mitra, S., **T.S. Bianchi**, B.A.McKee, and M. Sutula. 2002. Black carbon from the Mississippi River: Implications for the global carbon cycle. *Environ. Sci. & Tech.* 36: 2296-2302
- Chen, N., **T.S. Bianchi**, and B. A. McKee. 2001. Historical Trends of Hypoxia on the Louisiana Shelf: the Application of Pigments as Biomarkers. *Org. Geochem.* 32 (4): 451-621.
- Mitra, S., **T.S. Bianchi**, L. Guo, and P. H. Santschi. 2000. Sources and transport of terrestrially-derived organic matter in the Chesapeake Bay and Middle Atlantic Bight. *Geochim. Cosmochim. Acta* 64: 3547-3557.

BOOKS: Bianchi, T.S., R. Twilley, and J. Pennock (eds.) 1999. *Biogeochemistry of Gulf of Mexico Estuaries*, John Wiley & Sons, New York.

D. SYNERGISTIC AND EDUCATIONAL ACTIVITIES

Panelist for: NOAA/EPA, Coastal Intensive Sampling Network (CISNET) - June, 1998
National Science Foundation, Chemical Oceanography - November, 1998; National Science Foundation, Chemical Oceanography - May, 1999; National Science Foundation, Chemical Oceanography – November, 1999; *Editorial Boards:* Associate Editor, *Estuaries* - 1998 – present; Advisory Board, *Journal of Marine and Freshwater Research* - 1998 – present. *Graduate Students:* Corey Lambert, M.S. Degree, Lamar University – 1994, Michael Freer, M.S. Degree, Lamar University – 1994, Marina Argyrou, M.S. Degree, Tulane University – 1996, Amy Bennett, M.S. Degree, Tulane University – 1997, Erika Engelhaupt, M.S Degree, Tulane University – 1999, Nianhong Chen, Ph.D, Tulane University – 2002, Laura Wysocki, Ph.D, Tulane University - (started in 1999), Bryan Grace, Ph.D, Tulane University – (started in 2001), Shuiwang Duan, Ph.D, Tulane University – (started in 2002). *Postdocs:* Sid Mitra - 1997 – 2001; Martha Sutula 1999 - 2000

E. COLLABORATORS and OTHER AFFILIATIONS (past 48 months)

CURRENT COLLABORATORS: Ragnar Elmgren, Stockholm University; Alan Shiller, Univ. of Southern Mississippi; Patrick Hatcher, Ohio State Univ.; Tim Filley, Purdue Univ.; Liz Canuel, William and Mary - (VIMS)

GRADUATE ADVISORS: Jeffrey S. Levinton (M.S); Donald L. Rice (Ph.D)

NEAL EDWARD BLAIR

Education and Professional Position

B.S. (Chemistry) University of Maryland, 1975

Ph.D. (Organic Chemistry) Stanford University, 1980

Research Associate, NASA-Ames Research Center, 1980-1984

Lecturer, Department of Chemistry, Stanford University, 1980-1981

Assistant Professor, Department of Marine, Earth and Atmospheric Sciences, North Carolina State University, 1985-1991

Associate Professor, Department of Marine, Earth and Atmospheric Sciences, North Carolina State University, 1991-1998

Professor, Department of Marine, Earth and Atmospheric Sciences, North Carolina State University, 1998- present

Professional and Honorary Affiliations

American Association for the Advancement of Sciences

American Chemical Society: Organic and Geochemical Divisions

American Geophysical Union

Geochemical Society

Awards

Full University Scholarship (University of Maryland, 1971-1975)

National Research Council Associateship (1980-1981)

Recent Publications

- 1999 Benthic fluxes and porewater concentration profiles of dissolved organic carbon in sediments from the North Carolina continental slope. *Geochim. Cosmochim. Acta* 63, 427-448 (M.J. Alperin, C.S. Martens, D.B. Albert, I.B. Suayah, L.K. Benninger, N.E. Blair, and J.A. Jahnke)
- 1999 Macrofaunal processing of phytodetritus at two sites on the Carolina margin: in situ experiments using C-13-labeled diatoms *Marine Ecology-Progress Series* 182, 37-54 (L.A. Levin, N.E. Blair, C.M. Martin, D.J. DeMaster, G. Plaia, C.J. Thomas)
- 1999 Bioturbation and particle transport in Carolina slope sediments: A radiochemical approach *Journal of Marine Research* 57, 335-355 (W.L. Fornes, D.J. DeMaster, L.A. Levin, N.E. Blair)
- 2001 The biogeochemistry of carbon in continental slope sediments: the North Carolina margin. In *Organism-Sediment Interactions* (J.Y. Aller, S.A. Woodin and R.C. Aller, eds), Univ. S.

- Carolina Press, 243-262 (N. Blair, L. Levin, D. DeMaster, G. Plaia, C. Martin, W. Fornes, C. Thomas and R. Pope)
- 2001 Watershed control on the carbon loading of marine sedimentary particles *Geochim. Cosmochim. Acta* 65, 2231-2240 (E. Leithold and N. Blair).
- 2002 Organic carbon deposition on the North Carolina continental slope off Cape Hatteras. *Deep Sea Research II* 49, 4687- (C.J. Thomas, N.E. Blair, M.J. Alperin, D.J. DeMaster, R.A. Jahnke, C.S. Martens and L. Mayer).
- 2002 Transport and digestive alteration of uniformly ^{13}C -labeled diatoms in mudflat sediments *J. Mar. Res.* 60, 517-535 (C.J. Thomas and N.E. Blair).
- 2002 Deposition of Bomb ^{14}C in Continental Slope Sediments of the Mid-Atlantic Bight: Assessing Organic Matter Sources and Burial Rates. *Deep Sea Research II* 49, 4667-4686. (D.J. DeMaster, C.J. Thomas, N.E. Blair, W.L. Fornes, G. Plaia, and L.A. Levin).
- 2002 Bt resistance management: The importance of alternate host use by *Helicoverpa zea*. *Proc. Nat. Acad. Sci.*, 99, 16581-16586 (F. Gould, N. Blair, M. Reid, T.L. Rennie, J. Lopez, and S. Micinski).
- 2003 The Persistence of Memory: The Fate of Ancient Sedimentary Organic Carbon in a Modern Sedimentary System. *Geochim. Cosmochim. Acta*, 67, 63-73 (Neal Blair, Elana Leithold, Shawn Ford, Kelly Peeler, Jennifer Holmes and David Perkey).
- 2004 Patterns of intramolecular carbon isotopic heterogeneity within amino acids of autotrophs and heterotrophs. *Oecologia* 121, 178-189 (W.B. Savidge and N.E. Blair).
- 2004 Early diagenetic remineralization of sedimentary organic C in the Gulf of Papua deltaic complex (Papua New Guinea): net loss of terrestrial C and diagenetic fractionation of C isotopes. *Geochim. Cosmochim. Acta* 68: 1815-1825 (R.C. Aller and N.E. Blair).
- 2004 From bedrock to burial: the evolution of particulate organic carbon across coupled watershed-continental margin systems. *Mar. Chem. (in press)* (N.E. Blair, E.L. Leithold and R.C. Aller).
- 2004 Seasonal and within-plant gradients in the intramolecular carbon isotopic composition of amino acids of *Spartina alterniflora*. *J. Exp. Mar. Biol. Ecol.* 308: 151-167 (W.B. Savidge and N.E. Blair).
- 2004 Sedimentation and carbon burial on the northern California continental shelf: the signatures of land-use change. *Continental Shelf Res. (in press)* (E. Leithold, D.W. Perkey, N.E. Blair, T. Creamer).

BIOGRAPHICAL SKETCH

MICHAEL D. BLUM

CURRENT POSITION

Professor, Department of Geology and Geophysics, Louisiana State University

Work Address

Department of Geology and Geophysics
Louisiana State University
Baton Rouge, LA 70803

Contact Numbers

Phone: 1-225-578-8940
FAX: 1-225-578-2302
E-mail: mike@geol.lsu.edu

EDUCATION

- § BS (1983), The University of Texas at Austin
- § MA (1987), The University of Texas at Austin
additional coursework at the University of Wisconsin - Madison, Spring 1988.
- § Ph.D. (1992), The University of Texas at Austin.

PROFESSIONAL EMPLOYMENT

- § Professor, Department of Geology and Geophysics, Louisiana State University, August 2003 to present.
- § Associate Professor, Department of Geosciences, University of Nebraska-Lincoln, August, 1997 to July 2003
- § Faculty Research Fellow, Earth Science and Solar System Exploration Group, NASA Johnson Space Center, Summer 1997
- § Assistant Professor, Department of Geology, University of Nebraska-Lincoln, August, 1995 to August 1997
- § Assistant Professor, Department of Geology, Southern Illinois University, August, 1991 to August, 1995
- § Instructor, Department of Geography, The University of Texas at Austin, August, 1989 to May, 1991
- § Research Assistant, Bureau of Economic Geology, The University of Texas at Austin, 1986-1987

MEMBERSHIP IN PROFESSIONAL SOCIETIES

- § Geological Society of America (GSA), elected Fellow in 1999
- § American Geophysical Union (AGU-Life Member)
- § International Association of Sedimentologists (IAS)
- § Society for Sedimentary Geology (SEPM)
- § American Quaternary Association (AMQUA)

RESEARCH INTERESTS

- § Fluvial and coastal geomorphology and sedimentology
- § Responses of fluvial and coastal systems to climate and sea-level change
- § Sequence stratigraphy
- § Geologic records of global change

RECENT PUBLICATIONS

- BLUM, M. D., Sivers, A. E., Zayac, T., and Goble, R. J. (2003) Middle Holocene Sea-Level and Evolution of the Gulf of Mexico Coast. *Transactions of the Gulf Coast Association of Geological Societies*. v. 53.
- BLUM, M. D. (2003) Sediment Supply to the Shelf Margin and Beyond: Alluvial Valley Responses to Sea-Level Change. in Roberts, H., ed., *Shelf-Margin Deltas and Linked Downslope Petroleum Systems: Global Significance and Future Exploration Potential*. Proceedings of the 23rd Annual GCSSEPM Foundation Bob F. Perkins Research Conference, pp. 1-12.
- Rittenour, T. M., Goble, R. J., and BLUM, M. D. (2003) Luminescence geochronology of late Pleistocene braid channelbelts of the Mississippi River. *Quaternary Science Reviews*. v. 22, pp. 1105-1110.

- Straffin, E. C. and BLUM, M. D. (2002) Holocene fluvial response to climate change and human activities; Burgundy, France. *Netherlands Journal of Geosciences*. v. 81.
- BLUM, M. D., Carter, A. E., Zayac, T., and Goble, R. J. (2002) Middle Holocene Sea-Level and Evolution of the Gulf of Mexico Coast (USA). *Journal of Coastal Research*. Special Issue 36, pp. 65-80.
- Straffin, E. C and BLUM, M. D.(2002) Late and post-glacial fluvial response of the Loire River, Burgundy, France, to climate change. in Bravard, J.-P. (ed.) *The Rivers Have a History: Proceedings of the CNRS Colloquium*. Centre Nationale Recherche Scientifique, France.
- BLUM, M. D., Misner, T. J., Collins, E. S., Scott, D. B., Morton, R. A. and Aslan, A. (2001) Middle Holocene sea-level rise and highstand at +2m, Texas Gulf Coast. *Journal of Sedimentary Research*. v. 71, pp. 581-588.
- BLUM, M. D. and Straffin, E. C. (2001) Fluvial response to external forcing: examples from the Massif Central of France, the Texas Coastal Plain (USA), the Sahara of Tunisia, and the Lower Mississippi Valley (USA). pp. 195-228 in Maddy, D. and Macklin, M. A. (eds.) *River Basin Sediment Systems: Archives of Environmental Change*. Balkema Press.
- BLUM, M. D. and Tornqvist, T. E. (2000) Fluvial response to climate and sea-level change: a review and look forward. *Sedimentology* (Special Edition entitled "*Sedimentology for the New Millennium*"). v. 47, pp. 2-48.
- BLUM, M. D., Guccione, M. J., Wysocki, D., Robnett, P. C., and Rutledge, E. M. (2000) Late Pleistocene Evolution of the Mississippi Valley, Southern Missouri to Arkansas. *Geological Society of America Bulletin*. v. 112, pp. 221-235.
- Morton, R. A., Paine, J. G., and BLUM, M. D. (2000) Responses of stable bay margins and barrier island systems to Holocene sea-level changes, western Gulf of Mexico. *Journal of Sedimentary Research*. v.70, pp. 478-490.
- Straffin, E. C., BLUM, M. D., and Stokes, S. (2000) Alluvial stratigraphy of the Loire and Arroux Rivers, Burgundy, France. *Quaternaire*. v. 10, pp. 271-282.
- Swezey, C. S., Lancaster, N., Kocurek, G., Deynoux, M., BLUM, M. D., Price, D. M., and Pion, J.-C. (1999) Response of aeolian systems to Holocene climatic and hydrologic changes on the northern margin of the Sahara: a high resolution record from the Chott Rharsa basin, Tunisia. *The Holocene*. v. 9, pp. 141-147.
- Aslan, A. and BLUM, M. D. (1999) Contrasting styles of Holocene avulsion, Texas Gulf Coastal Plain. in Smith, N. D. and Rogers, J. J. (eds.) *Fluvial Sedimentology VI*. International Association of Sedimentologists Special Publication 28, pp. 193-209.
- BLUM, M. D. and Price, D. M. (1998) Quaternary alluvial plain construction in response to interacting glacio-eustatic and climatic controls, Texas Gulf Coastal Plain. pp. 31-48 in Shanley, K. and McCabe, P. (eds.) *Relative Role of Eustasy, Climate, and Tectonism in Continental Rocks*. SEPM Special Publication 59.
- BLUM, M. D., Kocurek, G., Deynoux, M., Swezey, C., Lancaster, N., Price, D., and Pion, J.-C. (1998) Quaternary wadi-lacustrine-aeolian depositional cycles and sequences, Chott Rharsa Basin, Tunisia. pp. 539-552 in Alsharhan, A. S., Glennie, K., Whittle, G. L., and Kendall, C. G. St.C. (eds.) *Quaternary Deserts and Climatic Change*. Balkema Press.

Jaye Ellen Cable

a. Professional Preparation

University of South Carolina	Marine Science	B.S.	1989
Florida State University	Chemical Oceanography	Ph.D.	1996
University of Florida	Paleolimnology	Post-doc	1996-1997

b. Appointments

2003 - present	Associate Professor, Department of Oceanography and Coastal Sciences, Louisiana State University, Baton Rouge, Louisiana 70803
1998 – 2003	Assistant Professor, Department of Oceanography and Coastal Sciences, LSU
2001 – present	Courtesy Faculty, Environmental Sciences Institute, Florida A&M University, Tallahassee, Florida 32306
1996	Instructor, Department of Geological Sciences, University of Florida

c. Publications (out of 29)

(i) Five publications closely related to the proposed project

- Cable, J., Martin, J., Swarzenski, P., Lindenberg, M., and Steward, J., 2004, Advection within shallow pore waters of a coastal lagoon, *Ground Water (Oceans special issue)* 42: 1011-1020.
- Martin, J., Cable, J., Swarzenski, P., and Lindenberg, M., 2004, Enhanced submarine ground water discharge from mixing of pore water and estuarine water, *Ground Water (special Oceans issue)* 42: 1001-1010.
- Cable, J., Bugna, G., Burnett, W., and Chanton, J. 1996. Application of ^{222}Rn and CH_4 for assessment of groundwater discharge to the ocean, *Limnology and Oceanography*, 41: 1347-1353.
- Bugna, G., Chanton, J., Cable, J., Burnett, W., and Cable, P. 1996. The importance of groundwater discharge to the methane budgets of nearshore and continental shelf waters of the northeastern Gulf of Mexico, *Geochimica et Cosmochimica Acta*, 60: 4735-4746.
- Cable, J., Burnett, W., Chanton, J., and Weatherly, G. 1996. Estimating groundwater discharge into the northeastern Gulf of Mexico using ^{222}Rn , *Earth and Planetary Science Letters*, 144: 591-604.

(ii) Five other significant publications

- Cable, J., Corbett, R., and Walsh, M. 2002. Phosphate uptake in coastal limestone aquifers: a fresh look at wastewater management, *Limnology and Oceanography Bulletin* 11(2): 29-32.
- Taniguchi, M., Burnett, W., Cable, J., and Turner, J. 2003. Assessment Methodologies for Submarine Groundwater Discharge, In: *Land and Marine Hydrogeology*, (eds) M. Taniguchi, K. Wang, and T. Gamo, Elsevier Publications, Oxford, 208 pp.
- Corbett, R. and Cable, J., 2003, Seepage Meters and Advective Transport In Coastal Environments, Comment on "Seepage Meters and Bernoulli's Revenge" by Shinn et al (2002), *Estuaries* 26(5):1383-1389.
- Burnett, W., Cable, J., and Corbett, R. 2003. Radon Tracing of Submarine Groundwater Discharge in Coastal Environments, In: *Land and Marine Hydrogeology*, (eds) M. Taniguchi, K. Wang, and T. Gamo, Elsevier Publications, Oxford, 208 pp.
- Taniguchi, M., Burnett, W., Cable, J., and Turner, J., 2002, Investigation of submarine groundwater discharge, *Hydrological Processes* 16(11): 2115-2129.

d. Synergistic Activities

- 1995 to present: Chair, co-Chair, or Session Reporter for 5 national or international meetings including AGU, ASLO, and the SCOR/LOICZ Working Group 112; Workshop Participant, NOAA Air Resources Laboratory and the NSF-ONR-NOAA sponsored Dissertations Symposium on Chemical Oceanography (DISCO) XIII
- 2003 to present: Member, IAPSO Commission on Ground Water – Seawater Interactions
- 1998 to 2003: Associate Member, International Council of Scientific Unions, Scientific Committee on Oceanic Research (SCOR) Working Group 112 on Submarine Groundwater Discharge

1998 to present: Mentor/Advisor for high school (1) and undergraduate (2) students to perform independent research projects; high school student won awards at the regional and state science fairs in her category, as well as the Woman Geoscientist Award for her work; one undergraduate presented the results of his research at a Geological Society of America sectional meeting and is currently writing it up for publication

1999 to present: Advisor/Mentor for minority students in science; First Ph.D. student under my direction was a minority (Inniss, see below); Currently serving as an Courtesy Faculty on dissertation committee for a minority student at Florida A&M University

2004 to 2005: Workshop participant for (1) CBED - Coastal Benthic Dynamics, (2) RiOMar – River Ocean Margins, and (3) Application of Sensor Technology to Assessing Groundwater-Surface water Interactions in the Coastal Zone

e. Collaborators and Other Affiliations

(i) Collaborators

Jennifer Cherrier (Florida A&M), Dan Childers (Florida International Univ.), Reide Corbett (East Carolina Univ.), Steve Davis (Texas A&M), John Day (LSU), Brian Fry (LSU), John Jaeger (Univ. Florida), Enrique Reyes (Univ. New Orleans), David Rudnick (South Florida Water Management District), Martha Sutula (Southern California Water Resources Project), Chris Swarzenski (USGS), Peter Swarzenski (USGS), Makoto Taniguchi (Nara Univ. of Education, Japan), Jeff Turner (CSIRO, Australia), Robert T. Twilley (Univ. Louisiana, Lafayette), Nan Walker (LSU), Maud Walsh (LSU), Susan Welsh (LSU), Clint Willson, (LSU); Bill Wiseman (NSF-Polar Programs, LSU), Bjorn Wissel (LSU)

(ii) Graduate and Post-Doctoral Advisors

Dr. William C. Burnett (Florida State University-Oceanography)

Dr. Claire L. Schelske (retired, University of Florida-Geological Sciences)

(iii) Thesis Advisor and Postgraduate-Scholar Sponsor (Last 5 Years; graduation year listed)

Lorna V. Inniss (Ph.D., 2002), Acting Director, Coastal Zone Management, Barbados

Katherine V. Wheelock (M.S., 2003), Environmental Scientist, NOAA, Rhode Island

Allen Reed (Ph.D., 2004), Marine Geologist, Naval Research Laboratory, Mississippi

Gregg Snedden (Ph.D. candidate), graduation anticipated spring 2005

WEI-JUN CAI

The University of Georgia
Department of Marine Sciences
Marine Sciences Building, Room 247
Athens, GA 30602-3636
E-mail: wcai@uga.edu

TEL: (706) 542 - 1285
FAX: (706) 542 - 5888

A. PROFESSIONAL PREPARATION

- 1982 B.S., Marine Chemistry, Xiamen University, Xiamen, China.
1985 M.S., Physical Chemistry, Shandong College of Oceanography (now: Ocean University of China), Qingdao, China.
1992 Ph.D., Oceanography, Scripps Institution of Oceanography. University of California at San Diego, La Jolla, CA.

B. PROFESSIONAL EXPERIENCE

- 2000- Associate Professor (with tenure) of Marine Sciences. Department of Marine Sciences, The University of Georgia, Athens, GA.
1994-2000 Assistant Professor. The University of Georgia, Athens, GA.
1992-1994 Postdoctoral Fellowship and Postdoctoral Investigator, Woods Hole Oceanographic Institution.
1987-1992 Research Assistant, Scripps Institution of Oceanography, University of California, San Diego, CA.
1985-1987 Faculty member, Department of Chemistry, East China Normal University, Shanghai, China.

C. SELECTED RELEVANT PUBLICATIONS

- Cai, W.-J. and Dai, M. 2004. A Comment on "Enhanced open ocean storage of CO₂ from shelf sea pumping" by Thomas et al. (Science 304). *Science* (in press)
- Cai, W.-J. 2003. Riverine inorganic carbon flux and rate of biological uptake in the Mississippi River plume. *Geophys. Res. Lett.*, 30(2), 1032, doi:10.1029/2002GL016312.
- Cai, W.-J., Z. Wang and Y. Wang. 2003. The role of marsh-dominated heterotrophic continental margins in transport of CO₂ between the atmosphere, the land-sea interface and the ocean. *Geophys. Res. Lett.*, 30(16), 1849, doi:10.1029/2003GL017633.
- Cai, W.-J., Wang, Y., Krest, J. and Moore, W.S. 2003. The geochemistry of dissolved inorganic carbon in a surficial groundwater aquifer in North Inlet, South Carolina and the carbon fluxes to the coastal ocean. *Geochim. Cosmochim. Acta.* 67:631-637.
- Cai, W.-J. and C.E. Reimers. 2000. Sensors for pH and pCO₂ measurements in seawater and sediment-water interface. In J. Buffle and Horvai (ed.) *In Situ Monitoring of Aquatic Systems: Chemical Analysis and Speciation*. IUPAC book series on Analytical and Physical Chemistry of Environmental Systems, vol 6.
- Wang, Z. and Cai, W.-J. 2004. Carbon dioxide degassing and inorganic carbon export from a marsh dominated estuary (the Duplin River): A marsh CO₂ pump. *Limnol. & Oceanogr.* 49(2):341-352.
- Wang, Z., Cai, W.-J. and Wang, Y. 2003. Spectrophotometric pCO₂ measurements based on a long pathlength liquid-core waveguide in the South Atlantic Bight. *Mar. Chem.* 84:73-84.
- Cai, W.-J., P. Zhao, and Y. Wang. 2000. pH and pCO₂ microelectrodes measurement and diffusive behavior of carbon dioxide species in coastal marine sediments. *Mar. Chem.* 70:133-148.
- Cai, W.-J., Wiebe, W. J., Wang, Y. and Sheldon, J. E.. 2000. Intertidal marsh as a source of dissolved inorganic carbon and a sink of nitrate in the Satilla River-estuarine complex in the southeastern U.S. *Limnol. & Oceanogr.* 45:1743-1752.
- Cai W.-J., L. R. Pomeroy, M. A. Moran and Y. Wang. 1999. An oxygen and carbon dioxide mass balance model of the estuarine/intertidal marsh complex of five rivers in the Southeastern U.S. *Limnol & Oceanogr.* 44:639-649.

Cai W.-J. and Wang, Y. 1998. The chemistry, fluxes and sources of carbon dioxide in the estuarine waters of the Satilla and Altamaha Rivers, Georgia. *Limnol. & Oceanogr.* 43:657-668.

Cai, W.-J. and Sayles, F.L.. 1996. Oxygen penetration depths and fluxes in marine sediments. *Marine Chemistry* 52:123-13.

Cai, W.-J., Reimers, C.E., and Shaw, T. 1995. Microelectrode studies of organic carbon degradation and calcite dissolution at a California continental rise site. *Geochimica et Cosmochimica Acta.* 59,497-511.

Zhao, P. and Cai, W.-J. 1997. An improved potentiometric $p\text{CO}_2$ microelectrode. *Anal. Chem.* 69:5052-58.

D. SYNERGISTIC ACTIVITIES

Participated the department's outreach activities; helped with local school science fairs; serviced as an advisor for the Oconee County High School's National Ocean Science Bowl (NOSB) team (2002, 2003 and 2004). Received 4th, 2nd and 1st places respectively in 2002, 2003 and 2004 in SC-GA regional competitions. Served in NSF panel activities. Reviewed many proposals and journal manuscripts. Outstanding Reviewer of L&O (2003). Adjunct professors in Xiamen University and Ocean University of China. Outstanding (oversea) Young Scientist Award from NSF-China (2002-04).

E-i. COLLABORATORS (other than those listed in the above publications and UGA colleagues) Anne Giblin, G. Luther, J. Cornwell, W. S. Moore, J. Krest, O. Zafiriou, Richard Zepp, H. Xie, . E. N. Powell, K. M. Parsons-Hubbard, S. E. Walker, C.-L. Li, C. Hopkinson, J. Bauer, J. Blanton, C. Flagg.

E-ii. GRADUATE AND POST-GRADUATE ADVISORS

Clare E. Reimers; Scripps Institution of Oceanography, University of California, San Diego (now at Oregon State U.). F. L. Sayles and W. Martin, both at Woods Hole Oceanographic Institution.

E-iii. GRADUATE ADVISEES (as primary advisor)

Pingsan Zhao (1995-2000), Z. Aleck Wang (1998-2003), Feizhou Chen (2000-), Liqing Jiang (2002-)

E-iii. POST-GRADUATE ADVISEES

Yongchen Wang (1995-1998)

ANNE E. CAREY

Assistant Professor, Department of Geological Sciences
The Ohio State University
275 Mendenhall Laboratory, 125 S. Oval Mall
Columbus OH 43210-1398
Phone: 614-292-2375 Fax: 614-292-7688
Email: carey.145@osu.edu

Professional Development

University of Massachusetts, Microbial Ecology, B.S., 1975
Massachusetts Institute of Technology, Civil Engineering, S.M., 1986
University of Nevada, Hydrology and Hydrogeology, Ph.D., 1995

Appointments

Assistant Professor, Department of Geological Sciences, The Ohio State University, 1999–present
Assistant Director, Southeastern Regional Center, National Institute for Global Environmental Change and Associate Research Engineer, Environmental Institute and Center for Freshwater Studies, The University of Alabama, 1998–1999
Temporary Assistant Professor, Department of Civil and Environmental Engineering, The University of Alabama, 1995–1998

Five Most Relevant Publications

Carey, A. E., S.-J. Kao, D. M. Hicks, C. A. Nezat and W. B. Lyons, 2004, Chemical and physical weathering in Taiwan and New Zealand, Geological Society of America special volume on *Tectonics, Climate and Landscape Evolution*, from Penrose Conference of same name, in press.
Munson, S. A. and A. E. Carey, 2004, Organic matter sources and transport in an agriculturally dominated temperate watershed, *Applied Geochemistry*, 19(7):1111–1121, doi:10.1016/j.apgeochem.2004.01.010.
Carey, A. E., C. B. Dowling and R. J. Poreda, 2004, Alabama Gulf Coastal groundwaters: ⁴He and ¹⁴C as groundwater dating tools. *Geology*, 32(4):289–292, doi:10.1130/G20081.1.
Carey, A. E., C. A. Nezat, W. B. Lyons, S.-J. Kao, D. M. Hicks and J. S. Owen, 2002, Trace metal fluxes to the ocean: the importance of high-standing oceanic islands. *Geophysical Research Letters*, 29, doi:10.1029/2002GL015690.
Lyons, W. B., C. A. Nezat, A. E. Carey, and D. M. Hicks, 2002, Organic carbon flux from high-standing oceanic islands. *Geology*, 30(5):443–446.

Five Other Significant Publications

Gardner, C. B. and A. E. Carey, 2004, Trace metal and major ion inputs into the Olentangy River from an urban storm sewer. *Environmental Science & Technology*, doi:10.1021/es0497835, ASAP web release 11 Sept 2004.
Dowling, C. B., Poreda, R. J., A. G. Hunt and Carey, A. E., 2004, Ground water discharge and nitrate flux to the Gulf of Mexico. *Ground Water*, 42(3):401–417.
Carey, A. E., C. A. Nezat, J. R. Pennock, T. Jones and W. B. Lyons, 2003, Nitrogen budget of the Mobile-Alabama River system watershed. *Geochemistry: Exploration Environment Analysis*, 3:239–244.
Carey, A. E., W. B. Lyons, J.-C. Bonzongo, and J. C. Lehrter, 2001, Nitrogen budget of the Upper Mississippi River watershed. *Environmental & Engineering Geoscience*, 7(3):251–265.
Lyons, W.B., R.M. Lent, N. Djukic, S. Maletin, V. Pujin, and A.E. Carey, 1992, Geochemistry of surface waters, Vojvodina, Yugoslavia. *Journal of Hydrology*, 137:33–55.

Synergistic Activities

Ohio State University representative at CUAHSI workshop August 24–25, 2004 to plan NSF proposal submittal for Hydrologic Observatories and facilitator at workshop breakout session, “Linking Hydrological and Biogeochemical Cycles” at proposed Hydrological Observatories
Member, DOE National Institute for Global Environmental Change Southeast Regional Center Advisory Board, 1999–2002
Participant, NSF EAR Hydrologic Sciences Summit meeting, 2001
Member, Geological Society of America Joint Technical Program Committee, 2000–2001
Associate Editor, *Environmental & Engineering Geoscience*

Collaborators

Jean-Claude Bonzongo, Univ. of Florida
Yu-Ping Chin, Ohio State University
Bea M. Csathó, Ohio State University
Peter S. Curtis, Ohio State University
Peter T. Doran, Univ. of Illinois-Chicago
Carolyn B. Dowling, Arkansas State Univ.
Andrew G. Fountain, Portland State Univ.
D. Murray Hicks, NIWA, New Zealand
Andrew G. Hunt, U.S. Geological Survey
Motomu Ibaraki, Ohio State University
Kenneth C. Jezek, Ohio State University
Tracey Jones, Univ. of North Alabama
Shu-Ji Kao, Academia Sinica, Taiwan
Lawrence A. Krissek, Ohio State University
David T. Long, Michigan State University
Carrie A. Masiello, Rice University
Carmen A. Nezat, Univ. of Michigan
Jeffrey S. Owen, Academia Sinica, Taiwan
Jonathan Pennock, Univ. of New Hampshire
John M. Priscu, Montana State University
Robert J. Poreda, University of Rochester
Franklin S. Schwartz, Ohio State University
Elisabeth L. Sikes, Rutgers University
Catherine M. Tremper, Ohio State Univ.
Scott W. Tyler, University of Nevada, Reno
Ross A. Virginia, Dartmouth University
Diana H. Wall, Colorado State University
Stephen Wheatcraft, Univ. of Nevada, Reno

Graduate and Postdoctoral Advisors

François M. M. Morel, now at Princeton University (S.M. advisor)
Stephen W. Wheatcraft, University of Nevada (Ph.D. advisor)

Thesis Advisees and Postgraduate-Scholars Sponsored

Dahlia N. El-Kaddah, M.S.C.E. 2000, The University of Alabama
Christopher B. Gardner, M.S. 2003, The Ohio State University
Steven T. Goldsmith, M.S. 2005 (expected), The Ohio State University
Samantha Hought, M.S. 2003, The Ohio State University
Zdravka Karanovic, M.S. 2005 (expected), The Ohio State University
Shelly A. Munson, M.S. 2003, The Ohio State University

6 total graduate students supervised

MICHAEL J. DAGG

Professor

Mailing Address: Louisiana Universities Marine Consortium
8124 Highway 56
Chauvin, LA 70344

e-mail: mdagg@lumcon.edu

Date of Birth: 7 April 1945

Place of Birth: Vancouver, British Columbia, Canada

Citizenship: USA and Canada

(a) Educational Background:

<u>Degree</u>	<u>Conferring Institution</u>	<u>Field</u>	<u>Year</u>
B.Sc.	Mount Allison University New Brunswick, Canada	Biology	1966
M.Sc.	University of Victoria British Columbia, Canada	Marine Biology	1969
Ph.D.	University of Washington Washington, U.S.A.	Biological Oceanography	1975

(b) Professional Background:

Louisiana Universities Marine Consortium	- Executive Director	1996-2002
	- Interim Director	1995-1996
	- Interim Director	1990-1991
	- Professor	1987-
	- Associate Scientist	1984-1987
	- Research Scientist	1981-1984
Brookhaven National Laboratory	- Oceanographer	1979-1981
	- Associate Oceanographer	1976-1979
	- Assistant Oceanographer	1975-1976

Member:

American Society of Limnology and Oceanography
World Association of Copepodologists
American Geophysical Union

Cruise Experience: (85 weeks aboard various vessels in the Pacific and Atlantic Oceans and in the Gulf of Mexico)

Selected Publications: 5 most closely related

Dagg, M.J. and G. A. Breed. 2003. Biological effects of Mississippi River nitrogen on the northern Gulf of Mexico - A review and synthesis. J. Mar. Systems 43: 133 – 152.

Dagg, M., R. Benner, S. Lohrenz and D. Lawrence. 2004. Transformation of dissolved and particulate materials on continental shelves influenced by large rivers: plume processes. *Cont. Shelf Res.* 24: 833-858.

Liu, H. and M. J. Dagg. 2003. Interactions between nutrients, phytoplankton growth, and grazing by micro- and meso-zooplankton in the plume of a large river. *Mar. Ecol. Prog. Ser.* 258: 31-42

Dagg, M.J. and S.L. Brown. 2003. The potential contribution of fecal pellets from the larvacean *Oikopleura dioica* to vertical flux of carbon in a river dominated coastal margin. In: G. Gorsky (ed.), *Response of marine Ecosystems to Global Change: Ecological Impact of Appendicularians*. Gordon and Breach (in press).

Liu, H., M. Dagg, L. Campbell and J. Urban-Rich. 2004. Picophytoplankton and bacterioplankton in the Mississippi River plume and its adjacent waters. *Estuaries* 27: 147-156.

Selected publications: 5 additional

Dagg, M.J. 1995. Ingestion of phytoplankton by the micro- and meso-zooplankton communities in a productive subtropical estuary. *J. Plankton Res.* 17: 845-857.

Dagg, M.J., E.P. Green, B.A. McKee and P.B. Ortner. 1996. Biological removal of fine grain lithogenic particles from a large river plume. *J. Mar. Res.* 54: 149-160.

Strom, S, R. Benner, S. Zeigler and M. Dagg. 1997. Sources of marine dissolved organic carbon: laboratory investigations of protozoa, copepods and phytoplankton. *Limnol. Oceanogr.* 42: 1364-1374.

Dagg, M.J. 1995. Copepod grazing and the fate of phytoplankton in the northern Gulf of Mexico. *Cont. Shelf Res.* 15: 1303-1317.

Liu, H., M.J. Dagg, C. Wu and K. Chiang. 2004. Mesozooplankton consumption of microplankton in the Mississippi River plume, with special emphasis on planktonic ciliates. *Mar. Ecol. Prog. Ser.* (in press 2004)

Synergistic activities

- Development of a new LUMCON field course (with B. McKee) titled "River-Ocean Interactions"
- Executive Committee member – North East Pacific Global Ocean Ecosystem Dynamics (NEP-GLOBEC) program
- Biological Oceanography Committee member – North Pacific Marine Science Organization (PICES)
- Co-Editor (with T. Royer) 2002 Special volume on Bering Sea (DSR II 49 (26))

Additional collaborators during past 4 years not listed in above publications

R. Brodeur (NOAA), S. Brown (Univ. Hawaii), K. Coyle (Univ Alaska), C. Del Castillo (NASA-Stennis), L. Haldorson (NMFS), A. Herman (PMEL), S. Hinckley (PMEL), R. Hopcroft (Univ Alaska), G. Jackson (Texas A and M Univ), T. Kline (PWSSC), E. Lessard (Univ Washington), R. Miller (NASA-Stennis), J. Napp (NMFS), P. Ortner (AOML), T. Royer (Univ Virginia), P. Stabeno (PMEL), S. Strom (Western Washington Univ.), J. Urban-Rich (UMASS-Boston), T. Weingartner (Univ Alaska), T. Whitley (University of Alaska).

Graduate Advisor: Karl Banse (University of Washington)

Post-doctoral Sponsor: Juanita Urban-Rich (Univ. Massachusetts, Boston), Dian Gifford (URI), Hongbin Liu (LUMCON),

Graduate Student (PhD): Robert Brenner (did not finish).

CURRICULUM VITAE

MINHAN DAI

Professor and Director
Marine Environmental Laboratory
Xiamen University
Xiamen, 361005, China
Telephone: 86-592-218-2132
Fax: 86-592-218-0655
E-mail: ; mdai@whoi.edu
Homepage: <http://ois.xmu.edu.cn/oec/carbon/>

EDUCATION

B.A.: Department of Oceanography, Xiamen University, China, 1987
Ph.D.: Earth Science, Université Pierre & Marie Curie (Paris VI), France, 1995

PROFESSIONAL EXPERIENCE

Postdoctoral scholar, Woods Hole Oceanographic Institution Doherty Foundation Postdoctoral Fellowship.
September 1995-March 1997
Postdoctoral investigator, March 1997 – September 1998
Associate Professor, Xiamen University, September 1998-December 1998
Professor, Xiamen University, December 1998-present
Adjunct Scientist, Woods Hole Oceanographic Institution, June 2002-present
Director, Marine Environmental Laboratory, Xiamen University, November 2003-present

PROFESSIONAL AFFILIATION

Member, American Geophysical Society, February 1996-present
Chair, Chinese Society of Marine Chemistry, January 2000-present
Member, China SOLAS working group, China IGBP
Editorial Board, Chinese Journal of Oceanography and Limnology, 2002-present
Editorial Board, Acta Oceanologica Sinica, 2003-present

RESEARCH INTERESTS:

Carbon biogeochemistry in marginal and estuarine systems with special attention on South China Sea and the Pearl River Estuary
Geochemistry of radioactive elements (Plutonium and Thorium) in surface and ground water
Geochemistry of trace metals in coastal and estuarine environments
Geochemical studies of colloidal material in the transport of trace metals, organic carbon, and radionuclides in surface and ground waters

SELECTED PUBLICATIONS

1. M. Dai, K.O. Buesseler, S.M. Pike, 2004, Plutonium in the groundwater at the DOE Hanford Site, *Journal of Contamination Hydrology*, in press
2. Cai, W.-J. and Dai, M. 2004. Comment on "Enhanced open ocean storage of CO₂ from shelf area pumping" by Thomas et al. (Science 304). *Science*, in press.
3. Zhai, W., Dai, M., Cai, W.J., Wang, Y. and Wang, Z., 2004. High partial pressure of CO₂ and its maintaining mechanism in a subtropical estuary, the Pearl River estuary, China, *Marine Chemistry*, in press
4. Dai, MH, et al., 2004. China Regional Carbon Cycling - progress and perspectives. *Advances in Earth Science* 19, 120-130 (in Chinese)

5. Callahan, J., Dai, M., Chen, R.F., Li, X., Lu, Z. and Huang, W., 2004. Distribution of dissolved organic matter in the Pearl River Estuary, China. *Marine Chemistry*, 89: 211-214
6. Cai, W.-J., Dai, M., Wang, Y., Zhai, W., Huang, T., Chen, S., Zhang, F., Chen, Z. and Wang, Z., 2004. The biogeochemistry of inorganic carbon and nutrients in the Pearl River estuary and the adjacent Northern South China Sea. *Continental Shelf Research*, 24: 1301-1319.
7. Buesseler, K.O., Hassellöv, M. and Dai, M.H., 2003. Comment on "Trace Metal Levels in Uncontaminated Groundwater of a Coastal Watershed: Importance of Colloidal Forms". *Environmental Science & Technology*, 37: 657-658.
8. Z. Zhang, M. Dai, H. Hong, J. L. Zhou and G. Yu Dissolved insecticides and polychlorinated biphenyls in the Pearl Estuary and South China Sea, *Journal of Environmental Monitoring*, 4, 922-928
9. Zhang ZL, Hong HS, Zhou JL, Dai MH, Maskouib K, Chen WQ, 2002 Contamination by organochlorine pesticides in the estuaries of southeast China, *Chemical Research In Chinese Universities*, 18 (2): 153-160
10. Dai, M.H., J.M. Kelley and K.O. Buesseler, 2002, Sources and migration of plutonium in groundwater at the Savannah River Site, *Environmental Science & Technology* 36, 3690 - 3699
11. Dai, M. H. and C. R. Benitez-Nelson, 2001, Colloidal Organic Carbon and ²³⁴Th in the Gulf of Maine, *Marine Chemistry*, 74, 181-196.
12. Dai, M.H., K. O. Buesseler, J.M. Kelley, J.E. Andrews, S. Pike and J.F. Wacker, 2001, Size Fractionated Plutonium Isotopes in a Coastal Environment, *Journal of Environmental Radioactivity*, 53, 9-25.
13. Dai, M.H, J. M. Martin, H.S. Hong & Z. Zhang, 2000 A preliminary study on the dissolved and colloidal organic carbon in the Pearl river estuary, *Chinese Journal of Limnology and Oceanology*, 18, 265-273.
14. Dai, M.H., K.O. Buesseler, P. Ripple, J. Andrews, R.A. Belastock, Ö. Gustafsson and S. B. Moran, 1998. An evaluation of two cross-flow ultrafiltration membranes to isolate marine organic colloids. *Marine Chemistry* 62, 117-136.
15. Martin, J.M., Dai M.H. and G. Cauwet. 1995. Significance of colloids in the biogeochemistry of organic carbon and trace metals in the Venice Lagoon (Italy). *Limnology and Oceanography* 40: 119-131.
16. Dai, M.H., J.M. Martin and G. Cauwet 1995. The significant role of colloids on the transport and transformation of organic carbon and trace metals in the Rhône delta, France. *Marine Chemistry* 51:159-175.
17. Dai, M.H. and J.M. Martin 1995. First data on the trace metal level and behavior in two major Arctic river/estuarine systems (Ob & Yenisey) and in the adjacent Kara Sea. *Earth and Planetary Science Letters* 131:127-141.
18. Hong H., Shang S., Dai M., 1994, The biogeochemical study of C、N、P in the Taiwan Strait and its adjacent regions, In: Global Fluxes of Carbon and its Relate Substances in the coastal Sea-Ocean-Atmosphere system, Hokkaido University, pp :129-136。
19. Hong, H. and Dai M.H., 1994 Biogeochemical studies of biologically important elements (C, N, P) at Taiwan Strait region. In, D. Zhou, Liang, Y., and C. Zeng (eds.), *Oceanology of China Seas*, Vol 1: pp. 201-212, Kluwer Academic Publisher, Dordrecht.

Nancye H. Dawers
Department of Earth & Environmental Sciences
Tulane University, New Orleans, LA 70118 USA
504-862-3200 | 504-865-5199(fax) | ndawers@tulane.edu

EDUCATION

Columbia University	Geology	PhD, 1997
University of Illinois, Urbana-Champaign	Geology	MS, 1987
University of Kentucky	Geology	BS, 1984

Academic & Research Positions

Assistant Professor, Department of Earth & Environmental Sciences, Tulane University, New Orleans, 2000-present
Postdoctoral Research Associate, Department of Geology & Geophysics, University of Edinburgh, 1996-1999
Research Staff Assistant, Lamont-Doherty Geological Observatory, Columbia University, NY, 1987-1990
Structural Geologist, Exxon Production Research, Integrated Basin Analysis Division, Houston, TX, spring & summer 1994
Geologist, U.S. Geological Survey, Branch of Seismology, Menlo Park, CA, summer 1984

Teaching

Physical Geology (lecture)
Structural Geology (lecture, lab & fieldtrip)
Grand Canyon Colloquium (lecture & field/raft trip; 1 of 6 faculty participants in 2004)
Subsurface Geology (lecture & computer-based lab)
Neotectonics Seminar
Fault Growth & Interaction Graduate Seminar
Tectonics Graduate Seminar

Graduate Students

Merethe Lindanger (PhD)
Leipin He (PhD)
Emily Martin (MS)
Timothy Sheehan (PhD)
Jennifer Wilson (MS)

Previous Students

Ruth Gilpin, University of Edinburgh (PhD 2003; co-advisor)
Peter McFadzean, University of Edinburgh (PhD 2002; co-advisor)

Contracts & Grants while at Tulane

NSF-Tectonics, Collaborative Research: Reconciling geologic and geodetic rates of deformation: The role of distributed strain in the upper crust, 2004-2007 (CoPI's E. Kirby, Penn State, & D. Burbank, UC-Santa Barbara)
LA Board of Regents, Recruitment of superior doctoral students in Earth and Environmental Sciences at Tulane University, 2005-2009
Governor's Office of Coastal Activities, Fault-related changes in Louisiana coastal geometry, 2003-2005
ACS-Petroleum Research Fund, The Baton Rouge growth-fault, Louisiana: structural evolution, recent activity and impact on sedimentary dispersal systems, 2003-2005
NSF-Tectonics, Can we constrain the evolution of crustal-scale normal fault arrays using geomorphic and structural criteria?, 2002-2005
Society of Independent Professional Earth Scientists' Foundation, Expansion of Tulane's 3D Seismic Interpretation Lab, 2002
LA Board of Regents', Research Competitiveness Program, Influence of fault growth and interaction on drainage patterns in extensional basins, 2001-2004

PROFESSIONAL SERVICE

AAPG Academic Liaison Committee, 2002-2007
Alumni Board, University of Kentucky, Department of Geological Sciences, 2004-2007

GSA, Structural Geology & Tectonics Division, Best Paper Award Committee, 2004-2007
GCAGS 2005 Technical Program Committee, 2004-2005
New Orleans Geological Society Board, Secretary, 2004-2005

Special Sessions

AAPG 2004 Special Poster Session: Extension and Gravity Flow: Processes and Provinces
AGU 2003 Special Sessions: Development of Fault Systems Through Time: Process and Rates (2 oral & 2 poster)
AAPG-SEPM 2001 Special Sessions (3 oral & 2 poster): Sedimentary Responses to Tectonics: Linking Process to Stratigraphy

University Service

Honor Board of Tulane College, 2002-2005

Departmental Service

Graduate Committee, 2003-present
Departmental Fieldtrip – 10-day trip in Death Valley & Owens Valley, California, 2002

SELECTED PUBLICATIONS

- Dawers, N.H., in revision, Evolution of fault size distribution and strain on the Volcanic Tableland, northern Owens Valley, California, revised ms to be resubmitted to Journal of Structural Geology.
- Densmore, A.L., Dawers, N.H., Gupta, S., Guidon, R., and Goldin, T., 2004, Footwall topographic development during continental extension, Journal of Geophysical Research – Earth Surface, 109, F03001, 10.1029/2003JF000115.
- Densmore, A.L., Dawers, N.H., Gupta, S., Allen, P.A., and Gilpin, R.E., 2003, Landscape evolution and catchment development at extensional relay zones, Journal of Geophysical Research, 108, B5, 10.1029/2001JB001741.
- Dawers, N.H., and Underhill, J.R., 2000, The role of fault interaction and linkage in controlling syn-rift stratigraphic sequences: Late Jurassic, Statfjord East area, northern North Sea, American Association of Petroleum Geologists Bulletin, 84, 45-64.
- McLeod, A.E., Dawers, N.H., and Underhill, J.R., 2000, The propagation and linkage of normal faults: Insights from the Strathspey-Brent-Statfjord fault array, northern North Sea, Basin Research, 12, 263-284.
- Dawers, N.H., Berge, A.M., Häger, K.-O., Puigdefàbregas, C., and Underhill, J.R., 1999, Controls on Late Jurassic, subtle sand distribution in the Tampen area, northern North Sea, In: Fleet, A. J., and Boldy, S.A.R., eds., *Petroleum Geology of NW Europe: Proceedings of the 5th Conference*, The Geological Society, London, v. 2, 827-838.
- Gupta, S., Cowie, P.A., Dawers, N.H., and Underhill, J.R., 1998. A mechanism to explain rift basin subsidence and stratigraphic patterns through fault array evolution, Geology, 26, 595-598.
- Dawers, N.H., and Anders, M.H., 1995, Displacement-length scaling and fault linkage, Journal of Structural Geology, 17, 607-614
- Dawers, N.H., Anders, M.H., and Scholz, C.H., 1993, Growth of normal faults: Displacement-length scaling, Geology, 21, 1107-1110.
- Scholz, C.H., Dawers, N.H., Yu, J.-Z., Anders, M.H., and Cowie, P.A., 1993, Fault growth and fault scaling laws: Preliminary results, Journal of Geophysical Research, 98, B12, 21,951-21,961.

BIOGRAPHICAL SKETCH FOR DAVID J. DEMASTER

ADDRESS: Department of Marine, Earth, and Atmospheric Sciences, Box 8208,
North Carolina State University, Raleigh, NC 27695-8208 USA

PHONE: 919-515-7026; **FAX:** 919-515-7802; **E-Mail:** dave_demaster@ncsu.edu

OFFICE: 4132 Jordan Hall

EDUCATION

B.S. (Chemistry) University of Wisconsin, Madison, 1973.

M.S. (Marine Geochemistry) Dept. of Geology and Geophys., Yale Univ., 1975.

Ph.D. (Marine Geochemistry) Dept. of Geology and Geophys., Yale Univ., 1979.

PROFESSIONAL EXPERIENCE

Professor, Dept. of Marine, Earth, and Atmospheric Sciences, North Carolina State University, 1990-Present.

Assoc. Professor; Dept. of MEAS, North Carolina State University, 1984-1990.

Asst. Professor; Dept. of MEAS, North Carolina State University, 1978-1984.

PROFESSIONAL SOCIETIES AND AFFILIATIONS

Geochemical Society, American Geophysical Union, Sigma Xi, Phi Beta Kappa

AREAS OF EXPERTISE

Radiochemistry, Nutrient Cycling in Rivers and Estuaries, Global Biogeochemical Cycles, Particle Mixing in Marine Sediments

SERVICE TO FEDERAL AGENCIES (over past 10 years)

1992-94: Member of So. Ocean JGOFS Advisory Team

1995: Member of NAS Committee on Arctic Research Platforms (Rapporteur for Chem. Oceanography)

1998: Member of NSF FOCUS Workshop (Futures of Chemical Oceanography in the US; Rapporteur for 2 subcommittees)

1999: NSF Chemical Oceanography Panel

2002: NSF Workshop on the N.B. Palmer Replacement

2003: NSF Workshop on the North American Carbon Project

5 MOST RELEVANT PUBLICATIONS

2004/5 DeMaster, D.J., C.R. Smith, and C.J. Thomas. Assessing Benthic Feeding Strategies in Continental Margin Environments Using Radiocarbon. Submitted to Science (for manuscript see DJD Website: www.meas.ncsu.edu/faculty/demaster/demaster.htm).

2003 Demopoulos, A.W.J., C.R. Smith, D.J. DeMaster, and W.L. Fornes. Evaluation of excess ^{234}Th activity in sediments as an indicator of food quality for deep-sea deposit feeders. *Journal of Marine Research*, **61**, 267-284.

2002 DeMaster, D.J., C.J. Thomas, N.E. Blair, W.L. Fornes, G. Plaia, and L.A. Levin. Deposition of bomb ^{14}C in continental slope sediments of the Mid-Atlantic Bight: Assessing organic matter sources and burial rates. *Deep-Sea Research II*, **49**, 4667-4685.

- 2002 DeMaster, D.J. The accumulation and cycling of biogenic silica in the Southern Ocean: revisiting the marine silica cycle. *Deep-Sea Research II*, **49**, 3155-3167.
- 2001 Fornes, W.L., D.J. DeMaster, and C.R. Smith. A particle introduction experiment in Santa Catalina Basin sediments: Testing the age-dependent mixing hypothesis. *Journal of Marine Research*, **59**, 97-112.

5 ADDITIONAL PUBLICATIONS

- 2004 DeMaster, D.J. The diagenesis of biogenic silica: Chemical transformations occurring in the water column, seabed, and crust. In: *Treatise on Geochemistry, Vol. 7*(vol. Ed. F.T. Mackenzie), Elsevier Pergamon. pp. 87-98.
- 2002 Verity, P.G., J.E. Bauer, C.N. Flagg, D.J. DeMaster, and D.J. Repeta. The Ocean Margins Program: an interdisciplinary study of carbon sources, transformations, and sinks in a temperate continental margin. *Deep-Sea Research II*, . **49**, 4273-4295
- 2002 Thomas, C.J., M. Alperin, N. Blair, D.J. DeMaster, R. Jahnke, C. Martens, and L. Mayer. A benthic carbon budget for the continental slope off Cape Hatteras, NC. *Deep-Sea Research II*, **49**, 4687-4709
- 2000 R.J. Miller, C.R. Smith, D.J. DeMaster, and W.L. Fornes. Feeding selectivity and rapid particle processing by deep-sea megafaunal deposit feeders: A ²³⁴Th tracer approach. *Journal of Marine Research*, **58**, 653-673.
- 1999 W.L. Fornes, D.J. DeMaster, L.A. Levin, and N.E. Blair. Bioturbation and particle transport in Carolina slope sediments: A radiochemical approach. *Journal of Marine Research*, **57**, 335-355.

SYNERGISTIC ACTIVITIES

Co-coordinator of Special Session on Benthic-Pelagic Coupling in High Latitudes at 2002 AGU/ASLO meeting in Honolulu; Chair of the 2003 Chemical Oceanography Gordon Research Conference; Session leader for session on “Understanding the Physical and Biological Coupling of Marine Population Dynamics: Physical and Biological Processes in Shelf Ecosystems” at 2004 AGU Ocean Sciences Meeting in Portland; Teach Introductory Earth System Science course at NCSU to 90-100 undergraduates with simulated Kyoto Summit.

RECENT COLLABORATORS AND OTHER AFFILIATIONS:

Craig Smith (University of Hawaii) and Carrie Thomas (NCSU)

PH.D. ADVISOR: K. Turekian (Yale U.); **PH.D. ADVISEES:** B. McKee (Tulane U.), S. Kuehl (VIMS), C. Alexander (SKIO), R. Pope, W. Fornes (CORE).

Louis Andrew Derry

Cornell University
Department of Earth and Atmospheric Sciences
Ithaca, NY 14853-1504
tel. (607)255-9354, fax (607)254-4780, email: lad9@cornell.edu

Education

Harvard University, Cambridge, MA; Ph.D. in Geochemistry (1990).
Colorado College, Colorado Springs, CO; B.A. in Geology (1981).

Employment History

8/03 –12/03 Visiting scientist, CRPG-CNRS, Nancy, France
7/02 Cornell University; Associate Professor of Geological Sciences.
7/96- 6/02 Cornell University; Assistant Professor of Geological Sciences.
9/93 - 6/96 Cornell University, Ithaca, NY; Snee Research Fellow .
9/92 - 7/93 Hartwick College, Oneonta, NY; visiting lecturer in chemistry.
10/90 - 9/92 Centre de Recherches Pétrographiques et Géochimiques, Nancy, France; chercheur
associe du CNRS (visiting researcher).
1984 Chevron Oilfield Research Co., La Habra, CA; research associate.

Professional Affiliations

GERM Steering Committee (Geochemical Earth Reference Model), 1997-
Canadian Institute for Advanced Research, Foreign Associate, 1999 -
Geology - member, editorial board, 1996 - 1999
American Geophysical Union
Geological Society of America
Geochemical Society - member, scientific program committee, 1996 - 1999

Students and postdoctoral fellows supported

Martin Kennedy, post-doctoral scholar, Cornell University 1994-1996, now faculty at UC-Riverside.
Andrew Kurtz, Ph.D. 2000, Cornell University; 2000-2002, post-doctoral scholar Penn State and Cornell -
currently Assistant Professor, Boston University
Eric Fermann, Ph.D. 2002, Cornell University; Earth Science Teacher, Eastchester High School, NY
Matthew Evans, Ph.D. 2002, Cornell University; now post-doctoral researcher, Oak Ridge National
Laboratory
Shithi Kamal, M.S. 2002, Cornell University; now Ph.D. candidate UC Santa Barbara
Valerie Monastra, M.S. 2002, Cornell University, now Environmental Planner for Westchester County
Gavin Sacks, current post-doctoral scholar, Cornell University
Julie Pett-Ridge, current Ph.D. candidate, Cornell University
Meghan Herz, current Ph.D. candidate, Cornell University
Herdis Shopka, current Ph.D. candidate, Cornell University
Christopher Garvin, current Ph.D. candidate, Cornell University
9 graduate students, 3 postdoctoral scholars advised

Selected publications

L. A. Derry, A. C. Kurtz, K. Ziegler, O. A. Chadwick, Germanium/silicon evidence for a plant phytolith source
of silica in Hawaiian streams . *Nature*, in review, accepted pending minor revision 10/04.
Kurtz, A.C., and Derry, L.A., 2004, Tracing silicate weathering and terrestrial silica cycling with Ge/Si ratios, in
Wanty, R.B., and Seal, R.R., eds., Proc. 11th Int. Symp. on Water Rock Interaction: The Netherlands, A. A.
Balkema Pubs, 833-836.
Evans, M. J., L. A. Derry and C. France-Lanord, 2004, Hydrothermal sources of alkalinity to the Narayani river
system, central Nepal. *Geophys. Geochem. Geosyst*, 5, doi:10.1029/2004GC000719.
Monastra, V. M., L. A. Derry and O. A. Chadwick, 2004, Multiple sources of lead in a Hawaiian soil
chronosequence. *Chemical Geology*; 209, 215-231.

- Anders, A. M., Sletten, R. S., Derry, L. A., Hallet, B. (2003) Germanium/silicon ratios in the Copper river basin, Alaska: Weathering and partitioning in periglacial versus glacial environments. *Jour. Geophys. Res. - Earth Surface*, 108, 6005, doi:10.1029/2003JF000026.
- Vitousek P., O. Chadwick, P. Matson, S. Allison, L. Derry, L. Kettley, A. Luers, E. Mecking, V. Monastra and S. Porder (2003) Erosion and rejuvenation of weathering -derived nutrient supply in an old tropical landscape. *Ecosystems*, 6, 762-772.
- Dong, D., Derry L. A. and Lion L. W. (2003) Pb scavenging from a freshwater lake by Mn oxides in heterogeneous surface coating materials. *Water Research*, 37, 1662-1666.
- Evans, M. J. and Derry, L. A. (2002) Quartz control of high germanium-silicon ratios in hydrothermal fluids. *Geology*, 30, 1019-1022.
- Kennedy, M. J., Hedin, L. O. and Derry, L. A. (2002) Unpolluted temperate forests are nutritionally decoupled from weathering sources. *Proc. Nat. Acad. Sciences*, 99, 9639-9644.
- Kurtz A. C., Derry L. A., & Chadwick O. A. (2002) Germanium/silicon fractionation in the weathering environment. *Geochim. Cosmochim. Acta*, 66, 1525-1537.
- Kurtz A. C., Derry L. A., & Chadwick O. A. (2001) Accretion of Asian dust to Hawaiian soils: isotopic, elemental and mineral mass balances. *Geochim. Cosmochim. Acta*, 65, 1971-1983.
- Evans M. J., Derry L. A., Anderson S. P. & France-Lanord C. (2001) A hydrothermal source of radiogenic Sr in the Marsyandi River, Nepal Himalaya. *Geology*, 29, 807-810.
- Kurtz A. C., Derry L. A., Chadwick, O. A & Alfano M. J.* (2000) Refractory element mobility in volcanic soils. *Geology*, 28, 683-686.
- Vitousek, P. M., Kennedy M. J., Derry, L. A. & Chadwick, O. A. (1999) Weathering versus atmospheric sources of strontium in ecosystems on young volcanic soils. *Oecologia*, 121, 255-259.
- Galy A., France-Lanord C. and Derry L.A. (1999). The strontium isotopic budget of Himalayan rivers in Nepal and Bangladesh. *Geochim. Cosmochim. Acta*, 63, 1905-1925.
- Chadwick, O. A., Derry, L. A., Vitousek, P. M., Huebert, B. J. and Hedin, L. O. (1999) Changing sources of nutrients during four million years of ecosystem development. *Nature*, 397, 491-497.
- Kennedy, M. J., O. A. Chadwick, P. M. Vitousek, L. A. Derry and D. M. Hendricks (1998) Replacement of weathering with atmospheric sources of base cations during ecosystem development, Hawaiian Islands. *Geology*, 26, 1015-1018.
- France-Lanord C. and Derry L. A. (1997) Organic carbon burial forcing of the carbon cycle from Himalayan erosion. *Nature*, 390, 65-75.

Synergistic activities

Derry is Director of the Cornell Program in Biogeochemistry and Environmental Change, an interdisciplinary program with faculty and graduate student participation from three Colleges and eight departments across the University. This NSF-IGERT program is focused on graduate student training, and currently involves approximately 20 students. Related to his Himalayan research, Derry serves on the Advisory Committee for the Cornell-Nepal Study Program, a joint undergraduate program between Cornell University and Tribhuvan University, Kathmandu. Derry has been a guest lecturer at Tribhuvan and co-sponsored visits by Tribhuvan faculty to the U.S. Derry has supervised summer research by eight undergraduates in the last four years, both from Cornell and other colleges. He has been interviewed by the New York Times and National Public Radio for science pieces, and served as a consultant to NOVA (Public Television).

WAYNE ROCKWELL GEYER

Senior Scientist and Chairman
Department of Applied Ocean Physics and Engineering
Woods Hole Oceanographic Institution

EDUCATION:

Ph.D. Physical Oceanography, University of Washington, Seattle, WA - 1985
M.S. Physical Oceanography, University of Washington, Seattle, WA - 1981
B.A. Geology, Dartmouth College, Hanover, NH - 1977

PROFESSIONAL EXPERIENCE:

2001-present Senior Scientist and Chairman, Applied Ocean Physics & Engineering Dept., Woods Hole Oceanographic Institution (WHOI)
1996-2001 Director, Rinehart Coastal Research Center (WHOI)
1991-2001 Associate Scientist, Applied Ocean Physics & Engineering Dept., Woods Hole Oceanographic Institution (WHOI)
1987-1990 Assistant Scientist, Applied Ocean Physics & Engineering Dept., WHOI
1986-1987 Postdoctoral Investigator, Ocean Engineering Department, WHOI
1985-1986 Postdoctoral Scholar, Ocean Engineering Department, WHOI (with William D. Grant)
1981-1985 Research Associate, University of Washington, Seattle, WA (with J. Dungan Smith)
1979-1981 Research Assistant, University of Washington and Pacific Marine Environmental Laboratory, Seattle, WA (with Glenn A. Cannon)

RESEARCH INTERESTS:

Estuarine and coastal transport processes; sediment transport; numerical modeling of estuaries and river plumes.

COMMITTEES:

2001 - present Ocean Studies Board

HONORS AND AWARDS:

1990 Excellence in Refereeing, American Geophysical Union (J. Geophys. Res., Oceans)
1985 Postdoctoral Scholar, WHOI

MEMBERSHIP IN PROFESSIONAL SOCIETIES:

American Geophysical Union
Estuarine Research Federation

REFEREED PUBLICATIONS:

1. Nepf, H. M. and W. R. Geyer, 1996. Intratidal variations in stratification and mixing in the Hudson estuary. *J. Geophys. Res.*, **101**: 12,079-12,086.
2. Geyer, W. R. and H. M. Nepf, 1996. Tidal pumping of salt in a moderately stratified estuary. *Coastal and Estuarine Studies*. **53**: 213-226.
3. Geyer, W.R., J.H. Trowbridge and M. Bowen, 2000. The Dynamics of a Partially Mixed Estuary. *J. Phys. Oceanog.*, **30**(8): 2035-2048.

4. Trowbridge, J.H., W.R. Geyer, M.M. Bowen and A.J. Williams 3rd, 1999. Near-bottom turbulence measurements in a partially mixed estuary: Turbulent energy balance, velocity structure, and along-channel momentum balance. *J. Phys. Oceanogr.*, **29**: 3056-3072.
5. Geyer, W.R., P.S. Hill, T.G. Milligan and P. Traykovski, 2000. The structure of the Eel River plume during floods. *Cont. Shelf Res.*, **20**:16, 2067-2093.
6. MacCready, P. and W.R. Geyer, 2001. Estuarine salt flux through an isohaline surface, *J. Geophys. Res.*, **106**:C6, 11,629-11,637.
7. Fong, D. A., and W. R. Geyer, 2001. Response of a river plume during an upwelling favorable wind event. *J. Geophys. Res.*, **106**:C1, 1067-1084.
8. Geyer, W.R., J.D. Woodruff and P. Traykovski, 2001. Sediment transport and trapping in the Hudson River estuary. *Estuaries*, **24**(5): 670-679.
9. Woodruff, J.D., W.R. Geyer, C.K. Sommerfield and N.W. Driscoll, 2001. Seasonal variation of sediment deposition in the Hudson River estuary. *Marine Geology*, 179, pp. 105-119.
10. MacCready, P., R. D. Hetland and W. R. Geyer, 2002. Long-Term Isohaline Salt Balance in an Estuary. *Continental Shelf Research*, **22**(11-13), 1591-1601.
11. Bowen, Melissa M.; Geyer, W. Rockwell, 2003. Salt transport and the time-dependent salt balance of a partially stratified estuary. *J. Geophys. Res.* Vol. 108, No. C5 1029/2001JC001231
12. Geyer, W.R., P.S. Hill and G.C. Kineke, 2004. The transport and dispersal of sediment by buoyant coastal flows. *Continental Shelf Research*, **24**: 927 – 949.
13. Geyer, W.R., R.P. Signell, D. A. Fong, J. Wang, D.M. Anderson and B.P. Keafer, 2004. The freshwater transport and dynamics of the Western Maine Coastal Current. *Continental Shelf Research*, **24** (12): 1339-1357.
14. Lerczak, J.A., and W.R. Geyer, 2004. Modeling the lateral circulation in straight, stratified estuaries. *Journal of Physical Oceanography*, **34**: 1410-1428.
15. Blumberg, A.F., D.J. Dunning, H.Li, D. Heimbough and W.R. Geyer, 2004. Use of a particle-tracking model for predicting entrainment at power plants on the Hudson River. *Estuaries*, **27**(3): 515-526.
16. Traykovski, P., W.R. Geyer and C. Sommerfield, 2004. Rapid sediment deposition and fine-scale strata formation in the Hudson estuary. *J. Geophys. Res.* **109** (F02004): 1-20.
17. MacDonald, D.G. and W.R. Geyer, 2004. Turbulent energy production and entrainment at a highly stratified estuarine front. *J. Geophys. Res.* **109** (C05004): 1-17.
18. MacDonald, D.G. and W. R. Geyer, (in press). Hydraulic control of a highly stratified estuarine front. *Journal of Physical Oceanography*.

VITA

Personal

Name: Miguel A. Goñi October 29, 2004
Address: College of Science and Mathematics Telephone: (803) 777-3550
Dept. of Geological Sciences FAX: (803) 777-6610
University of South Carolina E-Mail: goni@geol.sc.edu
Columbia, SC 29208 (U.S.A.)

Education

Ph.D., 1992, Oceanography, University of Washington
B.S., 1986, Oceanography, University of Washington
A.S., 1984, North Idaho Community College

Professional Appointments

2001 – present Assistant Chair, Department of Geological Sciences, USC
2000 - present Associate Professor, Department of Geological Sciences, USC
1999 - 2000 Director of Graduate Studies, Marine Sciences Program, USC
1995 - 2000 Assistant Professor, Department of Geological Sciences,
University of South Carolina, Columbia, SC (U.S.A.)
1993 - 1995 Postdoctoral Investigator, Woods Hole Oceanographic Institution,
Woods Hole, MA (U.S.A.)
1992 - 1993 Postdoctoral Fellow, Woods Hole Oceanographic Institution, Woods Hole, MA (U.S.A.)
1986 - 1992 Research Assistant, School of Oceanography, University of Washington, Seattle, WA
(U.S.A.)

Research Interests

Organic and stable isotope geochemistry. Sources, transport, transformations and fate of organic matter in marine and other aquatic environments. Role of organic matter in global biogeochemical cycles of major elements (e.g. C, N, O) and pollutants (e.g. PAHs). Paleoceanographic and paleoclimate applications of organic biomarkers and their isotopic composition.

Ten Selected Publications

1. Ruttenger K. C. and Goñi M. A. (1997) Phosphorous distributions, C:N:P ratios, and $\delta^{13}\text{C}_{\text{oc}}$ in arctic, temperate, and tropical coastal sediments: tools for characterizing bulk sedimentary organic matter. *Marine Geology* **139**, 123-145.
2. Goñi M. A., Ruttenger K. C., and Eglinton T. I. (1997) Sources and contribution of terrigenous organic carbon to surface sediments in the Gulf of Mexico. *Nature* **389**, 275-278.
3. Goñi M. A., Yunker M. B., Macdonald R. W., and Eglinton T. I. (2000) Distribution and sources of organic biomarkers in Arctic sediments from the Mackenzie River and Beaufort shelf. *Marine Chemistry* **71**, 23-51.
4. Goñi M. A. and Thomas K. A. (2000) Sources and transformations of organic matter in surface soils and sediments from a Tidal Estuary (North Inlet, South Carolina, USA). *Estuaries* **23**, 548-564.
5. Gordon E. S., Goñi M. A., Roberts, Q. N., Kineke, G. C., and Allison, M. A. (2001). Organic matter distribution and accumulation on the inner Louisiana Shelf. *Continental Shelf Research. Continental Shelf Research* **21**, 1691–1721.
6. Torres R., Mwamba M. J., and Goñi M. A. (2003) Properties of intertidal marsh sediment mobilized by rainfall. *Limnology and Oceanography* **48**, 1245-1253.
7. Gordon E. S. and Goñi M. A. (2003) Sources and distribution of terrigenous organic matter delivered by the Atchafalaya River to sediments in the northern Gulf of Mexico. *Geochimica et Cosmochimica Acta* **67**, 2359-2375.

8. Goñi M. A., Teixeira M. J., Perkey D. W. (2003) Sources and distribution of organic matter in a river-dominated estuary (Winyah Bay, South Carolina, USA). *Estuarine, Coastal and Shelf Sciences* **57**, 1023-1048.
9. Goñi M. A. and Gardner L. R. (2003) Seasonal dynamics in dissolved organic carbon concentrations in a coastal water-table aquifer at the forest-marsh interface. *Aquatic Geochemistry* **9**, 209–232.
10. Goñi M. A., Yunker, M. B., Macdonald, R. W., and Eglinton, T. I. (2004) The supply and preservation of ancient and modern components of organic carbon in the Canadian Beaufort Shelf of the Arctic Ocean. *Marine Chemistry* (In press).

Students Supervised

Graduate Students

David Hartz (M.S., 1998), Christine Jones (M.S., 1998), Elizabeth Gordon (Recipient of NSF Graduate Fellowship, EPA Graduate Fellowship; Ph.D., 2002), Maria Teixeira (Recipient of School of the Environment Fellowship; M.S., 2000), Thomas Kastner (MS, 2001), Lisa Maroney (MS, 2001), Mary Cathey (MS., 2002), Mark Woodworth (Ph.D., 2005), Audrey Thompson (MS, 2003), David Shelley (Ph.D., 2006).

Undergraduate Students

Kimberly Thomas (B.S., Honor's Thesis, 1998), Rachel Potter (B.S., 1998), David Perkey (B.S., 1999), Kyle Peterson (B.S., 2000), Raja Byrnside (B.S., 1999), Gabrielle Griffin (B.S., 1999), Quinn Roberts (B.S., 2001), Natasha Pratt (B.S., 2001), Molly Malloy (B.S., 2002), Tony Jones (B.S., 2002), Natalie Monacci (B.S., 2003), Lisa Addington (B.S., 2003); Sean Courtney (B.S., 2003); Thomas Wissing (B.S., 2003), Rebecca Clinton (B.S., 2004); Vanessa Michelou (B.S., 2004); Rachel Gisewhite (B.S., 2004); Urijah Corbett (B.S., 2005); Alan Mehrzad (B.S., 2006).

Other Professional Activities

Reviewer of an average of ten manuscripts per year from several scientific journals including: *Nature*, *Geochimica et Cosmochimica Acta*, *Global Biogeochemical Cycles*, *Organic Geochemistry*, *Marine Chemistry*, *Continental Shelf Research*, *Limnology and Oceanography*, *Estuarine Shelf Research*, *Journal of High Resolution Chromatography*, *Oceanologia Acta*.

Reviewer of an average of six proposals per year from several agencies including: National Science Foundation (Ocean Sciences Division, Marine Geology and Geophysics and Chemical Oceanography panels), Petroleum Research Fund (American Chemical Society), Department of Energy, and National Environmental Research Council (United Kingdom).

Participant on multiple oceanographic cruises including: UW R/V Thompson, WHOI R/V Oceanus, JOIDES R/V Resolution, LUMCOM R/V Pelican, Duke R/V Cape Hatteras, Duke R/V Susan Hudson, FUNDACION LA SALLE R/V Hermano Gines; NOAA R/V Ferrel; UT R/V Longhorn; Scripps R/V Melville. Chief scientists in several of these cruises.

Presenter of several abstracts per year at national and international meetings since 1990, including: American Geophysical Union, American Chemical Society, American Society of Limnologists and Oceanographers/Ocean Sciences, European Association of Organic Geochemists, and Gordon Conferences in Organic Geochemistry and Chemical Oceanography.

sea depocenters. *Geology*, 27:559-562.

Goodbred, Jr., S.L., and Kuehl, S.A., 1998. Floodplain processes in the Bengal Basin and the storage of Ganges-Brahmaputra river sediment: an accretion study using ^{137}Cs and ^{210}Pb geochronology. *Sedimentary Geology*, 121:239-258.

Goodbred, Jr., S.L., Wright, E.E., and Hine, A.C., 1998. Sea-level change and storm-surge deposition in a Late Holocene Florida salt marsh. *Journal of Sedimentary Research*, 68:240-252.

Goodbred, Jr., S.L., and Hine, A.C., 1995. Coastal storm deposition: Salt-marsh response to a severe extratropical storm, March 1993, west-central FL. *Geology*, 23:679-682.

PROFESSIONAL ACTIVITIES

Convener and Chair of Special Session at Fall Meeting of American Geophysical Union, Role of climate and climate change on Earth surface processes. Dec. 2004, San Francisco, CA.

IGCP Project-475, Deltas of the Monsoon Asia-Pacific Region: Late Quaternary Development and Recent Changes Due to Natural and Human Influences. Proponent and co-leader of UNESCO-funded program, 2003-2008

Editor, special issue for *Sedimentary Geology*. Impacts of Climate Change on the Production, Transport, and Accumulation of Sediment. Published Nov. 2003.

IODP Workshop for Drilling of the Indian Ocean Fan Systems, JOI/USSAC, Jul. 2003, Boulder, CO.

APN/START/LOICZ Regional workshop on assessment of material fluxes to coastal zone in South Asia and their impacts. Dec. 2002, Sri Lanka.

NSF US-Bangladesh Collaborative Workshop on Ganges-Brahmaputra-Meghna Delta of Bangladesh: Issues of Land, Water, and Environment. Jan. 2002, Dhaka, Bangladesh. Convener and Chair of Special Session at Fall Meeting of American Geophysical Union, Source to Sink: Production, Transport and Accumulation of Sediment (With a Special Focus on Climate Signals and Impacts). Dec. 2001, San Francisco, CA.

National Science Foundation MARGINS Program, Source-to-Sink Planning Workshop I and II, Sept. 1999, 2000.

RECENT COLLABORATORS

Yoshiki Saito (Geol. Survey Japan), Zhongyuan Chen (East China Normal Univ.), Wang Hong (China Geol. Survey), Steve Kuehl (William and Mary), Mead Allison (Tulane Univ.), Mike Steckler (Columbia Univ.), Nano Seeber (Columbia Univ.), Chris Small (Columbia Univ.), Lex van Geen (Columbia Univ.), Yan Zheng (CUNY, Queens), Sirajur Rahman Khan (Geol. Survey of Bangladesh), Kazi Matin Ahmed (Dhaka Univ.), Kirk Cochran (Stony Brook Univ.), Roger Flood (Stony Brook Univ.)

CURRICULUM VITAE

Name Paul J. HARRISON

Expertise Biological oceanography, phytoplankton ecology and physiology, nutrient pollution

Present position Director, Atmospheric, Marine and Coastal Environmental Program,
School of Science, Hong Kong University of Science and Technology

Academic Qualifications

1974	PhD	Biological Oceanography at University of Washington
1965	MSc	Plant Ecology at University of Guelph
1963	BSA	General Science at University of Toronto

Working Experience

2002 - present	Director, Atm, Mari & Coastal Environment (AMCE) Program, Hong Kong
1975 - 2002	Assist, Assoc & Professor, University of British Columbia, Canada

Selected References

73. Harrison, P.J., J.S. Parslow and H.L. Conway. Determination of nutrient uptake kinetic parameters: A comparison of methods. *Mar. Ecol. Prog. Ser.* 52: 301-312 (1989).
80. Harrison, P.J., M.H. Hu, Y.P. Yang and X. Lu. Phosphate limitation in estuarine and coastal waters of China. *J. Exp. Mar. Biol. Ecol.* 139: 1-9 (1990).
81. Levasseur, M.E., P.J. Harrison, B. Heimdahl and J.C. Therriault. Simultaneous nitrogen and silicate deficiency of a phytoplankton community in a coastal jet-front. *Mar. Biol.* 104: 329-338 (1990).
88. Harrison, P.J., P.J. Clifford, K. Yin, M. St. John, M.J. Sibbald, L.J. Albright, W.P. Cochlan and P.A. Thompson. Nutrient and plankton dynamics in the Fraser River plume, Strait of Georgia, British Columbia. *Mar. Ecol. Prog. Ser.* 70: 291-304 (1991).
102. Waite, A., P.K. Bienfang and P.J. Harrison. Spring bloom sedimentation in a subarctic ecosystem. I. Nutrient sensitivity. *Mar. Biol.* 114: 119-129 (1992).
103. Waite, A., P.K. Bienfang and P.J. Harrison. Spring bloom sedimentation in a subarctic ecosystem II. Succession and sedimentation. *Mar. Biol.* 114: 131-138 (1992).
117. St. John, M.A., S.G. Marinone, J. Stronach, P.J. Harrison, J. Fyfe and R.J. Beamish. A horizontally resolving physical-biological model of nitrate fluxes and primary productivity in the Strait of Georgia. *Can. J. Fish. Aquat. Sci.* 50: 1456-1466 (1993).
130. Yin, K., P.J. Harrison, S. Pond, and R.J. Beamish. Entrainment of nitrate in the Fraser River Plume and its biological implications. I. Effects of the salt wedge. *Estuarine Coastal Shelf Sci.* 40: 505-528 (1995).
131. Yin, K., P.J. Harrison, S. Pond, and R.J. Beamish. Entrainment of nitrate in the Fraser River Plume and its biological implications. II. Effects of spring vs neap tides and river discharge. *Estuarine Coastal Shelf Sci.* 40: 529-544 (1995).
132. Yin, K., P.J. Harrison, S. Pond, and R.J. Beamish. Entrainment of nitrate in the Fraser River Plume and its biological implications. III. Effects of winds. *Estuar. Coastal Shelf Sci.* 40: 545-558 (1995).
137. Boyd, P.W., S. Strom, F.A. Whitney, S. Doherty, M.E. Wen, P.J. Harrison, C.S. Wong, and D.E. Varela. The NE Subarctic Pacific in winter: I. Biological standing stocks. *Mar. Ecol. Prog. Ser.* 128: 11-24 (1995).
138. Boyd, P.W., F.A. Whitney, P.J. Harrison and C.S. Wong. The NE Subarctic Pacific in winter. II. Biological rate processes. *Mar. Ecol. Prog. Ser.* 128: 25-34 (1995).

145. Boyd, P.W., D.L. Muggli, D.E. Varela, R.H. Goldblatt, R. Chretien, K.J. Orians, and P.J. Harrison. In vitro iron enrichment experiments in the NE Subarctic Pacific. *Mar. Ecol. Prog. Ser.* 136: 179-193 (1996)
146. Yin, K., P.J. Harrison, R. Goldblatt and R.J. Beamish. Spring bloom in the vicinity of the Central Strait of Georgia: interactions of river discharge, winds and grazing. *Mar. Ecol. Prog. Ser.* 138: 255-263 (1996).
148. Mackas, D.L. & P.J. Harrison. Nitrogenous nutrient sources and sinks in Juan de Fuca Strait/St Georgia estuarine system: Assessing the potential for eutrophication. *Est Coastal Shelf Sci.* 44: 1-21. (1996)
156. Yin, K., P.J. Harrison & R.J. Beamish. Effects of a fluctuation in Fraser River discharge on primary productivity in the central Strait of Georgia, British Columbia.. *Can. J. Fish. Aquat. Sci.* 54: 1015-1024 (1997).
160. Yin, K., P.J. Harrison, R.H. Goldblatt, M.A. St. John & R.J. Beamish. Factors controlling the timing of the spring bloom in the Strait of Georgia estuary, BC. *Can. J. Fish. Aquat. Sci.* 54: 1985-1995 (1997).
161. Yin, K., R.H. Goldblatt, P.J. Harrison, M.A. St. John, P.J. Clifford, and R.J. Beamish. Importance of wind and river discharge i influencing nutrient dynamics and phytoplankton production in summer in the central Strait of Georgia. *Mar. Ecol. Prog. Ser.* 161: 173-183 (1997).
168. Boyd, P.W., C.S. Wong, J. Merrill, F. Whitney, J. Snow and P.J. Harrison. Atmospheric iron supply and enhanced vertical carbon flux in the N.E. Subarctic Pacific: Is there a connection. *Global Biogeochem. Cycles.* 12: 429-441 (1998).
172. Harrison, P.J., P. Boyd, D.E. Varela, S. Takeda, A. Shiomoto, T. Odate. Comparison of factors controlling plankton productivity in the NE and NW subarctic Pacific gyres. *Prog. Oceanography* 43: 205-234 (1999)
173. Boyd, P. and P.J. Harrison. Phytoplankton dynamics in the NE subarctic Pacific. *Deep-Sea Res. II.* 46: 2405-2432 (1999)
174. Varela, D.E. and P.J. Harrison. Seasonal variability in nitrogenous nutrition of phytoplankton assemblages in the NE subarctic Pacific Ocean. *Deep-Sea Res. II.* 46: 2505-2539 (1999)
181. Yin, K., P.J. Harrison, J. Chen, W. Huang, and P.-Y. Qian. Red tides during spring 1998 in Hong Kong: is El Niño responsible? *Mar. Ecol. Prog. Ser.* 187: 289-294 (1999).
188. Yin, K. P-Y. Qian. J.C Chen, D.P. Hsieh and P.J. Harrison. Dynamics of nutrients and phytoplankton biomass in the Pearl River estuary and adjacent waters on Hong Kong during summer: preliminary evidence for phosphorus and silicon limitation. *Mar. Ecol. Prog. Ser.* 194: 295-305 (2000).
196. Harrison, P.J. 2002. Station Papa time series: Insights into Ecosystem Dynamics. *J. Oceanogr* 58: 259-264.
201. Harrison, P.J, F.A. Whitney, A. Tsuda, H. Saito and K. Tadokoro. 2004. Nutrient and plankton dynamics in the NE and NW gyres of the Subarctic Pacific Ocean. *J. Oceanography* 60: 5-29.
202. Boyd, P.W., C.S. Law, C.S. Wong, Y. Nojiri, A. Tsuda, M. Levasseur, S. Takeda, R. Rivkin, P.J. Harrison, R. Strzepek, J. Gower and 26 others. The decline and fate of an iron-induced subarctic phytoplankton bloom. *Nature* 428 (6982): 549-553.
203. Whitney, W.R. Crawford and P.J. Harrison. 2004. Enhancement of primary productivity in the subarctic NE Pacific by nutrient transport in and between coastal and oceanic regions. *Prog. Oceanogr.* 48: XXX.

Curriculum Vitae of Paul S. Hill

Personal

Name: Paul S. Hill
Date of Birth: 27 October 1962
Citizenship: USA

Education

A. B. cum laude, 1984, Earth Sciences with High Honors, Dartmouth College, Hanover, New Hampshire
M. Sc., 1987, Marine Geology and Geophysics, School of Oceanography, University of Washington, Seattle Washington
Ph. D., 1992, Marine Geology and Geophysics, School of Oceanography, University of Washington, Seattle Washington

Experience

2003-present: Professor, Department of Oceanography, Dalhousie University, Halifax, Nova Scotia
1998-2003: Associate Professor, Department of Oceanography, Dalhousie University, Halifax, Nova Scotia
1993-1998: Assistant Professor, Department of Oceanography, Dalhousie University, Halifax, Nova Scotia
1992: Postdoctoral Fellow, School of Oceanography, University of Washington, Seattle, Washington

Recent Publications

George, D. A., P. S. Hill, and T. G. Milligan, submitted 2004. Flocculation, heavy metals, and the sand-mud transition on the Apennine Margin, Italy. *Continental Shelf Research*.

Hill, P. S., J. M. Fox, J. S. Crockett, K. J. Curran, C. T. Friedrichs, W. R. Geyer, T. G. Milligan, A. S. Ogston, P. Puig, M. E. Scully, P. A. Traykovski, and R. A. Wheatcroft, submitted 2004. Sediment delivery to the seabed on continental margins. *STRATAFORM Master Volume*.

Mikkelsen, O. A., P. S. Hill, T. G. Milligan, and R. Chant, submitted 2004. In situ particle size distributions and volume concentrations from a LISST-100 laser particle sizer and a digital floc camera. *Continental Shelf Research*.

Mikkelsen, O. A., P. S. Hill, and T. G. Milligan, submitted 2004. Seasonal and spatial variation of floc size, settling velocity, and density on the Apennine margin (Italy). *Continental Shelf Research*.

Khelifa, A., P. S. Hill, P. Stoffyn-Egli and K. Lee. 2005. Effects of salinity and clay composition on oil-clay aggregations. *Marine Environmental Research*, **59**: 235-254.

Curran, K. J., P.S. Hill, T.G. Milligan, E.A. Cowan, J.P.M. Syvitski, S.M. Konings. 2004. Fine-grained sediment flocculation below the Hubbard Glacier meltwater plume, Disenchantment Bay, Alaska. *Marine Geology*, **203(1-2)**: 83-94.

Curran, K. J., P. S. Hill, T. M. Schell, T. G. Milligan, and D. J. W. Piper, 2004. Inferring the mass fraction of floc-deposited mud: Application to fine-grained turbidites. *Sedimentology*, 51: 927-944.

Flory, E. N., P. S. Hill, T. G. Milligan and J. Grant. 2004. The relationship between floc area and backscatter during a spring phytoplankton bloom. *Deep Sea Research I*, **51(2)**: 213-223.

Fox, J. M., P. S. Hill, T. G. Milligan, and A. Boldrin, 2004. Flocculation and sedimentation on the Po River delta. *Marine Geology*, 203: 95-107.

- Fox, J. M., P. S. Hill, T. G. Milligan, A. S. Ogston, and A. Boldrin, 2004. Floc fraction in the waters of the Po River prodelta. *Continental Shelf Research*, 24: 1699-1715.
- Geyer, W.R, P.S. Hill, and G.C. Kineke. 2004. The transport and dispersal of sediment by buoyant coastal flows. *Continental Shelf Research*, **24(7/8)**: 927-949.
- Mikkelsen, O. A., T. G. Milligan, P. S. Hill, and D. Moffat, 2004. INSSECT---an instrumented platform for investigating floc properties close to the seabed. *Limnology and Oceanography Methods*, 2: 226-236.

Graduate Students

Current

Madiha Ali
Donghui Jiang
Jon Mackie
Ramzi Mirshak

Past

Lukman Ajijolaiya
Kristian Curran
Jason Fox
Doug George
Elizabeth Gonzalez
Erin Hildebrand Flory
Tim Milligan
Trecia Schell
Ken Skene
Michael White

Post-Doctoral Fellows

Current

Ole Mikkelsen
Tony Walker

Past

Ali Khelifa
Annamarie Hatcher

GEORGE ANTHONY JACKSON
CURRICULUM VITAE

WORK ADDRESS:

Department of Oceanography
College of Geosciences
Texas A&M University (TAMU)
College Station, Texas 77843
(979) 845-0405

PROFESSIONAL PREPARATION:

California Institute of Technology, Physics, B.S., 1969.
California Institute of Technology, Environ. Engineering, M.S., 1970.
California Institute of Technology, Environ. Engineering Science and Biology, Ph.D., 1976.
Woods Hole Oceanographic Institution, Department of Biology, 1975-1976
California Institute of Technology, Environmental Quality Laboratory, 1977-1978

RESEARCH INTERESTS

Biological-physical interests on a range of scales
Role of coagulation in removing biological material from surface systems.
Interpreting oceanographic data using inverse techniques.

APPOINTMENTS:

Professor, Department of Oceanography, College of Geosciences, TAMU, 1989-present
Associate Research Oceanographer, Scripps Institution of Oceanography (SIO), University of California, San Diego, 1986-1989
Assistant Research Oceanographer, SIO, University of California, San Diego, 1978-1986

COLLABORATORS DURING PREVIOUS 48 MONTHS: Martin Angel (UK), Philip Boyd, (NEWA New Zealand), Greg Breed (LUMCON), David Brooks (TAMU) Cheryl Brown (EPA), Adrian Burd (UGa), David Checkley (Scripps), Jackie Collier (SUNY Stony Brook), Michael Dagg (LUMCON), Russ Davis (Scripps), Hugh Ducklow (VIMS), Mick Follows (MIT), Pat Glibert (Horn Point), Hans-Pieter Grossart (Germany), Rodger Harvey (UMd), Alex Herman (Bedford), Todd Kana (Horn Point), Thomas Kjørboe (Denmark), Richard Lampitt (UK), Todd Lane (Princeton), Brad Moran (URI), Nathalie Niquil (France), Peter Ortner (NOAA AOML), Helle Ploug (Germany), Tammi Richardson (TAMU), Mike Roman (Horn Point), Lars Stemmann (France), Kam Tang (VIMS), André Visser (Denmark), Mary Voytek (USGS), Anya Waite (Australia), Bess Ward (Princeton), Jonathan Zehr (UC, Santa Cruz)

GRADUATE STUDENTS DURING PREVIOUS 5 YEARS (6 total) Cheryl Brown (EPA), Simone Francis (Texas A&M University), Greg Breed (LUMCON)

POSTDOCTORAL SCHOLARS DURING PREVIOUS 5 YEARS (5 total): Adrian Burd (UGa), Debby Ianson (Canada), Tammi Richardson (TAMU), Lars Stemmann (France), Chester Weiss (Sandia)

RECENT PUBLICATIONS

Burd, A., S. B. Moran, and **G. A. Jackson**. 2000. A coupled adsorption-aggregation model of the POC/²³⁴Th ratio of marine particles. *Deep-Sea Res.* I 47: 103-120.

- Brown, C. A., **G. A. Jackson**, and D. A. Brooks. 2000. Particle transport through a narrow tidal inlet due to tidal forcing and implications for larval transport. *J. Geophys. Res.* **105**:24,141-24,156.
- Jackson, G. A.** 2001. Effect of coagulation on a model planktonic food web. *Deep-Sea Res. I* **48**: 95-123.
- Kjørboe, T., and **G. A. Jackson**. 2001. Marine snow, organic solute plumes, and optimal chemosensory behavior of bacteria. *Limnol. Oceanogr.* **46**: 1309-1318.
- Jackson, G. A.**, and A. B. Burd. 2002. A model for the distribution of particle flux in the mid-water column controlled by subsurface biotic interactions. *Deep-Sea Research II* **49**: 193-217.
- Burd, A. B., and **G. A. Jackson**. 2002. Modeling steady state particle size spectra. *Environ. Sci. Technol.* **36**: 323-327.
- Boyd, P. W., **G. A. Jackson**, and A. M. Waite. 2002. Are mesoscale perturbation experiments in polar waters prone to physical artefacts? Evidence from algal aggregation modelling studies. *Geophys. Res. Lett.* **29**: 10.1029/2001GL014210
- Burd, A. B., and **G. A. Jackson**. 2002. An analysis of water column nutrient distributions in Florida Bay. *Estuaries* **25** (4A): 570--585.
- Burd, A. B., and **G. A. Jackson**. 2002. Illuminating the twilight zone: the effects of biological activity on midwater particle flux. *U.S. JGOFs Newsletter* **12** (1): 5--6.
- Burd, A. B., **G. A. Jackson**, R. S. Lampitt, and M. Follows. 2002. Shining a light on the ocean's twilight zone. *EOS*. **83** (49): 573
- Richardson, T. L., **G. A. Jackson**, and A. B. Burd. 2003. Planktonic food web dynamics in two contrasting regions of Florida Bay, USA. *Bull. Mar. Sci.*. **73**:565-591
- Jackson, G. A.**, and T. Kjørboe. 2004. Zooplankton use of chemodetection to find and eat particles. *Mar. Ecol. Prog. Ser.* **269**: 153--162.
- Brown, C. A., S. A. Holt, **G. A. Jackson**, D. A. Brooks and G. J. Holt. 2004. Simulating larval supply to estuarine nursery areas: How much variation in larval supply to Aransas Pass inlet is explained by physical processes?. *Fish. Oceanogr.* **13**: 181--196.
- Stemmann, L., **G. A. Jackson**, and D. Ianson. 2004. A vertical model of particle size distributions and fluxes in the midwater column that includes biological and physical processes. I. Model formulation. *Deep-Sea Res. I*, **51**: 865--884
- Stemmann, L., **G. A. Jackson**, and G. Gorsky. 2004. A vertical model of particle size distributions and fluxes in the midwater column that includes biological and physical processes. II. Application to a three year survey in the NW Mediterranean Sea. *Deep-Sea Res. I*, **51**: 885-908.
- Richardson, T. L., **G. A. Jackson**, H. W. Ducklow, and M. R. Roman. 2004. Planktonic food webs of the equatorial Pacific at 0°, 140°W: a synthesis of EqPac times-series carbon flux data. *Deep-Sea Res. I*. **51**: 1254--1274.
- Breed, G. A., **G. A. Jackson**, and T. L. Richardson. 2004. Sedimentation, carbon export, and food web structure in the Mississippi River plume described by inverse analysis. *Mar. Ecol. Prog. Ser.* **278**: 35-51
- Ianson, D., **G. A. Jackson**, R. Lampitt, M. Angel, and A. B. Burd. 2004. The effect of net avoidance on estimates of diel vertical migration. *Limnol. Oceanogr.*, **49**: 2297-2303..

VITA

PERSONAL

Name: Gail C. Kineke
Address: Department of Geology and Geophysics
Boston College
Chestnut Hill, MA 02467
(617) 552-3655
kinekeg@bc.edu

EDUCATION

B.A., Geology, Princeton University, with honors, 1983
M.S., Oceanography, University of Washington, 1988
Ph.D., Oceanography, University of Washington, 1993

PROFESSIONAL EXPERIENCE

1993-1994 Postdoctoral Investigator, Applied Ocean Physics & Engineering Dept.,
Woods Hole Oceanographic Institution
1995-1997 Assistant Professor of Marine Science and Geological Sciences,
University of South Carolina
1995-1997 Visiting Investigator, Applied Ocean Physics & Engineering Dept.,
Woods Hole Oceanographic Institution
1997-2002 Assistant Professor, Dept. of Geology and Geophysics, Boston College
1995-present Associate, Belle W. Baruch Institute for Marine Biology and Coastal
Research
1997-present Adjunct Scientist, Applied Ocean Physics & Engineering Dept., Woods
Hole Oceanographic Institution
2002-present Associate Professor, Dept. of Geology and Geophysics, Boston College

RESEARCH INTERESTS

Marine sediment transport, coastal and estuarine processes
Research focuses on fine sediment transport in coastal environments and is aimed at understanding how physical processes (those associated with rivers, waves, tides, and currents) move sediment, transform the coasts, and deposit sediment in the marine environment.

RECENT OR RELEVANT PUBLICATIONS

Kineke, G.C. and R.W. Sternberg. 1989. The effect of particle settling velocity on computed suspended sediment concentration profiles. *Marine Geology*, 90:159-174.
Trowbridge, J.H. and G.C. Kineke, 1994. Structure and dynamics of fluid muds over the Amazon continental shelf. *Journal of Geophysical Research*, 99:865-874
Geyer, W.R. and G.C. Kineke, 1995. Observations of currents and water properties in the Amazon frontal zone. *Journal of Geophysical Research*, 100:2321-2339.
Kineke, G.C., R.W. Sternberg, J.H. Trowbridge, and W.R. Geyer, 1996. Fluid Mud Processes on the Amazon Continental Shelf. *Continental Shelf Research*, 16:667-696.
Henrichs, S., N. Bond, R. Garvine, G. Kineke and S. Lohrenz, 2000. Coastal Ocean Processes (CoOP): Transport and Transformation Processes over Continental Shelves with Substantial Freshwater Inflows. University of Maryland Center for Environmental Science Technical Report TS-237-00.
Allison, M.A., G.C. Kineke, E.S. Gordon and M.A. Goni, 2000. Development and reworking of an annual flood deposit on the inner continental shelf off the Atchafalaya River. *Continental Shelf Research*, 20:2267-2294.

- Kineke, G., K.J. Woolfe, S.A. Kuehl, J. Milliman, T. Dellapena and R.G. Purdon, 2000. Sediment export from the Sepik River, Papua New Guinea: Evidence for a divergent dispersal system. *Continental Shelf Research*, 20:2239-2266.
- Blake, A.C., G.C. Kineke, T.G. Milligan, and C.R. Alexander, 2001. Sediment trapping and transport in the ACE Basin, South Carolina. *Estuaries*, 24:721-733.
- Milligan, T.G., G.C. Kineke, A. Carlson, C.R. Alexander, and P.S. Hill, 2001. Flocculation and Sedimentation in the ACE Basin, South Carolina. *Estuaries*, 24:734-744.
- Gordon, E.S., M.A. Goñi, Q.N. Roberts, G.C. Kineke, and M.A. Allison, 2001. Organic matter distribution and accumulation on the inner Louisiana Shelf west of the Atchafalaya River. *Continental Shelf Research*, 21:1691-1721.
- Belaval, Marcel, Lane, J.W., Jr., Lesmes, D.P., and Kineke, G.C., 2003, Continuous-resistivity-profiling for coastal ground-water investigations- three case histories. *In Symposium on the Application of Geophysics to Engineering and Environmental Problems, San Antonio, TX, April 6-10, 2003, Proceedings: Denver, Colo., Environmental and Engineering Geophysical Society, CD-ROM.*
- McKee, B.A., R.C. Aller, M.A. Allison, T.S. Bianchi, and G.C. Kineke, 2004. Transport and transformation of dissolved and particulate materials on continental margins influenced by major rivers: benthic boundary layer and seabed processes. *Continental Shelf Research*, 24:899-926.
- Geyer, W.R., P.S. Hill, and G.C. Kineke, 2004. The transport and dispersal of sediment by buoyant coastal flows. *Continental Shelf Research*, 24:927-949.
- Draut, A.E., Kineke, G.C., Velasco, D.W., Allison, M.A., and R.J. Prime, in press. Influence of the Atchafalaya River on Recent Evolution of the Chenier Plain Inner Continental Shelf, Northern Gulf of Mexico. *Continental Shelf Research*.

CURRENT RESEARCH PROJECTS

“Sediment Dispersal in the Gulf of Lions: Water Column Dynamics and Potential for Cross-Margin Transport” Office of Naval Research, EuroSTRATAFORM project.

"Sediment Dispersal from the Apennine Rivers," Office of Naval Research, EuroSTRATAFORM project.

Suzanne F. Leclair

Assistant Professor

Department of Earth and Environmental Sciences, Tulane University,

E-mail

Tel.: 862-3168

EDUCATION

Ph.D. in Geological Sciences, 2000, Binghamton University, NY, USA

Thesis: "Preservation of Cross-Strata due to Migration of Subaqueous Dunes"

Advisor: Professor John S. Bridge

M. Sc. in Geography, 1995, Université de Montréal, Montréal, Québec, Canada

B. Sc. in Geography, 1993, Université de Montréal, Montréal, Canada

RESEARCH INTERESTS

Process-oriented Sedimentology; Geomorphology; Paleo-environmental Studies.

PREVIOUS OCCUPATIONS

- 2002-2003 Post-doctoral assistant of Dr. Bill Arnott
Department of Earth Sciences, University of Ottawa
Project: Experiments on sedimentary processes and deposits in turbidite systems.
- 2001-2002 Post-doctoral associate of Dr. Michael Blum
Department of Geosciences, University of Nebraska-Lincoln
Projects: 1) Quantitative interpretation of deposits from the Loire and Rhône Rivers. 2) Edition of the Proceedings Volume of the 7th International Conference on Fluvial Sedimentology.
- 2000-2001 Visiting professor
Department of Geology, Youngstown State University, Ohio
Taught Intro Geology, Geomorphology, Sedimentology and Stratigraphy.

AWARDS, FELLOWSHIPS, AND GRANTS

- 2004 LOUISIANA BOARD OF REGENTS SUPPORT FUND-RESEARCH AND DEVELOPMENT PROGRAM (Research Competitiveness Subprogram)
- 2003 RESEARCH GRANT from the INTERNATIONAL COOPERATIVE RESEARCH/APPRENTICESHIP PROGRAM of NCED at St. ANTHONY FALLS LABORATORY, UNIVERSITY OF MINNESOTA.
- 2001 RESEARCH GRANT from the UNIVERSITY RESEARCH COUNCIL of YOUNGSTOWN STATE UNIVERSITY
- 1999 BINGHAMTON UNIVERSITY GRADUATE STUDENT AWARD FOR EXCELLENCE IN RESEARCH
- 1998 GSA ROBERT K. FAHNESTOCK MEMORIAL RESEARCH AWARD for the most outstanding research proposal in the field of Sediment Transport and Fluvial Geomorphology
- 1995-98 FONDS pour la FORMATION de CHERCHEURS et l'AIDE à la RECHERCHE (FCAR Graduate Studies Scholarship, Québec, Canada)

SELECTED PUBLICATIONS

- Leclair, S. F.**, *in preparation*. Reconstructing sediment transport conditions from river-dune cross-sets: new pieces to the puzzle, to be submitted to *Geology*.
- Leclair, S.F.** and Bradbury, N. Estimating original cross-set thickness distributions from dune deposits in partially-preserved channels: Implications for paleo-environmental reconstruction, submitted to the *Journal of Sedimentary Research*.
- Leclair, S. F.** 2002. Preservation of cross-strata due to migration of subaqueous dunes: an experimental investigation, *Sedimentology*, 49, 1157-1180.
- Leclair, S.F.** and Arnott, R.W.C., 2003, Windermere Enigmatic Strata: Indicators of Internal Hydraulic Jump, in *Shelf Margin Deltas and Linked down Slope Petroleum Systems: Global Significance and Future Exploration Potential*, 23rd Annual GCS-SEPM Foundation Bob F. Perkins Research Conference, Harry H. Roberts, Norman C. Rosen, Richard H. Filion, and John B. Anderson, Eds., p.817-835
- Leclair, S.F.** and Arnott, R.W.C., *in press*, Parallel lamination formed by high-density turbidity currents, *Journal of Sedimentary research (scheduled for Jan. 2005 issue)*.
- Leclair, S. F.** and Blom, A. *in press*, A qualitative analysis of the distribution of bed elevation and the characteristics of associated deposits for subaqueous dunes, *in press*, 7th *ICFS Proceedings Volume, Special Publ. IAS*. 35.
- Leclair, S. F.** and Bridge, J. S., 2001, Quantitative interpretation of sedimentary structures formed by river dunes, *Journal of Sedimentary research*, 71, 5, 714-717.
- Parker, G., Paola, C., and **Leclair, S. F.**, 2000, Probabilistic form of Exner equation of sediment continuity for mixtures with no active layer, *Journal of Hydraulic Engineering, ASCE*, 126, 11, 818-826.

PROFESSIONAL AFFILIATIONS

Scientific collaborator, Windermere Consortium, Canada (with PI Bill Arnott and Gerry Ross)
American Geophysical Union (AGU)
Geological Society of America (GSA)
International Association of Sedimentologists (IAS)

SERVICES AND COMMUNITY-ORIENTED ACTIVITIES

Actual

Member of the curriculum committee at the Department of Earth and Environmental Sciences at Tulane University

Previous

Co-representative of post-doctoral fellows at the Department of Earth Sciences, U of O.

Member of the Geology Departmental Curriculum Committee at YSU.

Representative of graduate students at the Graduate Committee for the Department of Geological Sciences, BU (1995-97)

Other: Singer (alto) in the University Choir at BU, UNL, and Tulane University.

ELANA L. LEITHOLD

Address: Department of Marine, Earth, and Atmospheric Sciences
North Carolina State University
Raleigh, NC 27695-8208

Phone: (919) 515-7282

FAX: (919) 515-7802

E-Mail: leithold@ncsu.edu

Education

University of Wisconsin-Madison, Geology and Geophysics, B.S., 1980

University of Washington, Geological Sciences, M.S., 1984

University of Washington, Geological Sciences, Ph.D. 1987

Appointments

1993-present Associate Professor, Department of Marine, Earth, and Atmospheric Sciences, North Carolina State University

1987-1993 Assistant Professor, Department of Marine, Earth, and Atmospheric Sciences, North Carolina State University

Areas of expertise

Marine sedimentation and stratigraphy, Carbon cycling in coupled watershed-continental margin sedimentary systems, Earth history

5 Most Relevant Publications

Leithold, E.L., Perkey, D.W., Blair, N.E., and Creamer, T.N., in press, Sedimentation and carbon burial on the northern California continental shelf: the signatures of land-use change: *Continental Shelf Research*

Blair, N.E., Leithold, E.L., and Aller, R.A., in press, From bedrock to burial: the evolution of particulate organic carbon across coupled watershed-continental margin systems: *Marine Chemistry*

Blair, N.E., Leithold, E.L., Ford, S.T., Peeler, K.A., Holmes, J.C., and Perkey, D.W., 2003, The persistence of memory: The fate of ancient sedimentary organic carbon in a modern sedimentary system: *Geochimica et Cosmochimica Acta*, v.67, p.63-73.

Leithold, E.L., and Blair, N.E., 2001, Watershed control on the carbon loading of marine sedimentary particles: *Geochimica et Cosmochimica Acta*, v.65, 2231-2240.

Leithold, E.L., and Hope, R.S., 1999, Deposition and modification of a flood layer on the northern California shelf: lessons from and about the fate of terrestrial particulate organic carbon: *Marine Geology*, v.154, p.183-195.

5 Additional Publications

Leithold, E.L., and Dean, W.E., 1998, Depositional processes and carbon burial on a Turonian prodelta at the margin of the Western Interior Seaway, in Dean, W.E., and Arthur, M.A., eds., Stratigraphy and Paleoenvironments of the Cretaceous Western Interior Seaway, USA: *SEPM Concepts in Sedimentology and Paleontology No. 6*: SEPM, Tulsa, OK, p.189-200.

Sethi, P.S., and Leithold, E.L., 1997, Recurrent depletion of benthic oxygen and enhancement of organic carbon preservation with third-order transgressive maximae in the Cretaceous Western Interior Seaway: *Palaeogeography, Palaeoclimatology, Palaeoecology*, v. 128, p.39-61

Leithold, E.L., 1994, Stratigraphical architecture at the muddy margin of the Cretaceous Western Interior Seaway, southern Utah: *Sedimentology*, v. 41, p.521-542.

Sethi, P.S., and Leithold, E.L., 1994, Climatic cyclicity and terrigenous sediment influx to the early Turonian Greenhorn Sea, southern Utah: *Journal of Sedimentary Research*, v. B64, p.26-39.

Leithold, E.L., 1993, Preservation of laminated shale in ancient clinoforms: comparison to modern subaqueous deltas: *Geology*, v. 21, p.359-362.

Recent Research Projects

"Age distribution of POC discharged from small mountainous rivers-the influence of sediment yield and soil residence time," National Science Foundation, Geology and Paleontology (North American Integrated Carbon Cycle Research), 2002-2006, Neal Blair co-PI

"Organic carbon loading on marine sedimentary particles as an indicator of river basin weathering and transport regimes," National Science Foundation, Marine Geology and Geophysics Program, 1998-2001, Neal Blair co-PI.

"Organic carbon burial in marine sediments: Processes controlling the organic carbon load on mineral surfaces in a coupled river/continental margin system," American Chemical Society Petroleum Research Fund, 1998-2001; Neal Blair co-PI.

"Following the fate of flood layers on the northern California continental margin," Office of Naval Research, 1996-1997

"STRATAFORM studies of seabed processes," Office of Naval Research, 1994-1996; collaborative project with Dr. Jeffrey Borgeld, Humboldt State University

"Sedimentary fabric and organic carbon preservation along a Cretaceous gradient of sediment accumulation rate," American Chemical Society 1993-1995

"High-frequency sea-level changes and paleoceanography of the Cenomanian-Turonian Western Interior Seaway," National Science Foundation, 1993-1996, collaborative project with Dr. Mark Leckie, University of Massachusetts

Collaborators in past 48 months:

R.C. Aller (Stony Brook Univ.), N.E. Blair (NCSU), J.C. Borgeld (Humboldt State Univ.), D.E. Drake (Drake Marine Consulting), S. Kuehl (VIMS), M. Leckie (Univ. of Massachusetts), C.A. Nittrouer (Univ. Washington), C. Sommerfield (Univ. Delaware), R.A. Wheatcroft (Oregon State Univ.), P. Wiberg (Univ. Virginia)

Graduate Advisors: Joanne Bourgeois, J.D. Smith, R.W. Sternberg

Graduate Students: Parvinder S. Sethi, Donna A. Lynch, Wendy Nix-Morris, Rebecca S. Hope, Todd N. Creamer, Jennifer Holmes, David Perkey, William Straight, Periann Russell, Ansley Wren, Kristen Lloyd, Catherine Thompson

Kon-Kee Liu

Institute of Hydrological Sciences, National Central University
300, Jungda Rd., Jhongli City, Taoyuan, Taiwan 320, R.O.C. Tel: +886-3-422-3354
E-mail: kkliu@cc.ncu.edu.tw

EDUCATIONAL BACKGROUND

1971 National Tsinghua University, BS in Chemistry
1979 UCLA, PhD in Geochemistry

PROFESSIONAL EXPERIENCES

1979-1981: Post-doctorate Research Fellow, California Institute of Technology
1981-1984: Associate Research Fellow, Institute of Earth Sciences, Academia Sinica
1984-1993: Research Fellow, Institute of Earth Sciences, Academia Sinica
1986-2003: Professor, Institute of Oceanography, National Taiwan University
2000-2003 Director, National Center for Ocean Research
2003- Professor, Institute of Hydrological Sciences and Department of Earth Sciences, National Central University

PROFESSIONAL HONORS & OFFICES

1992, 1996 Distinguished research award, National Science Council, Taiwan, ROC
1999-2000 Vice Chair, Scientific Steering Committee for JGOFS, SCOR/IGBP
2001-2003 Secretary, National Committee for Oceanic Research, China-Taipei
1999- Member, Continental Margins Task Team of JGOFS/LOICZ
2003- Editor-in-Chief, Terrestrial, Atmospheric and Oceanic Sciences (TAO), URL:
<<http://tao.gcc.ntu.edu.tw>>

MEMBERSHIP

Chinese Chemical Society, Taipei; American Geophysical Union; Chinese Geophysical Union, Taipei

RESEARCH INTERESTS

Marine carbon and nitrogen cycles, especially in continental margins
Isotope geochemistry, with emphasis on isotope biogeochemistry of nitrogen and carbon
Numerical modeling of marine biogeochemical systems

SELECTED PUBLICATIONS (2000-2004)

- Liu K.K., Iseki K. and Chao S.Y. (2000) Continental margin carbon fluxes. In: R.B. Hanson, H.W. Ducklow, J.G. Field (Eds): *The Changing Ocean Carbon Cycle: A midterm synthesis of the Joint Global Ocean Flux Study*, pp. 187-239. International Geosphere-Biosphere Programme Book Series, Cambridge: Cambridge University Press.
- Liu, K.-K., Tang, T.Y., Gong, G.-C., Chen, L.-Y., Shiah, F.-K. (2000) Cross-shelf and along-shelf nutrient fluxes derived from flow fields and chemical hydrography observed in the southern East China Sea off northern Taiwan. *Cont. Shelf Res.* 20, 493-523.

- Shiah, F.-K., **Liu, K.-K.** and Gong, G.-C. (2000) The coupling of bacterial production and hydrography in the southern East China Sea north of Taiwan: Spatial patterns in spring and fall. *Cont. Shelf Res.* 20, 459-477.
- Kao S.-J., **Liu, K.-K.** (2000) Stable carbon and nitrogen isotope systematics in a human-disturbed watershed (Lanyang-Hsi) in Taiwan and the estimation of biogenic particulate organic carbon and nitrogen fluxes. *Global Biogeochem. Cycle*, **14**, 189-198.
- Liu, K.-K.**, Atkinson, L., Chen, C.T.A., Gao, S., Hall, J., MacDonald, R.W., Talaue McManus, L., Quiñones, R. (2000) Exploring continental margin carbon fluxes on a global scale. *Eos, Transactions, American Geophysical Union* **81** (52) 641-644.
- Kao, S.-J., **Liu, K.-K.** (2001) Estimating the suspended sediment load by using the historical hydrometric record from the Lanyang-Hsi watershed. *Terrestrial, Atmospheric and Oceanic Sciences* **12**, 401-414.
- Chung, S.W., Jan, S. and **Liu, K.-K.** (2001) Nutrient fluxes through the Taiwan Strait in spring and summer 1999. *J. Oceanogr.* 57, 47-53.
- Kao, S.-J., **Liu, K.-K.** (2002) The exacerbation of erosion induced by human perturbation in a subtropical mountainous watershed in Taiwan: evidence from historical records of sediment load. *Global Biogeochem. Cycles* **16** (1), 16, doi: 10.1029/2000GB001334, 2002.
- Tsai, W.-t., **Liu, K.-K.** (2003) An assessment of the effect of sea surface surfactant on global atmosphere-ocean CO₂ flux. *J. Geophys. Res.* **108**(C4), 3127, doi:10.1029/2000JC000740.
- Liu, K.-K.**, Chao, S.-Y., Shaw, P.-T., Gong, G.C., Chen, C.C., Tang, TY (2002) Monsoon forced chlorophyll distribution and primary productivity in the South China Sea: observations and a numerical study. *Deep-Sea Res.* I 49, 1387-1412.
- Chen, C.-T.A., **Liu, K.-K.**, MacDonald, R.W. (2003) Continental margin exchanges. In: M.J.R. Fasham (Ed.), *Ocean Biogeochemistry: The Role of the Ocean Carbon cycle in Global Change*, pp. 53-97, IGBP Book Series, Springer.
- Liu, K.-K.**, Peng, T.-H., Shaw, P.-T., Shiah, F.K. (2003) Circulation and biogeochemical processes in the East China Sea and the vicinity of Taiwan: An overview and a brief synthesis. *Deep-Sea Res.* II 50 (6-7), 1055-1064
- Kao S.-J., Lin, F.-J., **Liu, K.-K.** (2003) Organic carbon and nitrogen contents and their isotopic compositions in surficial sediments from the East China Sea shelf and the southern Okinawa Trough. *Deep-Sea Res.* II 50 (6-7), 1203-1217.
- Lee, H.-J., Chao, S.-Y., **Liu, K.-K.** (2004) Effects of reduced Yangtze River discharge on the circulation of surrounding seas. *Terrestrial, Atmospheric and Oceanic Sciences* 15, 111-132.
- Liu, K.-K.**, Chao, S.-Y., Marra, J., Snidvongs, A. (2004) Monsoonal forcing and biogeochemical environments of Outer Southeast Asia Seas. In: Robinson, A., Brink, K.H. (Eds.), *The Sea, vol. 14, The Global Coastal Ocean: Interdisciplinary Regional Studies and Synthesis*, Harvard Univ. Press, Cambridge. (In press)

J. Paul Liu Assistant Professor

Dept. of Marine Earth and Atmospheric Sciences
Campus Box 8208
North Carolina State University
Raleigh NC 27695, USA
Tel: 919-515-7977
E-mail:

Guest investigator in Woods Hole Oceanographic Institution (WHOI)

Education:

1997-2001 Ph.D., School of Marine Science, VIMS, College of William & Mary
1992-1995 M.S., Institute of Oceanology, Chinese Academy of Sciences
1988-1992 B.S., College of Geo-Marine Sciences, Ocean University of Qingdao

Academic Positions:

2003 Post-doc at Woods Hole Oceanographic Institution
2002-2003 Post-doc research scientist, VIMS, College of William & Mary
2000 Visiting Lecturer, Geology Department, College of William & Mary .
1997-2001 Research Assistant, VIMS, College of William & Mary
1995-1996 Teaching Demonstrator, Dept. of Earth Science, Hong Kong University

Honors:

2003, Post-doc Scholar Fellowship at Woods Hole Oceanography Institution
2000, Virginia Power Teaching Award, VIMS
1997, Research Assistantship in William & Mary
1996, Hui Yin Hing Fellowships in Hong Kong
1995, Sino-British Fellowship Trust Fund
1992, Distinguished Graduate Student in the Chinese Academy of Sciences

Selected Publications:

J.P. Liu, J.D. Milliman, S. Gao, P. Cheng, 2004. Sedimentary Processes of the Yellow River's early-Holocene subaqueous delta in the North Yellow Sea. *Marine Geology*, 209: 45-67.

J.P. Liu, and J.D. Milliman, 2004. Reconsidering Melt-water Pulses 1A and 1B: Global Impacts of Rapid Sea-level Rise. *Journal of Ocean University of China*, 3(3): 183-190.

J.P. Liu, J.D. Milliman, and S. Gao, 2002, The Shandong Mud Wedge and Holocene Sediment Accumulation in the Yellow Sea, *Marine-Geo Letters*, 21: 212-218.

Jingpu Liu, Peng Cheng, Shu Gao, Katie Farnsworth and John D. Milliman, 1999, A preliminary report about the recent cruise in the North Yellow Sea and Bohai Strait. *Land-Sea Link in Asia*, 44-48.

Z.S. Yang, J.D. Milliman, J.Galler, **J.P. Liu**, and X.G. Sun, 1998. Yellow River's Water and Sediment Discharge Decreasing Steadily, *EOS*, Vol.79, No. 48.

Jingpu Liu, Songling Zhao, 1995. The origin of the exposed loess along coastal zone and the buried loess in the Bohai Sea bottom. *OCEANOLOGA ET LIMNOLOGIA SINICA*, 4:366-371.

Professional and Honor Societies:

American Geophysical Union
New York Academy of Sciences
The Geological Society of America
The Geological Society of Hong Kong

Graduate Students:

David Velozzi (MS)

Recent Collaborator:

Jeff Donnelly (WHOI), Neal Driscoll (Scripps), John D. Milliman (VIMS), Jesse McNinch (VIMS).

STEVEN E. LOHRENZ
Professor

ADDRESS:

Department of Marine Science
The University of Southern Mississippi
1020 Balch Boulevard
Stennis Space Center, MS 39529-5005
Phone: (228) 688-1176/688-3177; Fax: (228) 688-1121
E-mail:
Web Page:

EDUCATION:

Ph.D., Biological Oceanography, 1985, Massachusetts Institute of Technology-Woods Hole Oceanographic Institution
B.A., Biology and Chemistry, 1978, University of Oregon, Eugene

EXPERIENCE:

Professor, 1999-present, University of Southern Mississippi
Guest Investigator, 2001- 2002, Woods Hole Oceanographic Institution
Associate Professor, 1994-present, University of Southern Mississippi
Assistant Professor, 1988-1994, University of Southern Mississippi
Associate Research Scientist, 1987-1988, University of Southern Mississippi
Postdoctoral Fellow, 1985-1987, National Research Council Fellowship at the Naval Ocean Research and Development Activity
Graduate Fellow, 1979-1985, Massachusetts Institute of Technology-Woods Hole Oceanographic Institution

REPRESENTATIVE SCIENTIFIC PUBLICATIONS

- 2004 Lohrenz, Steven E. and P. G. Verity, "Regional Oceanography: Southeastern United States and Gulf of Mexico (2,W)," In: *The Sea, Vol. 13, The Global Coastal Ocean: Interdisciplinary Regional Studies And Syntheses* (A. R. Robinson and K. H. Brink, Eds.), John Wiley & Sons, New York, in press.
- 2003 Lohrenz, S.E., Carroll, C.L., Weidemann, A.D., Tuel, M. Variations in phytoplankton pigments, size structure and community composition related to wind forcing and water mass properties on the North Carolina inner shelf. *Cont. Shelf Res.* 23, 1447-1464.
- 2002 Verity, P.G., Redalje, D.G., Lohrenz, S.R., Flagg, C., Hristov, R. Coupling between primary production and pelagic consumption in temperate ocean margin pelagic ecosystems. *Deep-Sea Res. Part II-Top. Stud. Oceanogr.* 49, 4553-4569.
- 2002 Redalje, D.G., Lohrenz, S.E., Verity, P.G., Flagg, C.N. Phytoplankton dynamics within a discrete water mass off Cape Hatteras, North Carolina: the Lagrangian experiment. *Deep-Sea Res. Part II-Top. Stud. Oceanogr.* 49, 4511-4531.
- 2002 Lohrenz, S.E., Redalje, D.G., Verity, P.G., Flagg, C.N., Matulewski, K.V. Primary production on the continental shelf off Cape Hatteras, North Carolina. *Deep-Sea Res. Part II-Top. Stud. Oceanogr.* 49, 4479-4509.
- 2000 Chen, X., Lohrenz, S.E., Wiesenburg, D.A. Distribution and controlling mechanisms of primary production on the Louisiana-Texas continental shelf. *J. Mar. Syst.* 25, 179-207.
- 1999 Lohrenz, S.E., Wiesenburg, D.A., Arnone, R.A., Chen, X. What controls primary production in the Gulf of Mexico? In: Sherman, K., Kumpf, H., Steidinger, K. (Eds.), *The Gulf of Mexico Large Marine Ecosystem: Assessment, Sustainability and Management*. Blackwell Science, Inc., Malden, MA, pp. 151-170.
- 1999 Lohrenz, S.E., Fahnenstiel, G.L., Redalje, D.G., Lang, G.A., Dagg, M.J., Whitledge, T.E., Dortch, Q. 1999. Nutrients, irradiance, and mixing as factors regulating primary production in coastal waters impacted by the Mississippi River plume. *Cont. Shelf Res.* 19, 1113-1141.
- 1997 Lohrenz, S.E., Fahnenstiel, G.L., Redalje, D.G., Lang, G.A., Chen, X.G., Dagg, M.J., 1997. Variations in primary production of northern Gulf of Mexico continental shelf waters linked to nutrient inputs from the Mississippi River. *Mar. Ecol.-Prog. Ser.* 155, 45-54.
- 1994 Lohrenz, S.E., Fahnenstiel, G.L., Redalje, D.G. Spatial and temporal variations of photosynthetic parameters in relation to environmental conditions in northern Gulf of Mexico coastal waters. *Estuaries* 17, 779-795.

SYNERGISTIC ACTIVITIES

- Panel member, National Institutes of Health/National Institute of Environmental Health Sciences/National Science Foundation Peer Review Panel, Research Triangle Park, NC, June, 2003.
- Participant, Workshop on Real-time Coastal Observing Systems for Harmful Algal Blooms and Ecosystem Dynamics, Villefranche-Sur-Mer, France, June, 2003.
- External reviewer, "Chemical Reference Materials: Setting the Standards for Ocean Science," National Research Council, National Academy Press, Washington, D.C., 2001.
- Invited participant, NOAA Great Lakes Issues Identification Workshop, Ann Arbor, MI, Jan, 2003.
- Invited participant, COASTS: Coastal Ocean Advanced Scientific and Technical Studies, Interdisciplinary Ocean Science of the Global Coastal Ocean, IOC, UNESCO, Paris, August, 2001.
- Invited participant, Mississippi River/Gulf of Mexico Watershed Nutrients Task Force Workshop: Science to Support Nutrient-Management Decisions Related to Hypoxia in the Northern Gulf of Mexico and Water Quality in the Mississippi River Basin, Monitoring, Modeling and Research (MMR) workgroup, St. Louis, MO, October, 2002.
- Over the past four years, Lohrenz has served as an external reviewer of over 40 manuscripts for scientific journals and more than 70 proposals (including two panels) for various funding agencies.

LIST OF COLLABORATORS:

Robert Arnone (Naval Research Lab), Vernon Asper (Univ. Southern Miss.), Ronald Benner (Univ. South Carolina), Paula Bontempi (Univ. Southern Miss.), Hunter Carrick (SUNY-Buffalo), James Churchill (WHOI), Mike Dagg (LUMCON), Terrence J. Evans (USDA), Gary Fahnenstiel (NOAA/Univ. Michigan), Charles Flagg (Brookhaven Laboratories), Stephan Howden (Univ. Southern Miss.), Gary Kirkpatrick (Mote Marine Lab), John Largier (Scripps), David Millie (USDA), James O'Donnell (Univ. Connecticut), Rob Olson (WHOI), Donald Redalje (Univ. Southern Miss.), Oscar Schofield (Rutgers), Heidi Sosik (WHOI), Merritt Tuel (Univ. Southern Miss.), Albert Williams, III (WHOI), Peter Verity (Skidaway Inst.), Alan Weidemann (Naval Research Lab), A. Michelle Wood (Univ. Oregon)

ACADEMIC ADVISORS

Craig Taylor (Ph.D. advisor, WHOI)

Denis A. Wiesenburg (post-graduate advisor, currently at Univ. Southern Miss.)

STUDENTS AND POST-DOCS ADVISED OVER THE LAST FOUR YEARS

Post-docs: Susanne Craig

Academic Advisor: Xuemei Bai, Todd Bowers, Amy Brown, Megan Butterworth, James Byrum, Xiaogang Chen, Aubrey Foret, Callie Hall, David Hughes, Kimberly Kelly, Kevin Mahoney, Bruce Spiering, Vanessa Wright

Thesis committee member: David Hanisko, Karie Holtermann, David Hughes, Theia Hofstetter, Karie Holtermann, Robin McCall, Joseph Tegeder, Donna Thomas, Toshihiko Uozumi.

The PI has advised over 40 graduate students.

FRANCO MARCANTONIO

Education:

PhD (1994) Geological Sciences, Columbia University, Lamont-Doherty Earth Observatory

MSc (1988) Geology, McMaster University

BSc (1986) Chemistry and Geology (summa cum laude), Carleton University

Positions:

2002-present: Associate Professor, Department of Geology, Tulane University.

1996-2002: Assistant Professor, Department of Geology, Tulane University.

1995-1996: Post-doctoral research associate, Yale University. Seawater osmium isotope curve, osmium isotopes in coastal and deep-sea sediments

1994-1995: Post-doctoral research scientist, Columbia University. Helium in deep-sea sediments

Professional Society Memberships: American Geophysical Union, Geochemical Society

Research Interests and Activities: Using elemental and isotopic geochemistry as tools to aid in the unraveling of problems in geology and oceanography. Expertise in thermal ionization, noble gas, and inductively-coupled plasma mass spectroscopy. Current projects include: uranium, thorium, and protactinium isotopes in deep-sea sediments as geochronologic and particle-flux tracers, uranium isotopes in riverine/estuarine waters and the implications for ocean budgets and climate change, stable lead isotopes and the fate and transport of anthropogenic lead in the environment, Mg/Ca and Sr/Ca in planktonic forams as proxies for paleotemperature of the Gulf of Mexico.

Ten recent publications:

Pourmand, A., Marcantonio, F. and Schulz, H. (2004) Variations in productivity and eolian fluxes in the northeastern Arabian Sea over the past 110 ka, *Earth and Planetary Science Letters*, 221, 39-54.

Xu, Y. and Marcantonio F. (2004) Speciation of strontium in particulates and sediments from the Mississippi River mixing zone, *Geochimica et Cosmochimica Acta*, 68, 2649-2657.

Marcantonio, F., Zimmerman, A., Xu, Y., Canuel, E. (2002) A record of eastern US atmospheric Pb emissions in Chesapeake Bay sediments: stable Pb isotopes as a chronological tool, *Marine Chemistry*, 77, 123-132.

Higgins, S. M., Anderson, R. F., Marcantonio, F., Stute, M., and Schlosser, P. (2002) Sediment redistribution on the Ontong-Java plateau over the last 240 ka: implications for extraterrestrial ³He flux estimates, *Earth and Planetary Science Letters*, 203, 383-397.

- Marcantonio, F., Anderson, R. F., Higgins, S., Stute, M., Schlosser, P. (2001) Sediment focusing in the central Equatorial Pacific Ocean, *Paleoceanography*, 16, 260-267.
- Marcantonio, F., Anderson, R. F., Higgins, S., Fleisher, M. Q., Stute, M., Schlosser, P. (2001) Abrupt intensification of the SW Indian Ocean monsoon during the last deglaciation: constraints from Th, Pa, and He isotopes, *Earth and Planetary Science Letters*, 184, 504-514.
- Marcantonio, F., Turekian, K. K., Higgins, S., Anderson, R. F., Stute, M., Schlosser, P. (1999) The accretion rate of extraterrestrial ^3He based on ocean ^{230}Th flux and the relation to Os isotope variation over the past 200,000 years in an Indian Ocean core, *Earth and Planetary Science Letters* 170, 157-168.
- Marcantonio, F., Higgins, S., Anderson, R. F., Stute, M., Schlosser, P., and Rasbury, E. T. (1998) Terrigenous helium in deep-sea sediments, *Geochimica et Cosmochimica Acta* 62, 1535-1543.
- Marcantonio, F., Flowers, G., Thien, L., and Ellgaard, E. (1998) Pb isotopes in tree rings: chronology of pollution in Bayou Trepagnier, LA, *Environmental Science and Technology* 32, 2371-2376.
- Marcantonio, F., Anderson, R. F., Stute, M., Kumar, N., Schlosser, P., and Mix, A. (1996) Extraterrestrial ^3He as a tracer of marine sediment transport and accumulation, *Nature* 383, 705-707.

Advisors: PhD: A. Zindler, MSc: A. P. Dickin

Advisees at Tulane: Yingfeng Xu (PhD), Ali Pourmand (PhD), Bruce Sherman (PhD), David McGee (PhD), Troy Grzymko (MS), Joe Levitt (undergrad), Stephanie Thomas (undergrad), Tyler Kinley (undergrad), Nicole Templin (undergrad), Colin Caplan (undergrad), Mike Takaichi (undergrad).

Curriculum Vitae

Brent A. McKee

Professor

Department of Earth and Environmental Sciences

Tulane University, New Orleans LA 70118

Phone: 504-862-3167; FAX: 504-865-5199; Email: bmckee@tulane.edu

Education:

- 1986 Ph.D. (Marine Geochemistry) North Carolina State University
Title: *The Fate of Particle-Reactive Radionuclides on the Amazon and Yangtze Continental Shelves*
- 1983 M.S. (Marine Geochemistry) North Carolina State University
- 1980 B.S. (Chemistry) North Carolina State University
- 1976 Ed.B. (English / Education) University of North Carolina-Chapel Hill

Professional Experience:

- 2003 – Present Director, Tulane Center for River – Ocean Studies
- 2001 – Present Full Professor, Department of Earth and Environmental Sciences (formerly Geology), Tulane University
- 1997- 2001 Associate Professor, Department of Geology, Tulane University
- 1992-1997 Associate Professor, Louisiana Universities Marine Consortium
- 1987-1992 Assistant Professor, Louisiana Universities Marine Consortium

Selected Recent Publications:

- McKee, B.A., and M. Baskaran 1999. Sedimentary Processes of Gulf of Mexico Estuaries. In: Biogeochemistry of Gulf of Mexico Estuaries T. Bianchi, J. Pennock and R. Twilley (eds). John Wiley and Sons, New York. pp. 63-85.
- Booth, J. G., R.L. Miller, B.A. McKee and R.A. Lethers 2000. Wind-induced sediment resuspension in a microtidal coastal environment. *Continental Shelf Research*. 20: 785-806.
- Chen, N., T. Bianchi, B. McKee, and J. Bland. 2001. Historical Trends of Hypoxia on the Louisiana Shelf: the Application of Pigments as Biomarkers. *Organic Geochemistry*. 32 (4): 543-561.
- Bianchi, T, S. Mitra, and B. McKee. 2001. Sources of Terrestrially derived Organic Carbon in Lower Mississippi River and Louisiana Shelf Sediments: Implications for Differential Sedimentation and Transport at the Coastal Margin, *Marine Chemistry* 77 (2/3): 211-223.
- Mitra, S., T. Bianchi, B. McKee, and M. Sutula. 2002. Black Carbon from the Mississippi River: Quantities, Sources and Potential Implications for the Global Carbon Cycle. *Environmental Science and Technology* 36: 2296-2302.
- Bianchi, T., E. Engelhaupt, B. McKee, S. Miles, R. Elmgren, S. Hajdu, C. Savage, and M. Baskaran. 2002. Do sediments from coastal sites accurately reflect time trends in water column phytoplankton? A test from Himmerfjärden Bay (Baltic Sea proper). *Limnology and Oceanography* 47 (5): 1537-1544.
- Nealson K. H., Belz A., and McKee B. 2002. Breathing metals as a way of life: geobiology in action. *Antonie Van Leeuwenhoek International Journal of General and Molecular Microbiology* 81(1-4), 215-222.

- Alin, S., C. O'Reilly, A. Cohen, D. Dettman, M. Palacios-Fest, and B. McKee. 2002. Effects of land-use change on aquatic biodiversity: A view from the paleorecord at Lake Tanganyika, East Africa. *Geology* 30:12 1143-1146.
- O'Reilly, C.M., S.R. Alin, P-D Plisnie, A.S. Cohen and B.A. McKee 2003. Climate change decreases aquatic ecosystem productivity of Lake Tanganyika, East Africa. *Nature* 424: 766-768.
- Skei, J., B. McKee, and B. Sundby 2003. Fjords. In: Biogeochemistry of Marine Systems. (Ed.) K. Black. Blackwell Publishing, Oxford. p. 65 – 90.
- McKee, B.A., R.C. Aller, M.A. Allison, T.S. Bianchi, and G.C. Kineke. 2004. Transport and Transformation of Dissolved and Particulate Materials on Continental Margins Influenced by Major Rivers: Benthic Boundary Layer and Seabed Processes. *Continental Shelf Research*. Vol 24/7-8 pp 899-926.
- Corbett, R., B. McKee, and D. Duncan 2004. An evaluation of mobile mud dynamics in the Mississippi River Deltaic region. *Marine Geology*. 209, 91-112.
- Miller, R.L., and B.A. McKee 2004. Using MODIS Terra 250 m imagery to map concentrations of total suspended matter in coastal waters. *Remote Sensing of the Environment*. 93: 259-266.
- Sutula, M., T. S. Bianchi, and B. A. McKee 2004. Effect of seasonal sediment storage in the lower Mississippi River on the flux of reactive particulate phosphorus to the Gulf of Mexico. *Limnology and Oceanography*, 49(6)
- Miller, R.L., B.A. McKee and E.J. D'Sa. 2004. Monitoring Bottom Sediment Resuspension and Suspended Sediments in Coastal Waters. In: Remote Sensing of Coastal Aquatic Environments: Technologies, Techniques and Application, R.L. Miller, C.E. Del Castillo and B.A. McKee [Eds.], Kluwer Academic Publishing. In press. Fall 2004 publication.
- Swarzenski, P., P. Cambell, D. Porcelli and B. McKee. 2004. The estuarine chemistry and isotope systematics of $^{234,238}\text{U}$ in the Amazon and Fly River Outflow Regions. *Continental Shelf Research*. In Press.

Graduate Advisors:

David J. DeMaster, North Carolina State University
Charles A. Nittrouer, University of Washington

Graduate Students:

Peter Swarzenski Ph.D. 1997
Greg Booth Ph.D. 1999
Ryan Clark M.S. 2003
Greg Kozlowski Ph.D. candidate
Peter Cable Ph.D. candidate
Mike Stewart M.S. student

Post-Doctoral Associate: Reide Corbett 1999-2000;

presently Assistant Professor, East Carolina University

ROBERT H. MEADE

28603 Meadow Drive
Evergreen, Colorado 80439 USA

HYDROLOGIST AND POTAMOLOGIST

US Citizen
Phone 1-(303) 674-7001
Fax 1-(303) 236-5034

Education: B.S. in Geology, University of Oklahoma, 1952.
M.S., Ph.D. in Geology, Stanford University, 1957, 1960.

Professional Experience: Hydrologist and sedimentologist, U.S. Geological Survey, Water Resources Division, 1957-1996, with the following major programs:

1. Contaminants in the Mississippi River between Minneapolis and New Orleans. Comprehensive multidisciplinary assessment, 1987-1995. Project leader.
2. Mercury contamination (from gold mining) in Caroni River, Venezuela, 1993-1995. Consultant and advisor.
3. Navigation and hydropower potential of Orinoco and Apure Rivers, Venezuela, 1982-1986. Hydrologist and sedimentologist.
4. Transport of carbon (as part of global carbon budget) and nutrients in Amazon River, Brazil, 1982-1984. Potamologist and sedimentologist.
5. National Estuarine Summary, 1966-1969. Principal reporter to U.S. Congress on sedimentation in estuaries.
6. Geology of Atlantic Continental Shelf of U.S., 1963-1974. Project chief (1964-1969) and hydrologist.
7. Land subsidence and aquifer compaction (from extraction of artesian ground water), interior valleys of California, 1957-1963. Petrologist and sedimentologist.

Invited Lecturer on technical topics at numerous universities and institutes in North America, South America, Europe, Russia, and China. Complete listing for 1966-2003 available on request.

Language Proficiency:

Spanish: Read and speak moderately well (lectures given in Spanish); comprehension fairly good.

Portuguese and German: Read with dictionary, speak with difficulty; comprehension poor to moderate.

Awards: Meritorious Service, U.S. Department of the Interior, 1985.
Distinguished Service, U.S. Department of the Interior, 1996.

ROBERT H. MEADE**RECENT PUBLICATIONS ON LARGE RIVERS****South America**

- 2005, Transcontinental moving and storage: The Orinoco and Amazon transfer the Andes to the Atlantic, in *Large Rivers*: Chichester/New York, John Wiley (in press).
- 2002, Regional controls on geomorphology, hydrology, and ecosystem integrity in the Orinoco Delta, Venezuela: *Geomorphology*, v. 44, p. 273-307.
- 1998, Exchanges of sediment between the flood plain and channel of the Amazon River in Brazil: *Geological Society of America Bulletin*, v. 110, p. 450-467.
- 1994, Suspended sediments of the modern Amazon and Orinoco Rivers: *Quaternary International*, v. 21, p. 29-39.
- 1991, Backwater effects in the Amazon River of Brazil: *Environmental Geology and Water Science*, v. 18, p. 105-114.
- 1991, Distribution of the river dolphin, tonina *Inia geoffrensis*, in the Orinoco River basin of Venezuela and Colombia: *Interciencia*, v. 16, p. 300-312.
- 1990, Suspended-sediment budget for the Orinoco River, in *El Rio Orinoco como*

Ecosistema: Caracas, Rubel, p. 55-79.

North America

- 2004, Engineering works and their effects on movement and storage of sediment in Mississippi River and its major tributaries, in *Proceedings of the Ninth International Symposium on River Sedimentation*, Yichang, China, v. 1, p. 148-155.
- 2000, Environmental and hydrologic overview of the Yukon River basin, Alaska and Canada: *U.S. Geological Survey Water-Resources Investigations Report 99-4204*, 106 pp.
- 1995, Contaminants in the Mississippi River, 1987-92: *U.S. Geological Survey Circular 1133*, 140 pp.
- 1990, Movement and storage of sediment in rivers of the United States and Canada, in *Surface Water Hydrology*: Geological Society of America, *The Geology of North America*, v. 0-1, p. 255-280.
- 1990, Strategies and equipment for sampling suspended sediment and associated toxic chemicals in large rivers -- with emphasis on the Mississippi River, in *Fate and Effects of Toxic Chemicals in Large Rivers and their Estuaries*: Amsterdam, Elsevier, p. 125-135.

Other Global

- 2000, Suspended-sediment and fresh-water discharges in the Ob and Yenisey Rivers, 1960-1988: *International Journal of Earth Sciences*, v. 89, p. 461-469.
- 1996, River-sediment inputs to major deltas, in *Sea-Level Rise and Coastal Subsidence*: Dordrecht, Kluwer, p. 63-85.
- 1983, World-wide delivery of river sediment to the oceans: *Journal of Geology*, v.91, p. 1-21.

ROBERT H. MEADE

PUBLICATIONS ON ESTUARIES

- 1985, Transport and deposition of river sediment in the Changjiang estuary and adjacent continental shelf: *Continental Shelf Research*, v. 4, p. 37-45.
- 1977, Man's impact on estuarine sedimentation, in *Estuarine Pollution Control and Assessment -- Proceedings of a Conference*: U.S. Environmental Protection Agency, v. 1, p. 193-209.
- 1974, Net transport of sediment through the mouths of estuaries -- seaward or landward? in *International Symposium on Interrelationships of Estuarine and Continental Shelf Sedimentation*: Universite de Bordeaux Institut de Geologie du Bassin d'Aquitaine Memoir 7, p. 207-213.
- 1972, "transport and deposition of sediments in estuaries, in *Environmental Framework of Coastal-Plain Estuaries*: Geological Society of America Memoir 133, p. 91-120.
- 1972, Sources and sinks of suspended matter on continental shelves, in *Shelf Sediment Transport*: Stroudsburg, Pa., Dowden, Hutchinson & Ross, p. 249-262. 1971, *The Coastal Environment of New England: New England River Basins Commission*, 47 pp.
- 1969, Landward transport of bottom sediments in estuaries of the Atlantic Coastal Plain: *Journal of Sedimentary Petrology*, v. 39, p. 222-234.

Description of Sisyphé and Meybeck

The UMR Sisyphé (CNRS and University Pierre et Marie Curie (Paris 6)) has been focused over the last ten years on continental aquatic systems in three main directions : (i) surficial aquatic systems including rainfall, rivers, lakes and estuaries. We are mainly concerned by the natural variability in time and space of water borne material as the result of multiple basic processes as mechanical erosion, chemical weathering of minerals, soil leaching, biogeochemical processes within the water column and sediments related to phyto- and zooplankton and to bacteria. The multiple impacts from human activities (eutrophication, nitrate pollution, metal contamination, persistent organic pollutants, pesticides) are also considered by Sisyphé, the leading institution of the Piren-Seine, a 12 years programme linking a dozen of laboratories on the various issues of the impacted basin. These processes are now integrated in biogeochemical models coupled to hydrological models, (ii) soils, soil water and surficial aquifers are the second axis of Sisyphé including hydrological balance, wetland typology, alluvial aquifer modelling and the exploration of the first 10m by geophysical methods, (iii) deep confined aquifers and their mineralogical deposition over geological times are the third axis.

Prof. Dr. Michel Meybeck is research director at the French national center for scientific research (CNRS). He has worked mainly on surface waters geochemistry (estuaries, lakes). His global scale river basins comparisons have benefited from 25 years of collaboration and exchange with scientists in this field from Europe, Russia, North America and french overseas specialists (ORSTOM now IRD), and from his position as the scientific advisor (1978-1998) of the GEMS-Water programme of UNEP / WHO / UNESCO / WMO, which collects and compares water quality data at the global scale. He has been the lead editor of the first global synthesis on water quality issues (1), a co-editor of the first assessment of water quality issues in the Former Soviet Union (2). He is also the co-editor of the recent French limnology treaty (3).

From 1976 to 1983, he is the author (single author or second author) of a suite of half dozen seed papers in the field of global rivers inputs (major ions, silica, suspended solids, organic carbon, nutrients) (4, 5, 6) to the oceans, which total more than 1000 quotes at the SCI. Meanwhile he is working on geochemical control of surface waters and estuaries (7, 8). Since 1989 he has focused his work on the general alteration of continental aquatic systems by man activities at the global scale (9,10) and at the local scale using the Seine River as a key example (11) while still continuing to work on global riverine inputs to oceans particularly for carbon (15 to 17). He is now the PI of the EUROCAT European programme for the work package on comparative study of river catchments.

Since 1995 he is part of the BAHC-IGBP scientific steering committee and was nominated in 1997 by ICSU on the IGBP Scientific Committee. Over this period he has established a closed relationship with the Water System Analysis Group of the University of New Hampshire (Pr. C. Vörösmarty) with whom he is developing global-scale hydrological typologies and data bases on world basins (12, 13). Parallely M. Meybeck is developing a unique set of data bases on present-day river chemistry, GLORI (14) and on pristine rivers (PRISRI in progress).

Selected publication (total quotes in SCI since publication)

- (1) MEYBECK M., CHAPMAN D., HELMER R., (Eds), 1989. *Global Fresh Water Quality : A First Assessment*. Basil Blackwell, Oxford, 307 p
- (2) KIMSTACH V., MEYBECK M., BAROUDY E., (eds), 1998. *A Water Quality Assessment of the Former Soviet Union*, E&FN Spon, London, 611 p.
- (3) POURRIOT R., MEYBECK M., (eds), 1995. *Limnologie Générale*, Masson, Paris, 956 p.
- (4) MEYBECK M., 1979. Concentration des eaux fluviales en éléments majeurs et apports en solution aux océans - *Rev. Géol. Dyn. Géogr. Phys.*, 21, 3, 215-246. (150 quotes)
- (5) MARTIN J.M., MEYBECK M., 1979. Elemental mass balance of material carried by world major rivers - *Marine Chemistry*, 7, 173-206. (364 quotes)
- (6) MEYBECK M., 1982. Carbon, nitrogen and phosphorus transport by world rivers - *American J. Science*, 282, 401-450. (417 quotes)
- (7) MEYBECK M., 1987. Global chemical weathering of surficial rocks estimated from river dissolved loads - *American J. Science*, 287, 401-428. (90 quotes)
- (8) MEYBECK M., CAUWET G., DESSERTY S., SOMVILLE M., GOULEAU D., BILLEN G., 1988. Levels, behaviour and tentative budgets of nutrients (organic C, P, N, Si) in the eutrophic Loire estuary - *Estuarine Coastal Shelf Sci.*, 27, 595-624. (39 quotes)
- (9) MEYBECK M., HELMER R., 1989. The quality of rivers : from pristine stage to global pollution, *Pal. Pal. Pal. (Global and Planetary Change)*, 1, 283-309. (39 quotes)

- (10) BILLEN G., LANCELOT C., MEYBECK M., 1991. N, P and Si retention along the aquatic continuum from land to ocean. In : RFC Mantoura, J.M. Martin and R. Wollast (eds) *Ocean Margin Processes in Global Change*, Dahlem Workshop, Wiley, NY, 19-44. (51 quotes)
- (11) MEYBECK M., 1998. Man and river interface : multiple impacts on water and particulates chemistry illustrated in the Seine river basin. *Hydrobiologia*, 373/374, 1-20.
- (12) VOROSMARTY C.J., FEKETE B.M., MEYBECK M., LAMMERS R.B., 2000. The global systems of rivers : its role in organizing continental landmass and defining land-to-ocean linkages. *Global Biogeochemical Cycles* ; 14, 599-621.
- (13) MEYBECK M., GREEN P., VOROSMARTY C., 2001. Global distribution of mountains and other major relief classes with regards to water runoff and population density. *Mountain Research Development*, 21, 1, 34-45.
- (14) MEYBECK M., RAGU A., 1997. Presenting Gems Glori, a compendium of world river discharge to the oceans. *Int. Ass. Hydrol. Sci. Publ.*, 243, 3-14.
- (15) MEYBECK M. 1993. Riverine transport of atmospheric carbon : sources, global typology and budget. *Water, Air Soil Pollution*, 70, 443-464 (16 quotes).
- (16) MEYBECK M. 1993. C, N, P and S in rivers : from sources to global inputs. In: Wollast R., Mackenzie F.T., Chou L; (eds). *Interaction of C, N, P and S biogeochemical cycles and global change*, Springer Verlag, 163-193 (49 quotes).
- (17) KABAT P., CLAUSSEN M., DIRMEYER P., GASH J., GUENNI L., MEYBECK M., PIELKE R., VÖRÖSMARTY C. HUTJES R., LUTKMEYER S. (eds). 2002. *Vegetation, Water, Humans and the Climate : a New Perspective on an Interactive System* Springer Verlag IGBP Synthesis Series, 650p (in press).
- (2) MEYBECK M. 2003. Global analysis of river systems : from earth system controls to Anthropocene controls. *Phil. Trans. Royal Acad. London B*, 358, 1440, 1935-1955.

Richard L. Miller

Earth Science Applications Directorate, National Aeronautics and Space Administration, Stennis Space Center, Mississippi 39529. Phone (228) 688-1904; Fax (228) 688-1777; richard.l.miller@nasa.gov

Title

Chief Scientist, NASA Stennis Space Center; Research Scientist in Biological Oceanography and Remote Sensing.

Education

1984 Ph.D., Marine Biology, North Carolina State University, North Carolina, USA

1980 Master of Applied Statistics, Louisiana State University, Baton Rouge, Louisiana, USA

1980 M.S. in Marine Biology, Louisiana State University, Baton Rouge, Louisiana, USA

1977 B.S. in Zoology, Duke University, Durham, North Carolina, USA

Publications - Refereed

Liu, C-C. and **R.L. Miller**. 2004. A Spectrum Matching Method for Estimating the Inherent Optical Properties from Remote Sensing of Ocean Color. IEEE Transactions on Geoscience and Remote Sensing, Submitted.

Liu, C-C., **R.L. Miller**, K. Carder, and Z.P. Lee. 2004. Estimating the Underwater Light Field from Remote Sensing. Applied Optics, Submitted.

Miller, R.L. and B.A. McKee. 2004. Using MODIS Terra 250 m Imagery to Map Concentrations of Total Suspended Matter in Coastal Waters. Remote Sensing of Environment, 93(1-2), 259-266.

Slade, W., H. Ransom, M. Musavi, and **R.L. Miller**. 2004. Inversion of Ocean Color Observations Using Particle Swarm Optimization. IEEE Transactions on Geoscience and Remote Sensing, 42(9), 1-10.

Yuan, J., **R.L. Miller**, R.T. Powell, and M.J. Dagg. 2004. Storm Induced Injection of the Mississippi River Plume into the Open Gulf of Mexico. Geophysical Research Letters, 31, LXXXXX, doi:10.1029/2003GL019335.

D'Sa, E. and **R.L. Miller**. 2003. Bio-optical Properties in Waters Influenced by the Mississippi River during Low Flow Conditions. Remote Sensing of Environment, 84(4), 538-549.

Yuan, J. and **R.L. Miller**. 2002. Seasonal Variation in Precipitation Patterns to the Global Ocean: An Analysis of the GPCP Version 2 Data Set. Global Biogeochemical Cycles, 16(4), doi: 10.1029/2001GB001458, 2002.

Miller, R.L., Belz, M., C. Del Castillo and R. Trzaska. 2002. Determining CDOM Absorption Spectra in Diverse Coastal Environments Using a Multiple Pathlength, Liquid Core Waveguide System. Continental Shelf Research, 22(9), 1301-1310.

Liu, C-C., K. Carder, **R.L. Miller** and J. Ivey. 2002. A Fast and Efficient Model for Simulating Underwater Scalar Irradiance. Applied Optics, 41(24), 4962-4974.

Booth, J.G., **R.L. Miller**, B.A. McKee and R.A. Leathers. 2000. Wind Induced Sediment Resuspension in a Microtidal Estuary. Continental Shelf Research, 20(7): 785-806.

- Giardino, M., **R.L. Miller**, R. Kuzio, and D. Muirhead. 1998. Analysis of Ceramic Color by Spectral Reflectance. *American Antiquity*, 63(3): 477-483.
- Carter, G.A., W. Cibula and **R.L. Miller**. 1996. Narrow-band Reflectance Imagery Compared with Thermal Imagery for Early Detection of Plant Stress. *Journal of Plant Physiology*, 148, 516-523.
- Miller, R.L.** and J.F. Cruise. 1995. Effects of Suspended Sediments on Coral Growth: Evidence from Remote Sensing and Hydrologic Modeling. *Remote Sensing Environment*, 53, 177-187.
- Carter, G.A., and **R.L. Miller**. 1994. Early Detection of Plant Stress by Digital Imaging Within Narrow Stress-Sensitive Wavebands. *Remote Sensing Environment*. 50, 295-302.
- Barua, D.K., S.A. Kuehl, **R.L. Miller** and W.S. Moore. 1994. Suspended Sediment Distribution and Residual Transport in the Coastal Ocean off the Ganges-Brahmaputra River Mouth. *Marine Geology*, 120, 41-61.
- Miller, R.L.**, J.C. Cruise, E. Otero and J.M. Lopez. 1994. Monitoring Suspended Particulate Matter in Puerto Rico: Field Measurements and Remote Sensing. *Water Resources Bulletin*, 30(2), 271-282.

Publications – Books, Book Chapters

- Miller, R.L.**, C.E. DelCastillo, and B.A. McKee. 2004. [Eds], *Remote Sensing of Coastal Aquatic Environments: Technologies, Techniques and Applications*. Kluwer Academic Publishing. In press. Fall 2004 publication.
- Miller, R.L.**, B.A. McKee and E.J. D'Sa. 2004. Monitoring Bottom Sediment Resuspension and Suspended Sediments in Coastal Waters. In: *Remote Sensing of Coastal Aquatic Environments: Technologies, Techniques and Application*, R.L. Miller, C.E. Del Castillo and B.A. McKee [Eds.], In press. Fall 2004 publication.
- Meyers, J.S., and **R.L. Miller**. 2004. Optical Airborne Remote Sensing. In: *Remote Sensing of Coastal Aquatic Environments: Technologies, Techniques and Application*, R.L. Miller, C.E. Del Castillo and B.A. McKee [Eds.], In press. Fall 2004 publication.
- D'Sa. E.J., and **R.L. Miller**. 2004. Bio-optical Properties of Coastal Waters. In: *Remote Sensing of Coastal Aquatic Environments: Technologies, Techniques and Application*, R.L. Miller, C.E. Del Castillo and B.A. McKee [Eds.], In press. Fall 2004 publication.
- Ressom, H., **R.L. Miller**, P. Natarajan and W.H. Slade, Jr. 2004. Computational intelligence and its application in remote sensing. In: *Remote Sensing of Coastal Aquatic Environments: Technologies, Techniques and Application*, R.L. Miller, C.E. Del Castillo and B.A. McKee [Eds.], In prep. Fall 2004 publication.
- Cruise, J.E., and **R.L. Miller**. 2003. Hydrologic Modeling Using Remote Sensing. In Lyon, J.G., Ed., *GIS for Water Resources and Watershed Management*. Taylor and Francis, pg. 189-205. Fall 2004 publication.

Frank Muller-Karger

Institute for Marine Remote Sensing (IMaRS)
College of Marine Science, University of South Florida
140 Seventh Avenue South, St. Petersburg, FL 33701
Phone: (727) 553-3335 and FAX: (727) 553-1103 / 1189
e-mail: carib@marine.usf.edu; <http://imars.usf.edu>

Ph.D. 1988. University of Maryland.

Master of Science in Management: 2001. University of South Florida.

Master in Biological Oceanography: 1984. University of Alaska, Fairbanks.

Bachelor in Biological Oceanography: 1979. Florida Institute of Technology. Melbourne, FL.

Commissioner, U.S. Commission on Ocean Policy (2001-present)

Full Professor (tenured 1994): University of South Florida; 1994-present

Program Scientist, Ocean Biogeochemistry Program: NASA Headquarters, 1992-1994.

Program Scientist, NASA SeaWiFS Program, 1992-1994.

Assistant Professor: University of South Florida, 1989-1994.

Selected Publications (2004 only; not a complete list):

Andréfouët, Serge, Claude Payri, Eric J. Hochberg, Chuanmin Hu, Marlin J. Atkinson, Frank E. Muller-Karger . 2004. Use of in situ and airborne reflectance for scaling-up spectral discrimination of coral reef macroalgae from species to communities. *Marine Ecology Progress Series*.

Andréfouët S., E. J. Hochberg, C. Payri, M.J. Atkinson, F.E. Muller-Karger, H. Ripley. 2004 (In press). Multi-scale remote sensing of microbial mats in atolls environment *International Journal of Remote Sensing* (Special issue: Remote Sensing of the Coastal Marine Environment).

Andréfouët S., Robinson, J., Hu, C., Feldman, G., Salvat, B., Payri, C., FE Muller-Karger. 2004 (In press). Influence of the spatial resolution of SeaWiFS, Landsat 7, SPOT and International Space Station data on determination of landscape parameters of Pacific Ocean atolls. *Canadian Journal of remote sensing*. Special issue on "Synergistic Utilisation of Landsat 7".

Goñi, Miguel A., Mark P. Woodworth, Heather L. Aceves, Robert C. Thunell, Eric Tappa, David Black, Frank Muller-Karger, Yrene Astor, and Ramon Varela. 2004. Generation, transport, and preservation of the alkenone-based UK'37 sea surface temperature index in the water column and sediments of the Cariaco Basin (Venezuela). *Global Biogeochemical Cycles*. Vol 18., GB2001, doi:10.1029/2003GB002132.

Ho, T-Y., G.T. Taylor, Y. Astor, R. Varela, F. E. Muller-Karger, and M.I. Scranton. 2004. Vertical and temporal variability of redox zonation in the water column of the Cariaco Basin: implications for organic carbon oxidation pathways. *Marine Chemistry*. 86 (2004) 89–104.

Hu, C., E T. Montgomery, R. W. Schmitt, and F. E. Muller-Karger. 2004 (In press) The Amazon and Orinoco River plumes in the tropical Atlantic and Caribbean Sea: Observation from space and S-PALACE floats. *Deep-Sea Research II*.

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Muller-Karger, F. E., C. Hu, S. Andréfouët, and R. Varela. (Accepted, 2004.) The Color of the Coastal Ocean and applications in the solution of research and management problems. In: *Remote Sensing of Coastal Aquatic Environments*. Richard L. Miller, Carlos E. Del Castillo, Brent A. McKee (Editors). Kluwer Academic Publishers.

Muller-Karger, F. E., R. Varela, R. C. Thunell, M. I. Scranton, G. T. Taylor, Y. Astor, E. Tappa, M. A. Goñi, R. N. Sambrotto, H. Zhang, M. McIntyre, B. Marin, C. Hu, M. Iabichella, T.-Y. Ho, and R. H. Weisberg.

- (Accepted, 2004). CARIACO: A Time Series of Primary Production and Vertical Export in the Cariaco Basin. In: JGOFS CMTT Synthesis.
- Muller-Karger, F. E., R. Varela, R. Thunell, Y. Astor, H. Zhang, and C. Hu. (In press, 2004). Processes of Coastal Upwelling and Carbon Flux in the Cariaco Basin. *Deep-Sea Research II*.
- Palandro, D., Hu, C., Andréfouët, S. and Müller-Karger, F. E. (2004. in press) Synoptic water clarity assessment in the Florida Keys using diffuse attenuation coefficient estimated from Landsat imagery. *Hydrobiologia*.
- Smoak, Joseph M., Claudia Benitez-Nelson, Willard S. Moore, Robert C. Thunell, Yrene Astor, Frank Muller-Karger. 2004. Radionuclide fluxes and particle scavenging in Cariaco Basin. *Continental Shelf Research* 24. 1451–1463.
- Tang, D. L., I-H. Ni, F. E. Muller-Karger, and I. S. Oh. 2004 Monthly variation of pigment concentration and seasonal winds in China's marginal seas. *Hydrobiologia*. 511. 1-15.
- Thunell, Robert C., Daniel M. Sigman, Frank Muller-Karger, Yrene Astor, and Ramon Varela. 2004. Nitrogen isotope dynamics of the Cariaco Basin, Venezuela. *Global Biogeochemical Cycles*. Vol 18, GB3001, doi:10.1029/2003GB002185.

Charles A. Nittrouer

Education

Lafayette College, Geology, B.A. - 1972

University of Washington, Oceanography, M.S. - 1974

University of Washington, Oceanography, Ph.D. – 1978

Professional Experience

1978-1987 North Carolina State University, assistant and associate professor

1987-1998 SUNY Stony Brook, professor

1998-present University of Washington, professor

Recent Publications:

C.A. Nittrouer, F. Trincardi and S. Miserocchi, Po and Apennine sediment transport and accumulation, *Oceanography*.

J.D. Parsons and C.A. Nittrouer, Extreme events moving particulate material on continental margins, in A. Robinson and K. Brink (eds.) *The Sea*, v. 13, *The Global Coastal Ocean: Multiscale Interdisciplinary Processes*.

A.S. Ogston, R.W. Sternberg, and C.A. Nittrouer, Recent advances in fine-grained sediment transport processes on the continental shelf, in A. Robinson and K. Brink (eds.) *The Sea*, v. 13, *The Global Coastal Ocean: Multiscale Interdisciplinary Processes*.

C.M. Palinkas, C.A. Nittrouer, R.A. Wheatcroft, and L. Langone, The use of ^7Be to identify event and seasonal sedimentation near the Po River delta, Adriatic Sea, *Mar. Geol.*

D.L. Orange, A. Garcia-Garcia, T. Lorensen, C.A. Nittrouer, T.G. Milligan, S. Miserocchi, L. Langone, A. Correggiari, and F. Trincardi, Shallow gas and flood deposition in the Po delta, *Mar. Geol.*

B.L. Mullenbach, C.A. Nittrouer, P. Puig and D.L. Orange, Sediment deposition in a modern submarine canyon: Eel Canyon, northern California, *Mar. Geol.*

C.M. Palinkas, C.A. Nittrouer and J.P. Walsh, Inner-shelf sedimentation in the Gulf of Papua, New Guinea: a mud-rich shallow shelf setting. *Jour. Coast. Res.*

J.P. Walsh, C.A. Nittrouer, C.M. Palinkas, A.S. Ogston, R.W. Sternberg and G.J. Brunskill, Clinof orm mechanics in the Gulf of Papua, New Guinea, *Cont. Shelf Res.*

J.P. Walsh and C.A. Nittrouer, Mangrove-bank sedimentation in a mesotidal environment with large sediment supply, Gulf of Papua. *Mar. Geol.* 208: 225-248 (2004).

J.S. Crockett, and C.A. Nittrouer, The sandy inner shelf as a repository for muddy sediment: an example from northern California, *Cont. Shelf Res.*, 24, 55-73 (2004).

P. Puig, A.S. Ogston, B.L. Mullenbach, C.A. Nittrouer, J.D. Parsons and R.W. Sternberg, Storm-induced sediment gravity flows at the head of the Eel submarine canyon, *Jour. Geophys. Res.*, 109, C03019, doi:10.1029/2003JC001918 (2004).

S.J. Bentley and C.A. Nittrouer, Emplacement, modification and preservation of event stratigraphy on a flood-dominated continental shelf: Eel shelf, northern California, *Cont. Shelf Res.*, 23, 1465-1493 (2003).

J.P. Walsh and C.A. Nittrouer, Contrasting styles of off-shelf sediment accumulation in New Guinea, *Mar. Geol.*, 196, 105-125 (2003).

R. Aalto, L. Maurice-Bourgoin, T. Dunne, D.R. Montgomery, C.A. Nittrouer, J.-L. Guyot, ENSO-orchestrated sediment accumulation on Amazonian floodplains, *Nature*, 425, 493-497 (2003).

P. Puig, A.S. Ogston, B.L. Mullenbach, C.A. Nittrouer and R.W. Sternberg, Shelf-to-canyon sediment-transport processes on the Eel continental margin (northern California), *Mar. Geol.*, 193, 129-149 (2003).

L. Langone, R.B. Dunbar, D.A. Mucciarone, M. Ravaioli, R. Meloni, and C.A. Nittrouer, Rapid sinking of biogenic material during the late austral summer in the Ross Sea, Antarctica, in G. DiTullio and R. Dunbar (eds.), *Biogeochemistry of the Ross Sea*, American Geophysical Union, Antarctic Research Series Monograph, 78, 221-234 (2003).

Aalto, R.E., T. Dunne, C.A. Nittrouer, L. Maurice-Bourgoin and D.R. Montgomery, Fluvial transport of sediment across a pristine tropical foreland basin: channel-flood plain interaction and episodic flood plain deposition, in F.J. Dyer, M.C. Thoms and J.M. Olly (eds.), *The structure, function and management implications of fluvial sedimentary systems*: IAHS Press, Wallingford, U.K., 339-344 (2002).

C.K. Sommerfield, R.C. Aller and C.A. Nittrouer, Sedimentary C-S-Fe relationships in modern and ancient diagenetic environments of the Eel River Basin (USA), *J. Sed. Res.*, 70, 335-345 (2001).

B.L. Mullenbach and C.A. Nittrouer, Rapid deposition of fluvial sediment in the Eel Canyon, northern California, *Cont. Shelf Res.*, 20, 2191-2212 (2000).

J.M. Jaeger and C.A. Nittrouer, Marine record of surge-induced outburst floods from the Bering Glacier, Alaska, *Geology*, 27, 847-850 (1999).

S.J. Bentley and C.A. Nittrouer, Physical and biological influences on the formation of sedimentary fabric in an oxygen-restricted depositional environment; Eckernfoerde Bay, southwestern Baltic Sea, *Palios*, 14, 585-600 (1999).

J.M. Jaeger and C.A. Nittrouer, Sediment deposition in an Alaskan fjord: controls on the formation and preservation of sedimentary structures in Icy Bay, *J. Sed. Res.*, 69, 1011-1026 (1999).

C.K. Sommerfield, C.A. Nittrouer and C.R. Alexander, ⁷Be as a tracer of flood sedimentation on the northern California continental margin, *Cont. Shelf Res.*, 19, 335-361 (1999)

C.A. Nittrouer, STRATAFORM: overview of its design and synthesis of its results, *Mar. Geol.*, 154, 3-12 (1999).

J.P. Walsh and C.A. Nittrouer, Observations of sediment flux on the Eel continental slope, northern California, *Mar. Geol.*, 154, 55-68 (1999).

C.K. Sommerfield and C.A. Nittrouer, Modern accumulation rates and a sediment budget for the Eel shelf: a flood-dominated depositional environment, *Mar. Geol.*, 154, 227-241 (1999).

C.A. Nittrouer, G.R. Lopez, L.D. Wright, S.J. Bentley, A.F. D'Andrea, C.T. Friedrichs, C.K. Sommerfield and N.I. Craig, Oceanic processes and the formation of sedimentary strata in Eckernfoerde Bay, Baltic Sea, *Cont. Shelf Res.*, 18, 1689-1714 (1998).

M.A. Allison and C.A. Nittrouer, Identifying accretionary mud shorefaces in the geologic record: insights from the modern Amazon dispersal system, in *Shales and Mudstones*: J. Schieber, W. Zimmerle, and P.S. Sethi, eds., Schweizerbart Verlag, Stuttgart, pp. 147-161 (1998).

J.M. Jaeger, C.A. Nittrouer, N.D. Scott and J.D. Milliman, Sediment accumulation along a glacially impacted mountainous coastline: north-east Gulf of Alaska, *Basin Res.* 10, 155-173 (1998).

S.J. Bentley and C.A. Nittrouer, Environmental influences on the formation of sedimentary fabric in a fine-grained carbonate-shelf environment: Dry Tortugas, Florida Keys, *Geo-Mar. Letts.* 17, 268-275 (1997).

BIOGRAPHICAL SKETCH - CHRIS PAOLA

Christopher Paola

Department of Geology and Geophysics
310 Pillsbury Dr. SE
Minneapolis MN 55455-0219
voice 612 624 8025, fax: 612 625 3819
cpaola@umn.edu

St. Anthony Falls Laboratory
3rd Avenue SE and Mississippi River
Minneapolis MN 55414
voice 612 624 8025, fax: 612 624 4398

<http://www.safl.umn.edu/research/basic/paola/index.html>

EDUCATION:

BS 1976 Lehigh University, Bethlehem, Pennsylvania (Summa Cum Laude)
MSc 1977 University of Reading, Reading UK (With Distinction)
ScD 1983 Massachusetts Institute of Technology and Woods Hole Oceanographic Institution, Cambridge and Woods Hole, Massachusetts

EMPLOYMENT:

9/90-present Associate Professor & Professor, Department of Geology and Geophysics, University of Minnesota, Minneapolis, Minnesota
9/88-8/90 Hydraulic Engineer, US Geological Survey Cascades Volcano Observatory, Vancouver, Washington and Assistant Professor, University of Minnesota, Minneapolis, Minnesota (leave of absence)
3/83-8/88 Assistant Professor, Department of Geology and Geophysics, University of Minnesota, Minneapolis, Minnesota

ACADEMIC HONORS:

Morse/Alumni Award for contributions to undergraduate education 1994
Tate Advising Award 1994
Fellow, Geological Society of America, 1998

Five Publications related to this project

Cazanacli, D., C. Paola, and G. Parker, Experimental steep, braided flow: Application to flooding risk on fans, *Journal of Hydraulic Engineering*, 128 (3), 322-330, 2002.
Gran, K., and C. Paola, Riparian vegetation controls on braided stream dynamics, *Water Resources Research*, 37 (12), 3275-3283, 2001.
Hasbargen, L.E., and C. Paola, Landscape instability in an experimental drainage basin, *Geology*, 28 (12), 1067-1070, 2000.
Paola, C., Improving public understanding of scientific research: a view from the research side, in *Creating Connections: Museums and the Public Understanding of Current Research*, edited by D. Chittenden, G. Farmelo, and B.V. Lewenstein, pp. 145-152, Altamira Press, Walnut Creek, California, 2004.
Sheets, B.A., T.A. Hickson, and C. Paola, Assembling the stratigraphic record: depositional patterns and time-scales in an experimental alluvial basin, *Basin Research*, 14, 287-301, 2002.

Five other Publications

Catania, G., and C. Paola, Braiding under glass, *Geology*, 29 (3), 259-262, 2001.
Federici, B., and C. Paola, Dynamics of channel bifurcation in non-cohesive sediments, *Water Resources Research*, 39 (6), 3-1 -- 3-15, 2003.
Hasbargen, L., and C. Paola, How predictable is local erosion rate in erosional landscapes?, in *Prediction in Geomorphology*, edited by P.R. Wilcock, and R.M. Iverson, pp. 256, American Geophysical Union, Washington DC, 2002.
Paola, C., Quantitative models of sedimentary basin filling, *Sedimentology*, 47 (suppl. 1), 121-178, 2000.
Strong, N., B.A. Sheets, T.A. Hickson, and C. Paola, A mass-balance framework for quantifying downstream changes in fluvial architecture, *Sedimentology*, in press, 2004.
Tal, M., K. Gran, A.B. Murray, C. Paola, and D.M. Hicks, Riparian vegetation as a primary control on channel

characteristics in multi-thread rivers, in *Riparian Vegetation and Fluvial Geomorphology*, edited by S.J. Bennett, and A. Simon, pp. 43-58, American Geophysical Union, 2004.

Synergistic activities

- Director, National Center for Earth-surface Dynamics (NSF Science and Technology Center)
- Director of SAFL oil-industry consortium, currently with five companies
- ONR EuroSTRATAFORM principal investigator

OTHER RECENT RESEARCH COLLABORATORS

P. Ashmore (Univ. Western Ontario); P. Ashworth (Univ. Brighton); J. Banfield (UC Berkeley); J. Best (Univ. Leeds); W. Dietrich (UC Berkeley); R. Ferguson (Univ. Sheffield); S. Gupta (Imperial Coll. London); P. Heller (Univ. Wyoming); M. Power (UC Berkeley); L. Pratson (Duke Univ.); I. Rodriguez-Iturbe (Princeton); G. Seminara (Univ. Genoa); G. Smith (Univ. New Mexico); M. Steckler (LDEO); J. Syvitski (Univ. Colorado); R. Torres (Univ. S. Carolina); M. Tubino (Univ. Genoa); P. Wilcock (Johns Hopkins Univ.); G. Wilkerson (Univ. Wyoming)

Thesis titles: Ph. D.

A computational investigation of bank erosion and mid-channel bar formation in gravel-bed rivers

Mechanisms of downstream fining in gravel-bed rivers

Braided-stream modeling and evaluation of models; dynamical-systems approaches

Fluid flow and sediment transport in evolving sedimentary basins

Erosion in steady state drainage basins

M. S.

Stream braiding under pressurized flow

Effects of riparian vegetation on braided stream dynamics: experimental results

Graduate And Post-Graduate Advisors And Advisees

Advisees:

Stephen M. Wiele (USGS Boulder CO); Rebecca Seal (USACE, St Paul, MN); A. Brad Murray (Duke Univ.); Philip J. Ashworth (Univ. Brighton); David K. Mohrig (MIT); Kelin X. Whipple (MIT); John Swenson (Univ. Minnesota, Duluth); Les Hasbargen (Univ. Indiana)

Thesis supervisors:

John B. Southard (MIT); Giselher Gust (Univ. Kiel, Germany); John R. L. Allen (University of Reading)

Steven Petsch

Assistant Professor

Department of Geosciences
University of Massachusetts-Amherst
Amherst, MA 01003-9297

Tel.: (413) 545-4413
Fax: (413) 545-1200
E-mail: spetsch@geo.umass.edu

I. Professional Preparation:

B.S.: Geosciences, Pennsylvania State University, University Park, PA, 1994

Ph.D.: Geochemistry, Yale University, New Haven, CT, 2000

Postdoctoral Scholar and Investigator: Dept. of Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution. (2000-2002)

Professional Affiliations

American Chemical Society	Geological Society of America
American Geophysical Union	Geochemical Society
American Society of Microbiologists	European Association of Organic Geochemists

Appointments:

Assistant Professor, Department of Geosciences, University of Massachusetts Amherst, 2002-present

Adjunct Assistant Professor, Department of Microbiology, University of Massachusetts Amherst, pending

Postdoctoral Investigator, Dept. of Marine Chem. and Geochem., Woods Hole Oceanographic Institution, Woods Hole, MA (2001-2002)

Postdoctoral Scholar, Dept. of Marine Chem. and Geochem., Woods Hole Oceanographic Institution, Woods Hole, MA (2000-2001)

III. Current research:

- ancient sedimentary rocks as sources of aged organic carbon in modern river systems
 - concentration and elemental analysis (C,H,N,S,O) of particulate and dissolved organic matter in major and minor drainages of Hudson/Mohawk water
 - isotopic analysis (^{13}C , ^{14}C) of dissolved and particulate organic matter
 - characterization of organic matter sources to watersheds (concentration, isotopic analysis, composition based on elemental analysis and pyrolysis-gc fingerprinting) from rocks, soils and wetlands
 - isotopic analysis (^{13}C , ^{14}C) of molecular markers tracing export from rocks and soils and utilization by aquatic microbiota
 - use of GIS to develop sampling and data analysis matrix based on lithology, relief and land use types
- Gas (CH_4 , CO_2) generation in ancient sedimentary rocks from subsurface microbial communities
 - distribution and origin of microorganisms in deep subsurface sedimentary environments
 - characterization of dissolved and solid phase organic matter in deep sedimentary basins
 - 16S rDNA-based molecular phylogeny of shale-hosted subsurface microorganisms
 - processing and overprinting of molecular marker signatures in organic carbon-rich sedimentary rocks
 - mechanisms, limitations and efficiency of anaerobic hydrocarbon degradation and methane generation in sedimentary rocks
- chemical degradation of refractory organic carbon during rock weathering
 - elemental, isotopic and structural characterization of macromolecular shale organic matter in weathering profiles
 - elemental analysis, isotope ratio mass spectrometry, analytical pyrolysis - gas chromatography, solid state ^{13}C nuclear magnetic resonance, infrared spectroscopy to determine changes in organic matter composition upon oxidation and microbial degradation
 - identification, quantification, ^{13}C and ^{14}C analysis of microbial phospholipids
 - 16S rDNA-based molecular phylogeny of weathering profile microorganisms
 - organic matter dissolution rate and characterization of dissolution products

Recent Research Funding:

NSF EAR-0403960 Integrated Carbon Cycle Research Program. “Collaborative Research: Assessing the Variability and Modification of Age, Character and Reactivity of Organic Carbon Delivered by Rivers and Estuaries to an Ocean Margin”, \$1.25M total project among 5 PIs, \$225338 to UMass, Co-PI. *start date 9/1/04.*

NSF EAR-0433766 Biogeosciences Program. “Active microbial methane production and organic matter degradation in a Devonian black shale”, 437303000. PI. *start date 9/1/04.*

NSF EAR-0106707 “Microbial degradation of refractory organic carbon during rock weathering”, \$307860. 7/01 – 6/04. Co-PI.

LLNL/Center for Accelerator Mass Spectrometry “Contribution of ancient organic matter to a modern riverine carbon cycle: The Hudson-Mohawk river system, New York, USA”. Award of graduate student training in ^{14}C sample preparation/analysis and ~\$20k worth of radiocarbon analyses. 10/03 – 9/04. PI.

Hudson River Foundation “Contribution of ancient organic matter to a modern riverine carbon cycle: The Hudson-Mohawk river system, New York, USA”. \$12,000. 8/03 – 7/04. PI.

Research Partnership to Secure Energy for America “Enhancing microbial gas generation from unconventional reservoirs”, \$72,500. 9/03 – 8/04. Co-PI.

IV. Publications

Petsch, S.T. (2004) Inheritance of ancient organic matter: a synthesis and summary. *Geoderma*. (special issue: *Organic Matter Stabilization in Soils*, *invited manuscript*.) submitted.

Bolton, E.W., Berner, R.A., **Petsch, S.T.**, and Wildman, R.A. (2004) The weathering of sedimentary organic matter as a control on atmospheric O_2 : II. Theoretical Modeling. *in prep.*

*Longworth, B.E., **Petsch, S.T.**, and Raymond, P.A. (2004) Ancient and modern sources of river organic matter to Hudson River headwaters. *in prep.*, from student’s M.S. thesis.

Petsch, S.T., Edwards, K.J., and Eglinton, T.I. (2004) Microbial degradation of sedimentary organic matter. *Palaeogeography, Palaeoclimatology, Palaeoecology* (special issue: *Geobiology*, *invited manuscript*). *in press.*

Raymond, P.A., Bauer, J.E., Caraco, N.F., Cole, J.J., Longworth, B.E., and **Petsch, S.T.** (2004) Controls on the variability of organic matter and dissolved inorganic carbon age in northeast U.S. rivers. *Marine Chemistry* (special issue honoring *John Hedges*, *invited manuscript*). *in press.*

*Wildman, R.A., Berner, R.A., **Petsch, S.T.**, Bolton, E.W., Eckert, J.O., Mok, U. and Evans, J.B. (2004) The weathering of sedimentary organic matter as a control on atmospheric O_2 : I. Analysis of a black shale. *American Journal of Science* **304**, 234-249.

Petsch, S.T. (2003) Ch. 11: The Global Oxygen Cycle. *Treatise on Geochemistry* (H.D. Holland and K.K. Turekian, eds.), vol. 8 *Biogeochemistry* (W.H. Schlesinger, ed.). *Invited book chapter*. p. 515-556, Elsevier Science, Amsterdam.

Petsch, S.T., Edwards, K.J., and Eglinton, T.I. (2003) Abundance, distribution and $\delta^{13}\text{C}$ analysis of microbial phospholipid-derived fatty acids in a black shale weathering profile. *Organic Geochemistry* **34**, 731-743.

*Jaffe, L.A., Peucker-Ehrenbrink, B., and **Petsch, S.T.** (2002) Effects of weathering of organic-rich sedimentary rocks on the mobility of rhenium, platinum-group elements and organic carbon. *Earth and Planetary Science Letters*. **198**, 339-353.

Petsch, S.T., Eglinton, T.I., and Edwards, K.J. (2001) ^{14}C -dead living biomass: evidence for microbial assimilation of ancient organic carbon during shale weathering. *Science*, **292**, 1127-1131

Petsch, S.T., Smernik, R.J., Eglinton, T.I., and Oades, J.M. (2001) A solid state ^{13}C NMR study of kerogen degradation during black shale weathering. *Geochimica et Cosmochimica Acta*, **65**, 1867-1882.

Petsch, S.T., (2001) The carbon cycle and atmospheric evolution. *Marella, Newsletter of the Yoho-Burgess Shale Foundation*. N° 14. M. Coppold, ed.

Berner, R.A., **Petsch, S.T.**, Beerling, D.J., Popp, B.N., Lane, R.S., Laws, E.A., Westley, M.B., Cassar, N. Woodward, F.I., and Quick, W.P. (2000) Isotope fractionation and atmospheric oxygen: implications for Phanerozoic O_2 Evolution. *Science*, **287**, 1630-1633.

Petsch, S.T., Berner, R.A., and Eglinton, T.I. (2000) A field study of the chemical weathering of ancient sedimentary organic matter. *Organic Geochemistry*, **31**, 475-487.

Petsch, S.T. (1999) Comment on “Carbon isotope ratios of Phanerozoic marine cements: re-evaluating global carbon and sulfur systems”. *Geochimica et Cosmochimica Acta*, **63**, 307-310.

Berner, R.A. and **Petsch, S.T.** (1998) The sulfur cycle and atmospheric oxygen. *Science*, **282**, 1426-1427.

Petsch, S.T. and Berner, R.A. (1998) Coupling the geochemical cycles of C, P, Fe and S: the effect on atmospheric O_2 and the isotopic records of carbon and sulfur. *American Journal of Science*, **298**, 246-262.

V. Recent Collaborators:

within the past 48 months:

A. Martini (Amherst); K. Nüsslein (UMass);

J. Bauer (VIMS); N. Caraco (IES); J. Cole (IES); R. Berner (Yale); E. Bolton (Yale); S. Burns (UMass); K. Edwards (WHOI); T. Eglinton (WHOI); M. Leckie (UMass); B. Peucker-Ehrenbrink (WHOI); P. Raymond (Yale); S. Rimmer (Kentucky)

Graduate Advisor: Professor Robert A. Berner (Yale University)

Postdoctoral Advisors: Katrina Edwards and Timothy Eglinton (Woods Hole Oceanographic Institution)

Thesis advisor to: J. Gunnard, B. Longworth, R. Sanderoff, S. Schillawski

Rodney T. Powell

Assistant Professor

Louisiana Universities Marine Consortium
Chauvin, Louisiana 70344
ph: 504-851-2825 fax: 504-851-2874
email: rpowell@lumcon.edu

Date of Birth: July 8, 1966

Social Security No.: 244-15-6333

Place of Birth: Fort Bragg, North Carolina

Citizenship: United States

DEGREES

1995 Ph.D. (Chemical Oceanography) Florida State University

1991 M.S. (Chemical Oceanography) Florida State University

1988 B.S. (Chemistry) Wake Forest University

POSITIONS

1998-present Assistant Professor, Louisiana Universities Marine Consortium

1999-present Adjunct Assistant Professor, Louisiana State University, Department of Oceanography and Coastal Studies

2001-present Adjunct Assistant Professor, Tulane University, Department of Earth and Environmental Science

1996-98 Postdoctoral Research Associate, Department of Chemistry and Biochemistry, Old Dominion University, Norfolk, Virginia 23529

1996-98 Adjunct Assistant Professor, Department of Chemistry and Biochemistry, Old Dominion University, Norfolk, Virginia 23529

1989-95 Graduate Research Assistant, Department of Oceanography, Florida State University, Tallahassee, FL 32306-3048

1988-89 Graduate Teaching Assistant, Department of Oceanography, Florida State University, Tallahassee, FL 32306-3048

1987 Laboratory Teaching Assistant, Department of Chemistry, Wake Forest University, Winston-Salem, NC 27109

PROFESSIONAL SOCIETY MEMBERSHIPS

Estuarine Research Federation, Sigma Xi, Alpha Chi Sigma, ACS, AGU

FIELD AND SEA EXPERIENCE

Since 1989 I have spent over 200 days at sea with almost half of this as chief scientist.

SYNERGISTIC ACTIVITIES

I am currently a participant in the FIRST (Faculty Institutes Reforming Science Teaching) which is an NSF funded project and has been an advisor for students from LAMP (Louisiana Alliance for Minority Participation). I regularly review submissions to international journals as well as several funding agencies.

PUBLICATIONS

- 2004** R.T. Powell, M. Dagg, H.B. Liu, K. Rinker and G. Breed, High Resolution Description of the Mississippi River Plume at High Flow. Continental Shelf Research (in prep)
- 2004** Rinker, K.R. and R.T. Powell, Seasonal and Spatial Distribution of Dissolved Organic Phosphorus in the Mississippi River Plume. Marine Chemistry, submitted 10/04.
- 2004** Measures, C.I., Cutter, G.A., Landing, W.M. and Powell, R.T., Hydrographic observations during the 2002 IOC Contaminant Baseline Survey in the western Pacific Ocean. Geochemistry, Geophysics, Geosystems, submitted 9/04.
- 2004** M.A. Rouse, R.T. Powell and K.R. Carman, Copper speciation in contaminated sediment, results from salt marsh microcosm experiments. Water, Air and Soil Pollution, submitted 9/04.
- 2004** Wysocki, L., T. Bianchi, R. T. Powell and N.Reuss. Spatial and temporal variability in the coupling of organic carbon, nutrients and phytoplankton pigments in surface waters and sediments of the Mississippi River plume. Continental Shelf Research, submitted 8/04.
- 2004** Hanrahan, G., R.T. Powell, G. Kozlowski and B. McKee, The Role of Storm-Driven Events on Porewater Nutrient Fluxes in a Shallow Estuarine System: Lake Pontchartrain, USA. Estuarine, Coastal and Shelf Science, submitted 6/03
- 2004** J. Yuan, R. Miller, R.T. Powell and M.J. Dagg, A Tropical Storm Induced Anticyclonic Eddy, Its Abrupt Injection of Mississippi River Plume, and a Phytoplankton Bloom in the Open Gulf of Mexico. Geophysical Research Letters, 31:, L09312.
- 2003** Powell, R.T. and A. Wilson-Finelli, Importance of Organic Fe Complexing Ligands in a Bouyant River Plume. Estuarine, Coastal and Shelf Science, Vol 58(4): 757-764.
- 2003** R.T. Powell and A. Wilson-Finelli, Photochemical degradation of organic Fe complexing ligands. Aquatic Sciences, Vol 65(4): 367-374.
- 2003** Powell, R.T. and M.R. Alexander, Trace Metal Contamination in Barataria Bay, Louisiana. Bulletin of Environmental Contamination and Toxicology, Vol 71(2): 308-314.
- 2001** Millward, R.N., K.R. Carman, J.W. Fleeger, R.P. Gambrell, R.T. Powell and M.M. Rouse, Linking ecological impact of metals upon a salt marsh meiofaunal community with metal concentrations and speciation. Environmental Chemistry and Toxicology, Vol 20(9), 2029-2037.
- 2001** Powell, R.T. and J.R. Donat, Distributions of organic Fe complexing ligands in the South and Equatorial Atlantic. Deep-Sea Research II, Vol 48/13, pp 2877-2893.

STUDENTS SUPERVISED

Graduate Students

Katherine Rinker, M.S. candidate, EES, Tulane University (Major Professor), 2001-present
Greg Kozlowski, Ph.D. candidate, EES, Tulane University (Committee Member), 2000- present
Bryan Grace, Ph.D. candidate, IEES, Tulane University (Committee Member), 2002-present
Mary-Anne Rouse, M.S. 2001, Department of Oceanography and Coastal Studies, LSU (Major Professor)

Postdoctoral Researchers

Stephen Money, Postdoctoral Research Associate, 2000-2002
Grady Hanrahan, Posdoctoral Research Associate, 2002-2003

Dr CHRISTOPHE RABOUILLE

Born March 19, 1964, in Saint-Denis, France

Married, three children

Professional activity

Since 1991 : Researcher at the Laboratoire des Sciences du Climat et de l'Environnement, CNRS-CEA

Research interests : Geochemistry of aquatic environments, fluxes at the sediment-water interface, human perturbation on ocean biogeochemical cycles, modelling of early diagenesis, *in situ* measurements of chemical parameters

Address :

Laboratoire des Sciences du Climat et de l'Environnement

Domaine du CNRS

Bat.12 Avenue de la Terrasse

91198 Gif sur Yvette - France

Tel : 33-1 69 82 35 30 Fax : 33-1 69 82 35 68

e-mail : rabouill@lsce.cnrs-gif.fr

University training

2002 : Habilitation à Diriger des Recherches, Université Paris 7. *Transformation et flux à l'interface eau-sédiment en milieu marin profond.*

1990 : Ph.D. in fundamental geochemistry, Université Paris 7 et IPGP, France. *La diagenèse précoce: Modèles dynamiques et quantitatifs.* Directeur: Dr J-F. Gaillard

1987 : Master in fundamental geochemistry, Université Paris 7 et IPGP, France

1985 : Bachelor of physical chemistry, Université de Paris 7

Experiences abroad

1995-1996: **Sabbatical year at Department of Oceanography**, University of Hawai'i, research on biogeochemical cycles in the coastal zone and human perturbations with Pr F. Mackenzie

1990-1991: **Post-doc at Laboratoire d'Océanographie Chimique** Université Libre de Bruxelles (Pr R. Wollast)

Teaching

2004-2005: **Master of physics of the environment** *Université de Versailles (UVSQ)*. Chemical microsensors in the environment

1995-2003: **Master of Science of the marine environment (University of Marseille)**. Transport and transformation at the sediment-water interface : theory and practice of modelling.

Recent programmes :

- 2004-2006** : **Coordinator of COBO (european programme) on Coastal Ocean Benthic Observatory** – Developing technologies for biogeochemical studies in the coastal marine environment.
- 2001-2004** : **Coordinator of Microbent (PNEC)**– microscale benthic biogeochemistry and mobility of trace metal contaminants in a coastal lagoon (Etang de Thau)
- 2001-2002** : **MINERCOT** : investigating the relationships between river Rhône and the continental margin (programme still going on)

Selected publications :

- Gehlen, M., **C. Rabouille**, L.D. Guidi-Guilvard and U. Ezat, 1997. Drastic changes in deep-sea sediment porewater composition induced by episodic input of organic matter. *Limnol. Oceanogr.*, 42: 980-986.
- Rabouille, C.**, J.-F. Gaillard, M.-A. Vincendeau and P. Treguer, 1997. Biogenic silica recycling in surficial sediments across the Polar Front zone of the Southern Ocean (Indian Sector). *Deep-sea Res. (II)*, 44: 1151-1176.
- Rabouille, C.**, J.-F. Gaillard, J.-C. Relexans, P. Treguer and M.-A. Vincendeau, 1998. Recycling of organic matter in Antarctic sediments: A transect through the Polar front in the Southern Ocean (Indian Sector). *Limnol. Oceanogr.*, 43: 420-432.
- Rabouille, C.**, F. Mackenzie and L.M. Ver, 2001. Influence of the human perturbation on carbon, nitrogen and oxygen biogeochemical cycles in the global coastal ocean. *Geochim. Cosmochim. Acta*, 65: 3615-3639.
- Rabouille, C.**, H. Stahl, F. Bassinot, P. Hall, A. Tengberg, J. Brunnegard, K. Kariakoulakis, J.-L. Reyss, L. Dezileau, P. Crassous, P. Roos and R. Lampitt, 2001. Imbalance in the carbonate budget of surficial sediments in the North Atlantic Ocean: millenium time scale variation? *Progr. Oceanogr.*, 50: 201-221.
- Rabouille, C.**, N. Tisnerat and D. Blamart, 2002. $\Delta^{14}\text{C}$ of the organic matter in sediments from the Antarctic Polar Front: origin and dynamics of the organic pool in the deep-sea. *Deep-Sea Res. (II)*, 49: 1953-1961.
- Smith, C.R. and **C. Rabouille**, 2002. What controls the mixed-layer depth in deep-sea sediments? the importance of the POC flux. *Limnol. Oceanogr.*, 47: 418-426.
- Rabouille, C.**, L. Denis, K. Dedieu, G. Stora, B. Lansard and C. Grenz, 2003. Oxygen demand in coastal marine sediments : comparing in situ microelectrodes and laboratory core incubations. *J. Exper. Mar. Biol. Ecol.*, 285/286: 49-69.
- Viollier, E., **C. Rabouille**, S. Apitz, E. Breuer, G. Chaillou, K. Dedieu, Y. Furukawa, C. Grenz, P. Hall, F. Janssen, J.L. Morford, J.C. Poggiale, S. Roberts, T. Shimmield, M. Taillefert, A. Tengberg, F. Wenzhöfer and U. Witte, 2003. In situ assessment of benthic biogeochemistry: State of the art technologies and guidelines for the future. *J. Exper. Mar. Biol. Ecol.*, 285/286: 5-31.

Peter A. Raymond
Yale School of Forestry and Environmental Studies
Yale University
New Haven, CT 06511

Education B.S. Environmental Chemistry, Marist College 1993
Ph.D., Biogeochemistry, College of William & Mary 1999

Research interests

Inorganic carbon cycling and air-sea exchange
Isotope geochemistry of riverine, estuarine, and oceanic organic matter
Organic carbon cycling in marshes, rivers, estuaries, and oceans

Professional Experience

2002-present, Assistant Professor, Yale University
2001-2002, Postdoctoral Scientist (Dr. W. McGillis advisor), Woods Hole Oceanographic Institution
1999-2001, Postdoctoral Scientist (Dr. J. Hobbie advisor), Marine Biological Laboratory
1998-1999, Participating Scientist, Lawrence Livermore National Laboratory
1995-1997, Graduate Research Assistant for Dr. James Bauer, College of William and Mary
1993-1995, Research Assistant for Dr. J. Cole, Institute of Ecosystem Studies.

Recent Publications:

Raymond, P.A. et al., in press. Controls on the variability of organic matter and dissolved inorganic carbon age in Northeast United States rivers. *Mar. Chem.*
Raymond P.A., and J.J. Cole. 2003. Increase in the export of alkalinity from North America's largest river. *Science* **301**:56-59
Raymond P.A., and C. Hopkinson. 2003. Ecosystem modulation of dissolved carbon age in a temperate marsh dominated estuary. *Ecosystems*. 6: 694-705
Raymond P.A., J. E. Bauer, J.J. Cole. 2000. Atmospheric CO₂ evasion, dissolved inorganic carbon production, and net heterotrophy in the York River Estuary, *Limnol. Oceanogr.* **45**: 1707-1717.
Raymond P.A., J. E. Bauer. 2001. Riverine export of aged terrestrial organic matter to the North Atlantic Ocean. *Nature*. **409**: 497-500.
Raymond P.A., J. E. Bauer. 2001. DOC cycling in a temperate estuary: A mass balance approach using natural ¹⁴C and ¹³C Isotopes. *Limnol. Oceanogr.* **46**: 655-657.
Raymond P.A., J. E. Bauer. 2001. Use of ¹⁴C and ¹³C natural abundances for evaluating riverine, estuarine, and coastal DOC and POC sources and cycling: Review and Synthesis. *Org. Geochem.* **32**: 469-485.
Raymond P.A., J.J. Cole. 2001. Gas exchange in rivers and estuaries: choosing a gas transfer velocity. *Estuaries* **24**:269-274.
Raymond P.A., J. E. Bauer. 2000. Bacterial utilization and transport of DOC in a temperate estuary: implications for export to the coastal ocean. *Aquat. Microb. Ecol.* **22**:1-12.
Caraco, N., J.J. Cole, P.A. Raymond, D.L. Strayer, M.L. Pace, S. Findlay, D. Fischer. 1997. Zebra mussel invasion in a large, turbid river: Phytoplankton response to increased grazing. *Ecology* **78**: 588-602.

Graduate School Advisors (College of William and Mary): James Bauer (major), Hugh Ducklow, Jon Cole, Iris Anderson, Ken Moore.

Postdoctoral Advisors: John Hobbie (MBL), Charles Hopkinson (MBL), Wade McGillis (WHOI).

Collaborators: James Bauer (VIMS), Nina Caraco (IES), Jon Cole (IES), Byron Crump (MBL), Charles Hopkinson (MBL), Wade McGillis (WHOI), J. Vallino (MBL), Chris Zappa (WHOI), Joseph Boyer (FIU), Steve Petsch (UMASS)

Synergistic Activities: Reviewing Efforts- Nature, Limnology and Oceanography, Marine Chemistry, Deep-Sea Research II, Biological Bulletin, Archiv fuer Hydrobiologie, Estuaries, Proceedings for the Natural Academy of Sciences, Aquatic Microbial Ecology, Estuarine, Coastal, & Shelf Science. Co-Chair session at INQUA Congress Reno 23 - 31 July 2003, Fossil carbon in modern environments. Teaching efforts at Yale University include a course in Ecosystem Science and The Science and Policy of Eutrophication. Review Panel for NSF IGERT pre-proposals.

Recent Invited Talks

- Raymond, P.A. March 2004 The Riverine Export of Atmospheric CO₂ from the United States: Linkages Between Climate Land-use, and Chemical Weathering. University of Connecticut/Avery Point. March 2004
- Raymond, P.A. Feb. 2004. Terrestrial atmospheric CO₂ sequestration through weathering in the Mississippi. University of Massachusetts/Amherst. Geology Dept. February 2004
- Raymond, P.A. August 2003. Evaluating system-specific variability in riverine organic matter ages: implications for determining terrestrial contributions to oceanic DOC. Symposium on New Approaches in Marine Organic Biogeochemistry. Friday Harbor Laboratory, Seattle WA. August 2003
- Raymond, P.A., C. Hopkinson. Ecosystem modulation of dissolved carbon age in a temperate marsh dominated estuary. AGU, San Francisco 2002.

Recent Abstracts

- Raymond, P.A., J McClelland, R Striegl. A Preliminary Evaluation of Carbon Sources and Ages Exported By Major Arctic Rivers. American Geophysical Union. San Francisco 2004.
- Ho N, P.A Raymond. The Role of Land Use in Chemical Weathering and the Transport of Inorganic Carbon to Rivers in the Ohio River Basin. Soil Science Society of America International Meeting. Seattle 2004
- Longworth, B., P Raymond, S Petsch. Ancient Organic Matter Sources to the Hudson-Mohawk River System: Implications of Riverine Transport of Ancient Organic Matter for the Global Biogeochemical. American Geophysical Union (AGU). San Francisco, 2003
- S Petsch, P Raymond. Geochemical Short Circuits: How Recycled Ancient Organic Matter Impacts the Biogeochemical Carbon Cycle. American Geophysical Union (AGU). San Francisco, 2003
- Raymond, P.A., C Hopkinson. Metabolism in the Plum Island Estuary. Estuarine Research Federation, Seattle 2003
- Raymond, P.A., J Bauer, J Cole, N Caraco. Variability in the age of riverine organic matter from rivers of the East Coast of the United States GSA, INQUA XVI Congress, Reno 2003.
- Raymond, PA, J Cole. Increase in the export of alkalinity from North America's largest river: Climate and land use controls on alkalinity export from the Mississippi River. GSA, INQUA XVI Congress, Reno 2003.
- Raymond, P.A., C. Hopkinson. Ecosystem modulation of dissolved carbon age in a temperate marsh dominated estuary. ASLO, Salt Lake City 2003.

Pichan Sawangwong

Burapha University Bangsaen Chonburi 20131, Thailand

Tel (038) 390047, 745900-50, Ext. 1017

Fax (038) 390047, 390351

Nationality Thai

Education B.Sc., M.Sc. (Chula)
Ph.D (Marine, Estuarine and Environmental Studies)
(University of Maryland)

Present Position -Vice-President for International Relations

Other Academic & Professional Appointments
Assistant Professor in Department of Aquatic Science
Burapha University, Bangsaen Chonburi 20131
Thailand

Honours & Awards -Monbusho Scholarship
-Fulbright Scholarship

Administration -Cooperative Research Project Leader (JSPS-NRCT)
-Head of Department of Aquatic Science
-Deputy Dean of Science
-Vice-President for International Relations
-Coordinator for the ADB Environmental Science Program

Grant Support -NRCT grants
-JSPS-NRCT grant

Selected Publications

1. Kijjoa, A. and Sawangwong, P. 2004. Drugs and Cosmetics from the Sea. *Marine Drugs*, February 73-82, 2004.
2. Pratoomchat, B., Sawangwong, P. and Machado, J. 2003. Effects of Controlled pH on Organic and Inorganic Composition in Haemolymph, Epidermal Tissue and Cuticle of Mud Crab *Scylla serrata*. *Journal of Experimental Zoology*, April 47-56, 2003.
3. Leethochavalit, S., Upatham, E. S., Kwang-Sik Choi, Sawangwong, P., Chalermwat, K. and Kruatrachue, M. 2003. Ribosomal RNA Characterization of Non-Transcribed Spacer and Two Internal Transcribed Spacers With 5.8S Ribosomal RNA of *Perkinsus* sp. Found in Undulated Surf Clams (*Paphia undulate*) From Thailand. *Journal of Shellfish Research*, 431-434, 2003.
4. Pratoomchat, B., Sawangwong, P., Pakkong, P. and Machado, J. 2002. Organic and Inorganic Compound Variations in Haemolymph, Epidermal Tissue and Cuticle Over The Molt Cycle in *Scylla serrata* (Decapoda), *Comparative Biochemistry and Physiology Part A*, January 243-255, 2002.
5. Buranapratheprat, A., Yanagi, T., Boonphakdee, Y. and Sawangwong, P. 2002. Seasonal Variations in Inorganic Nutrient Budgets of The Bangpakong Estuary, Thailand., *Journal of Oceanography*, may 557-564, 2002.
6. Pratoomchat, B., Sawangwong, P., Guedes, R., De Lurdes Reis, M. and Machado, J. 2002. Cuticle Ultrastructure Changes in The Crab *Scylla serrata* Over The Molt Cycle. *Journal of Experimental Zoology*, September 414-426, 2002.
7. Kijjoa, A., Watanadilok, R., Sonchaeng, P., Sawangwong, P., Pedro, M., Maia Sao Jose Mascimento, Artur M. S. Silva, Eaton, G. and Herz, W. 2002. Further Halotyrosine Derivatived from the Marine Sponge *Suberea* aff. *Praetensa*. *Z. Naturforsch*, 732-738, 2002.
8. Boonpakee, T., Sawangwong P., and Tateki F. 1999. Freshwater Discharge of Bangpakong River flowing into the inner Gulf of Thailand. *La Mer* 37:103-109, Societe franco-japonaise d'oceanographie, Tokyo
9. Sawangwong, P. 1997. The Importance of Arsenic to Primary Productivity along Coastal Waters of the Eastern Seaboard of Thailand. Report to NRCT. 21 pp.
10. Sawangwong, P. 1997. Marine Environmental Management Program: The Eastern Seaboard. Report to NRCT. 27 pp.
11. Boonpakdi, T., Sawangwong, P. and Fujiwara, T. 1997. Nutrients Distribution in the

- Bangpakong Estuary. In: Proceedings of the Eight Joint Seminar on Marine Science, NRCT/JSPPS "Marine Conservation and Resources Rehabilitation" Chiangrai, Thailand, 8-10 December 1997. Pp. 79-84
12. Jaritkhuan, S. and P. Sawangwong. 1996. Acute Toxicity Tests for Cd, Cu and Zn on Juvenile Tiger Prawn and Sea Bass. Conference on ASEAN-Marine Environmental Management: Quality Criteria and Monitoring for Aquatic Life and Human Health Protection. Penang, Malaysia. 24-28 June 1996. 7 pp
 13. Sojisuporn, P., Sawangwong, P. and Kouichi, K. 1996 An Integrated Study on Physical, Chemical and Biological Characteristics of the Bangpakong Estuary. In: Proceedings of the Seventh Joint Seminar on Marine Science, National Olympics Memorial Youth Center, Tokyo, Japan, December 3-5, 1996: pp. 88-99
 14. Sawangwong, P., 1995. The Application of HPLC in Chloropigments Estimation in the Estuarine Environment, The International Seminar on Marine Fisheries Environment, March 9-10, 1995. Rayong Resort, Rayong, Thailand
 15. Sawangwong, P., 1994. Phytoplankton Pigments as Biomarkers for Tracking Phytoplankton-derived Carbon in Coastal Environment. Presented at the IOC Third International Scientific Symposium 22-26 November 1994, Bali, Indonesia
 16. Sellner, K.G., Sawangwong, P. Dawson, R. Boynton, W.R. Kemp, W.M. and Garber J.H. 1991. Fate of dinoflagellates in Chesapeake Bay : Is sedimentation Likely? In : Samyda, T.J. and Shimizu, Y. (eds.) Toxic Phytoplankton Bloom in the Sea. Elsevier Science Publishers, B.V. pp. 825-830
 17. Bianchi S.T. R.Dawson and P. Sawangwong. 1988. The effects of macrobenthic deposit feeding on the degradation of chloropigment in sandy sediments. *J.Exp. Biol. Ecol.* 122: 243-24
 18. Dawson, R., H.R. Harvey and P. Sawangwong. 1988. Multiple biomarkers for the study of the composition and flux of natural organic in the Chesapeake Bay. Presented at the AERS Meeting, October 27-29, 1988, Solomons, MD. USA
 19. Dawson, R., T.S. Bianchi, P. Sawangwong and C.E.F.O., Dawson, 1988. Production and flux of Photosynthetic Pigments in Estuaries. Presented at the International Symposium of Biogeochemical Study of the Changiang Estuary and Its Adjacent Waters of the East China Sea., Hangzhou, China, March 20-25 1988.

CURRICULUM VITAE
THOMAS J. WEINGARTNER

EDUCATION

Ph.D. Physical Oceanography, 1990, North Carolina State University
M.S. Physical Oceanography, 1980, University of Alaska
B.S. Biology, 1974, Cornell University

MEMBERSHIPS

American Geophysical Union; American Meteorological Society, Oceanography Society

SYNERGISTIC ACTIVITIES

Guest Co-Editor, Deep-Sea Research Special Issues on Northeast Pacific GLOBEC Program
Member, Science and Technology Advisory Committee, Gulf Ecosystem Monitoring Program, 2002 - 2004
Member, GLOBEC Northeast Pacific Executive Committee, 2000 - 2003
Member, Science Steering Committee, NSF - Arctic System Science-Ocean Atmosphere Ice Interaction (OAI) Shelf-Basin Interaction Project (term expired 2/03).
Member, Science Steering Committee, NSF - ARCSS-OAI Shelf-Basin Interactions (1995 -2002)
Past Member, Science Steering Committee, NSF - ARCSS-Human Dimensions of the Arctic component
Past Member, UNOLS - Fleet Improvement Committee
Co-chair, Institute of Marine Science Ship Committee, 1993-present

PROFESSIONAL EXPERIENCE

Associate Professor; Institute of Marine Science, School of Fisheries and Ocean Sciences, U. of Alaska Fairbanks, Alaska; 7/99 - present
Assistant Professor; Institute of Marine Science, School of Fisheries and Ocean Sciences, U. of Alaska Fairbanks, Alaska; 11/93 - present
Research Associate; Institute of Marine Science, School of Fisheries and Ocean Sciences, U. of Alaska Fairbanks, Alaska; 9/91 - 10/93
Postdoctoral Student; Institute of Marine Science, School of Fisheries and Ocean Sciences, U. of Alaska Fairbanks, Alaska; 7/88 - 8/91
Graduate Research Assistant; Department of Marine, Earth and Atmospheric Sciences, North Carolina State U.; Raleigh, North Carolina; and Department of Marine Science, U. of South Florida; St. Petersburg, Florida; 8/84 - 10/88

Five Relevant Publications

Weingartner, T., K. Aagaard, R. Woodgate, S. Danielson, Y. Sasaki, D. Cavalieri, Circulation on the North Central Chukchi Sea Shelf (submitted to Deep-Sea Research)

Woodgate, R. A., K. Aagaard, and **T. Weingartner**. A year in the physical oceanography of the Chukchi Sea: Moored measurements from autumn 1990-91. Submitted to Deep-Sea Research.

Weingartner, T. J., S. Danielson, Y. Sasaki, V. Pavlov, and M. Kulakov. The Siberian Coastal Current: a wind and buoyancy-forced arctic coastal current. *J. Geophys. Res.*, 104: 29697 – 29713, 1999.

Münchow, A., **T. J. Weingartner**, and L. Cooper. On the subinertial summer surface circulation of the East Siberian Sea. *J. Phys. Oceanogr.*, 29: 2167 – 2182, 1999.

Roach, A.T., K. Aagaard, C. H. Pease, S.A. Salo, **T. Weingartner**, V. Pavlov, and M. Kulakov, Direct measurements of transport and water properties through Bering Strait, *J. Geophys. Res.*, 100, 18,443-18,457, 1995.

OTHER RECENT PUBLICATIONS

***Weingartner, T.J.**, S. Danielson, and T. C. Royer, Freshwater Variability and Predictability in the Alaska Coastal Current (accepted to Deep-Sea Research)

Pickart, R.S., **T. Weingartner**, L.J. Pratt, S. Zimmermann, and D. J. Torres, Flow of winter-transformed Pacific water into the western Arctic (submitted to Deep-Sea Research)

*Okkonen, S., **Weingartner, T.J.**, S. Danielson, D. L. Musgrave, and G. M. Schmidt, Satellite and hydrographic observations of eddy-induced shelf-slope exchange in the northwestern Gulf of Alaska *J. Geophys. Res.* 108: 15 –1, 15 –10, 2003.

***Weingartner, T.J.**, K. Coyle, B. Finney, R. Hopcroft, T. Whitledge, R. Brodeur, M. Dagg, E. Farley, D. Haidvogel, L. Haldorson, A. Hermann, S. Hinckley, J. Napp, P. Stabeno, T. Kline C. Lee, E. Lessard, T. Royer, S. Strom, The Northeast Pacific GLOBEC Program: Coastal Gulf of Alaska, *Oceanography*, 15: 48 – 63, 2002.

Weingartner, T. J., D. J. Cavalieri, K. Aagaard, and Y. Sasaki. Circulation, dense water formation and outflow on the northeast Chukchi Sea shelf. *J. Geophys. Res.* 103: 7647-7662, 1998.

SCIENTIFIC COLLABORATIONS WITHIN PAST 48 MONTHS:

K. Aagaard, R. Woodgate (U. Washington), R. Macdonald (Institute of Ocean Sciences), R. Pickart (Woods Hole), A. Hermann, P. Stabeno (NOAA-PMEL), T. Royer (Old Dominion).

GRAD STUDENT THESIS ADVISOR:

M. Janout (PhD expected 2008), J. Kaspar (PhD expected 2006), W. Williams (PhD, 2003), T. Massa (MS, expected 2004), P. Furey (MS, 1998), S. Danielson (MS, 1998)