

CURRICULUM VITAE

RONALD H. BENNER

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EDUCATION:

B.S.	1979	Biology	Florida International University (<i>Magna Cum Laude</i>)
Ph.D.	1984	Microbiology	University of Georgia

EMPLOYMENT HISTORY:

1999 - present	Professor, Biological and Marine Sciences, Univ. of South Carolina
1998 - 1999	Professor, Department of Marine Science, 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 - 1990	Research Scientist, Univ. of Texas Marine Science Institute, Port Aransas, TX
1986 - 1987	Research Scientist, U.S. Environmental Protection Agency, Athens, Georgia
1984 - 1986	Postdoctoral Associate, Institute of Ecology, Univ. of Georgia

HONORS AND AWARDS:

2015 Sustaining Fellow, *Advancing the Sciences of Limnology & Oceanography* (ASLO)
2013 Carolina Distinguished Professor, University of South Carolina
2011 Fellow, *American Geophysical Union* (AGU)
2010 Honorary Professor of the Ocean University of China, Qingdao
2009 Fellow, *American Association for the Advancement of Science* (AAAS)
2009 Einstein Professor, Chinese Academy of Sciences (CAS) *Einstein Professorships are the most distinguished appointments given to foreign scientists. Einstein Professors are provided support to foster the exchange of students and faculty between China and their home institution to establish long-term research and education collaborations.*
2009 Visiting professor, Centre National de la Recherche Scientifique (CNRS), Pierre & Marie Curie University VI, Laboratoire Arago, Banyuls sur Mer, France
2007 Visiting professor, Centre National de la Recherche Scientifique (CNRS), Pierre & Marie Curie University VI, Laboratoire Arago, Banyuls sur Mer, France
2005 University of South Carolina Educational Foundation Award for Research in Science, Mathematics and Engineering
2005 Thompson-ISI Web of Knowledge highly cited author (<http://isihighlycited.com>)
"ISIHighlyCited.com reveals the face of research--the these individuals comprise less than one-half of one percent of all publishing researchers--truly an extraordinary accomplishment."

ACADEMIC APPOINTMENTS:

Director of the Marine Science Program, 2014-2016
Advisory Committee to the Vice President for Research, 2010-2011

Advisory Committee to the Dean, College of Arts & Sciences, 2009-2010
Director of Graduate Studies, Marine Science Program, 2004-2009
Adjunct Professor, Department of Chemistry and Biochemistry, 2008-2011
University General Education and Scientific Literacy Committee, 2006-2007
Assistant Director, Marine Science Program, 2001-2002
Director of Graduate Studies, Department of Marine Science (Univ. Texas-Austin), 1993-1997

PROFESSIONAL SERVICE AND ACTIVITIES:

Editorial Advisory Board for *Continental Shelf Research*, 2007-present
Review Editor for *Aquatic Microbial Ecology*, 2006-present
Gordon Conference invited speaker, *Ocean Biogeochemistry*, Hong Kong, China, 2016
External collaborating member of Québec-Océan partners in oceanographic research, 2015-2021
AGU Fellows Selection Committee, 2014-2017
International Scientific Committee on Ocean Research (SCOR) working group on the Organic Ligands - A Key Control on Trace Metal Biogeochemistry in the Ocean (WG-139) 2012-2016
International Scientific Committee on Ocean Research (SCOR) working group on the Marine Microbial Carbon Pump in the Ocean (WG-134) 2009-2013
NSF Chemical Oceanography review panel member 2012
Chair of the A.C. Redfield Lifetime Achievement Award committee, American Society of Limnology and Oceanography, 2007-2010
Session Chair for the Ocean Carbon and Biogeochemistry Scoping Workshop on Terrestrial and Coastal Carbon Fluxes in the Gulf of Mexico, St. Petersburg, FL May 6-8, 2008
NASA Regional Ocean Carbon Cycle review panel 2007
Panel Chair for the NOAA and EPA sponsored symposium, *Hypoxia in the Northern Gulf of Mexico: Assessing the State of the Science*, New Orleans, April 25-27, 2006
Member of the A. C. Redfield Lifetime Achievement Award committee, American Society of Limnology and Oceanography, 2004-2006
Member of the University-National Oceanographic Laboratory System (UNOLS) Fleet Improvement Committee, 2003-2006
Associate Editor for *Limnology and Oceanography*, 1999-2004
Member of the NSF-sponsored Arctic System Science (ARCSS) Program Synthesis committee 2003
Co-Organizer of the symposium, *New Approaches in Marine Organic Biogeochemistry*, Friday Harbor Laboratory, Washington 2003, and Guest Editor of the special issue of *Marine Chemistry* (vol. 92 issues 1-4) dedicated to the proceedings of the symposium.
Member of the NSF-sponsored *Ocean Carbon Transport, Exchanges and Transformations (OCTET)* Committee 2000
Organizer of the symposium, *Origin and Reactivity of Dissolved Organic Matter*, Ocean Sciences 2000 Meeting (AGU/ASLO), San Antonio, TX 2000
Associate Editor for *Marine Chemistry*, 1996-1999
Member of NSF-sponsored *Future of Ocean Chemistry in the U.S. (FOCUS)* Committee 1997
NOAA Sea Grant review panel 1997
Gordon Conference invited speaker, *Chemical Oceanography*, Meriden, NH, 1997
NSF Chemical Oceanography review panel 1996, 1997
Editorial Board for the *Journal of Marine Systems*, 1990-1996
DOE Ocean Margins Program review panel 1995

Plenary speaker, Humic Substances in the Environment, IHSS Society, Atlanta, GA, 1995
 Gordon Conference invited speaker, *Coastal and Estuarine Processes*, Plymouth, NH, 1995
 NOAA Global Change Program review panel 1994
 Co-organizer of symposium, *Measurement and Reactivity of Organic Materials in Natural Waters*, American Chemical Society, San Diego, CA, 1994
 NSF Joint Global Ocean Flux Study review panel 1993
 NOAA National Undersea Research Program review panel 1993
 Dahlem Conference invited participant, *The Role of Non-Living Organic Matter in the Earth's Carbon Cycle*, Berlin, Germany, 1993
 Steering committee for the DOE Ocean Margins Program 1992-1993
 Gordon Conference invited speaker, *Organic Geochemistry*, Plymouth, NH, 1992
 Steering Committee for the NSF-sponsored Workshop on the *Measurement of Dissolved Organic Carbon and Nitrogen in Natural Environments*, 1990-1991
 Organizer of symposium, *Biogeochemical Processes in Estuaries*, American Chemical Society, Boston, MA 1990

AFFILIATIONS:

American Association for the Advancement of Science
 Association for the Sciences of Limnology and Oceanography
 American Geophysical Union

TEACHING:

The Living Ocean (undergraduate Honors College)
Processes in the Marine Environment (undergraduate Honors College)
Marine Biogeochemistry (undergraduate & graduate)
Environmental Microbiology (undergraduate & graduate)
Aquatic Microbiology (undergraduate)
Marine Microbial Ecology (graduate)
 Senior Seminar: *Marine Food Webs* (undergraduate)
 Sections of *Biological Oceanography* and *Methods in Marine Science* (graduate)

GRADUATE STUDENTS AND POSTDOCTORAL ASSOCIATES:

Graduate students

Yuan Shen	Ph.D.	2012-present	
Michael Philben	Ph.D.	2010-2014	Postdoc, Memorial Univ., NF, Canada
Cédric Fichot	Ph.D.	2008-2013	Res. Scientist, JPL, Cal-Tech, Pasadena, CA
Yuan Shen	M.S.	2009-2011	Doctoral student
Karl Kaiser	Ph.D.	2004-2009	Asst. Prof., Marine Science, Texas A&M Univ., Galveston, TX
Nobuyuki Kawasaki	Ph.D.	2001-2008	Faculty of Science, Universiti Selangor, Bestari Jaya, Selangor, Malaysia
Jenny Davis	Ph.D.	2002-2007	Res. Scientist, NOAA Center for Coastal Fisheries & Habitat Research Beaufort, NC
Xiaoqun Wang	M.S.	1999-2002	Accountant, Atlanta, GA

Susan Ziegler	Ph.D.	1993-1998	Canada Research Chair in Environmental Sciences, Professor, Memorial University, Newfoundland, Canada
Andrew Biersmith	M.A.	1993-1997	High School Science Teacher, GA
Stephen Opsahl	Ph.D.	1988-1995	Res. Scientist, USGS, San Antonio, TX
Rainer Amon	Ph.D.	1991-1995	Professor, Texas A&M Univ., Galveston, TX

Postdoctoral Associates

Oliver Lechtenfeld	Postdoc	2013-2015	Res. Faculty, Helmholtz Center, Leipzig, Germany
Cédric Fichot	Postdoc	2013	Asst. Professor, Boston University, MA
Karl Kaiser	Postdoc	2010-2012	Asst. Professor, Texas A&M Galveston
Luc Tremblay	Postdoc	2003-2005	Assoc. Professor, Moncton University, Moncton, Canada
Erik Smith	Postdoc	2003-2004	Res. Scientist, Baruch Marine Institute, Georgetown, SC
Anthony Aufdenkampe	Postdoc	2002-2002	Res. Scientist, Stroud Water Research Center, Avondale, PA
Ingrid Obernosterer	Postdoc	2001-2002	Res. Scientist, University of Paris VI, Laboratoire Arago, Banyuls, France
Peter Hernes	Postdoc	1999-2002	Professor, Univ. of California-Davis Davis, CA
Patrick Louchouart	Postdoc	1998-1999	Vice President for Academic Affairs and Chief Academic Officer, Texas A&M Univ., Galveston, TX
Stephen Opsahl	Postdoc	1995-1998	as above
Rainer Amon	Postdoc	1995-1996	as above
Annelie Skoog	Postdoc	1995-1996	Assoc. Professor, Univ. of Connecticut, Groton, CT
Bopi Biddanda	Postdoc	1992-1997	Res. Scientist, Grand Valley State University, Muskegon, MI
J. Dean Pakulski	Postdoc	1990-1994	Res. Scientist, Univ. West Florida, FL
Gerardo Chin-Leo	Postdoc	1988-1991	Professor, Evergreen State College, WA
Won Bae Yoon	Postdoc	1987-1989	Res. Scientist, Food Industry, Korea

Graduate student committees at other universities:

Doctoral committee, Kaijun Lu, University of Texas, Austin, TX, 2016-present
 Doctoral committee, Jason Howard, Florida International University, Miami, FL, 2014-present
 Doctoral committee, Kathy Bowles, University of Georgia, Athens, GA, 2009-11
 Doctoral committee, Zou Zou Kuzyk, Univ. of British Columbia, Canada, 2009
 Doctoral committee, Andrew Steen, University of North Carolina, Chapel Hill, NC, 2007-09
 Doctoral defense, Lucia Klauser, Swiss Federal Institute of Technology, Zurich, 2007
 Doctoral committee, Lynn Abramson, SUNY-Stony Brook, NY, 2005-07
 Doctoral defense, Bart Veuger, Utrecht University, Netherlands, 2006
 Masters committee, Susan Lang, University of Washington, Seattle, WA, 2003
 Faculty opponent, PhD student, Ramunas Stepanauskas, at Lund University, Sweden, 2000

Doctoral defense, Ingrid Obernosterer, Groningen University, Netherlands, 2000
Doctoral committee, Niels Borch, University of Delaware, Lewes, DE, 1998

VISITING SCHOLARS HOSTED:

Dr. Sara Sandron (Res. Scientist)	University of Tasmania (Australia)	2016
Dr. Tae-Hoon Kim (Postdoc)	Seoul National University (Korea)	2014
Linda Jørgensen (PhD student)	Technical University of Denmark (Denmark)	2013
Chia-Jung Lu (PhD student)	Ocean Research Institute, Tokyo University (Japan)	2013
Dandan Duan (PhD student)	Guangzhou Institute of Geochemistry, CAS (China)	2012-13
Dr. Yong Ran (Faculty)	Guangzhou Institute of Geochemistry, CAS (China)	2012
Dr. Satoru Hobara (Faculty)	Rakuno Gakuen University (Japan)	2011-12
Yulong Zhang (PhD student)	Guangzhou Institute of Geochemistry, CAS (China)	2011-12
Ruth Flerus (PhD student)	Alfred Wegener Institute (Germany)	2011
Dr. Qinghui Huang (Faculty)	Tongji University (China)	2010-11
Dr. Shengkang Liang (Faculty)	Ocean University of China, Qingdao (China)	2009-10
Lashun King (PhD student)	Virginia Institute of Technology, (USA)	2007, 2008
Andras Gaspar (PhD student)	Institute of Ecological Chemistry, GSF (Germany)	2007
Kenia Whitehead (PhD student)	University of Washington, (USA)	2001
Ralph Engbrodt (PhD student)	Alfred Wegener Institute (Germany)	2000
Mercedes Martinez (MS student)	Universidad de Las Palmas (Spain)	2000
Joerg Lobbes (PhD student)	Alfred Wegener Institute (Germany)	1998
Dr. Rainer Amon (Res. Faculty)	Alfred Wegener Institute (Germany)	1998, 1999
Dr. Hiroshi Ogawa (Faculty)	Ocean Research Institute, Tokyo University (Japan)	1997-98
Jasper van Heemst (PhD student)	Institute for Sea Research (Netherlands)	1994
Dr. John Hedges (Faculty)	University of Washington, (USA)	1987

RESEARCH EXPEDITIONS (Chief scientist on 6 of 27 expeditions, over 400 days at sea):

RV Atlantic Explorer, Bermuda Atlantic Time Series Station, 2016
CCGS Amundsen, Beaufort Sea and Amundsen Gulf, MALINA program, 2009
USCGC Healy, Arctic Ocean, Shelf Basin Interactions (SBI) program, 2002, 2004
RV Cape Hatteras, Sargasso Sea and Bermuda Atlantic Time Series Station, 2001
RV Kaimikai-O-Kanoloa, Hawaii Ocean Time Series Station, 1999
RV Longhorn, Gulf of Mexico, 1987, 1988, 1989, 1991, 1993, 1996, 2000
RV Pelagia, North Sea, 1995
RV Pelican, Louisiana shelf and slope, 1993
RV John Vickers, Equatorial Pacific (EQPAC), 1992
RV Weatherbird, Bermuda Atlantic Time Series Station, 1992
RV Alpha Helix, Hawaii Ocean Time Series Station, 1991
NV Malcolm Baldrige, Mississippi River plume (NECOP), 1990, 1991
RV Amanai, Amazon River (Carbon in the Amazon River Experiment; CAMREX), 1988, 1990
RV Cape Florida, Bahamas, 1982, 1983, 1985, 1986
RV Bellows, Bahamas, 1979

WORKSHOPS ATTENDED:

Newfoundland-Labrador Boreal Ecosystem Latitudinal Transect (NL-BELT) long-term ecological research project, Memorial Univ. Grenfell campus, NL, Canada, 2015

SCOR WG139 Organic Ligands-A Key Control on Trace Metal Biogeochemistry in the Ocean, Honolulu, HI, 2014
Newfoundland-Labrador Boreal Ecosystem Latitudinal Transect (NL-BELT) long-term ecological research project, Memorial Univ., NL, Canada, 2013
SCOR WG139 Organic Ligands-A Key Control on Trace Metal Biogeochemistry in the Ocean, New Orleans, LA, 2013
ASLO Emerging Topics, *Linking Optical and Chemical Properties of Dissolved Organic Matter in Natural Waters*, New Orleans, LA, 2013
SCOR WG134 Microbial Carbon Pump workshop, Delmenhorst, Germany, 2012
SCOR WG139 Organic Ligands-A Key Control on Trace Metal Biogeochemistry in the Ocean, Salt Lake City, Utah, 2012
SCOR WG134 Microbial Carbon Pump workshop, San Juan, Puerto Rico, 2011
Gulf Carbon Project data presentation and collaboration workshop, University of Georgia, 2010
MALINA data presentation and collaboration workshop, Villefranche, France, 2010
Planning workshop for the MALINA project in the Beaufort Sea, Quebec City, Canada, 2008
Dissolved organic matter fate and effects in Florida Bay: A workshop for information synthesis and evaluation of the influence of Everglades Restoration, Miami, FL 2008
Marine dissolved organic matter and heterotrophic bacteria: from bulk measurements to molecular analyses, Banyuls sur Mer, France, 2007
Shelf Basin Interactions (SBI Phase II) Arctic Synthesis Meeting, Kauai, HA 2006
North American Continental Margins (NACM) workshop, Boulder, Colorado 2005
Arctic System Science (ARCSS) Program Synthesis Meeting, Big Sky, Montana 2003
Shelf Basin Interactions (SBI) pan-Arctic Meeting, Miami, FL 2003
Shelf Basin Interactions (SBI) pan-Arctic Meeting, Pine Mountain, GA 2000
Ocean Carbon Transport, Exchanges and Transformations (OCTET), Washington D.C. 2000
Future of Ocean Chemistry in the U.S. (FOCUS), Seabrook Island, SC, 1998
Cycling of Dissolved Organic Matter in the Marine Environment, Hakone, Japan, 1996
Dahlem Conference on The Role of Non-Living Organic Matter in the Earth's Carbon Cycle, Berlin, Germany, 1993
Nutrient Enhanced Coastal Ocean Productivity program, Univ. of Southern Mississippi, 1993
Ocean Margins Program, Brookhaven National Laboratory, New York, 1992, 1993
Nutrient Enhanced Coastal Ocean Productivity program, Cocodrie, Louisiana, 1991
The Measurement of Dissolved Organic Carbon and Nitrogen in Natural Waters, Battelle Conference Center, Seattle, Washington, 1991
The Analysis and Characterization of Marine Particles, University of Hawaii, 1991
Stable Isotopes as Natural Tracers of Ecosystem Processes, Woods Hole, Massachusetts, 1987
Oxidation-Reduction Processes in Sediment/Water/Aquifer Systems, Estes Park, Colorado, 1987
Microbial Activities in the Carbon Cycle in Aquatic Ecosystems, Utrecht, The Netherlands, 1986
Long-Term Ecological Research Program, Coweeta Laboratory, North Carolina, 1985
Long-Term Ecological Research Program, Lake Itasca, Minnesota, 1984
Long-Term Ecological Research Program, Corvallis, Oregon, 1983

PUBLICATIONS *h-index 79; over 20,100 citations (Google Scholar)*

<http://scholar.google.com/citations?user=hAL8GcMAAAAJ>

2016 (192 publications total)

- Shen, Y., R. Benner, A.E. Murray, C. Gimpel, G. Mitchell, E. Weiss, C. Reiss. 2016. Bioavailable dissolved organic matter and biological hot spots during austral winter in Antarctic waters. **J. Geophys. Res.**, in review.
- Shen, Y., R. Benner, L. L. Robbins, J. G. Wynn. 2016. Sources, distributions and dynamics of dissolved organic matter in the Canada and Makarov Basins. **Frontiers Mar. Sci.**, in review.
- Ziegler, S., R. Benner, S. Billings, K. A. Edwards, M. Philben, X. Zhu, and J. Laganière. 2016. Climate change can accelerate carbon fluxes without changing soil carbon stocks. **Science Advances**, in review.
- Fichot, C. G., R. Benner, K. Kaiser, Y. Shen, R.W.M. Amon, H. Ogawa, and C-J. Lu. 2016. Predicting dissolved lignin phenol concentrations in the coastal ocean from chromophoric dissolved organic matter (CDOM) absorption coefficients. **Frontiers Mar. Sci.**, 3:7. DOI: 10.3389/fmars.2016.00007.
- Philben, M., S. Ziegler, K. Edwards, R. Kahler III, and R. Benner. 2016. Rates of soil organic nitrogen cycling increase with temperature and precipitation along a boreal forest latitudinal transect. **Biogeochem.**, DOI 10.1007/s10533-016-0187-7
- Shen, Y., C. Fichot, S-K. Liang, and R. Benner. 2016. Biological hot spots and the accumulation of dissolved organic matter in a highly productive ocean margin. **Limnol. Oceanogr.**, 61: 1287-1300, doi: 10.1002/lno.10290
- Chapelle, F. H., Y. Shen, E. W. Strom, and R. Benner. 2016. The removal kinetics of dissolved organic matter and the optical clarity of groundwater. **Hydrogeol. J.**, DOI 10.1007/s10040-016-1406-y
- Strong, A. L., Lowry, K. E., Brown, Z. W., Mills, M. W., van Dijken, G. L., Pickart, R. S., Cooper, L. W., Frey, K. E., Benner, R., Fichot, C. G., Mathis, J. T., Bates, N. R., Arrigo, K. R. 2016. Mass balance estimates of carbon export along flow paths of the Chukchi Sea shelf. Deep Sea Research Part II: Topical Studies in Oceanography, in press.
- Lu, C-J., R. Benner, C. G. Fichot, H. Fukuda, Y. Yamashita, and H. Ogawa. 2016. Sources and transformations of dissolved lignin phenols and chromophoric dissolved organic matter in Otsuchi Bay, Japan. **Frontiers Mar. Sci.**, doi: 10.3389/fmars.2016.00085.

2015 (183 publications total)

- Benner, R., and R. Amon. 2015. The size-reactivity continuum of major bioelements in the ocean. **Ann. Rev. Mar. Sci.**, 7: 185-205.
- Lechtenfeld, O. J., N. Hertkorn, Y. Shen, M. Witt, and R. Benner. 2015. Marine sequestration of carbon in bacterial exometabolites. **Nature Communications**, 6:6711 doi: 10.1038/ncomms7711.
- Shen, Y., F. H. Chapelle, E. W. Strom, and R. Benner. 2015. Origins and bioavailability of dissolved organic matter in groundwater. **Biogeochemistry** 122: 61-78.
- Philben, M., J. Holmquist, G. MacDonald, D. Duan, K. Kaiser, and R. Benner. 2015. Temperature, vegetation and oxygen controls on decomposition in a James Bay peatland. **Global Biogeochem. Cycles**, 29, doi:10.1002/2014GB004989.

Motegi, C., K. Kaiser, R. Benner, and M. G. Weinbauer. 2015. Effect of P-limitation on prokaryotic and viral production in surface waters of the Northwestern Mediterranean Sea. **J. Plankton. Res.**, 37: 16-20.

Yamamshita, Y., C. G. Fichot, Y. Shen, R. Jaffé, and R. Benner. 2015. Linkages among fluorescent dissolved organic matter, dissolved amino acids and lignin-derived phenols in river-influenced ocean margins. **Frontiers Mar. Sci.**, 2:92. doi: 10.3389/fmars.2015.00092.

2014 (177 publications total)

Fichot, C. G., and R. Benner. 2014. The fate of terrigenous dissolved organic carbon in a river-influenced ocean margin. **Global Biogeochem. Cycles**, 28, doi:10.1002/2013GB004670.

Fichot, C. G., S. E. Lohrenz, and R. Benner. 2014. Pulsed, cross-shelf export of terrigenous dissolved organic carbon to the Gulf of Mexico. **J. Geophysical Res.**, 119, doi: 10.1002/2013JC009424.

Hobara S., T. Osono, D. Hirose, K. Noro, M. Hirota, and R. Benner. 2014. The roles of microorganisms in litter decomposition and soil formation. **Biogeochemistry**, 118: 471-486, doi10.1007/s10533-013-9912-7.

Philben, M., K. Kaiser, and R. Benner. 2014. Biochemical evidence for minimal vegetation change in peatlands of the West Siberian Lowland during the Medieval Climate Anomaly and Little Ice Age. **J. Geophys. Res. Biogeosci.**, 119, doi:10.1002/2013JG002396.

Philben, M., K. Kaiser, and R. Benner. 2014. Does oxygen exposure time control the extent of organic matter decomposition in peatlands? **J. Geophys. Res. Biogeosci.**, 119, doi:10.1002/2013JG002573.

Jørgensen, L., O. J. Lechtenfeld, R. Benner, M. Middelboe, and C. A. Stedmon. 2014. Production and transformation of dissolved neutral sugars and amino acids by bacteria in seawater. **Biogeosciences**, 11, 5349-5363, doi:10.5194/bg-11-5349-2014.

2013 (171 publications total)

Fichot, C. G., K. Kaiser, S. B. Hooker, R. M. W. Amon, M. Babin, S. Bélanger, S. A. Walker, and R. Benner. 2013. Pan-Arctic distributions of continental runoff in the Arctic Ocean. **Sci. Rep. 3 (Nature Publ. Group)**, 1053: DOI:10.1038/srep01053 (2013). *This article was highlighted under Editor's Choice in the 1 Feb. 2013 issue of Science.*

Philben, M. and R. Benner. 2013. Reactivity of hydroxyproline-rich glycoproteins and their potential as biochemical tracers of plant nitrogen. **Org. Geochem.**, 57: 11-22.

DeBond, N., M. L. Fogel, P. L. Morrill, R. Benner, R. Bowden, and S. Ziegler. 2013. Variable δD values among major biochemicals in plants: Implications for environmental studies. **Geochimica Acta Cosmochimica**, 111: 117-127.

Zhang, Y., K. Kaiser, Y. Ran, R. Benner, D. Zhang, and L. Li. 2013. Sources, distributions and early diagenesis of sedimentary organic matter in the Pearl River region of the South China Sea. **Mar. Chem.**, 158: 39-48.

2012 (167 publications total)

Fichot, C. G., and R. Benner. 2012. The spectral slope coefficient of chromophoric dissolved organic matter ($S_{275-295}$) as a tracer of terrigenous dissolved organic carbon in river-

- influenced ocean margins. **Limnol. Oceanogr.**, 57: 1453-1466.
- Shen, Y., C. Fichot, and R. Benner. 2012. Floodplain influences on dissolved organic matter composition and export from the lower Mississippi-Atchafalaya River system to the Gulf of Mexico. **Limnol. Oceanogr.**, 57: 1149-1160.
- Kaiser, K., and R. Benner. 2012. Organic matter transformations in the upper mesopelagic zone of the North Pacific: chemical composition and linkages to microbial community structure. **J. Geophys. Res.**, 117, C01023, doi: 10.1029/2011JC007141.
- Shen, Y., C. G. Fichot, and R. Benner. 2012. Dissolved organic matter composition and bioavailability reflect ecosystem productivity in the western Arctic Ocean. **Biogeosciences**, 9: 4993-5005.
- Flerus, R., B.P. Koch, O.J. Lechtenfeld, S.L. McCallister, P. Schmitt-Kopplin, R. Benner, K. Kaiser, G. Kattner. 2012. A molecular perspective on the ageing of marine dissolved organic matter. **Biogeosciences**, 9: 1935–1955.
- Kaiser, K., and R. Benner. 2012. Characterization of lignin by gas chromatography and mass spectrometry using a simplified CuO oxidation method. **Anal. Chem.**, 84: 459-464.
- Matsuoka, A., A. Bricaud, R. Benner, J. Para, R. Sempéré, L. Prieur, S. Bélanger and M. Babin. 2012. Tracing the transport of colored dissolved organic matter in water masses of the Southern Beaufort Sea: relationship with hydrographic characteristics. **Biogeosciences**, 9: 925-940.
- Chapelle, F.H., P.M. Bradley, P.B. McMahon, K. Kaiser, and R. Benner. 2012. Dissolved oxygen as an indicator of bioavailable dissolved organic carbon in groundwater. **Ground Water**, 50: 230-241.
- Xie H., S. Bélanger, G. Song, R. Benner, A. Taalba, M. Blais, V. Lefouest, J.-É Tremblay, M. Babin. 2012. Photoproduction of ammonium in the southeastern Beaufort Sea and its biogeochemical implications. **Biogeosciences**, 9: 3047-3061.
- Huang, Q., K. Kaiser, and R. Benner. 2012. A simple HPLC method for the measurement of nucleobases and the RNA and DNA content of cellular material. **Limnol. Oceanogr. Methods**, 10: 608-616.
- Ortega-Retuerta, E., W. H. Jeffrey, M. Babin, S. Bélanger, R. Benner, D. Marie, A. Matsuoka, P. Raimbault, and F. Joux. 2012. Carbon fluxes in the Canadian Arctic: patterns and drivers of bacterial abundance, production and respiration on the Beaufort Sea margin. **Biogeosciences**, 9: 3679-3692.
- Peter, S., Y. Shen, K. Kaiser, R. Benner, and E. Durisch-Kaiser. 2012. Bioavailability and diagenetic state of dissolved organic matter in riparian groundwater. **J. Geophys. Res.** 117, G04006, doi:10.1029/2012JG002072.
- Billings, S. A., S. E. Ziegler, R. Benner, D. deB. Richter, W. Schlesinger, J. Chanton. 2012. Predicting carbon cycle feedbacks to climate: choosing the right tools for the job. **EOS**, 93: 188-189.
- Thomas, L.K., M.A. Widdowson, J.T. Novak, F.H. Chapelle, R. Benner, and K. Kaiser. 2012. Potentially bioavailable natural organic carbon and hydrolyzable amino acids in aquifer sediments. **Ground Water Monitoring and Remediation**, 32: 92-95.

2011 (153 publications total)

Benner, R. 2011. Loose ligands and available iron in the ocean. **Proc. Natl. Acad. Sci.** 108: 893-894.

Benner, R., and G. J. Herndl. 2011. Bacterially derived dissolved organic matter in the microbial carbon pump, pp. 46–48, *In: Microbial Carbon Pump in the Ocean*, N. Jiao, F. Azam, S. Sanders (eds.), **Science/AAAS**, Washington, DC, <http://www.sciencemag.org/site/products/microbialpump/>

Kawasaki, N., R. Sohrin, H. Ogawa, T. Nagata and R. Benner. 2011. Bacterial carbon content and the living and detrital bacterial contributions to suspended particulate organic carbon in the North Pacific Ocean. **Aquat. Microb. Ecol.** 62: 165-176.

Fichot, C. G., and R. Benner. 2011. A novel method to estimate DOC from CDOM absorption coefficients in coastal waters. **Geophys. Res. Lett.** 38, L03610, doi:10.1029/2010GL046152.

Benner, R., and K. Kaiser. 2011. Biological and photochemical transformations of lignin phenols and amino acids in riverine dissolved organic matter. **Biogeochem.**, 102: 209-222.

Luo, H., H. Zhang, R. A. Long and R. Benner. 2011. Depth distribution of alkaline phosphatases and phosphonate utilization genes in the North Pacific Subtropical Gyre. **Aquat. Microb. Ecol.**, 62: 61-69.

Jiao, N., G. J. Herndl, D. A. Hansell, R. Benner, G. Kattner, S. W. Wilhelm, D. L. Kirchman, M. G. Weinbauer, T. Luo, F. Chen and F. Azam. 2011. The microbial carbon pump and the oceanic recalcitrant dissolved organic matter pool. **Nature Rev. Micro.**, 9: 555

2010 (146 publications total)

Jiao, N., G. J. Herndl, D. A. Hansell, R. Benner, G. Kattner, S. W. Wilhelm, D. L. Kirchman, M. G. Weinbauer, T. Luo, F. Chen and F. Azam. 2010. Microbial production of recalcitrant dissolved organic matter: long-term carbon storage in the global ocean. **Nature Rev. Micro.**, 8, 593-599.

Benner, R. 2010. Biosequestration of carbon by heterotrophic microbes. **Nature Rev. Micro.**, 9: 75.

2009 (144 publications total)

Luo, H., R. Benner, R. A. Long, and J. Hu. 2009. Subcellular localization of marine bacterial alkaline phosphatases. **Proc. Natl. Acad. Sci.**, 106: 21219-21223.

Kaiser, K., and R. Benner. 2009. Biochemical composition and size distribution of organic matter at the Pacific and Atlantic time-series stations. **Mar. Chem.**, 113: 63-77.

Davis, J., K. Kaiser, and R. Benner. 2009. Amino acid and amino sugar yields and compositions as indicators of dissolved organic matter diagenesis. **Org. Geochem.**, 40: 343-352.

Perdue, E. M., and R. Benner. 2009. Marine organic matter, pp. 407-449, *In: Biophysico-Chemical Processes Involving Natural Nonliving Organic Matter in Environmental Systems*, N. Senesi, B. Xing, and P. M. Huang (eds), IUPAC Book Series, Wiley, NJ.

Tremblay, L., and R. Benner. 2009. Organic matter diagenesis and bacterial contributions to detrital carbon and nitrogen in the Amazon River system. **Limnol. Oceanogr.**, 54: 681-691.

2008 (139 publications total)

Kaiser, K., and R. Benner. 2008. Major bacterial contribution to the ocean reservoir of detrital organic carbon and nitrogen. **Limnol. Oceanogr.**, 53: 99-112.

Chapelle, F. H., P. M. Bradley, D. J. Goode, C. Tiedeman, P. J. Lacombe, K. Kaiser, and R. Benner. 2008. Biochemical indicators for the bioavailability of organic carbon in ground water. **Ground Water**, DOI: 10.1111/j.1745-6584.2008.00493.x

Burns, K. A., P. J. Hernes, D. Brinkman, A. Poulsen, and R. Benner. 2008. Dispersion and cycling of organic matter from Sepik River outflow to the Papua New Guinea coast as determined from biomarkers. **Org. Geochem.**, 39: 1747-1764.

Verdugo, P., M. V. Orellena, W. C. Chin, T. W. Petersen, G. van den Eng, R. Benner, and J. I. Hedges. 2008. Marine biopolymer self-assembly: implications for carbon cycling in the ocean. **Faraday Discuss.** 139: 393-398.

2007 (135 publications total)

Davis, J., and R. Benner. 2007. Quantitative estimates of labile and semi-labile DOC in the western Arctic Ocean: A molecular approach. **Limnol. Oceanogr.**, 52: 2434-2444.

McCarthy, M. D., R. Benner, C. Lee, and M. L. Fogel. 2007. Amino acid nitrogen isotopic fractionation patterns as indicators of heterotrophic processing in plankton, particulate and dissolved organic matter in the central Pacific Ocean. **Geochim. Cosmochim. Acta**, 71, 4727-4744.

2006 (133 publications total)

Tremblay, L., and R. Benner. 2006. Microbial contributions to N-immobilization and organic matter preservation in decaying plant detritus. **Geochim. Cosmochim. Acta.**, 70: 133-146.

Hernes, P.J., and R. Benner. 2006. Terrigenous organic matter sources and reactivity in the North Atlantic Ocean and a comparison to the Arctic and Pacific oceans. **Mar. Chem.**, 100: 66-79.

Hertkorn N., R. Benner, P. Schmitt-Kopplin, M. Witt, K. Kaiser, M. Frommberger, A. Kettrup, J. I. Hedges. 2006. Characterization of a major refractory component of marine dissolved organic matter. **Geochim. Cosmochim. Acta.**, 70: 2990-3010.

Kawasaki, N., and R. Benner. 2006. Bacterial release of dissolved organic matter during cell growth and decline: molecular origin and composition. **Limnol. Oceanogr.**, 51: 2170-2180.

Maie, N., K. J. Parish, A. Watanabe, H. Knicker, R. Benner, T. Abe, K. Kaiser and R. Jaffe. 2006. Chemical characteristics of dissolved organic nitrogen in an oligotrophic subtropical coastal ecosystem. **Geochim. Cosmochim. Acta**, 70: 4491-4506.

Sannigrahi, P., E. D. Ingall, and R. Benner. 2006. Nature and dynamics of phosphorous-containing components of marine dissolved and particulate organic matter. **Geochim. Cosmochim. Acta**, 70: 5868-5882.

2005 (127 publications total)

- Benner, R., P. Louchouart, and R.M.W. Amon. 2005. Terrigenous dissolved organic matter in the Arctic Ocean and its transport to surface and deep waters of the North Atlantic. **Global Biogeochem. Cycles**. 19, GB2025, doi:10.1029/2004GB002398.
- Sannigrahi, P., E. D. Ingall, and R. Benner. 2005. Cycling of dissolved and particulate organic matter at station Aloha: Insights from ¹³C NMR spectroscopy coupled with elemental, isotopic and molecular analyses. **Deep-Sea Res. I**. 52: 1429-1444.
- Smith, E. M. and R. Benner. 2005. Photochemical transformations of riverine dissolved organic matter: Effects on estuarine bacterial metabolism and nutrient demand. **Aquat. Microb. Ecol.** 40: 37–50.
- Davis, J. and R. Benner. 2005. Seasonal trends in the abundance, composition and bioavailability of particulate and dissolved organic matter in the Chukchi/Beaufort Seas and western Canada Basin. **Deep-Sea Res. II**, 52: 3396-3410.
- Kaiser, K., and R. Benner. 2005. Hydrolysis-induced racemization of amino acids. **Limnol. Oceanogr. Methods**, 3: 318-325.
- Overpeck J. T. and 23 co-authors. 2005. Arctic system on trajectory to new, seasonally ice-free state. **Eos**, 86 (34): 309-313.
- Cooper, L.W., R. Benner, J.W. McClelland, B.J. Peterson, R.M. Holmes, P.A. Raymond, D.A. Hansell, J.M. Grebmeier, and L.A. Codispotti. 2005. Linkages among runoff, dissolved organic carbon, and the stable oxygen isotope composition of seawater and other water mass indicators in the Arctic Ocean. **J. Geophys. Res.** 110, G02013, doi:10.1029/2005JG000031, 2005.

2004 (120 publications total)

- 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. *This article was highlighted in the Research Spotlight section of EOS.*
- Benner, R. 2004. What happens to terrestrial organic matter in the ocean? **Mar Chem.** 92: 307-310.
- Obernosterer, I., and R. Benner. 2004. Competition between biological and photochemical processes in the mineralization of dissolved organic carbon. **Limnol. Oceanogr.** 49: 117-124.
- 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.
- Ziegler, S., E. Kaiser, and R. Benner. 2004. Dynamics of dissolved organic carbon, nitrogen and phosphorus in a seagrass meadow of Laguna Madre, Texas. **Bull. Mar. Sci.**, 75; 391-407.
- Burns, K. A., P. Greenwood, R. Benner, D. Brinkman, G. Brunskill, S. Codi, and I. Zagorskis. 2004. Organic biomarkers for tracing carbon cycling in the Gulf of Papua (Papua New Guinea). **Cont. Shelf Res.** 24: 2373-2394.

- McCarthy, M. D., R. Benner, C. Lee, J. I. Hedges, and M. L. Fogel. 2004. Amino acid carbon isotopic fractionation patterns in oceanic dissolved organic matter: an unaltered photoautotrophic source for dissolved organic nitrogen in the ocean? **Mar Chem.**, 92: 123-134.
- Kim, S., L. A. Kaplan, R. Benner, and P. G. Hatcher. 2004. Hydrogen deficient molecules in natural riverine water samples - evidence for the existence of black carbon in DOM. **Mar. Chem.**, 92: 225-234.
- Lee, C., S. G. Wakeham, and R. Benner. 2004. Symposium on new approaches in marine organic biogeochemistry: a tribute to the life and science of John I. Hedges. **Mar. Chem.** 92: 1-3.
- 2003 (111 publications total)**
- Benner, R., and K. Kaiser. 2003. Abundance of amino sugars and peptidoglycan in marine particulate and dissolved organic matter. **Limnol. Oceanogr.** 48: 118-128.
- Amon, R. M. W., and R. Benner. 2003. Combined neutral sugars as indicators of the origin and diagenetic state of dissolved organic matter in the Arctic Ocean. **Deep-Sea Res. I** 50, 151-169.
- Wakeham, S. G., T. K. Pease, and R. Benner. 2003. Hydroxy fatty acids in marine dissolved organic matter as indicators of bacterial membrane material. **Org. Geochem.** 34: 857-868.
- Obernosterer, I., N. Kawasaki, and R. Benner. 2003. Phosphate limitation of respiration in the Sargasso Sea and uncoupling of P cycling in size fraction experiments. **Aquat. Microb. Ecol.** 32: 229-237.
- 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. Photochemical 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.
- 2002 (105 publications total)**
- 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.
- 2001 (103 publications total)**
- Ogawa, H., Y. Amagai, I. Koike, K. Kaiser, and R. Benner. 2001. Production of refractory dissolved organic matter by bacteria. **Science** 292: 917-920.
- 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.
- Kolowitz, L. C., E. D. Ingall, and R. Benner. 2001. Composition and cycling of marine organic phosphorus. **Limnol. Oceanogr.** 46: 309-320.

- Amon, R. M. W., H.-P. Fitznar, and R. Benner. 2001. Linkages among the bioreactivity, chemical composition, and diagenetic state of marine dissolved organic matter. **Limnol. Oceanogr.** 46: 287-297.
- Hernes, P. J., R. Benner, G. L. Cowie, M. A. Goñi, B. A. Bergamaschi, and J. I. Hedges. 2001. Tannin diagenesis in mangrove leaves from a tropical estuary: A novel molecular approach. **Geochim. Cosmochim. Acta**, 65: 3109-3122.
- Routh, J., E. L. Grossman, E. M. Murphy, and R. Benner. 2001. Characterization and origin of dissolved organic carbon in Yegua groundwater in Brazos County, Texas. **Ground Water**, 39: 760-767.
- 2000 (97 publications total)**
- Benner, R., and S. Ziegler. 2000. Do photochemical transformations of dissolved organic matter produce biorefractory as well as bioreactive substrates? pp. 181-192, *In* : Microbial Biosystems: New Frontiers, Proceedings of the 8th International Symposium on Microbial Ecology. C. R. Bell, M. Brylinsky, and P. Johnson-Green (eds), **Atlantic Canada Society for Microbial Ecology**, Halifax, Canada.
- Ziegler, S., and R. Benner. 2000. Effects of solar radiation on dissolved organic matter cycling in a subtropical seagrass meadow. **Limnol. Oceanogr.** 45: 257-266.
- Kaiser, K., and R. Benner. 2000. Determination of amino sugars in environmental samples with high salt content by high-performance anion-exchange chromatography and pulsed amperometric detection. **Anal. Chem.** 72: 2566-2572.
- Pakulski, J. D., R. Benner, T. Whittedge, 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
- Louchouart, P., S. Opsahl, and R. Benner. 2000. Isolation and quantification of dissolved lignin from natural waters using solid-phase extraction (SPE) and GC/MS. **Anal. Chem.** 72: 2780-2787.
- 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.
- 1999 (91 publications total)**
- Ziegler, S., and R. Benner. 1999. Dissolved organic carbon cycling in a subtropical seagrass-dominated lagoon. **Mar. Ecol. Prog. Ser.**, 180: 149-160.
- 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.
- Opsahl, S., and R. Benner. 1999. Characterization of carbohydrates during early diagenesis of five vascular plant tissues. **Org. Geochem.** 30: 83-94.
- Guay, C. K., G. P. Klinkhammer, K. K. Falkner, R. Benner, P. G. Coble, T. E. Whittedge, 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.

Skoog, A., B. Biddanda, and R. Benner. 1999. Bacterial utilization of dissolved glucose in the upper water column of the Gulf of Mexico. **Limnol. Oceanogr.** 44: 1625-1633.

Clark, L. L., E. D. Ingall, and R. Benner. 1999. Marine organic phosphorus cycling: novel insights from nuclear magnetic resonance. **Amer. J. Sci.** 299: 724-732.

Ziegler, S., and R. Benner. 1999. Nutrient cycling in the water column of a subtropical seagrass meadow. **Mar. Ecol. Prog. Ser.** 188: 51-62.

1998 (84 publications total)

Clark, L. L., E. D. Ingall, and R. Benner. 1998. Marine phosphorus is selectively remineralized. **Nature** 393: 426.

McCarthy, M., J. I. Hedges, and R. Benner. 1998. Major bacterial contribution to marine dissolved organic nitrogen. **Science** 281: 231-234.

Benner, R., and B. Biddanda. 1998. Photochemical transformations of surface and deep marine dissolved organic matter: Effects on bacterial growth. **Limnol. Oceanogr.** 43: 1373-1378.

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.

Benner, R. 1998. Cycling of dissolved organic matter in the ocean. pp. 317-331, *In Aquatic Humic Substances: Ecology and Biogeochemistry*, D. Hessen and L. Tranvik (eds), **Springer-Verlag**.

Opsahl, S., and R. Benner. 1998. Photochemical reactivity of dissolved lignin in river and ocean waters. **Limnol. Oceanogr.** 43: 1297-1304.

Biersmith, A. and R. Benner. 1998. Carbohydrates in phytoplankton and freshly-produced dissolved organic matter. **Mar. Chem.** 63: 131-144.

Ziegler, S., and R. Benner. 1998. Ecosystem metabolism in a subtropical seagrass-dominated lagoon. **Mar. Ecol. Prog. Ser.** 173: 1-12.

1997 (76 publications total)

Opsahl, S., and R. Benner. 1997. Distribution and cycling of terrigenous dissolved organic matter in the ocean. **Nature** 386: 480-482.

McCarthy, M., T. Pratum, J. I. Hedges, and R. Benner. 1997. Chemical composition of dissolved organic nitrogen in the ocean. **Nature** 390: 150-154.

Benner, R., B. Biddanda, B. Black, and M. McCarthy. 1997. Abundance, distribution, and stable carbon and nitrogen isotopic compositions of marine organic matter isolated by tangential-flow ultrafiltration. **Mar. Chem.** 57: 243-263.

Biddanda, B., and R. Benner. 1997. Major contribution from mesopelagic plankton to heterotrophic metabolism in the upper ocean. **Deep-Sea Res. I** 44: 2069-2085

Skoog, A., and R. Benner. 1997. Aldoses in various size fractions of marine organic matter: implications for carbon cycling. **Limnol. Oceanogr.** 42: 1803-1813.

Biddanda, B., and R. Benner. 1997. Carbon, nitrogen, and carbohydrate fluxes during the production of particulate and dissolved organic matter by marine phytoplankton. **Limnol. Oceanogr.** 42: 506-518.

Strom, S., R. Benner, S. Ziegler, and M. Dagg. 1997. Planktonic grazers are a potentially important source of marine dissolved organic carbon. **Limnol. Oceanogr.** 42: 1364-1374.

Hedges, J. I., R. Keil, and R. Benner. 1997. What happens to terrestrial organic matter in the ocean? **Org. Geochem.** 27: 195-212.

1996 (68 publications total)

Wheeler, P. A., M. Gosselin, E. Sherr, D. Thibault, D. Kirchman, R. Benner, and T. E. Whittedge. 1996. Active cycling of organic carbon in the central Arctic Ocean. **Nature** 380: 697-699.

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.

McCarthy, M., J. I. Hedges, and R. Benner. 1996. Major biochemical composition of dissolved high molecular weight organic matter in seawater. **Mar. Chem.** 55: 281-298.

1995 (63 publications total)

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.

Opsahl, S., and R. Benner. 1995. Early diagenesis of vascular plant tissues: lignin and cutin decomposition and biogeochemical implications. **Geochim. Cosmochim. Acta** 59: 4889-4904.

Sharp, J. H., R. Benner, L. Bennett, C. A. Carlson, S. E. Fitzwater, E. T. Peltzer, and L. M. Tupas. 1995. Analyses of dissolved organic carbon in seawater: the JGOFS EQPAC methods comparison. **Mar. Chem.** 48: 91-108.

Pakulski, J. D., R. Benner, R. Amon, B. Eadie, and T. Whittedge. 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.

Quay, P. D., D. O. Wilbur, J. E. Richey, A. H. Devol, R. Benner, and B. R. Forsberg. 1995. The $^{18}\text{O}/^{16}\text{O}$ of dissolved oxygen in rivers and lakes in the Amazon Basin: a tracer of respiration and photosynthesis. **Limnol. Oceanogr.** 40: 718-729.

Alperin, M. J., J. Balesdant, R. Benner, N. Blough, R. Christman, E. R. Druffel, F. Frimmel, G. Guggenberger, D. Repeta, H. Richnow, and R. Swift. 1995. How can we best characterize and quantify pools of nonliving organic matter? *In: The Role of Nonliving Organic Matter in the Earth's Carbon Cycle*, R. G. Zepp and C. Sonntag (eds.), **Wiley & Sons**.

1994 (57 publications total)

Amon, R. M. W., and R. Benner. 1994. Rapid cycling of high-molecular-weight dissolved organic matter in the ocean. **Nature** 369: 549-552.

- Pakulski, J. D., and R. Benner. 1994. Abundance and distribution of dissolved carbohydrates in the ocean. **Limnol. Oceanogr.** 39: 930-940.
- Zimmerman, A. R., and R. Benner. 1994. Denitrification, nutrient regeneration and carbon mineralization in sediments of Galveston Bay, Texas. **Mar. Ecol. Prog. Ser.** 114: 275-288.
- 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.
- Biddanda, B., S. Opsahl, and R. Benner. 1994. Plankton respiration and carbon flux through bacterioplankton on the Louisiana shelf. **Limnol. Oceanogr.** 39: 1259-1275.
- 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.

1993 (51 publications total)

- Benner, R. and M. Strom. 1993. A critical evaluation of the analytical blank associated with DOC measurements by high-temperature catalytic oxidation. **Mar. Chem.** 41: 153-160.
- Benner, R., and J.I. Hedges. 1993. A test of the accuracy of freshwater DOC measurements by high-temperature catalytic oxidation and UV-promoted persulfate oxidation. **Mar. Chem.** 41: 161-166.
- Opsahl, S., and R. Benner. 1993. Decomposition dynamics of senescent blades of the seagrass *Halodule wrightii* Aschers in a subtropical lagoon. **Mar. Ecol. Prog. Ser.** 94: 191-205.
- Koepfler, E.T., R. Benner, and P.A. Montagna. 1993. Variability of dissolved organic carbon in sediments of a seagrass bed and an unvegetated area within an estuary in southern Texas. **Estuaries** 16: 391-404.
- Benner, R. 1993. Radiotracer approaches for the study of plant polymer biodegradation. pp. 589-596, *In: Current Methods in Aquatic Microbial Ecology*, P.F. Kemp, B.F. Sherr, E.B. Sherr, and J.J. Cole (eds.), **Lewis Publishers**.
- Van Heemst, J. D. H., M. Baas, J. W. de Leuw, and R. Benner. 1993. Molecular characterization of marine dissolved organic matter. pp. 694-698, *In Organic Geochemistry*, K. Oygard (ed.), **Falch Hurtigtrykk**.
- Hedges, J.I., B.A. Bergamaschi, and R. Benner. 1993. Comparative analyses of DOC and DON in natural waters. **Mar. Chem.** 41: 121-134.
- Hedges, J. I., R. Benner, B. von Bodungen, J. Farrington, C. Lee, F. Mantoura, Y. Suzuki, and P. M. Williams. 1993. Measurement of dissolved organic carbon and nitrogen in natural waters: workshop report. **Mar. Chem.** 41: 5-10.
- Sharp, J. H., R. Benner, L. Bennett, C. A. Carlson, R. Dow, and S. E. Fitzwater. 1993. A re-evaluation of high temperature combustion and chemical oxidation measurements of dissolved organic carbon in seawater. **Limnol. Oceanogr.** 38: 1774-1782.
- McCarthy, M. D., J. I. Hedges, and R. Benner. 1993. The chemical composition of dissolved organic matter in seawater. **Chem. Geol.** 107: 503-507.

1992 (41 publications total)

- Benner, R., J.D. Pakulski, M. McCarthy, J.I. Hedges and P.G. Hatcher. 1992. Bulk chemical characteristics of dissolved organic matter in the ocean. **Science** 255: 1561-1564. listed as a "Science Citation Classic"
- 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.
- Pakulski, J.D., and R. Benner. 1992. An improved method for the hydrolysis and MBTH analysis of dissolved and particulate carbohydrates in seawater. **Mar. Chem.** 40: 143-160.
- Yoon, W. B., and R. Benner. 1992. Denitrification and oxygen consumption in sediments of two south Texas estuaries. **Mar. Ecol. Prog. Ser.** 90: 157-167.
- 1991 (37 publications total)**
- Benner, R., M. L. Fogel, and E. K. Sprague. 1991. Diagenesis of belowground biomass of *Spartina alterniflora* in salt-marsh sediments. **Limnol. Oceanogr.** 36: 1358-1374.
- Chin-Leo, G., and R. Benner. 1991. Dynamics of bacterioplankton abundance and production in a seagrass-dominated hypersaline lagoon. **Mar. Ecol. Prog. Ser.** 73: 219-230.
- Benner, R. 1991. Ultrafiltration for the concentration of bacteria, viruses, and dissolved organic matter. pp. 181-186, *In: The Analysis and Characterization of Marine Particles*, D. C. Hurd and D. W. Spencer (eds.), Geophysical Monograph 63, **American Geophysical Union**.
- 1990 (34 publications total)**
- Benner, R., K. Weliky, and J. I. Hedges. 1990. Early diagenesis of mangrove leaves in a tropical estuary: Molecular-level analyses of neutral sugars and lignin-derived phenols. **Geochim. Cosmochim. Acta** 54: 1991-2001.
- Schoenberg, S.A., R. Benner, A. Armstrong, P. Sobecky, and R.E. Hodson. 1990. Effects of acid stress on aerobic decomposition of algal and aquatic macrophyte detritus: direct comparison using a radiocarbon assay. **Appl. Environ. Microbiol.** 56: 237-244.
- Benner, R., P. G. Hatcher, and J. I. Hedges. 1990. Early diagenesis of mangrove leaves in a tropical estuary: Bulk chemical characterization using solid-state ¹³C NMR and elemental analyses. **Geochim. Cosmochim. Acta** 54: 2003-2013.
- Lee, K.H., M. A. Moran, R. Benner, and R. E. Hodson. 1990. Influence of soluble components of red mangrove (*Rhizophora mangle*) leaves on microbial decomposition of structural (lignocellulosic) leaf components in seawater. **Bull. Mar. Sci.** 46: 374-386.
- Hodson, R. E., M. A. Moran, and R. Benner. 1990. Modeling the persistence of lignocellulosic detritus in wetland ecosystems. *In: Biodeterioration Research 1*, G. C. Llewellyn and C. E. O'Rear (eds.), **Plenum Press**.
- 1989 (29 publications total)**
- Benner, R., D. L. Lewis, and R. E. Hodson. 1989. Biogeochemical cycling of organic matter in acidic environments: Are microbial degradative processes adapted to low pH? pp. 33-46, *In: Microbial Interactions in Acid Stressed Aquatic Ecosystems*, S. S. Rao (ed.), **CRC Press**, Boca Raton.
- Moran, M. A., R. Benner, and R. E. Hodson. 1989. Kinetics of microbial degradation of vascular plant material in two wetland ecosystems. **Oecologia** 79: 158-167.

Hodson, R. E., M. A. Moran, D. L. Lewis, R. Murray, J. Teska, and R. Benner. 1989. Microbial biogeochemical processes in a naturally acidic wetland, the Okefenokee Swamp. pp. 47-58, *In: Microbial Interactions in Acid Stressed Aquatic Ecosystems*, S. S. Rao (ed.), **CRC Press**, Boca Raton.

1988 (26 publications total)

Benner, R., E. K'nees, J. Lay, and R. E. Hodson. 1988. Carbon conversion efficiency for bacterial growth on lignocellulose: Implications for detritus-based food webs. **Limnol. Oceanogr.** 33: 1514-1526.

Benner, R., R. E. Hodson, and D. Kirchman. 1988. Bacterial abundance and production on mangrove leaves during initial stages of leaching and biodegradation. **Archiv. Hydrobiol. Beih. Ergeb. Limnol.** 31: 19-26.

Schoenberg, S. A., R. Benner, P. Sobecky, and R. E. Hodson. 1988. Adaptation of phytoplankton-degrading microbial communities to thermal reactor effluent in a cooling reservoir. **Appl. Environ. Microbiol.** 54: 1481-1487.

Benner, R., and J. Vaun McArthur. 1988. Effects of temperature on microbial utilization of lignocellulosic detritus in a thermally-impacted stream. **Microb. Ecol.** 16: 323-330.

Moran, M. A., T. Legovic, R. Benner, and R. E. Hodson. 1988. Carbon flow from lignocellulose: A simulation analysis of a detritus-based ecosystem. **Ecology** 69: 1525-1536.

Aiken, D. E., and R. Benner. 1988. Degradation of polysaccharides and lignin by rumen bacteria and fungi. **Appl. Environ. Microbiol.** 54:1117-1125.

1987 (20 publications total)

Benner, R., M. F. Fogel, E. K. Sprague, and R. E. Hodson. 1987. Depletion of ¹³C in lignin and its implications for stable carbon isotope studies. **Nature** 329: 708-710.

Moran, M. A., A. E. Maccubbin, R. Benner, and R. E. Hodson. 1987. Spatial and temporal dynamics of the microbial community in the Okefenokee Swamp, Georgia. **Microb. Ecol.** 14: 203-217.

1986 (18 publications total)

Benner, R., M. A. Moran, and R. E. Hodson. 1986. Biogeochemical cycling of lignocellulosic carbon in marine and freshwater ecosystems: relative contributions of prokaryotes and eukaryotes. **Limnol. Oceanogr.** 31: 89-100.

Benner, R., A. E. Maccubbin, and R. E. Hodson. 1986. Temporal relationship between the deposition and microbial degradation of lignocellulosic detritus in a Georgia salt marsh and the Okefenokee Swamp. **Microb. Ecol.** 12: 291-298.

Benner, R., E. R. Peele, and R. E. Hodson. 1986. Microbial utilization of dissolved organic matter from leaves of the red mangrove, *Rhizophora mangle*, in the Fresh Creek estuary, Bahamas. **Est. Coast. Mar. Sci.** 23: 607-619.

Benner, R., M. A. Moran, and R. E. Hodson. 1986. Biodegradation of lignocellulose by natural microbial populations and pure cultures of bacteria from aquatic environments. pp. 517-523, *In: Biodeterioration 6*. S. Barry and D.R. Houghton (eds.), **CAB International**, U.K.

- Hodson, R. E., and R. Benner. 1986. Anaerobic biodegradation of natural lignocellulose and synthetic lignin. pp. 510-516, *In* : Biodeterioration 6. S. Barry and D.R. Houghton (eds.), **CAB International**, U.K.
- Kerr, T. J., R. Benner, J. H. Woodward, W. E. Rigsby, and W. R. Windham. 1986. Chemical composition and *in vitro* digestibility of biologically degraded peanut hulls. **J. Sci. Food Agric.** 37: 637-651.
- Kerr, T. J., W. R. Windham, J. H. Woodward, and R. Benner. 1986. Chemical composition and *in vitro* digestibility of thermochemically treated peanut hulls. **J. Sci. Food Agric.** 37: 632-636.
- 1985 (11 publications total)**
- Benner, R., M. A. Moran, and R. E. Hodson. 1985. Effects of pH and plant source on lignocellulose biodegradation rates in two wetland ecosystems, the Okefenokee Swamp and a Georgia salt marsh. **Limnol. Oceanogr.** 30: 489-499.
- Benner, R., and R. E. Hodson. 1985. Microbial degradation of the leachable and lignocellulosic components of leaves and wood from *Rhizophora mangle* in a tropical mangrove swamp. **Mar. Ecol. Prog. Ser.** 23: 221 -230.
- Benner, R., and R. E. Hodson. 1985. Thermophilic anaerobic biodegradation of [14C]lignin, [14C]cellulose, and [14C]lignocellulose preparations. **Appl. Environ. Microbiol.** 50: 971-976.
- Hodson, R. E., R. Benner, R. E. Murray and A. E. Maccubbin. 1985. Microbial transformations of detrital carbon in wetland ecosystems: effects of environmental stress. pp. 277-297, *In*:: Ecological Considerations in Wetlands Treatment of Municipal Wastewaters. P. J. Godfrey, E. R. Kaynor, S. Pelczarski, and J. Benforado (eds.), **Van Nostrand**, New York.
- 1984 (7 publications total)**
- Benner, R., A. E. Maccubbin, and R. E. Hodson. 1984. Anaerobic biodegradation of the lignin and polysaccharide components of lignocellulose and synthetic lignin by sediment microflora. **Appl. Environ. Microbiol.** 47: 998 - 1004.
- Kerr, T. J., W. R. Windham, and R. Benner. 1984. Chemical and bacterial pretreatment of lignocellulosic material to increase ruminant digestibility. **Nature Biotechnology** 2: 805 - 807.
- Benner, R., A. E. Maccubbin, and R. E. Hodson. 1984. Preparation, characterization, and microbial degradation of specifically radiolabelled [14C]lignocelluloses from marine and freshwater macrophytes. **Appl. Environ. Microbiol.** 47: 381 - 389.
- Benner R., S. Y. Newell, A. E. Maccubbin, and R. E. Hodson. 1984. Relative contributions of bacteria and fungi to the degradation of lignocellulosic detritus in salt marsh sediments. **Appl. Environ. Microbiol.** 48: 36 - 40.
- 1983 (3 publications total)**
- Kerr, T. J., R. Kerr, and R. Benner. 1983. Isolation of a bacterium capable of degrading peanut hull lignin. **Appl. Environ. Microbiol.** 46: 120-1206.
- Hodson, R. E., R. Benner and A. E. Maccubbin. 1983. Transformations and fate of lignocellulosic detritus in marine environments. pp.185-195. *In* : Biodeterioration 5. T. A. Oxley and S. Barry (eds.), **John Wiley and Sons**, New York.

Maccubbin, A. E., R. Benner, and R. E. Hodson. 1983. Interactions between pulp mill effluents and microbial populations in coastal waters and sediments. pp. 246 - 256, *In* : Biodeterioration 5. T. A. Oxley and S. Barry (eds.), **John Wiley and Sons**, New York.

REPORTS, BOOK REVIEWS, NEWS RELEASES, COMMENTARIES:

University of South Carolina. "Boreal peatlands not a global warming time bomb."

ScienceDaily. ScienceDaily, 10 June 2015.

<www.sciencedaily.com/releases/2015/06/150610093437.htm>.

Benner, R. 2012. Book review, *Chemical Biomarkers in Aquatic Systems*, T. Bianchi and E. Canuel. Mar. Chem. 132: 95.

Benner, R. 2006. Marine dissolved organic matter, Encyclopedia of Earth, a web-based information source sponsored by Environmental Information Coalition - National Council for Science and the Environment, Secretariat

Benner, R. 2005. National Public Radio science segment on the Arctic, *Imagine That!*

Leifert, H. 2004. Climate change could release large amounts of carbon locked in Arctic soils into the ocean. Joint news release from the American Geophysical Union, the National Science Foundation and the University of South Carolina, March 2, AGU #04-12, http://www.agu.org/sci_soc/prrl/prrl0412.html

Benner, R. 2001. Citation for presentation of the 2000 Alfred E. Treibs Award to John I. Hedges. Geochim. Cosmochim. Acta 65: 101-102.

Guterman, L. 2000. Studying the organic fog of the sea. The Chronicle for Higher Education. XLVI, No. 23: A20-A21. (I was interviewed for this article).

Monastersky, R. 1998. What's in ocean water? Shards of bacteria. Science News 154, 23. (summary of Science article that I co-authored in 1998)

Eadie, B. J., R. Amon, R. Benner, J. Cavaletto, J. B. Cotner, W. S. Gardner, M. Lansing, and D. Pakulski. 1994. Organic matter decomposition, nitrogen recycling, and oxygen consumption in the Mississippi River Plume/Gulf Shelf Region. Proceedings of the NECOP Workshop, Louisiana Sea Grant Program.

Benner, R., G. Chin-Leo, W. Gardner, B. Eadie, and J. Cotner. 1992. The fates and effects of riverine and shelf-derived DOM on Mississippi River Plume/Gulf Shelf Processes, Proceedings of the NECOP Workshop, TAMU Sea Grant Program, pp 84-94.

Benner, R. 1989. Book review, *Biology of Anaerobic Microorganisms*, A. Zehnder. Limnol. Oceanogr. 34: 647.

Benner, R. and W.B. Yoon. 1989. Nitrogen cycling and bacterial production in Nueces and Guadalupe Estuaries. Final report to the Texas Water Development Board.

Hodson, R. E., A. E. Maccubbin, and R. Benner. 1982. Microbial degradation of natural and pollutionally-derived lignocellulosic detritus in wetland ecosystems. U.S. Department of the Interior OWRT project report no. A-802-GA.

SEMINARS AND PRESENTATIONS:

University of California at Santa Cruz, Santa Cruz, CA, 2015 (Invited Seminar)

Alfred Wegener Institute, Bremerhaven, Germany, 2015 (Colloquium Invited Speaker)

University of Connecticut, Dept. of Marine Science, Groton, CT, 2014 (Invited Seminar)

Ocean Sciences Meeting, Honolulu, HI 2014 (Poster)

Ball State University, Muncie, IN, 2013 (Environmental Sciences Invited Seminar)

ASLO Emerging Topics, *Linking Optical and Chemical Properties of Dissolved Organic Matter in Natural Waters*, New Orleans, LA, 2013 (Invited Keynote Paper)

SCOR WG139 Organic Ligands, New Orleans, 2013 (Invited Paper)

Aquatic Sciences Meeting, New Orleans, 2013 (Invited Paper)

University of Kiel, GEOMAR, Kiel, Germany 2012 (Invited Seminar)

Hanse-Wissenschaftskolleg Institute, Delmenhorst, Germany 2012 (Invited Paper)

Skidaway Institute of Oceanography, Savannah, GA 2012 (Invited Seminar)

American Geophysical Union Meeting, San Francisco, CA 2011 (Paper)

University of Kansas, Lawrence, Kansas, 2011 (Invited Seminar)

Aquatic Sciences Meeting (ASLO), San Juan, Puerto Rico, 2011 (Invited Paper)

University of Georgia, Athens, GA, 2010 (Invited Seminar)

Ohio State University, Columbus, OH, 2010 (Invited Seminar)

National Institute for Environmental Studies, Tsukuba, Japan, 2010 (Invited Seminar)

Atmospheric and Ocean Research Institute, Tokyo University, Tokyo, Japan, 2010 (Invited Seminar)

Chinese Research Academy of Environmental Sciences, Beijing, China 2010 (Einstein Professor Seminar)

Institute of Oceanology, Chinese Academy of Science, Qingdao, China, 2010 (Einstein Professor Seminar)

Ocean University of China, Qingdao, China, 2010 (Einstein Professor Seminar)

Guangzhou Institute of Geochemistry, Chinese Academy of Science, Guangzhou, China, 2010 (Einstein Professor Seminar)

European Geophysical Union, Vienna, Austria, 2010 (Invited Keynote Paper)

Ocean Sciences Meeting, Portland, OR, 2010 (Invited Paper)

Polar Marine Science Gordon Conference, Lucca, Italy, 2009 (Poster presentation)

Skidaway Institute of Oceanography, Savannah, GA, 2009 (Poster presentation)

Florida International University, Miami, FL, 2009 (Invited Seminar)

University of Quebec at Montreal, Montreal, Canada, 2008 (Invited Seminar in GEOTOP)

University of Toronto, Toronto, Canada, 2008 (Invited Annual Environmental Chemistry Lecture)

University of South Carolina, Columbia, SC, 2008 (Marine Science Seminar)

Xiamen University, China, 10th International Estuarine Biogeochemistry Symposium, 2008 (Invited Plenary Speaker)

Florida International University, Miami, FL, 2008 (Invited Workshop Paper)

Laboratoire d'Océanographie de Villefrance, Villefranche sur Mer, France, 2007 (Invited Seminar)

Institut de Ciéncies del Mar, Barcelona, Spain, 2007 (Invited Seminar)

Centre d'Océanologie de Marseille, Marseille, France, 2007 (Invited Seminar)

Observatoire Océanologique, Banyuls-Sur-Mer, France, 2007 (Invited Seminar)

Swiss Federal Institute of Technology (ETH), Zurich, Switzerland, 2007 (Invited Seminar)

University of Aarhus, Aarhus, Denmark, 2007 (Invited Seminar)

Swiss Federal Institute of Aquatic Science, Kastanienbaum, Switzerland, 2007 (Invited Seminar)

Old Dominion University, Norfolk, VA, 2006 (Invited Seminar)

Netherlands Institute of Ecology, Yerseke, Netherlands, 2006 (Invited Seminar)

University of North Carolina, Chapel Hill, NC, 2006 (Invited Seminar)

Oregon State University, Corvallis, OR, 2006 (Invited Seminar)

Carnegie Geophysical Laboratory, Washington DC, 2006 (Invited Seminar)
 University of California-Irvine, Irvine, CA, 2006 (Invited Seminar)
 State University of New York, Stony Brook, NY, 2006 (Invited Seminar)
 Ocean Sciences Meeting, Honolulu, HI, 2006 (Paper)
 American Chemical Society Meeting, Washington, DC, 2005 (Invited Keynote Lecture)
 ASLO Meeting, Santiago de Compostella, Spain, 2005 (Invited Paper)
 Texas A&M University, College Station, TX, 2004 (Invited Seminar)
 ASLO Meeting, Honolulu, HI, 2004 (Paper)
 Stroud Water Research Center, Avondale, PA, 2003 (Invited Seminar)
 University of Washington, Seattle, WA 2003 (Invited Seminar, graduate student invitation)
 ASLO Meeting, Salt Lake City, UT, 2003 (Invited Paper)
 Special Symposium on Biocomplexity, Otsu, Japan, 2001 (Invited Paper)
 Society for General Microbiology, Norwich, England, 2001 (Invited Paper)
 University of Georgia, Athens, GA 2001 (Invited Seminar, graduate student invitation)
 Georgia Institute of Technology, Atlanta, GA, 2001 (Invited Seminar)
 European Marine Microbiology Symposium, Leeuwenhorst, The Netherlands, 2000 (Invited Paper)
 Netherlands Institute for Sea Research, Texel, The Netherlands, 2000 (Invited Seminar)
 Groningen University, Groningen, The Netherlands, 2000 (Invited Seminar)
 Virginia Institute of Marine Science, Gloucester Point, VA, 2000 (Invited Seminar)
 Alfred Wegener Institute for Polar and Marine Science, Bremerhaven, Germany, 2000 (Invited Seminar)
 Max Plank Institute for Microbiology, Bremen, Germany, 2000 (Invited Seminar)
 Lund University, Malmo, Sweden, 2000 (Invited Seminar)
 University of Minnesota, St. Paul, MN, 2000 (Invited Seminar)
 Ocean Sciences Meeting (AGU/ASLO), San Antonio, TX, 2000 (Paper)
 Georgia Institute of Technology, Atlanta, GA, 1999 (Invited Seminar)
 University of California-Santa Cruz, Santa Cruz, CA, 1998 (Invited Seminar)
 University of Puerto Rico, La Parguera, PR, 1998 (Invited Seminar)
 Louisiana Universities Marine Consortium, Chauvin, LA, 1998 (Invited Seminar)
 Eight International Symposium on Microbial Ecology, Halifax, Canada, 1998 (Invited Paper)
 University of South Carolina, Columbia, SC, 1998 (Invited Seminar)
 Geological Society of America, Salt Lake City, UT, 1997 (Invited Paper)
 Gordon Research Conference, Meriden, NH, 1997 (Invited Paper)
 Ocean Sciences Meeting (AGU/ASLO), Santa Fe, NM 1997 (Invited Paper)
 Oregon Graduate Institute, Portland, OR 1996 (Invited Seminar)
 University of Washington, Seattle, WA 1996 (Invited Seminar)
 Ocean Research Institute, Tokyo University, Tokyo, Japan 1996 (Invited Paper)
 AGU/ASLO Meeting, San Diego, CA 1996 (Invited Paper)
 University of Goteborg, Sweden, 1995 (Invited Seminar)
 Texas A&M University, College Station, TX 1995 (Invited Seminar)
 Texas A&M University, Galveston, TX 1995 (Invited Seminar)
 Gordon Research Conference, Plymouth, NH 1995 (Invited Paper)
 International Humic Substances Society, Atlanta, GA 1995 (Invited Paper)
 Dartmouth College, Hanover, NH 1995 (Invited Seminar)
 Estuarine Research Federation meeting, Corpus Christi, TX 1995 (Paper)

AGU/ASLO Meeting, San Diego, CA 1994 (Invited Paper)
ACS Meeting, San Diego, CA 1994 (Paper)
Texas A&M University, College Station, TX 1994 (Invited Seminar)
Carnegie Institution of Washington Geophysical Laboratory, Washington D.C., 1993 (Invited Seminar)
Chesapeake Bay Laboratory, Solomons, MD 1993 (Invited Seminar)
Gordon Research Conference, Plymouth, NH 1992 (Invited Paper)
NOAA-AOML, Miami, FL 1991 (Invited Seminar)
ACS Meeting, Atlanta, GA 1991 (Invited Paper)
ASM Meeting, Dallas, TX 1991 (Paper)
Rosenstiel School of Marine and Atmospheric Chemistry, Miami, FL 1991 (Invited Seminar)
Southern Regional Geochemistry Meeting, Port Aransas, TX 1991 (Paper)
ACS Meeting, Dallas, TX 1989 (Paper)
Texas A&M University, College Station, TX 1989 (Invited Seminar)
AGU/ASLO Meeting, New Orleans, LA 1988 (Invited Paper)
Joint Oceanographic Assembly, Acapulco, Mexico 1988 (Paper)
Chesapeake Bay Laboratory, Solomons, MD 1987 (Invited Seminar)
UT Marine Science Institute, Port Aransas, TX 1987 (Invited Seminar)
University of Washington School of Oceanography, Seattle, WA 1987 (Invited Seminar)
Southern Regional Geochemistry Meeting, Port Aransas, TX 1987 (Paper)
ACS Meeting, New York, NY 1986 (Invited Paper)
3rd International Workshop on the Measurement of Microbial Activities in the Carbon Cycle in Aquatic Ecosystems, Utrecht, The Netherlands, 1986 (Paper)
4th International Symposium on Microbial Ecology, Yugoslavia, 1986 (Paper)
U.S. Geological Survey, Reston, VA 1986 (Invited Seminar)
AGU/ASLO Meeting, San Francisco, CA 1986 (Paper)
ASM Meeting, Las Vegas, NV 1985 (Paper)
Florida International University, Miami, FL 1985 (Invited Seminar)
ASLO Meeting, Minneapolis, MN 1985 (Paper)
Rosenstiel School of Marine and Atmospheric Sciences, Miami, FL 1984 (Invited Seminar)
6th International Biodeterioration Symposium, Washington, D.C., 1984 (Paper)
ASM Meeting, New Orleans, LA 1983 (Paper)
3rd International Symposium on Microbial Ecology, East Lansing, MN 1983 (Paper)