

CURRICULUM VITAE

RONALD H. BENNER

Carolina Distinguished Professor
Department of Biological Sciences and
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Google Scholar *h-index* 81

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; 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.	2012-2017	Postdoc, U.C. Santa Cruz, CA
Michael Philben	Ph.D.	2010-2014	Postdoc, Oak Ridge National Laboratory, TN
Cédric Fichot	Ph.D.	2008-2013	Asst. Professor, Boston University, MA
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 for Environmental Research, 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, CNRS, 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	Professor, 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 420 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

PUBLICATIONS *h*-index 81; over 22,400 citations (Google Scholar)

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

2017 (197 publications total)

- Shen, Y., R. Benner, K. Kaiser, C. Fichot, and T. E. Whitley. 2017. Pan-Arctic distribution of bioavailable dissolved organic matter and linkages with productivity in ocean margins. **Geophys. Res. Lett.**, in review.
- Shen, Y. and R. Benner. 2017. Mixing it up in the ocean carbon cycle. **Sci. Rep. (Nature Publ. Group)**, in review.
- Kim, T-H., G. Kim, Y. Shen, and R. Benner. 2017. Strong linkages between surface and deep-water dissolved organic matter in the East/Japan Sea. **Biogeosci.**, 14, 2561-2570, doi: 10.5194/bg-14-2561-2017.
- Druffel, E.R.M., S. Griffin, C.S. Glynn, R. Benner, and B.D. Walker. 2017. Radiocarbon in dissolved organic and inorganic carbon of the Arctic Ocean. **Geophys. Res. Lett.**, 44, doi:10.1002/2016GL072138.
- Ziegler, S.E., R. Benner, S.A. Billings, K.A. Edwards, M. Philben, X. Zhu, and J. Laganière. 2017. Climate warming can accelerate carbon fluxes without changing soil carbon stocks. **Frontiers Earth Sci.** 5:2 doi: 103389/feart.2017.00002
- Kaiser, K., R. Benner, and R.M.W. Amon. 2017. Fate of terrigenous dissolved organic carbon on the Eurasian shelves and export to the North Atlantic. **J. Geophys. Res. Oceans**, 122, doi: 10.1002/2016JC012380
- Shen, Y., R. Benner, A.E. Murray, C. Gimpel, G. Mitchell, E. Weiss, C. Reiss. 2017. Bioavailable dissolved organic matter and biological hot spots during austral winter in Antarctic waters. **J. Geophys. Res. Oceans**, 121, doi: 10.1002/2016JC012301

2016 (190 publications total)

- Shen, Y., R. Benner, L.L. Robbins, and J.G. Wynn. 2016. Sources, distributions and dynamics of dissolved organic matter in the Canada and Makarov Basins. **Frontiers Mar. Sci.**, 3:198. doi: 10.3389/fmars.2016.00198
- 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., K.E. Lowry, Z.W. Brown, M.W. Mills, G.L. van Dijken, R.S. Pickart, L.W. Cooper, K.E. Frey, R. Benner, C.G. Fichot, J.T. Mathis, N.R. Bates, K.R. Arrigo. 2016. Mass

balance estimates of carbon export in different water masses of the Chukchi Sea shelf. **Deep-Sea Res. II**, 130: 88-99.

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.

Yamashita, 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. Oceans**, 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, doi:10.1007/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 *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. Oceans*, 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.

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2016 \$7,500

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2015 \$180,943

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2012 \$500,000

The microbial carbon pump and bacterial carbon sequestration in the ocean, NSF Chemical Oceanography, \$500,000, Sep. 1, 2012 – Aug 31, 2015, (PI)