DAVID JAY BURDIGE
Department of Ocean and Earth Sciences[1]
Old Dominion University
(last up-dated 1/15/2026)

EDUCATION

1983	Ph.D. in Oceanography, Scripps Institution of Oceanography, University of California at San Diego, Co-Advisors: J.M. Gieskes (deceased) and K.H. Nealson (retired)
1980	NASA summer course "Planetary Biology and Microbial Ecology", NASA-Ames Research Center and University of Santa Clara, CA
1978	B.A., with Honors, in Chemistry (minors in Physics and Mathematics), Swarthmore College

EXPERIENCE

2024 -	Associate Editor, *Encyclopedia of Ocean Sciences* (4th ed.)
2016 - 2025	Co-Editor in Chief, *Estuarine, Coastal and Shelf Science*
2015 - 2018	Associate Editor, *Marine Chemistry*
2015 - 2023	Chief Departmental Advisor, BS degree in Ocean and Earth Sciences, Department of Ocean and Earth Sciences, Old Dominion University
2012 -	Associate Editor, *Aquatic Geochemistry*
2011 - 2012	Graduate Program Director (acting), MS Program in Ocean and Earth Sciences, and PhD Program in Oceanography, Department of Ocean, Earth and Atmospheric Sciences (OEAS), ODU
2007 -	Eminent Scholar, Department of OEAS, ODU
2000 - 2012	Associate Editor, *Geochimica et Cosmochimica Acta*
1999 - 2010	Associate Editor, *Marine Chemistry*
1999 -	Full Professor, Department of OEAS, ODU
2003 - 2005	Graduate Program Director, MS Program in Geology, Department of OEAS, ODU
1997 - 2005	Graduate Program Director, MS and PhD Programs in Oceanography, Department of OEAS, ODU
1996	Visiting Research Scientist, Challenger Division for Seafloor Processes, Southampton Oceanography Centre (U.K.)
1995 - 97	Advisor, Undergraduate Minor, Department of Oceanography, ODU
1992 -	Joint faculty appointment, Department of Chemistry and Biochemistry, ODU

[1] Formerly the Department of Ocean Earth and Atmospheric Sciences (1997-2022) and the Department of Oceanography (prior to 1997)

1991 - 99	Associate Professor (with tenure), Department of Oceanography, ODU
1985 - 91	Assistant Professor, Department of Oceanography, ODU
1983 - 85	Post-Doctoral Research Associate, Marine Sciences Program, University of North Carolina at Chapel Hill
1980	Teaching Assistant, Earth Sciences Program, University of California at San Diego
1978 - 83	Graduate Research Assistant, Scripps Institution of Oceanography, University of California at San Diego
1977	Research Assistant, Department of Chemistry, Swarthmore College

RESEARCH INTERESTS

Chemical oceanography; Biogeochemistry; Aquatic chemistry; Geochemistry of marine sediments; Organic geochemistry; Mathematical modeling of geochemical processes

PUBLICATIONS

(Note: pdf copies of many of the papers are available here)

Total number of refereed publications, books and other media = 107; Total number of citations = 13,248; *h*-index = 56 (source: *Google Scholar*, 1/15/26; for details see this link)

Refereed publications (* = works co-authored with students at ODU or elsewhere)

Burdige, D.J. and D.A. Sweigart. 1978. Mechanism of addition of N-propylimidazole to tetraphenylporphinatoiron(III)chloride. Inorg. Chim. Acta 28:L131-133.

Burdige, D.J. and J.M. Gieskes. 1983. A pore water/solid phase diagenetic model for manganese in marine sediments. Am. J. Sci. 283:29-47.

Burdige, D.J. and P.E. Kepkay. 1983. Determination of bacterial manganese oxidation rates in sediments using an in-situ dialysis technique, I. Laboratory studies. Geochim. Cosmochim. Acta 47:1907-1916.

Burdige, D.J., P.E. Kepkay and K.H. Nealson. 1983. An in-situ method for determining microbial manganese oxidation rates in sediments. In Biomineralization and Biological Metal Accumulation. (P. Westbroek and E.W. deJong, eds.). D. Reidel Pub. Co., pp. 481-487.

Kepkay, P.E., D.J. Burdige and K.H. Nealson. 1984. Kinetics of microbial manganese binding and oxidation. Geomicrobiology J. 3:245-262.

Burdige, D.J. and K.H. Nealson. 1985. Microbial manganese reduction by enrichment cultures from coastal marine sediments. Appl. Environ. Microbiol. 50:491-497.

Burdige, D.J. and K.H. Nealson. 1986. Chemical and microbiological studies of sulfide-mediated manganese reduction. Geomicrobiology J. 4:361-387.

Burdige, D.J. and C.S. Martens. 1988. Biogeochemical cycling in an organic-rich marine basin. 10. The role of amino acids in sedimentary carbon and nitrogen cycling. Geochim. Cosmochim. Acta 52:1571-1584.

Burdige, D.J. 1989. The effects of sediment slurrying on microbial processes, and the role of amino acids as substrates for sulfate reduction in anoxic, marine sediments. Biogeochem. 8:1-23.

Burdige, D.J. and C.S. Martens. 1990. Biogeochemical cycling in an organic-rich marine basin. 11. The sedimentary cycling of dissolved, free amino acids. Geochim. Cosmochim. Acta 54:3033-3052.

Burdige, D.J. 1991. Microbial processes affecting alanine and glutamic acid in anoxic marine sediments. FEMS Microbiol. Ecology 85:211-231.
Burdige, D.J. 1991. The kinetics of organic matter mineralization in anoxic marine sediments. J. Mar. Research 49:727-761.
Velinsky, D.J., M.L. Fogel and D.J. Burdige. 1991. Nitrogen diagenesis in anoxic marine sediments: isotope effects. Annu. Rep. Director Geophys. Lab., Carnegie Institution Washington, 1990-1991, pp. 154-162.
Burdige, D.J., M.J. Alperin, J. Homstead and C.S. Martens. 1992. The role of benthic fluxes of dissolved organic carbon in oceanic and sedimentary carbon cycling. Geophys. Res. Letters 19:1851-1854.
* Burdige, D.J., S.P. Dhakar, and K.H. Nealson. 1992. Effects of manganese oxide mineralogy on microbial and chemical manganese reduction. Geomicrobiology J. 10:29-50.
Burdige, D.J. 1993. The biogeochemistry of manganese and iron reduction in marine sediments. Earth-Sci Rev. 35:249-284.
* Anderson, I.C., M.A. Poth, J. Homstead, and D.J. Burdige. 1993. A comparison of NO and N2O production by autotrophic and heterotrophic nitrifiers. Appl. Environ. Microbiol. 59:3525-3533.
Burdige, D.J. and J. Homstead. 1994. Fluxes of dissolved organic carbon from Chesapeake Bay sediments. Geochim. Cosmochim. Acta 58:3407-3424.
Lustwerk, R.L. and D.J. Burdige. 1995. Elimination of dissolved sulfide interference in the flow injection determination of $\sum CO_2$ by the addition of molybdate. Limnol. Oceanogr. 40:1011-1012.
* Burdige, D.J., C.M. Huang, N. Krishna and F.E. Scully, Jr. 1995. Aliphatic amines in Chesapeake Bay sediments. Marine Chem. 51:45-54.
* Dhakar, S.P. and D.J. Burdige. 1996. A coupled, non-linear steady-state model for early diagenetic processes in pelagic marine sediments. Am. J. Sci. 296:296-330.
Berelson, W.M., J. McManus, T. Kilgore, K. Coale, K.S. Johnson, K. Coale, D.J. Burdige, C. Pilskaln. 1996. Biogenic matter diagenesis on the seafloor: A comparison of two continental margin transects. J. Mar. Res. 54:731-762.
Skrabal, S.A., J.R. Donat and D.J. Burdige. 1997. Fluxes of copper-complexing ligands from estuarine sediments. Limnol. Oceanogr. 42:992-996.
Burdige D.J. and K.G. Gardner. 1998. Molecular weight distribution of dissolved organic carbon in marine sediment pore waters. Mar. Chem. 62:45-64.
* Burdige, D.J. and S. Zheng. 1998. The biogeochemical cycling of dissolved organic nitrogen in estuarine sediments. Limnol. Oceanogr. 43:1796-1813.
McManus, J., W.M. Berelson, G.P. Klinkhammer, K. Johnson, K. Coale, R. Anderson, N. Kumar, D.J. Burdige, D.E. Hammond, H.J. Brumsack, and D.C. McCorkle. 1998. Geochemistry of barium in marine sediments: Potential influence of diagenesis on burial. Geochim. Cosmochim. Acta 62:3453-3473.
Burdige, D.J., W.M. Berelson, J. McManus, K. Coale and K. Johnson. 1999. Fluxes of dissolved organic carbon from California continental margin sediments. Geochim. Cosmochim. Acta 63:1507-1515.
Burdige, D.J., A. Skoog and K.G. Gardner. 2000. Dissolved and particulate carbohydrates in contrasting marine sediments. Geochim. Cosmochim. Acta 64:1029-1041.
Skrabal, S.A., J.R. Donat and D.J. Burdige. 2000. Pore water distributions of dissolved copper and copper-complexing ligands in estuarine sediments. Geochim. Cosmochim. Acta 64:1843-1857.
Burdige, D.J. 2001. Dissolved organic matter in estuarine sediment pore waters. In Organic Geochemical Tracers in Estuaries (E. Canuel and T. Bianchi, eds.). special issue of Org. Geochem. 32:487-505 (invited contribution).
Burdige, D.J. 2002. Sediment pore waters. In Biogeochemistry of marine dissolved organic

matter (D. Hansell and C. Carlson, eds.). Academic Press. Pp. 611-663.
Burdige, D.J. and R.C. Zimmerman. 2002. Impact of seagrass density on carbonate dissolution in Bahamian sediments. Limnol. Oceanogr. 47:1751-1763.
* Sharp, J.H. et al. (27 co-authors including D.J. Burdige). 2002. A preliminary methods comparison for measurement of dissolved organic nitrogen in seawater. Mar. Chem. 78:171-184.
Berelson, W., J. McManus, K. Coale, K. Johnson, T. Kilgore, D. Burdige, D. Colodner, F. Chavez, R. Kudela and J. Boucher. 2003. A time series of benthic flux measurements from Monterey Bay, CA. Cont. Shelf. Res. 23:457-481.
* Sharp, J.H. et al (14 co-authors including D.J. Burdige). 2004. A direct instrument comparison for measurement of total dissolved nitrogen in seawater. Mr. Chem. 84:181-193.
* Burdige, D.J., S.A. Kline, and W. Chen. 2004. The cycling of fluorescent dissolved organic matter in contrasting marine sediments. Mar. Chem. 89:289-311.
* Johannesson, K.H., J. Tang, J.M. Daniels, W.J. Bounds, and D.J. Burdige. 2004. Organic geochemistry of rare earth elements in blackwaters of the Great Dismal Swamp, Virginia, USA. Chem. Geol. 209:271-294.
* Komada, T., C.E. Reimers, G.W. Luther III, and D.J. Burdige. 2004. Factors affecting dissolved organic matter dynamics in mixed-redox to anoxic coastal sediments. Geochim. Cosmochim. Acta 68:4099-4111.
Neuweiler, F., and D.J. Burdige. 2005. The modern calcifying sponge Spheciospongia vesparium (Lamark, 1815), Great Bahama Bank: Implications for ancient sponge mud mounds. Sediment. Geol. 175:89-98.
Burdige, D.J. 2005. The burial of terrestrial organic carbon in marine sediments: A re-assessment. Global Biogeochem. Cycles 19:10.1029/2004GB002368.
Burdige, D.J. 2006. Data Report: Dissolved carbohydrates in interstitial waters from the Equatorial Pacific and Peru Margin, ODP Leg 201. In Proceedings of ODP, Sci. Results, 201 (B.B. Jørgensen, S.L. D'Hondt and D.J. Miller, eds.).
* Hu, X. and D.J. Burdige. 2007. Enriched stable carbon isotopes in the pore waters of carbonate sediments dominated by seagrasses: evidence for coupled carbonate dissolution and reprecipitation. Geochim. Cosmochim. Acta 71:129-144.
Johannesson, K.H. and D.J. Burdige. 2007. Balancing the global neodymium budget: Evaluating the role of groundwater. Earth Planet Sci. Letters 253:129-142.
Burdige, D.J. 2007. The preservation of organic matter in marine sediments: Controls, mechanisms, and an imbalance in sediment organic carbon budgets? Chem. Rev. 107:467-485 (invited contribution to a special thematic issue on chemical oceanography).
Neuweiler, F., I. Daoust, P.-A. Bourque, and D.J. Burdige. 2007. Collagen-supported precipitation of authigenic aragonite during the natural degradation of a modern siliceous sponge, Great Bahama Bank, The Bahamas. J. Sed. Res. 77:552-563.
* Haque, S., J. Tang, W.J. Bounds, D.J. Burdige, and K.H. Johannesson. 2007. Arsenic geochemistry of the Great Dismal Swamp, USA: Possible organic matter controls. Aquat. Geochem. 13: 289-308.
* Burdige, D.J., X. Hu and R.C. Zimmerman. 2008. Rates of carbonate dissolution in permeable sediments estimated from pore water profiles: the role of seagrasses. Limnol. Oceanogr. 53:549-565.
* Chanton, J. P., P. H. Glaser, L. S. Chasar, D. J. Burdige, M. E. Hines, D. I. Siegel, L. B. Tremblay, and W. T. Cooper. 2008. Radiocarbon evidence for the importance of surface vegetation on fermentation and methanogenesis in contrasting types of boreal peatlands. Global Biogeochem. Cycles 22:GB4022, doi:10.1029/2008GB003274.
* Hu, X. and D.J. Burdige. 2008. Shallow marine carbonate dissolution and early diagenesis – Implications from an incubation study. J. Mar. Res. 66:489-527.
Dierssen, H.M., R.C. Zimmerman, L.A. Drake, and D. Burdige. 2009. Potential transport of

unattached benthic macroalgae to the deep sea through wind-driven Langmuir circulation. Geophys. Res. Letters 36: L04602, doi:10.1029/2008GL036188.
Dierssen, H.M., R.C. Zimmerman and D.J. Burdige. 2009. Optics and remote sensing of Bahamian carbonate sediment whitings and potential relationship to wind-driven Langmuir circulation. Biogeosciences 6:487-500.
Neuweiler, F., E.C. Turner, and D.J. Burdige. 2009. Early Neoproterozoic origin of the Metazoan phylum recorded in carbonate rock texture. Geology 35:475-478.
Neuweiler, F., E.C. Turner, and D.J. Burdige. 2009. Early Neoproterozoic origin of the metazoan clade recorded in carbonate rock texture: REPLY (to a comment by N. Planavsky). Geology 2009 v. 37, p. e196-196 (electronic supplement).
Dierssen, H.M., R.C. Zimmerman, L.A. Drake, and D. Burdige. 2010. Benthic ecology from space: optics and net primary production across the Great Bahama Bank from seagrass and benthic algae. Marine Ecology Progress Series 411:1-15.
* Burdige, D.J., X. Hu, and R.C. Zimmerman. 2010. The widespread occurrence of carbonate dissolution and reprecipitation in Bahamas Bank sediments. Am. J. Sci. 310:492-521.
* Johannesson, K. H., Chevis, D. A., Burdige, D. J., Cable, J. E., Martin, J. B., and Roy, M. 2011. Submarine groundwater discharge is an important net source of light and middle REEs to coastal waters of Indian River Lagoon, Florida USA. Geochim. Cosmochim. Acta 75:825-43.
Burdige, D.J. and T. Komada. 2011. Anaerobic oxidation of methane and the stoichiometry of remineralization processes in continental margin sediments. Limnol. Oceanogr. 56:1781-1796.
Burdige, D.J. 2011. The temperature dependence of organic matter remineralization in deeply buried marine sediments. Earth Planet. Sci. Letters 311:396-410.
Burdige, D.J. 2011. Estuarine and coastal sediments – coupled biogeochemical cycling. In Treatise on Estuarine and Coastal Science, vol. 5 (R. Laane and J.J. Middelburg, eds.). pp. 279-316, Elsevier.
* Hu, X., D.J. Burdige, and R.C. Zimmerman. 2012. $\delta^{13}C$ is a signature of light availability and photosynthesis in seagrass. Limnol. Oceanogr. 57:441-448.
* Corbett, J.E., M.M. Tfaily, D.J. Burdige, W.T. Cooper, P.H. Glaser, and J.P. Chanton 2012. Partitioning pathways of CO2 production in peatlands with stable carbon isotopes. Biogeochem. DOI 10.1007/s10533-012-9813-1.
* Komada, T., D. J. Burdige, S. M. Crispo, E. R. M. Druffel, S. Griffin, and L. Johnson. 2013. Dissolved organic carbon dynamics in anaerobic sediments of the Santa Monica Basin. Geochim. Cosmochim. Acta 110:253-273.
Burdige, D. J., Komada, T. 2013. Using ammonium pore water profiles to assess stoichiometry of deep remineralization processes in methanogenic continental margin sediments. Geochem. Geophys. Geosys., 14: doi:10.1002/ggge.20117.
* Corbett, J.E., D.J. Burdige, M.M. Tfaily, A.R. Dial, W.T. Cooper, P.H. Glaser, and J.P. Chanton. 2013. Surface production fuels deep heterotrophic respiration in northern peatlands. Global Biogeochem. Cycles 27:1163-1174. DOI 10.1002/2013GB004677.
Burdige, D.J. and T. Komada. 2015. Sediment pore waters. In Biogeochemistry of Marine Dissolved Organic Matter. 2nd edition (D. Hansell and C. Carlson, eds.). pp. 535-577. Elsevier.
* Corbett, J.E., M.M. Tfaily, D.J. Burdige, W.T. Cooper, P.H. Glaser, and J.P. Chanton. 2015. The relative importance of methanogenesis in the decomposition of organic matter in northern wetlands. J. Geophys. Res. Biogeosciences, 2014JG002797.
* Li, W., S. R. Joshi, G. Hou, D.J. Burdige, D. L. Sparks, and D. P. Jaisi. 2015. Characterizing phosphorus speciation of Chesapeake Bay sediments using chemical extraction, ^{31}P NMR, and X-ray absorption fine structure spectroscopy. Environ. Sci. Tech. 49: 203-211.
* Joshi, S. R., R. K. Kukkadapu, D.J. Burdige, M. E. Bowden, D. L. Sparks, and D. P. Jaisi. 2015. Organic matter remineralization predominates phosphorus cycling in the mid-bay sediments

in the Chesapeake Bay. Environ. Sci. Tech. 49:5887-5896.

* Chevis, D. A., K. H. Johannesson, D.J. Burdige, J. Tang, S. B. Moran, and R. P. Kelly. 2015. Submarine groundwater discharge of rare earth elements to a tidally-mixed estuary in southern Rhode Island. Chem. Geol. 397:128-142.

* Chevis, D. A., K. H. Johannesson, D.J. Burdige, J. E. Cable, J. B. Martin, and M. Roy. 2015. Rare earth element cycling in a sandy subterranean estuary in Florida, USA. Mar. Chem. 176: 34-50.

* Bianchi, T.S., K.M. Schreiner, R.W. Smith, S. Woodward, D.J. Burdige, and D. Conley. 2016. Changes in coastal redox: Human versus natural causes. Ann. Rev. Earth Planet Sci., 44:295-319 (invited review).

Burdige, D.J., T. Komada, C. Magen and J.P. Chanton. 2016. Carbon cycling in Santa Barbara Basin sediments: A modeling study. J. Mar. Res., 64:133-159.

Burdige, D.J., T. Komada, C. Magen, and J. P. Chanton. 2016. Modeling studies of dissolved organic matter cycling in Santa Barbara Basin (CA, USA) sediments. Geochim. Cosmochim. Acta 195: 100-119.

Burdige, D.J., T. Komada, C. Magen, and J. P. Chanton. 2016. Methane dynamics in Santa Barbara Basin (USA) sediments as examined with a reaction-transport model. J. Mar. Res., 74, 277-313.

Cutter, G. A., and D. J. Burdige. 2016. A tribute to Thomas M. Church: Exploring chemical oceanography in the coastal zone—the history and future. Aquat. Geochem. 22: 271-274.

* Hung, C.-W., K.-H. Huang, Y.-Y. Shih, Y.-S. Lin, H.-H. Chen, C.-C. Wang, C.-C. Hung and D. Burdige. 2016. Benthic fluxes of dissolved organic carbon from gas hydrate sediments in the northern South China Sea. Nature – Sci. Reports, 6: 29597, DOI:10.1038/srep29597.

* Hung, C.-C., Y.-F. Chen, S.-C. Hsu, K. Wang, J. F. Chen, and D.J. Burdige. 2016. Using rare earth elements to constrain particulate organic carbon flux in the East China Sea. Scientific Reports, 6:33880, DOI: 10.1038/srep33880.

* Komada, T., D.J. Burdige, H.-L. Li, C. Magen, J. Chanton, and A. K. Cada. 2016. Organic matter cycling across the sulfate-methane transition zone of the Santa Barbara Basin, California Borderland. Geochim. Cosmochim. Acta, 176:259-278.

* Komada T, Burdige D.J., Magen C., Li H.-L., Chanton J. 2016. Recycling of organic matter in the sediments of Santa Monica Basin, California Borderland. Aquat. Geochem. 22: 593-618. DOI: 10.1007/s10498-016-9308-0.

* Johannesson, K. H., C. D. Palmore, J. Fackrell, N. G. Prouty, P. W. Swarzenski, D. A. Chevis, K. Telfeyan, C. D. White, and D.J. Burdige. 2017. Rare earth element behavior during groundwater–seawater mixing along the Kona Coast of Hawaii. Geochim. Cosmochim. Acta 198:229-258.

Fassbender, A.J., et al. (74 co-authors including DJB). 2017. Perspectives on chemical oceanography in a changing environment: Participants of the COME ABOARD Meeting examine the field in the context of 40 years of DISCO. Mar. Chem. 196:181-190

Abdulla, H.A., D.J. Burdige, and T. Komada. 2018. Accumulation of deaminated peptides in anoxic sediments of the Santa Barbara Basin. Geochim. Cosmochim. Acta, 223:245-258.

Bianchi, T.S., X. Cui, N.E. Blair, D.J. Burdige, T.I. Eglinton, and V. Galy. 2018. Centers of organic carbon burial and oxidation at the land-ocean interface. Org. Geochem. 115:138-155 (invited review).

Burdige D.J. 2018. Diagenesis. In Encyclopedia of Engineering Geology (Bobrowsky P., Marker B., eds.). Springer. DOI: https://doi.org/10.1007/978-3-319-12127-7_90-1.

Najjar, R., et al. (30 co-authors including DJB). 2018. Carbon budget of tidal wetlands, estuaries, and shelf waters of Eastern North America. Global Biogeochemical Cycles 32:389-416.

* Fox, C. A., H. A. Abdulla, D.J. Burdige, J. P. Lewicki, and T. Komada. 2018. Composition of dissolved organic matter in anoxic marine sediments analyzed by 1H nuclear magnetic

resonance spectroscopy. Front. Mar Sci. 5:172. https://doi.org/10.3389/fmars.2018.00172
* Fox, C. A., H. A. Abdulla, D.J. Burdige, J. P. Lewicki, and T. Komada. 2018. Corrigendum: Composition of dissolved organic matter in anoxic marine sediments analyzed by 1H nuclear magnetic resonance spectroscopy. Front. Mar Sci. 5:230.
Jovanović, V., Terzić, B., Erten-Unal, M., Hill, V., McLeod, G., Covi, M., Burdige, D., Alonzo, J., Mason, J., Batts, T. and Tomovic, C. (2019) Improving STEM recruitment through a theme-based summer residential camp focused on sea level rise. Technology Interface International Journal 19, 12-23.
Long, M., J. Rheuban, D. McCorkle, D.J. Burdige, and R. C. Zimmerman. 2019. Closing the oxygen mass balance in shallow coastal ecosystems. Limnol. Oceanogr. 64: 2694-2708.
Abdulla, H. A., D.J. Burdige, and T. Komada. 2020. Formation of abiotic dissolved organic sulfur in anoxic sediment of Santa Barbara Basin. Org. Geochem. 139:103879.
* Long, M. H., K. Sutherland, S. D. Wankel, D. J. Burdige, and R. C. Zimmerman. 2020. Ebullition of oxygen from seagrasses under supersaturated conditions. Limnol. Oceanogr. 65:314-324.
* Taylor, R.S., D.J. DeMaster, and D.J. Burdige. 2020. Assessing the distribution of labile organic carbon from diverse depositional environments on the West Antarctic peninsula shelf. Deep Sea Research Part I: Oceanographic Research Papers 156:103166.
Burdige, D.J. and T. Komada. 2020. Iron redox cycling, sediment resuspension and the role of sediments in low oxygen environments as sources of iron to the water column. Mar. Chem. 223:103793.
Lyons, W.B. and D.J. Burdige. 2020. An introduction to "Microbial biogeochemistry: A special issue of Aquatic Geochemistry honoring Mark Hines". Aquat. Geochem. 26:179-181.
* Forsch, K., Hahn-Woernle, L., Sherrell, R., Roccanova, J., Bu, K., Burdige, D., Vernet, M. and Barbeau, K.A. 2021. Seasonal dispersal of fjord meltwaters as an important source of iron to coastal Antarctic phytoplankton. Biogeosciences 18: 6349-6375.
* Chevis, D.A., Mohajerin, T.J., Yang, N., Cable, J.E., Rasbury, E.T., Hemming, S.R., Burdige, D.J., Martin, J.B., White, C.D. and Johannesson, K.H. 2021. Neodymium isotope geochemistry of a subterranean estuary. Frontiers in Water 3: 778344.
Santos, I.R., Burdige, D.J., Jennerjahn, T.C., Bouillon, S., Cabral, A., Serrano, O., Wernberg, T., Filbee-Dexter, K., Guimond, J. and Tamborski, J.J. 2021. The renaissance of Odum's outwelling hypothesis in 'Blue Carbon' science. Est. Coastal Shelf Sci. 255:107361 (invited feature article).
Burdige, D.J. and Christensen, J.P., 2022. Iron biogeochemistry in sediments on the western continental shelf of the Antarctic Peninsula. Geochim. Cosmochim. 326:288-312.
* Lin, C. Y., Bradbury, H. J., Antler, G., Burdige, D. J., Bennett, T. D., Li, S. & Turchyn, A. V. 2022. Sediment mineralogy influences the rate of microbial sulfate-reduction in marine sediments. Earth Planet. Sci. Lett. 598:117841.
Yao, P., Bianchi, T. S., Burdige, D. J., Feng, X. & Raymond, P. A. 2022. Editorial: Carbon cycling in aquatic critical zones. Front. Earth Sci. 10: 975323 (introduction to a special issue of the same name).
* Johannesson, K. H., Horne, J. D., Misra, A., Aliperta, C., Meletis, O. V., Santore, R. C., White, C. D., Mavrommati, G. & Burdige, D. J. 2023. Acidification of northeastern USA lakes from rising anthropogenic-sourced atmospheric carbon dioxide and its effects on aluminum speciation. Geophys. Res. Letters 50:e2023GL104957.
Reithmaier, G.M.S., Cabral, A., Akhand, A., Bogard, M.J., Borges, A.V., Bouillon, S., Burdige, D.J., Call, M., Chen, N., Chen, X., Jr., L.C.C., Eagle, M.J., Kristensen, E., Kroeger, K.D., Lu, Z., Maher, D.T., Pérez-Lloréns, L.J., Ray, R., Taillardat, P., Tamborski, J.J., Upstill-Goddard, R.C., Wang, F., Wang, Z.A., Xiao, K., Yau, Y.Y.Y. and Santos, I.R. 2023. Carbonate chemistry and carbon sequestration driven by inorganic carbon outwelling from mangroves and saltmarshes. Nature Comm. 14, 8196.

Burdige, D.J. 2024. Estuarine and coastal sediments – coupled biogeochemical cycling. in Treatise on Estuarine and Coastal Science, 2nd ed. (vol. 3) (T. Jennerjahn, ed.). Elsevier, 578-625.

Burdige, D.J., Komada, T. and Abdulla, H. 2024. Sediment pore waters, in: Hansell, D.A., Carlson, C. (Eds.), Biogeochemistry of Marine Dissolved Organic Matter, 3rd ed. Elsevier. 247-315.

Burdige D.J. and Komada T. 2025. Organic carbon cycling in hemi-pelagic and turbidite sediments of Santa Monica Basin, California Borderland. Geochim. Cosmochim. Acta, in press.

* Shultz C., Luo J., Brady D., Fulweiler R.W., Long M.H., Petrik C.M., Testa J.M., Benway H., Burdige D., Cecchetto M.M., Elegbede I., Evans N., Frenzel A., Gillen K., Herbert L., Hirsch H., Lessin G., Levin L., Maiti K., Malkin S., Minchs S., Nmor S., Le-Duy Pham A., Pinckney J., Rabouille C., Rahman S., Rakshit S., Ray N.E., Sasaki D.K., Siedlecki S.A., Somes C.J., Stubbins A., Sulpis O., Trevisan C.L., Xu Y., Yin H. 2025. Elucidating the role of marine benthic carbon in a changing world. Global Biogeochemical Cycles, 39, e2025GB008643.

Books

Burdige, D.J. 2006. Geochemistry of Marine Sediments. Princeton Univ. Press.

Other media

Burdige, D. J. 2015. An introduction to marine sediments with an emphasis on sediment organic matter remineralization. Limnology and Oceanography e-Lectures 5: 2164-0254.

Technical reports, non-refereed publications, book reviews and comments

Burdige, D.J. 1988. Organic matter remineralization in anoxic estuarine and coastal marine sediments. In Sediment Processes and Sediment Modeling. HydroQual, Inc. Mahwah, NJ. pp. 51-58.

Burdige, D.J. 1989. 1988 Sediment Monitoring Program in the Southern Chesapeake Bay. ODURF Technical Report 89-6, 114 p.

Burdige, D.J. 1989. The Geochemistry of Southern Chesapeake Bay Sediments. ODURF Technical Report 89-15, 30 p.

Alden, R.W. III, R.M. Ewing, M.F. Helmstetter, J.G. Winfield, D.J. Burdige, J.H. Rule, G.T.F. Wong, D.J.P. Swift and A. Muller. 1990. Distribution and management implications of contaminants in Elizabeth River sediments. AMRL Technical Report No. 741-I.

Cutter, G.A., D.J. Burdige, and C.E. Grosch. 1991. Selenium Biogeochemistry in Reservoirs, vol 2: Kinetic Geochemical Model for Redox Speciation of Selenium – User's Manual. Electric Power Research Institute Report EPRI EN-7281-CCML.

Cutter, G.A. and D.J. Burdige. 1992. Atmospheric Deposition of Trace Elements to the Southern Chesapeake Bay, Year 1 Final Report. ODURF Technical Report 92-1.

Sediment Diagenesis Working Group (incl. D.J. Burdige). 1992. Sediment diagenesis working group report. Mar. Chem. 29:27-37 (prepared as a part of the workshop *Marine Organic Geochemistry: Review and Challenges for the Future*).

Burdige, D.J. 1993. Determination of Dissolved Organic Carbon in Water Samples from the Anacostia River. ODURF Technical Report 93-1.

Hopkinson, C.S., L. Cifuentes, D.J. Burdige, S. Fitzwater, D. Hansell, S. Henrichs, P. Kähler, I. Koike, T. Walsh, and B. Bergamaschi. 1993. DON subgroup report. Mar. Chem. 41:23-36 (prepared as a part of the workshop *The Measurement of Dissolved Organic Carbon and Nitrogen in Natural Waters*)

Baker, J.E., D.J. Burdige, T.M. Church, G. Cutter, R.M. Dickhut, D.L. Leister, J.M. Ondov and J.R. Scudlark. 1994. Chesapeake Bay Atmospheric Deposition Study, Phase II Final Report. U.S. EPA/Chesapeake Bay Program Office, Annapolis, MD.

Burdige, D.J. 1994. Review of Organic Geochemistry: Principles and Applications (M.H. Engel and S.A. Macko, eds.). Limnol. Oceanogr. 39:1500-1501.

Burdige, D.J. 1996. Review of Oceanography, Contemporary Readings in Ocean Sciences (R. Gordon Pirie, ed.). Geochim. Cosmochim. Acta 60:1640.

Burdige, D.J. 1997. Thoughts on a sabbatical visit to England. Wavelengths 3:2 (ODU Dept. of Oceanography newsletter).

Burdige, D.J. and E. Weber. 1999. Memo to DC: Don't give global warming the cold shoulder. Commentary section of the Virginian-Pilot Ledger Star (Sept. 12, 1999).

Burdige, D.J. 2001. Global warming or cooling? There's really no question. Commentary section of the Virginian-Pilot Ledger Star (April 22, 2001).

Burdige, D.J. 2002. Why I am concerned about global warming. Wavelengths 7:1 (ODU Dept. of Ocean, Earth and Atmos. Sciences newsletter).

Burdige, D.J. and R. Zimmerman. 2002. Shallow water carbonate sediment-seagrass interactions and their impact on atmospheric CO_2. *In*: Kraines S, Isobe M (eds) International Workshop for Seagrass Ecosystem Engineering and Carbon Sequestration. Graduate School of Frontier Science, University of Tokyo, Tokyo, Japan, 15 pp.

Burdige, D.J. 2004. Review of The Discovery of Global Warming (S.R. Weart). Limnol. Ocean. Bull. 13(2):32-34.

Burdige, D.J. and J. Slate. 2004. Recent and Historical Environmental Change in Lake Drummond, Within the Great Dismal Swamp. Final report submitted to the Virginia Water Resources Center.

Burdige, D.J. 2007. Review of Biogeochemistry of Estuaries (T.S. Bianchi). Eos 88(52):581.

Pilskaln, C., Burdige, D., Cai, W.-J., Canuel, E., Hu, X., 2012. Sediment-water exchange. In: R.G. Najjar, M.A.M. Friedrichs, W.-J. Cai (Editors), Report of The U.S. East Coast Carbon Cycle Synthesis Workshop, January 19-20, 2012, Ocean Carbon and Biogeochemistry Program and North American Carbon Program, pp. 11-12.

Zimmerman, R.C., Burdige, D.J., and Bochdansky, A.B. 2017. Comment on "Caribbean spiny lobster fishery is underpinned by trophic subsidies from chemosynthetic primary production" (N.D. Higgs et al. 2016. Current Biology 26:3393-3398). Available here.

PUBLISHED ABSTRACTS AND ORAL AND POSTER PRESENTATIONS

(186 total; * = invited presentations)

Burdige, D.J. and J.M. Gieskes. 1981. A model for pore water/solid phase manganese diagenesis in marine sediments. EOS 62:900. Presented at the 1981 AGU Fall Meeting.

* Burdige, D.J., P.E. Kepkay and K.H. Nealson. 1982. An in situ method for determining microbial manganese oxidation rates in sediments. Presented at the Fourth International Symposium on Biomineralization.

Burdige, D.J. and K.H. Nealson. 1983. Bacterial reduction of manganese oxides. Presented at the 1983 American Society for Microbiology (ASM) Annual Meeting.

Burdige, D.J. and K.H. Nealson. 1983. Studies of microbial manganese reduction. Presented at the Sixth International Symposium on Environmental Biogeochemistry.

* Burdige, D.J. 1984. The biogeochemistry of manganese redox reactions. Presented at the Symposium on Dissertations in Chemical Oceanography.

Burdige, D.J. and C.S. Martens. 1984. Amino acid cycling in an organic-rich marine sediment. EOS 65:959. Presented at the 1984 Fall AGU/ASLO Winter Meeting.

Burdige, D.J. and C.S. Martens. 1986. The diagenesis of amino acids in Cape Lookout Bight sediments. EOS 67:1043. Presented at the 1986 AGU/ASLO Winter Meeting.

* Burdige, D.J. 1987. The diagenesis of amino acids in anoxic marine sediments. Virg. J. Sci. 38:118. Presented at the 1987 Virginia Academy of Sciences Annual Meeting (symposium on "Environmental Chemistry of the Chesapeake Bay").
Burdige, D.J. 1988. The utilization of dissolved, free amino acids in anoxic marine sediments. EOS 68:1741. Presented at the 1988 AGU/ASLO Ocean Sciences Meeting.
Burdige, D.J. 1988. The microbial utilization of alanine and glutamic acid in anoxic marine sediments. EOS 69:1122. Presented at the 1988 AGU Fall/ASLO Winter Meeting.
* Burdige, D.J. and C.S. Martens. 1989. Dissolved free amino acids in Cape Lookout Bight pore waters. Presented at the 1989 American Chemical Society Annual Meeting.
Burdige, D.J. 1990. The kinetics of nutrient regeneration in anoxic estuarine sediments. EOS 71:99. Presented at the 1990 AGU/ASLO Ocean Sciences Meeting.
* Cutter, G.A., D.J. Burdige and C.A. Grosch. 1990. The freshwater biogeochemistry of selenium: A time-dependent computer model. Presented at the International Conference on Metals in Soils, Water, Plants, and Animals.
Cornwell, J.C., P. A. Sampou and D.J. Burdige. 1990. Regional trends in phosphorus distribution in Chesapeake Bay sediments: deposition and recycling. Presented at the Chesapeake System Research and Management Conference.
Burdige, D.J. 1990. The factors controlling sulfate reduction and nutrient regeneration in southern Chesapeake Bay sediments. Presented at the 1990 Chesapeake System Research and Management Conference.
Anderson, I.C. J. Homstead, D.J. Burdige and M. Poth. 1991. Factors affecting emissions of NO and N2O by autotrophic and heterotrophic nitrifiers. Presented at the 1991 ASM Annual Meeting.
Anderson, I.C., D.J. Burdige, M. Poth and J. Homstead. 1991. A comparison of nitrogen trace gas production by autotrophic and heterotrophic nitrifiers. Presented at the Tenth International Symposium on Environmental Biogeochemistry.
Burdige, D.J. and S.P. Dhakar. 1991. The effect of manganese oxide mineralogy on manganese reduction in the marine environment. EOS 72:151. Presented at the 1991 Joint AGU/MSA Spring Meeting.
Velinsky, D.J., M.L. Fogel and D.J. Burdige. 1991. The isotopic distribution and diagenesis of nitrogen in coastal marine sediments. EOS 72:152. Presented at the 1991 Joint AGU/MSA Spring Meeting.
Burdige, D.J., J. Homstead and W.M. Berelson. 1992. Benthic fluxes of dissolved organic carbon from marine sediments. Presented at the 1992 ASLO Aquatic Sciences Meeting.
Burdige, D.J., J. Homstead and W.M. Berelson. 1993. Fluxes of dissolved organic carbon from continental marine sediments. Poster presented at the Third Scientific Meeting of The Oceanography Society.
* Burdige, D.J. and J. Homstead. 1993. The role of benthic dissolved organic carbon fluxes in carbon cycling in estuarine sediments. Presented at the 1993 ASLO Annual Meeting.
Sayyar, S., D.J. Burdige and A.S. Gordon. 1993. Amino acid analysis of copper-induced supernatant protein (CuBP1) from chemostat cultures of *Vibrio alginolyticus*. Presented at the 1993 ASM Annual Meeting.
Lustwerk, R.L. and D.J. Burdige. 1993. Iron and manganese reduction in Chesapeake Bay sediments. EOS 74:326. Presented at the 1993 Joint AGU/MSA/GS Spring Meeting.
Scudlark, J.R., T.M. Church, K.M. Conko, G.A. Cutter and D.J. Burdige. 1993. Atmospheric wet deposition of trace elements to Chesapeake Bay. EOS 74:80. Presented at the Joint AGU/MSA/GS Spring Meeting.
* Burdige, D.J. 1993. The early diagenesis of nitrogen in sediments. Presented at the 1993 GSA Annual Meeting, in the symposium "Sedimentary Diagenesis of Nitrogen and Sulfur in Organic Matter".
Dhakar, S.P. and D.J. Burdige. 1994. A steady-state, coupled, non-linear model for early

diagenetic processes in pelagic marine sediments. EOS 75:169. Presented at the 1994 AGU/ASLO Ocean Sciences Meeting.

* Burdige, D.J. 1994. Dissolved organic carbon (DOC) cycling in estuarine sediments: Does the macrobenthos have any effect? Presented at the 1994 Chesapeake Research Conference.

* Burdige, D.J. and S.P. Dhakar. 1994. Non-steady-state diagenetic processes in marine sediments: manganese and iron redox cycling. Mineral. Mag. 58A:134-135. Presented at the 1994 VM Goldschmidt Conference (invited opening lecture for the symposium "Deposition and Diagenesis").

* Burdige, D.J., W.M. Berelson, and J. McManus. 1994. Dissolved organic carbon in the pore waters of California Borderland sediments. EOS 75:311. Presented at the 1994 Fall AGU Meeting.

Burdige, D.J., S.A. Skrabal and J.R. Donat. 1994. The speciation of copper in bottom waters and pore waters of Chesapeake Bay and Atlantic coastal waters: implications for sediment-water exchange. EOS 75:330. Presented at the 1994 Fall AGU Meeting.

Dhakar, S.P. and D.J. Burdige. 1994. A non-steady state, coupled, non-linear model for early diagenetic processes in pelagic marine sediments. EOS 75:390. Presented at the 1994 Fall AGU Meeting.

* Burdige, D.J. 1995. Manganese redox cycling in sediments: Relationships to carbon cycling in recent sediments and on Glacial-Holocene time scales. Presented at the 1995 Gordon Research Conference on Chemical Oceanography.

* Donat, J.R., S.A. Skrabal, and D.J. Burdige. 1995. Copper complexation in pore waters and bottom waters of Chesapeake Bay and the Atlantic shelf/slope: implications for sediment-water exchange. Presented at the 1995 American Chemical Society National Meeting.

Skrabal, S.A., J.R. Donat. and D.J. Burdige. 1995. The speciation of copper in bottom waters and pore waters of Chesapeake Bay and Atlantic coastal waters: Implication for sediment-water exchange. Poster presented at the 1995 Gordon Research Conference on Chemical Oceanography.

Burdige, D.J., K.G. Gardner and S. Zheng. 1996. The molecular weight distribution of dissolved organic matter (DOM) in marine sediment pore waters. EOS 76(3):OS11K. Presented at the 1996 Ocean Sciences Meeting.

Skrabal, S.A., J.R. Donat and D.J. Burdige. 1996. The flux of copper-complexing ligands from Chesapeake Bay sediments. EOS 76(3):OS42J. Presented at the 1996 Ocean Sciences Meeting.

Zheng, S. and D.J. Burdige. 1996. The geochemistry of dissolved organic nitrogen in coastal sediment pore waters. EOS 76(3):OS11K. Presented at the 1996 Ocean Sciences Meeting.

Dhakar, S.P. and D.J. Burdige. 1996. Paleoredox condition in Quaternary sediments determined with a time-dependent sediment diagenesis model. EOS 77(17):O32A. Presented at the 1996 Spring AGU Meeting.

* Berelson, W.M., D.J. Burdige, J. McManus, K. Coale and K. Johnson. 1996. Is DOC an important component of benthic carbon cycling? EOS 77(46):OS72B. Presented at the 1996 Fall AGU Meeting.

McManus, J., G.P. Klinkhammer, W.M. Berelson, D.E. Hammond, K. Coale, K. Johnson, D.J. Burdige, D.C. McCorkle. 1996. Diagenetic alteration of the marine barite record under suboxic conditions. EOS 77(46):OS21A. Presented at the 1996 Fall AGU Meeting.

Zheng, S. and D.J. Burdige. 1997. Dissolved organic nitrogen (DON) fluxes from coastal and continental margin sediments. Presented at the 1997 ASLO Aquatic Sciences Meeting.

Skrabal, S.A., J.R. Donat and D.J. Burdige. 1997. Fluxes of strong copper-complexing ligands from estuarine sediments: A source to the water column? Presented at the 1997 American Chemical Society National Meeting.

Burdige, D.J. 1997. A conceptual model for dissolved organic matter (DOM) remineralization in marine sediments. Poster presented at the 1997 GSA Annual Meeting.

Berelson, W.M., D.J. Burdige, K. H. Coale, J. McManus and K.S. Johnson. 1997. The cycling of DOC in Southern California Borderland basins. Poster presented at the 1997 Gordon Research Conference on Chemical Oceanography.

Burdige, D.J., W.M. Berelson, K. H. Coale, J. McManus and K.S. Johnson. 1997. Fluxes of dissolved organic carbon (DOC) from continental margin sediments. Poster presented at the 1997 Gordon Research Conference on Chemical Oceanography.

Price, D., J.R. Donat and D.J. Burdige. 1997. Fluxes of copper-complexing ligands from the sediments to the water column in Chesapeake Bay: Ligand persistence experiments. Poster presented at the 1997 Gordon Research Conference on Chemical Oceanography.

Chen, W. and D.J. Burdige. 1998. Characterization of pore water DOM in marine sediments by fluorescence spectroscopy. EOS 79(1):OS22G. Presented at the 1998 AGU/ASLO Ocean Sciences Meeting.

Gardner, K.G. and D.J. Burdige. 1998. Dissolved carbohydrates in marine sediment pore waters. EOS 79(1):OS12G. Presented at the 1998 AGU/ASLO Ocean Sciences Meeting.

Price, D., J.R. Donat and D.J. Burdige. 1998. Persistence of copper-complexing ligands derived from Chesapeake Bay porewaters: Implications to water column copper biogeochemistry. EOS 79(1):OS51C. Presented at the 1998 AGU/ASLO Ocean Sciences Meeting.

Skrabal, S.A., J.R. Donat, and D.J. Burdige. 1998. Copper-complexing ligands in estuarine waters: the role of sediments. Poster presented at the 1998 Gordon Conference on Chemical Oceanography.

Byers, D.G., J.R. Donat and D.J. Burdige. 1998. Zinc concentrations, complexation and speciation in estuarine sediment pore waters. Presented at the Fall Meeting of the Chesapeake Regional Chapter of the Society of Environmental Toxicology and Chemistry.

Burdige, D.J. 1999. The composition and reactivity of dissolved organic matter (DOM) in marine sediment pore waters. Presented at the 1999 ASLO Aquatic Sciences Meeting.

Byers, D.G., J.R. Donat and D.J. Burdige. 1999. Zinc concentrations, complexation and speciation in sediment pore waters of the Chesapeake Bay and Elizabeth River, Virginia. Presented at the 1999 ASLO Aquatic Sciences Meeting.

Kline, S. and D.J. Burdige. 1999. Fluorescence excitation–emission matrix spectroscopy of marine sediment pore waters. Poster presented at the 1999 Gordon Research Conference on Chemical Oceanography.

Burdige, D.J., S.W. Kline, L.S. Chasar, J.P. Chanton, P. Glaser and D.I. Siegel. 2000. Examination of dissolved organic matter (DOM) sources using fluorescence spectroscopy. EOS 80(49):OS21K-02. Presented at the 2000 AGU/ASLO Ocean Sciences Meeting.

Kline, S.W. and D.J. Burdige. Protein-like fluorescence in carbonate sediments. 2000. EOS 80(49):31A-10. Poster presented at the 2000 AGU/ASLO Ocean Sciences Meeting.

Reeves, H.N., W.J. Bounds, D.J. Burdige and K.H. Johannesson. 2000. Rare earth element and organic ligand complexation: evidence from a groundwater dominated blackwater lake and other natural waters. Presented at the 2000 GSA Annual Meeting.

Burdige, D.J. and R.C. Zimmerman. 2000. The seagrass-carbonate sediment system: A natural mechanism for atmospheric CO_2 sequestration. EOS 81(48):B12A-09. Poster presented at the 2000 Fall AGU meeting.

* Burdige, D.J. 2001. The cycling of dissolved organic matter (DOM) in estuarine sediments. Presented at the 2001 ALSO Aquatic Sciences Meeting.

Burdige, D.J. and R.C. Zimmerman. 2001. Carbonate dissolution in Bahamas sediments with contrasting seagrass densities. Poster presented at the 2001 Gordon Research Conference on Chemical Oceanography.

Carrasco, G.G., J.R. Donat and D.J. Burdige. 2001. Benthic fluxes of copper and zinc and their complexing ligands in the Elizabeth River estuary. Presented at the Atlantic Estuarine Research Society spring meeting.

Carrasco, G.G., J.R. Donat and D.J. Burdige. 2001. Benthic fluxes of copper and zinc and their

complexing ligands in the Elizabeth River, Virginia. Presented at the spring meeting of the Chesapeake and Potomac Regional Chapter of the Society of Environmental Toxicology and Chemistry.

Carrasco, G.G., J.R. Donat, and D.J. Burdige. 2001. Benthic fluxes of copper, zinc, and cadmium and their complexing ligands in the Elizabeth River, Virginia. Presented at the 22nd Annual Meeting of the Society of Environmental Toxicology and Chemistry.

Donat, J.R. and D.J. Burdige. 2001. Trace metal concentrations, speciation, and benthic fluxes in the Elizabeth River, Virginia. Presented at the 2001 ALSO Aquatic Sciences Meeting.

* Donat, J.R. and D.J. Burdige. 2001. Water column complexation and speciation of copper, zinc, and cadmium and their benthic fluxes in the Elizabeth River, Virginia. Presented at the 24th Annual Conference on Analysis of Pollutants in the Environment.

Donat, J.R., D.J. Burdige, G.G. Carrasco, and M.T. Brown. 2001. Complexation, speciation, and sediment-water cycling of metals in the Elizabeth River, Virginia (a major U.S. harbor). Presented at the International Conference on Remediation of Contaminated Sediments.

Kline S.W. and D.J. Burdige. 2001. Fluorescence in estuarine sediment pore waters determined by excitation-emission matrix spectroscopy (EEMS). Presented at the 2001 ALSO Aquatic Sciences Meeting.

Olkaba, J., D.J. Burdige, and K.H. Johannesson. 2001. Dissolved organic carbon and nitrogen in the Great Dismal Swamp. Poster presented at the 2001 ALSO Aquatic Sciences Meeting.

Simjouw, J.-P., D.J. Burdige and R.C. Zimmerman. 2001. Carbonate dissolution in Bahamas sediments with contrasting seagrass densities. Presented at the 2001 ALSO Aquatic Sciences Meeting.

Burdige, D.J., E. Boss and R. Zaneveld. 2002. The role of seagrasses as a source of CDOM to tropical coastal waters. Presented at the 2002 Ocean Sciences Meeting.

Kline, S.W. and D.J. Burdige. 2002. Fluorescence of pore water dissolved organic matter in shallow water marine carbonate sediments as a function of seagrass density. Presented at the 2002 Ocean Sciences Meeting.

Carrasco, G.G., J.R. Donat and D.J. Burdige. 2002. Benthic fluxes of copper, zinc and cadmium and their complexing ligands in the Elizabeth River, Virginia and the Chesapeake Bay. Presented at the 2002 Ocean Sciences Meeting.

Sharp, J.H. et al. (13 authors including DJB). 2002. A high temperature combustion instrument comparison for measurement of dissolved organic nitrogen in seawater. Presented at the 2002 Ocean Sciences Meeting.

* Burdige, D.J. and R.C. Zimmerman. 2003. Sediment-seagrass interactions and carbonate dissolution: scaling up the local rates of these processes to examine regional carbon budgets. Presented at the 2003 ASLO Aquatic Sciences Meeting.

* Zimmerman, R.C. and D.J. Burdige. 2003. Oceanic and diagenetic controls of seagrass distributions on the Bahamas Banks. Presented at the 2003 ASLO Aquatic Sciences Meeting.

Hu, X. and D.J. Burdige. 2003. Dissolved carbohydrates and dissolved organic carbon in carbonate sediments, Lee Stocking Island, Bahamas. Presented at the 2003 ASLO Aquatic Sciences Meeting.

Burdige, D.J. 2003. Some general observations on the composition of organic matter undergoing remineralization in marine sediments. Poster presented at the 2003 Gordon Research Conference on Chemical Oceanography.

Hu, X. and D.J. Burdige. 2003. The role of O_2 input on sedimentary carbonate dissolution- a simulation experiment. Poster presented at the 2003 Gordon Research Conference on Chemical Oceanography.

Burdige, D. J., R.C. Zimmerman, L. Bodensteiner, X. Hu. 2003. Sediment-seagrass interactions and sediment carbonate dissolution: ecological and geochemical considerations. Presented at the 2003 ERF Meeting.

Hu, X. and D.J. Burdige. 2004. Stable carbon isotopes in tropical sediment pore waters. Poster

presented at the 2004 Ocean Sciences Meeting.

Dierssen, H.M., R.C. Zimmerman and D.J. Burdige. 2004. Wind rows and whitings: Unique bio-optical phenomenon in the Bahamas Banks. Abstract presented at Ocean Optics XVII.

Burdige, D.J. and Hu, X. 2005. Isotopic evidence for shallow-water carbonate dissolution and reprecipitation. Poster presented at the 2005 VM Goldschmidt Conference, Moscow ID. Geochim. Cosmochim. Acta 69(10S): A130.

Burdige, D.J., X. Hu and R.C. Zimmerman. 2005. A carbonate dissolution budget for shallow water carbonate platforms. Poster presented at the 2005 Gordon Research Conference on Chemical Oceanography.

Hu, X. and D.J Burdige. 2005. Carbonate recrystallization in marine sediments: Observations from an incubation study. Poster presented at the 2005 Gordon Research Conference on Chemical Oceanography, Tilton NH.

Zimmerman, R. C., and D.J. Burdige. 2005. Oceanic and diagenetic controls of seagrass distributions on the Bahamas Banks. Presented at the 2005 Estuarine Research Federation Biennial Conference, Norfolk VA.

Burdige, D.J., X. Hu and R.C. Zimmerman. 2006. Quantifying carbonate dissolution rates in shallow water carbonate platform sediments. Poster presented at the 2006 Ocean Sciences Meeting, Honolulu HI.

* Burdige, D.J. 2006. Non-steady state diagenesis in aquatic sediments. Invited talk (tutorial) presented at the 2006 ASLO Summer Meeting, Victoria BC (Canada) - symposium "Transient Diagenesis: Reconstructing the Past and Predicting the Future."

Gargett, A.E., D.J. Burdige and R.C, Zimmerman. 2006. Biological implications of Langmuir supercells, Presented at the 2006 ASLO Summer Meeting, Victoria BC (Canada).

Burdige, D.J., X. Hu and R.C. Zimmerman. 2006. Carbonate dissolution rates in permeable carbonate platform sediments. Poster presented at the 2006 Gordon Research Conference on Permeable Sediments, Colby College, Waterville, ME.

Ranck, T.S., L.A. Tallet, D.M. Tillman, D.J. Burdige, and G.R. Whittecar. 2006. Sources of salinity in a brackish coastal-zone borrow-pit lake, Portsmouth, Virginia. Poster presented at the 2006 Geol. Soc. Am. Annual Meeting, Philadelphia, PA.

Johannesson, K.H. and D.J. Burdige. 2006. Evaluating the role of groundwater in the global oceanic neodymium budget. Presented at the 2006 Geol. Soc. Am. Annual Meeting, Philadelphia, PA.

Burdige, D.J., X. Hu and R.C. Zimmerman. 2007. Carbonate dissolution in shallow water carbonate platform sediments. Poster presented at the 2007 Gordon Research Conference on Chemical Oceanography, Tilton NH.

Dierssen, H., R. Zimmerman, and D. Burdige. 2007. Bahamian windrows and whitings: Benthic processes shaped by wind-driven Langmuir supercells. Presented at the 2007 Estuarine Research Federation Biennal Conference, Providence, RI.

Dierssen, H.M., D. Burdige, L.A. Drake, and R.C. Zimmerman. 2008. Episodic carbon export of benthic macroalgae from the Great Bahama Bank to the deep seafloor visible from satellite imagery. Presented at the 2008 Ocean Sciences Meeting, Orlando, FL.

Johannesson, K.H., D. Chevis, D.J. Burdige, J.E. Cable. 2008. Rare earth element cycling in a subterranean estuary. Presented at the 2008 VM Goldschmidt Conference.

Dierssen, H.M., R.C. Zimmerman, L.A. Drake, and D. Burdige. 2008. Net primary productivity on the Bahama Banks revisited. Presented at Ocean Optics XIX.

Burdige, D.J., X. Hu and R.C. Zimmerman. 2008. Shallow water carbonate dissolution and ocean acidification: impacts and feedbacks. Poster presented at the 2008 Fall AGU meeting.

* Johannesson, K.H., D. Chevis, D.J. Burdige, J.E. Cable, J.B. Martin, and M. Roy. 2008. Submarine groundwater discharge of rare earth elements: Evidence of an important trace element flux to coastal waters. Presented at the 2008 Fall AGU meeting.

Corbett, J., J. Chanton, P. Glaser, D. Siegel, W. Cooper and D. Burdige. 2008. Using ^{14}C to

investigate methane production and DOC reactivity in northern peatlands. Poster presented at the 2008 Fall AGU meeting.

Komada, T., Burdige D. J., Jinuntuya M., Crispo, S., Johnson L., Pitts A., and Polly J. A. 2009. Cycling of dissolved organic matter in Santa Monica Basin sediments and its linkages to deep reaction zones. Poster presented at the 2009 Gordon Research Conference on Chemical Oceanography.

Corbett, J.E., Chanton, J.P., Burdige, D.J., Glaser, P.H., Cooper, W.T., Siegel, D.I., Dasgupta, S.S., and Tfaily, M.M. 2009. Using C/N ratios and diagenetic modeling to investigate DOM reactivity and fluxes in Northern Peatlands. Poster presented at the 2009 Fall AGU Meeting.

Hu, X., D. J. Burdige and R. C. Zimmerman. 2009. Light controls carbon isotope signatures of turtlegrass across the Great Bahamas Bank. Presented at the Coastal and Estuarine Research Federation 20th Biennial Conference, Portland, OR.

Crispo, S.M., L. Johnson, T. Komada, and D. J. Burdige. 2010. Isotopic signatures of porewater DIC in Santa Monica Basin sediments: A method for determining DIC sources. Presented at the 2010 Ocean Sciences Meeting.

Komada, T., D. J. Burdige, M. Jinuntuya, S. M. Crispo, L. Johnson, A. Pitts, and J. Polly. 2010 Reactivity of porewater dissolved organic carbon in Santa Monica Basin sediments. Poster presented at the 2010 Ocean Sciences Meeting.

Burdige, D.J. and T. Komada. 2010. Anaerobic oxidation of methane and the stoichiometry of remineralization processes in continental margin sediments. Presented at the 2010 Ocean Sciences Meeting.

Burdige D.J. 2010. A modeling study of organic matter remineralization in deeply-buried marine sediments. Presented at the 2010 VM Goldschmidt Conference. Geochim. Cosmochim. Acta 74(12S): A127.

Chevis D., Johannesson K., Burdige D., Cable J., Martin J., and Roy M. 2010. Submarine groundwater flux of Nd to coastal waters. Presented at the 2010 VM Goldschmidt Conference. Geochim. Cosmochim. Acta 74(12S): A174.

Corbett J.E., Chanton J.P., Burdige D., Glaser P.H., Cooper W.T., Siegel D.I., Dasgupta S.S., and Tfaily M.M. 2010. Partitioning peatland gas production: Determining the fraction of CO_2 produced from methanogenesis. Presented at the 2010 VM Goldschmidt Conference. Geochim. Cosmochim. Acta 74(12S): A190.

Pitts, A.K., Burdige, D.J., Cook, D.C., and Canuel, E.A. 2010. Effect of physical reworking and bioturbation on sedimentary reactive iron within a microtidal estuary. Presented at the 2010 VM Goldschmidt Conference. Geochim. Cosmochim. Acta 74(12S): A818.

Corbett J.E., Chanton J.P., Burdige D., Glaser P.H., Cooper W.T., and Tfaily M.M. 2010. Partitioning peat respiration with stable carbon isotopes. Presented at the 2010 Fall AGU meeting.

Komada T., Burdige D. J., Crispo S. M., Druffel E. R. M., Griffin S., Johnson L. 2010. Reactivity of dissolved organic carbon in Santa Monica Basin sediments: Clues from carbon isotope signatures. Poster presented at the 2010 Fall AGU Meeting.

Howerton, Z. and Burdige, D.J. 2011. Phosphorus cycling in tropical carbonate sediment-sea grass systems. Poster presented at the 2011 Gordon Research Conference on Chemical Oceanography.

Corbett, J.E., Chanton, J.P., Tfaily, M., Cooper, W.T., Burdige, D., and Glaser, P. 2011. Partitioning peat respiration in the catotelm. Presented at the 2011 GSA Annual Meeting (Minneapolis MN).

Burdige, D.J., Chanton, J.P., Cooper, W.T., Corbett, J.E., Glaser, P., and Tfaily, M. 2011. Linking dissolved organic carbon dynamics with terminal remineralization processes in peatlands. Presented at the 2011 GSA Annual Meeting (Minneapolis MN).

Glaser, P. et al. (incl. D.J. Burdige). 2011. The Red Lake Peatland Observatory (RLPO): a multi-

sensor instrument array for monitoring carbon-water dynamics in a large northern peatland. Presented at the 2011 GSA Annual Meeting (Minneapolis MN).

Burdige D. J. and Komada T. 2012. Linkages between sulfate reduction and methanogenesis in marine sediments through dissolved organic carbon intermediates. Poster presented at the 2012 Ocean Sciences Meeting (Salt Lake City, UT).

Komada T., Burdige D. J., Crispo S. M., Druffel E. R. M., Griffin S., Johnson L. 2012. Radiocarbon signatures of dissolved organic carbon (DOC) in Santa Monica Basin sediments and implications for the role of sediments in the oceanic DOC cycle. Presented at the 2012 Ocean Sciences Meeting (Salt Lake City, UT).

Corbett, J.E., Chanton, J.P., Tfaily, M.M., Cooper, W.T., Burdige, D.J. and Glaser, P.H. 2012. An isotope mass balance approach to distinguishing sources of CO_2 production in northern Minnesota peatlands. Presented at the 9th International Wetlands Conference (Orlando, FL).

Chevis, D.A., Johannesson, K.H., Burdige, D.J., Cable, J.A., Martin, J.B., Kelly, R.P., Moran, S.B. and White, C.D. 2012. Assessing the role of submarine groundwater discharge on the rare earth element budgets of two estuaries. Presented at the 2012 Goldschmidt Conference.

* Najjjar, R., et al. (15 co-authors incl. DJB). 2012. The carbon budget for coastal waters of the eastern United States. Presented at the 4th North American Carbon Program All-Investigators Meeting, Albuquerque, NM.

Pilskaln, C., K. Hayashi, D. Burdige, J. Salisbury, E. Vandemark. 2012. Carbon budget for the Gulf of Maine: water column to sediments. Presented at the 4th North American Carbon Program All-Investigators Meeting, Albuquerque, NM.

Komada, T., D.J. Burdige, S. Crispo, E.R.M. Druffel, S. Griffin, L. Johnson. 2012. Composition of metabolizable organic matter in anoxic sediments of the Santa Monica Basin inferred from ^{14}C and ^{13}C signatures of particulate and dissolved organic carbon. Poster presented at the 2012 Fall AGU meeting, San Francisco, CA.

Cada, A.K., H.L. Li, D.J. Burdige, and T. Komada. 2013. Microbial methane production in anoxic continental margin sediments: Insights from isotope profiles of dissolved inorganic carbon (DIC). Presented at the Annual Biomedical Research Conference for Minority Students, Nashville, TN.

Chevis, D.A., Johannesson, K.H., Burdige, D.J., Cable, J.E. and Martin, J.B. 2013. Estimating the submarine groundwater discharge flux of rare earth elements to the Indian River Lagoon, FL, USA, using the 1—D vertical –flow equation. Presented at the 2013 Fall AGU Meeting, San Francisco, CA.

Burdige, D. J., Komada, T., Chanton, J.P., and Magen, C. 2014. Linear pore water gradients in continental margin sediments do not necessarily imply a diffusion-only, no-reaction zone. Poster presented at the 2014 Ocean Sciences Meeting, Honolulu, HI.

Hill, V., Zimmerman, R.C., and Burdige, D.J. 2014. The influence of CO_2 availability on the release of dissolved organic carbon from eelgrass *Zostera marina*. Poster presented at the 2014 Ocean Sciences Meeting, Honolulu, HI.

Komada T., Burdige D. J., Cada A. K., Chanton J., and Magen C. 2014. Radiocarbon values of methane and dissolved inorganic carbon in Santa Barbara Basin sediments: implications for carbon cycling below the sulfate-reducing zone. Poster presented at the 2014 Ocean Sciences Meeting, Honolulu, HI.

Magen, C., Finke, N., Komada, T., Burdige, D.J. and Chanton, J.P. 2014. Production of methane in the upper water column of the open ocean associated with the chlorophyll maximum. Poster presented at the 2014 Ocean Sciences Meeting, Honolulu, HI.

Abdulla H., Komada T., Hatcher P. and Burdige D. 2014. Changes in the chemical composition of porewater dissolved organic matter across the sulfate methane transition region. Poster presented at the 2014 Goldschmidt Conference, Sacramento CA.

Burdige D., Komada T., Magen C., and Chanton J. 2014. Remineralization processes across the

sulfate-methane transition zone in contrasting California Borderland basin sediments. Poster presented at the 2014 Goldschmidt Conference, Sacramento CA.

Fox C., Lewicki J., Abdulla H., Harley S., Burdige D., Magen C., Chanton J. and Komada T. 2014. Characterization of whole porewater dissolved organic matter by ^{1}H NMR. Poster presented at the 2014 Goldschmidt Conference, Sacramento CA.

Komada T., Li H.L., Burdige D., Cada A., Grose A., Magen C. and Chanton J. 2014. Radiocarbon signatures of dissolved organic carbon in anoxic sediments of the Santa Barbara Basin. Poster presented at the 2014 Goldschmidt Conference, Sacramento CA.

Li, H.L., Burdige, D. and Komada, T. 2014. Reactivity of pore water dissolved organic carbon in the water column: Initial findings from an incubation experiment. Poster presented at the 2014 Goldschmidt Conference, Sacramento CA.

Magen, C., Chanton, J., Burdige, D. and Komada, T. 2014. Radiocarbon and stable isotope signatures of sedimentary methane at a coastal California basin. Poster presented at the 2014 Goldschmidt Conference, Sacramento CA.

Johannesson, K., Palmore, C. D., Chevis, D.A., Prouty, N.G., Swarzenski, P.W., and Burdige, D.J. 2014. Rare earth element (REE) behavior during mixing in subterranean estuaries along the Kona coast of Hawaii. Presented at the 2014 GSA Annual Meeting, Vancouver, B.C. Canada.

Corbett J.E., Tfaily M.M, Burdige D.J., Glaser P.H., and Chanton J.P. 2014. Quantifying methanogenesis and methane loss from northern wetlands. Poster presented at the 2014 Fall AGU Meeting, San Francisco, CA.

Komada, T., Li, H.L., Cada, A., Burdige, D., Magen, C., Chanton, J. and Grose, A. 2014. Radiocarbon evidence for active turnover of pore-water dissolved organic carbon in the methanogenic and sulfate-methane-transition zones of Santa Barbara Basin sediments. Poster presented at the 2014 Fall AGU Meeting, San Francisco, CA.

* Johannesson, K., Chevis, D.A., Palmore, C. D., Telfeyan, K. Burdige, D., Cable, J., Hemming, S., Rasbury, T., Moran, S., Prouty, N., Swarzenski, P. 2014. Submarine groundwater discharge is an important source of REEs to the coastal ocean. Poster presented at the 2014 Fall AGU Meeting, San Francisco, CA.

Fox C., Lewicki J., Abdulla H., Burdige D., Magen C., Chanton J. and Komada T. 2014. Characterization of whole porewater dissolved organic matter by ^{1}H NMR. Poster presented at the 2014 Fall AGU Meeting, San Francisco, CA.

Fox, C., Lewicki, J. P., Abdulla, H., Burdige, D., Magen, C., Chanton, J., Komada, T. 2015. Characterization of whole porewater dissolved organic matter in anoxic sediments by ^{1}H NMR. Presented at the ASLO 2015 Aquatic Sciences Meeting, Granada Spain.

Moore, T.N. and Burdige, D.J. 2015. Ocean acidification effects on carbonate dissolution. Poster presented at the ASLO 2015 Aquatic Sciences Meeting, Granada Spain.

Burdige, D.J., Komada, T., Magen, C. and Chanton, J.P. 2015. A stable isotope model for DIC and methane in Santa Barbara Basin sediments. Poster presented at the 2015 Chemical Oceanography Gordon Research Conference.

Monteverde D., Baronas, J., Berelson, W., Burdige, D., Rollins, N., and Sanudo-Wilhelmy, S. 2015. Dissolved B-vitamins in coastal marine sediments of San Pedro Basin, CA. Presented at the 2015 Goldschmidt Conference, Prague, Czech Republic.

Jaisi, D.P., Joshi, S., Kukkadapu, R.K. and Burdige, D. 2015. Remineralization vs. reductive dissolution pathway of phosphorus cycling: A case study in the Chesapeake Bay. Presented at the 2015 Fall AGU Meeting, San Francisco, CA.

Najjar, R. and others (23 co-authors including DJB). 2015. The carbon budget for coastal waters of Eastern North America. Presented at the 2015 Fall AGU Meeting, San Francisco, CA.

McManus, J., Wheat, C., Orcutt, B., Fisher, Hulme, S and Burdige, D. 2015. Carbon and nutrient dynamics in cool ridge-flank hydrothermal springs: The Dorado Outcrop of the Eastern Pacific. Presented at the 2015 Fall AGU Meeting, San Francisco, CA.

Komada, T., Fox C., Li, H.-L., Burdige, D. Abdulla, H.A., and Lewicki, J.P. 2016. What

constitutes the refractory component of pore-water dissolved organic matter? Poster presented at the 2016 Ocean Sciences Meeting, New Orleans, LA.

* Burdige, D.J., Abdulla, H., and T. Komada. 2016. Dissolved organic matter (DOM) cycling in anoxic marine sediments: General observations and the formation of refractory DOM. Presented at the workshop "Microbial contribution and impact on soil organic matter, structure and genesis" (SOMmic), Leipzig, Germany.

Komada, T., Burdige, D., Abdulla, H. A., Fox, C., Li, H. L., and Lewicki, J. P. 2016. A common refractory component in pore-water DOM from two anaerobic continental margin sediments with contrasting POM content and composition. Poster presented at the 2016 Fall AGU Meeting, San Francisco, CA.

Burdige, D. J., Komada, T., and Christensen, J. 2017. Iron geochemistry in two contrasting continental margin sediments. Poster presented at the 2017 Gordon Research Conference on Chemical Oceanography, Colby-Sawyer College, NH.

Burdige, D. J., Zimmerman, R. C., Dobbs, F. C., Hung, C.-C., and Ho, C.-Y. 2017. An in situ ocean acidification experiment in shallow water seagrass sediments. Paper presented at the 2017 Biennial CERF meeting, Providence, RI, USA.

Long, M. H., Zimmerman, R. C., Burdige, D. J., and McCorkle, D. C. 2017. Benthic biogeochemical cycling mediates large diel changes in coastal pH and carbonate chemistry. Paper presented at the 2017 Biennial CERF meeting, Providence, RI.

Najjar, R. G. et al. (27 co-authors including D.J. Burdige). 2017. Carbon budget of tidal wetlands, estuaries, and shelf waters of Eastern North America. Poster presented at the 2017 Biennial CERF meeting, Providence, RI.

Zimmerman, R. C., Hill, V. J., Burdige, D. J., Collister, B., and Long, M. 2017. Understanding the role of seagrasses in sequestering CO_2 in coastal habitats. Paper presented at the 2017 Biennial CERF meeting, Providence, RI.

Abdulla, H. A., D. J. Burdige, and T. Komada. 2018. Abiotic formation of dissolved organic sulfur in anoxic sediment of Santa Barbara Basin. Paper presented at the 2018 Goldschmidt Conference. Boston, MA.

* Burdige, D. J. 2018. Linking iron oxide mineralogy and organic matter preservation in sediments (invited keynote talk). Presented at the 2018 Goldschmidt Conference. Boston, MA.

Burdige, D. J., T. Komada, and J. P. Christensen. 2018. Iron geochemistry in two contrasting continental margin sediments and its impact on sedimentary sources of iron to the water column [CT14A-1254]. Poster presented at the 2018 Ocean Sciences Meeting. Portland, OR, 12-16 Feb.

Christensen, J. P., and D. J. Burdige. 2018. Sedimentary carbon oxidation on the West Antarctic Shelf in relation to iron resolubilization [CT14A-1260]. Poster presented at 2018 Ocean Sciences Meeting. Portland, OR, 12-16 Feb.

Fox, C., H. Abdulla, D. Burdige, J. Lewicki, and T. Komada. 2018. Composition and reactivity of unfractionated dissolved organic matter in anaerobic marine sediments analyzed by 1H nuclear magnetic resonance spectroscopy [SS011-22]. Poster presented at the ASLO 2018 Summer Meeting. Victoria, BC Canada, 10-15 June.

Long, M. H., R. C. Zimmerman, D. Burdige, and D. C. McCorkle. 2018. Accessing diel changes in coastal oxygen, pH and carbonate chemistry driven by ecosystem metabolic processes [OC12A-02]. Presented at the 2018 Ocean Sciences Meeting. Portland, OR, 12-16 Feb.

Burdige, D.J., Zimmerman, R.C. and Long, M.H. 2019. The seagrass sediment carbon pump and its impact on carbon dynamics in coastal environments. Presented at the CERF 2019 25th Biennial Conference. Mobile, AL.

Long, M.H., Zimmerman, R.C. and Burdige, D. 2019. Novel insights from high-frequency, in-situ primary productivity and physical exchange rates in a seagrass-dominated coastal ecosystem. Presented at the AGU Fall Meeting 2019. San Francisco, CA.

Long, M.H., Burdige, D.J., McCorkle, D.C., Rheuban, J. and Zimmerman, R.C. 2019. Coastal primary productivity: Apportioning benthic, water column, and atmosphere exchange importance with in-situ fluxes. Presented at the CERF 2019 25th Biennial Conference. Mobile, AL.

Abdulla, H.A., Burdige, D. and Komada, T. 2020. Structural elucidation of deaminated peptides in anoxic sediments. Presented at the Ocean Sciences Meeting 2020. San Diego, CA.

Burdige, D. and Komada, T. 2020. Sediments in low oxygen environments as a potential source of iron to the water column: The role of iron redox cycling and sediment resuspension. Presented at the Ocean Sciences Meeting 2020. San Diego, CA.

Zimmerman, R.C., Long, M.H., Burdige, D.J., Hill, V.J., Collister, B., Islam, K.A., Li, J., Coffer, M. and Schaeffer, B.A. 2020. Carbon flux and blue carbon potential of seagrass ecosystems in the Anthropocene. Presented at the Ocean Sciences Meeting 2020. San Diego, CA.

* Burdige D.J, Komada T, and Abdulla H.A. 2020. Linking dissolved organic matter composition data to reaction-transport models of sediment diagenesis (invited keynote talk). Presented at the (virtual) 2020 Goldschmidt Conference in Honolulu, HI.

Abdulla H.A., Komada, T. and Burdige, D.J. 2020. A tale of two basins: The role of peptide deamination in the accumulation of pore water dissolved organic matter in marine sediments. Presented at the (virtual) 2020 Goldschmidt Conference in Honolulu, HI.

Komada T., Burdige D.J. and Abdulla H.A. 2020. Testing peptide deamination as a pathway for refractory DOM production in sediments: Incubation experiment results. Presented at the (virtual) 2020 Goldschmidt Conference in Honolulu, HI.

Long, M.H., Rheuban, J.E., McCorkle, D.C., Wankel, S.D., Sutherland, K., Burdige, D.J. and Zimmerman, R.C. 2020. Advances in the aquatic eddy covariance technique and the unique challenges of aquatic boundary layers: Waves, ebullition, and biogeochemical mass-balance closure. AGU Fall Meeting 2020, (virtual).

Cross, B., H.A. Abdulla, T. Komada, and D. Burdige. 2021. Deciphering the abiotic sulfurization of porewater dissolved organic matter by 3-D molecular network analysis. 2021 Fall AGU Meeting. New Orleans, LA.

Abdulla, H., Komada, T. & Burdige, D. J. 2022. Accumulation of peptides and deaminated peptides in sediment porewaters under different redox conditions. Goldschmidt Conference 2022. Honolulu, HI.

Burdige, D. J. & Komada, T. 2022. Reaction-transport modeling of pore-water DOC and its isotopic composition in Santa Monica Basin (CA) sediments. Goldschmidt Conference 2022. Honolulu, HI.

Komada, T., Suddes, L., Burdige, D. J. & Abdulla, H. 2022. Persistence and transformation of DOM in marine sediment pore waters examined by ^{1}H NMR. Goldschmidt Conference 2022. Honolulu, HI.

Suddes, L., Abdulla, H., Burdige, D. and Komada, T., 2022. Comparison of DOM composition in mixed-redox and anoxic sediment porewaters using ^{1}H-NMR. 2022 Ocean Sciences Meeting, Honolulu, HI (virtual).

Allen C.D., Abdulla H.A., Burdige D.J., Suddes L.A., Cochlan W.P., and Komada T. 2023. Investigating marine sediments as sources of ^{14}C-depleted dissolved organic carbon in the deep ocean. 2023 Fall AGU Meeting, San Francisco, CA.

Reithmaier, G., A Cabral, A Akhand, MJ Bogard, Alberto Borges, S Bouillon, DJ Burdige, M Call, N Chen, X Chen, LC Cotovicz Jr, MJ Eagle, E Kristensen, KD Kroeger, Z Lu, DT Maher, K Xiao, YYY Yau, and IR Santos. 2023, Coastal acidification and carbon sequestration driven by inorganic carbon export from tidal wetlands. 2023 Aquatic Sciences Meeting.

Tamborski, J., Sarker, Md. O., Rahman, S., Burdige, D., Siebach, K., Rampe, E.B. and Thorpe, M. 2023. Evidence of secondary mineral formation in a pro-glacial groundwater-surface water mixing zone. 2023 Fall AGU Meeting, San Francisco, CA.

Abdulla, H., T. Komada, and D. Burdige. 2024. Formation of dissolved organic sulfur in

sediment porewaters under different redox conditions. 2024 Goldschmidt Conference. Chicago, IL.

Burdige, D.J. 2024. Sediment iron redox cycling, ocean deoxygenation and possible negative feedbacks on rising anthropogenic CO_2. 2024 Goldschmidt Conference. Chicago, IL.

Komada, T., H. Abdulla, and D. Burdige. 2024. Net production of ancient DOC in continental margin sediments. 2024 Goldschmidt Conference. Chicago, IL.

Rahman, S., Tamborski, J., Sarker, Md., Burdige, D., Siebach, K., Rampe, E.B., and Thorpe, M. 2024. Pro-glacial groundwater-surface water mixing zones: A novel approach to determining chemical weathering rates (EP43E-09). 2024 Fall AGU Meeting. Washington, D.C.

Zimmerman, R.C., Hill, V.J., Burdige, D. and Hale, R. 2025. Blue carbon and SAV in the Chesapeake Bay: Where's the peat?, CERF 2028 28th Biennial Conf., Richmond, VA.

Zimmerman, R.C., Hill, V.J., Burdige, D.J. and Hale, R.P. 2025. Blue carbon sequestration by submerged aquatic vegetation in Chesapeake Bay: Where's the peat?, AGU2025, New Orleans, LA.

Abdulla, H., Burdige, D.J. and Komada, T. 2026. Microbial production of refractory deaminated peptides across redox conditions, Winter Conference 2026: Mass Spectrometry in Microbial Sciences (to be presented).

Tamborski, J.J., Rahman, S., Thorpe, M.T., Sarker, M.O., Burdige, D.J., Putnam, A., Wilcox, M.C., Siebach, K. and Rampe, E.B. 2026. Constraining chemical weathering rates and secondary phase formation in a pro-glacial groundwater-surface water mixing zone, ASLO-SIL 2026 Joint Meeting (to be presented), Montreal, Quebec CA.

GRANTS AWARDED

Radiotracer and Inhibitor Studies of Amino Acid Cycling in Anoxic Marine Sediments – NSF Chemical Oceanography Program; 8/16/86-8/15/88; $107,821.

REU (Research Experience for Undergraduates) Supplement to "Radiotracer and Inhibitor Studies of Amino Acid Cycling in Anoxic Marine Sediments" – NSF Chemical Oceanography Program; 8/16/87-8/15/88; $4,000.

A Kinetic Geochemical Model for Redox Speciation (G. Cutter, DJB and C. Grosch, Co-PI's) – Electric Power Research Institute; 1/1/88-5/31/88; $24,550.

Sediment Data Collection Program for the Southern Chesapeake Bay – Va. State Water Control Board/EPA Chesapeake Bay Program; 4/1/88-3/31/89; $44,478.

Radiotracer and Inhibitor Studies of Amino Acid Cycling in Anoxic Marine Sediments – NSF Chemical Oceanography Program; 12/15/88-5/31/90; $53,294.

Geochemistry of Sediments from the Southern Chesapeake Bay – Va. State Water Control Board/EPA Chesapeake Bay Program; 4/1/89-3/31/90; $23,984.

^{15}N and Inhibitor Studies of Nitrogen Cycling within a Salt Marsh (I.C. Anderson, PI; DJB, Co-PI) – NSF Research Opportunities for Women/ Ecosystems Program; 8/1/89-1/31/91; $70,000.

Studies of Microbial Manganese Reduction in Tropical Marine and Estuarine Sediments – NSF International Programs Travel Grant; 10/4/89 – 10/22/89; $2,050.

Atmospheric Deposition of "Toxics" to the Chesapeake Bay: Virginia/Southern Bay Trace Element Program (G.A. Cutter and DJB, Co-PI's) – U.S. E.P.A.; 5/1/90-4/30/91; $34,839.

Atmospheric Deposition of "Toxics" to the Chesapeake Bay: Virginia/Southern Bay Trace Element and Major Ion Program, Year 2 (G.A. Cutter and DJB, Co-PI's) – U.S. E.P.A.; 6/1/91-6/30/92; $41,200.

Fluxes of Dissolved Organic Matter from Marine Sediments – NSF Chemical Oceanography Program; 3/15/91 – 3/15/93; $136,848.

Atmospheric Deposition of "Toxics" to the Chesapeake Bay: Virginia/Southern Bay Trace Element and Major Ion Program, Year 3 (G.A. Cutter and DJB, Co-PI's) – U.S. E.P.A.;

7/1/92 – 3/31/94; $84,605.

Direct Measurements and Biogeochemical Controls of Sediment-Water Flux of Trace Metals from Estuarine Sediments (J.C. Cornwell, W.R. Boynton [both at Univ. of Md.] and DJB, Co-PI's) – Chesapeake Bay Environmental Effects Committee; 1/1/92 – 12/31/93; $93,418 (ODU portion).

Coupled Non-Linear Models of Diagenetic Processes in Marine Sediments – Petroleum Research Fund of the ACS; 2/1/92 – 8/31/94; $43,000.

Effects of Speciation on Sediment-Water Exchange of Metals (J.R. Donat and DJB, Co-PI's) – of Office of Naval Research (Marine Environmental Quality Program); 6/15/93 – 6/14/96; $611,629.

Fluxes of Dissolved Organic Matter from Marine Sediments (DJB and W. Berelson [Univ. of Southern Calif.], Co-PI's) – NSF Chemical Oceanography Program; 8/1/93 – 1/31/98; $249,856 (ODU portion).

Metal Complexing Ligands and Metal Speciation in Sediment Pore Waters: Implications for Sediment/Water Exchange and Water Column Metal Speciation (J.R. Donat and DJB, Co-PI's) – Office of Naval Research (Harbor Processes Program); 1/1/96 – 12/31/98; $549,595.

Colored Dissolved Organic Matter in Sediments and Seagrass Beds and its Impact on Shallow Water Benthic Optical Properties- Office of Naval Research (Environmental Optics Program, CoBOP DRI); 10/1/96 – 9/30/99; $316,171.

Biological Transformations of Colored Dissolved Organic Matter (F.C. Dobbs and DJB, Co-PI's) – Office of Naval Research; 5/1/98 – 4/30/00; $142,544.

Colored Dissolved Organic Matter in Sediments and Seagrass Beds and its Impact on Shallow Water Benthic Optical Properties- Office of Naval Research (Environmental Optics Program, CoBOP DRI); 10/1/99 – 9/30/01; $155,596.

Interactions Among Chemical Speciation, Algal Accumulation, and Sediment-Water Cycling of Toxic Metals in a Major US Naval Harbor (Elizabeth River, VA) (J.R. Donat and DJB Co-PI's) – Office of Naval Research (Harbor Processes Program); 1/1/99 – 12/31/01; $375,000.

Colored Dissolved Organic Matter in Sediments and Seagrass Beds and its Impact on Benthic Optical Properties – Data Analysis, Synthesis, and Student Support; Office of Naval Research (Environmental Optics Program); 10/1/01 – 12/31/03; $84,368.

Acquisition of two mass spectrometer systems for the analysis of C, H, N, O, and S stable isotopes in biological, environmental, and geochemical samples (R.F. Dias plus 4 co-PI's including DJB [all at ODU]); NSF Major Research Instrumentation (Ocean Sciences); 8/1/01 – 3/31/04; $340,000.

Quantifying the Cycling of Toxic Metals and Metal-Complexing Ligands in a Major US Naval Harbor (Elizabeth River, VA) (DJB, JR Donat and AS Gordon co-PI's); Office of Naval Research (Environmental Quality Program); 7/23/02 – 7/23/04; $150,000.

Recent and Historical Environmental Changes in Lake Drummond, within the Great Dismal Swamp; Virginia Water Resources Research Center; 7/1/01 – 6/31/04 [note: I took over as PI for this project on 7/25/03 when the original PI, Dr. Jennifer Slate, left ODU]; $12,000;

The Post-Cruise Analysis of Dissolved Carbohydrates in ODP Leg 201 Sediment Pore Waters; Ocean Drilling Program (Texas A&M Research Foundation); 4/1/02 – 1/24/05; $3,773.

Collaborative Research: Carbonate Dissolution in Shallow Water Tropical Sediments: The Role of Seagrasses (R.C. Zimmerman, MLML, co-PI); NSF (Chem. Ocean. Program); 2/1/02 – 6/30/06 (incl. no-cost extension); $259,454 (ODU portion).

Collaborative Research: Tracing the Transformations of Organic Carbon in Marine Sediments Using Natural C Isotopes (Tomoko Komada [SFSU] and DJB, co-PI's); NSF (Chemical Oceanography Program); 10/1/07 – 9/31/10; $113,079 (ODU portion).

2011 Chemical Oceanography Gordon Research Conference; NSF (Chemical Oceanography Program); 7/15/11- 6/30/2012; $37,000.

Collaborative Research: An Interdisciplinary Investigation of Groundwater-Carbon Coupling in

Large Peat Basins and its Relation to Climate Change (J. Chanton and W. Cooper, FSU co-PI's; DJB, sub-contractor); NSF (Biocomplexity in the Environment: Carbon and Water in the Earth System); 2/1/07 – 1/31/12; $50,000 (ODU sub-contract).

ETBC Collaborative Research: The Role of Submarine Groundwater Discharge in The Oceanic Nd Budget (Karen Johannesson [Tulane], PI, and DJB, co-PI); NSF (Chemical Oceanography and Hydrology Programs); 10/1/08 – 4/30/12; $263,841 (ODU portion).

Collaborative Research: Dissolved organic carbon (DOC) transformations in deep sub-surface sediments and its role as a source of "old" DOC to the water column (Tomoko Komada [SFSU], DJB and Jeff Chanton [FSU], co-PI's); NSF (Chemical Oceanography Program); $339,573 (ODU portion); 3/1/12 – 8/30/15.

Organic carbon oxidation and iron remobilization by West Antarctic shelf sediments (co-PI: John Christensen, NEOL); NSF (Antarctic Earth Science); $780,391; 9/1/15 – 8/30/2020.

Collaborative Research: Toward an improved understanding of blue carbon: The role of seagrasses in sequestering CO_2 (Dick Zimmerman PI; DJB co-PI; Matt Long [WHOI], co-PI); NSF (Biological Oceanography); $876,426 (ODU portion); 8/1/16 – 11/31/21.

Collaborative Research: Peptide deamination as a source of refractory dissolved organic matter in marine sediments (PI – Hussain Abdulla (TAMU-CC); co-PI's – DJB, Tomoko Komada (SFSU)); NSF (Chemical Oceanography); $333,549 (ODU portion); 3/15/18-8/31/23.

Prototype for a Blue Carbon Observatory: Submerged Aquatic Vegetation in the Chesapeake Bay - Where's the Peat? (R.C. Zimmerman, PI; V.J. Hill, D.J. Burdige J. Li and R. Hale, co-I's); NASA; $1,112,173; 1/1/25 – 12/31/27.

TEACHING

Univ. of Calif., San Diego (undergraduate level)
Teaching Assistant in Earth Sciences 102 (Introduction to Geochemistry), 1982

ODU (undergraduate and undergraduate/graduate level)
(note that in 2006 our course prefix changed from OCEN to OEAS; F= fall semester, S = spring semester, M = summer semester)

OEAS 108N, *Understanding Global Climate Change*: F 2012, S 2014, S 2015, F 2015, S 2017, S 2018, F 2018, F 2019, F 2020, F 2021, F 2022, F 2023

OEAS 310, *The Global Earth System*: F 2004, F 2005, F 2006, F 2007, S 2024, S 2025, F2025, S2026

OCEN 406/506, *Oceanography*: F and S 1986-88

OCEN 410/510, *Chemical Oceanography*: S 1993

OCEN 412/512, *Global Environmental Change*: S 1996, S 1997, S 1998, S 1999, S 2000, S 2001, S 2002, S 2003, S 2004

OEAS 413/513, *Environmental Geochemistry*: S 2020, S 2021, S 2022

OEAS 441-442, *Ocean and Earth Sciences Field Study I and II* (team taught): M 2006, M 2007, M 2008; F and S 2010, 2011, 2012

ODU (graduate level only)

OEAS 610, *Advanced Chemical Oceanography*: F 1986, F 1987, F 1988, F 1999, F 2000, F 2001, F 2002, F 2003, F 2004, S 2007, S 2008

OEAS 613, *Geochemistry of Marine Sediments*: S 1994, F 1997, F 1998, F 2000, S 2005, F 2008, F 2009, S 2011, S 2013, F 2014, F 2017, S 2019, S 2023

OCEN 718/818, *Organic Geochemistry of the Oceans*: S 1987

OEAS 732/832, *Advanced Geochemistry of Marine Sediments*: S 1986, S 1989, S 1992, S 1995, F 1999, F 2001, F 2010

OCEN 895, *Topics in Oceanography: Evolution of atmospheric oxygen*: S 2006 (1 credit

readings class)
OEAS 895, *Topics in Oceanography: Controls on sediment organic carbon preservation*: S 2007 (1 credit readings class)
OEAS 895, *Topics in Oceanography: Carbon cycling in boreal peatlands*: S 2012 (1 credit readings class)
OEAS 895, *Topics in Oceanography: Biogeochemistry*: F 2021 (1 credit readings class)

Netherlands School of Sedimentary Geochemistry (graduate level)
Biogeochemical Cycles and Diagenetic Modeling Applied to Steady State and Time Dependent Processes in Marine Sediments – Fall 1996 (this was a one week, intensive graduate level short course co-taught at Utrecht University with Profs. C.H. Van der Weijden and G.J. DeLange)

STUDENT MENTORING

Graduate students supervised as major professor (Department of Ocean and Earth Sciences)
Vivek Navale (M.S., non-thesis, 1988)
Mark J. Herrenkohl (M.S., 1989). "*Nutrient Cycling in Bordenstake Bay Sediments: A Backbarrier Lagoon"*
Robert F. Williamson (M.S., non-thesis, 1989)
Rou Shi (M.S., non-thesis, 1991)
Alison Vijgen (M.S., non-thesis, 1991)
Bryan Jennings (M.S., non-thesis, 1994)
Shilong Zheng (M.S., non-thesis, 1996)
Donald J. Seaborn (M.S., non-thesis, 1998)
Amy Pitts (M.S., 2011). "*Effect of Physical Reworking and Bioturbation on Sedimentary Reactive Iron within a Microtidal Estuary"*
Zachery Howerton (M.S., 2013). "*Phosphorus Cycling in Tropical Carbonate Sediment-Seagrass Systems"*

Surya Dhakar (Ph.D., 1995). "*A Time-Dependent Diagenetic Model for Manganese Redox Cycling in Deep Sea Sediments*"
Xinping Hu (Ph.D., 2007). "*Seagrass-Mediated Carbonate Dissolution and Early Diagenesis in Bahamas Bank Sediments*" (2006-7 Outstanding OEAS graduating PhD student)
Hussain Abdulla (Ph.D., 2009). "*Reactivity and Chemical Characterization of Dissolved Organic Matter in an Estuary*"
Joy Matthews (Ph.D., 2010). "*Oxygen Isotopes as a Tracer of DOM Processes in River-Estuary Systems*" (2009-10 Outstanding OEAS graduating PhD student)

Thesis or dissertation committee member (ODU)
Department of Ocean and Earth Sciences, ODU
David J. Velinsky (Ph.D., 1987)
Christian F. Krahforst (M.S., 1988)
Robert S. Kluckhohn (M.S., 1990)
Maria Lourdes C. San Diego-McGlone (Ph.D., 1991)
Michael Helmstetter (Ph.D., 1992)
Keun-Hyung Choi (Ph.D., 1999)
Jianwu Tang (Ph.D., 2005)
Margaret Stoughton (M.S., 2008)
Carrie Lingle (M.S., 2009)
Brandon Gipson (M.S., 2012)

Meredith McPherson (M.S., 2103)
Charles Carlson (M.S., 2019)
Ryan Glaubke (M.S., 2019)
Wesley Myers (Ph.D., 2019)
Brian Close (M.S., 2020)
Colton Watkins (M.S., 2020)
Md. Opu Sakhar (M.S., non-thesis, 2023)
Yifan Zhu (Ph.D. 2023)
Malee Jinuntuya (Ph.D. 2024)
Andrew Lindgren (M.S., 2025)
Emily Frett (Ph.D. guidance committee; left the PhD program in 2025)
Talia Cartafalsa (Ph.D. guidance committee)
Summer Collier (M.S. thesis committee)

Department of Chemistry and Biochemistry, ODU
Chuen Mei-Huang (M.S., 1989)
Neerja Krishna (M.S., 1993)
Charles Henry (M.S., 1996)
Duncan Beyers (M.S., 1999)
Luni Sun (Ph.D., 2015)
Hannah Hamontree (Ph.D. dissertation committee)

Department of Physics, ODU
Grady White (Ph.D., 2019)

Thesis or dissertation committees (other universities)
Peter Pruysers (Ph.D., 1998, Utrecht University, The Netherlands)
William Savidge (Ph.D., 2001, North Carolina State Univ.)
Lancen S. Tully (M.S., 2004, East Carolina University)
Darren Chevis (Ph.D., 2014, Tulane Univ.)

External Ph.D. examiner
Angela Landén (Ph.D., 1998, Göteborg University Sweden)
Karin Lalonde (Ph.D. 2014, Concordia Univ., Canada)
Peter Faber (Ph.D. 2014, Monash University, Australia)
Dan Paraska (Ph.D., 2015, University of Western Australia)
Gloria Reithmaier (Ph.D., 2021, Southern Cross University, Australia)
Subhadeep Rakshit (Ph.D. 2023, Dalhousie University, Canada)

The following post-doctoral research associates have worked in my lab under my supervision:
Dr. Rigel L. Lustwerk (1992-4)
Dr. Stephen Skrabal (1994-5)
Dr. David Price (1996-8)
Dr. Wenhao Chen (1997-8)

HONORS, AWARDS AND PRIZES

1974-79 Youth Foundation Scholarship, New York, N.Y.

1986 ODU Summer Faculty Research Fellowship

1990 Elected to Sigma Xi, The Scientific Research Society

2004 Elected to Phi Kappa Phi

2008 ODU Faculty Development Fund Award

Outstanding reviewer, Limnology *& Oceanography* (*Limnol. & Ocean. Bull.* 2008. vol. 17(4), p. 109)

2009 Citation by *Discover* magazine in 2009 of Neuweiler et al. (2009, *Geology*) as the #12 scientific discovery of the year

2015 Outstanding reviewer 2014-15 *Marine Geology*

2016 Awarded the NSF Antarctic Service Award Medal "in recognition of valuable contributions to exploration and scientific achievement under the US Antarctic Program"

2017 Elected a Fellow of the Association for the Sciences of Limnology and Oceanography (ASLO) in recognition of contributions in the field of oceanography and service to the society

2020 ODU Outstanding Undergraduate Advisor (2019-20 AY)

2020 Reign On' ODU Faculty Recognition Award, awarded for helping students succeed academically, professionally, or personally inside and outside the classroom setting

Named in the listing of the top 2% of most-cited scientists worldwide (original citation [listing now up-dated annually]: Ioannidis et al. 2020. Updated science-wide author databases of standardized citation indicators. *PLOS Biology* [for details see this link or the database listed here]; field: Geochemistry and Geophysics: ranking: 488 (out of 70,197; top 0.7%)

2021 Named in the listing of the top 2% of most-cited scientists worldwide (original citation and database listed above); career-long citation impact, field: Geochemistry and Geophysics; ranking: 465 (out of 81,218; top 0.6%)

Named in the listing of the top 2% of most-cited scientists worldwide (original citation and database listed above); current-year citation impact, field: Geochemistry and Geophysics; ranking: 265 (out of 81,218; top 0.3%)

2022 The article "The renaissance of Odum's outwelling hypothesis in 'Blue Carbon' science" (Est. Coastal Shel Sci. vol. 255, 2021) was recognized for its links to the United Nations Sustainable Development Goals (SDG's) SDG 13 – Take urgent action to combat climate change and its impacts, and SDG 14 – Conserve and sustainably use the oceans, seas and marine resources for sustainable development.

Named in the listing of the top 2% of most-cited scientists worldwide (original citation and database listed above); career-long citation impact, field: Geochemistry and Geophysics; ranking: 455 (out of 87,916; top 0.5%)

Named in the listing of the top 2% of most-cited scientists worldwide (original citation and database listed above); current-year citation impact, field: Geochemistry and Geophysics; ranking: 297 (out of 87,916; top 0.3%)

2023 Old Dominion University Annual Faculty Research, Scholarship & Creative Achievement Award

Named in the listing of the top 2% of most-cited scientists worldwide (original citation and database listed above); career-long citation impact, field: Geochemistry and Geophysics; ranking: 453 (out of 92,230; top 0.5%)

Named in the listing of the top 2% of most-cited scientists worldwide (original citation and database listed above); current-year citation impact, field: Geochemistry and Geophysics; ranking: 311 (out of 92,230; top 0.3%)

2024 Named in the Stanford/Elsevier Top 2% Scientist Rankings of most-cited scientists worldwide (for details, click here); career-long citation impact, field: Geochemistry and Geophysics; ranking: 337 (out of 98,126; top 0.3%)

Named in the Stanford/Elsevier Top 2% Scientist Rankings of most-cited scientists worldwide (for details, click here); current-year citation impact, field: Geochemistry and Geophysics; ranking: 259 (out of 98,126; top 0.3%)

2025 Appointed as a Faculty Fellow of the ODU Institute of Coastal Adaptation and Resilience (ICAR)

Named in the Stanford/Elsevier Top 2% Scientist Rankings of most-cited scientists worldwide (for details click here); current-year citation impact, field: Geochemistry and Geophysics; ranking: 189 (out of 103,460; top 0.2%)

Named in the Stanford/Elsevier Top 2% Scientist Rankings of most-cited scientists worldwide (for details click here); career-long citation impact, field: Geochemistry and Geophysics; ranking: 329 (out of 103,460; top 0.3%)

MEMBERSHIP IN PROFESSIONAL SOCIETIES

American Geophysical Union
Association for the Sciences of Limnology and Oceanography
Geochemical Society
Phi Kappa Phi
Sigma Xi
The Oceanography Society

PROFESSIONAL SERVICE

Invited seminars

1982 Aarhus University, Denmark
1983 University of North Carolina, Chapel Hill
1984 Duke University
1985 University of Delaware; Old Dominion University
1986 Center for Great Lakes Studies, University of Wisconsin-Milwaukee
Old Dominion University
1987 Marine Science Research Center, Stony Brook University
Old Dominion University
1988 University of Virginia
Geophysical Laboratory, Carnegie Institute of Washington
University of North Carolina, Chapel Hill
1990 University of Newcastle-upon-Tyne, U.K.
1991 Center for Great Lakes Studies, University of Wisconsin-Milwaukee
Virginia Institute of Marine Sciences
Chesapeake Biological Laboratory, University of Maryland
Old Dominion University
1992 Norfolk State University
Virginia Institute of Marine Sciences
1993 University of Connecticut

	University of North Carolina, Chapel Hill
1994	University of Maryland, Chesapeake Biological Laboratory
	Old Dominion University
1996	Center for Estuarine and Coastal Ecology, Netherlands Institute of Ecology
	Southampton Oceanography Centre, U.K.
	Utrecht University, Netherlands
	University of Southampton, U.K.
1997	Texas A&M University
	University of Miami
1998	Utrecht University, Netherlands
	Göteborg University, Sweden
	University of Delaware
	Old Dominion University
1999	University of Maryland, Horn Point Environmental Laboratory
2001	Old Dominion University
2002	University of North Carolina, Chapel Hill
	University of Maryland, Horn Point Environmental Laboratory
2003	Old Dominion University
	University of Georgia
2004	East Carolina University
2005	Tulane University
2007	Old Dominion University
2008	Tulane University
2009	Stony Brook University
	Florida State University
2010	University of Wisconsin, Milwaukee
2011	Colorado School of Mines
	Old Dominion University (Dept. of Chemistry and Biochemistry)
2012	University of South Carolina
2013	Florida State University
	Drexel University
	Chesapeake Biological Laboratory, University of Maryland
2014	McGill University
2015	Old Dominion University (Dept. of Chemistry and Biochemistry)
2016	Texas A&M Corpus Christi
	Virginia Institute of Marine Sciences
2017	Scripps Institution of Oceanography, Univ. of Calif. San Diego
	National Sun-Yat Sen University (Taiwan)
2018	Old Dominion University (Dept. of Chemistry and Biochemistry)
2020	Old Dominion University (Dept. of OEAS)
2023	Wood Hole Oceanographic Institution
2024	Old Dominion University (Dept. of OES)

Manuscript reviews for >50 journals: including *American Journal of Science; Biogeochemistry; Chemical Reviews; Deep-Sea Research; Earth and Planetary Science Letters; Environmental Science and Technology; Estuarine, Coastal and Shelf Science; Geochimica et Cosmochimica Acta; Global Biogeochemical Cycles; Journal of Geophysical Research – Biogeosciences* and *Oceans; Limnology and Oceanography; Marine Chemistry; Nature; Nature Geosciences; Organic Geochemistry; Proceedings of the National Academy of Sciences; Science Advances.*

Manuscript reviews (not counting editorial duties): 6 2025, 6 (2024), 6 (2023), 14 (2022), 8

(2021), 6 (2020), 2 (2019), 6 (2018), 14 (2017), 14 (2016), 16 (2015)

Domestic proposal reviews for:
National Science Foundation – numerous programs, including: Chemical Oceanography; Biological Oceanography; Environmental Geochemistry and Biogeochemistry; Marine Geology and Geophysics; Oceanographic Centers and Facilities; Materials Engineering and Technology; Geology and Paleontology; Antarctic Biology and Medicine; Polar Programs; International Opportunities for Scientists and Engineers; Biocomplexity; Integrated Carbon Cycle Research; Geomorphology; Geobiology and Low Temperature Geochemistry; Sedimentary Geology and Paleobiology (note: this list is not complete)
NOAA Sea Grant College Programs (California, Delaware, Georgia, Louisiana, Maryland, Hawaii, Rhode Island, Illinois-Indiana, North Carolina and Virginia)
NOAA National Undersea Research Program
Petroleum Research Fund of the American Chemical Society
US EPA
Department of Energy (Ocean Margins Program)
Connecticut Department of Environmental Protection (Long Island Sound Program)
Connecticut/New York Sea Grant Long Island Sound Program
National Geographic Society
Gordon Research Conferences
Marine Science & Technology Foundation (letters of intent only)

International proposal reviews for*:*
Danish Research Agency
ETH Zurich Research Commission
ERC France
European Research Council
Israel Science Foundation
National Sciences and Engineering Research Council of Canada
National Environmental Research Council of the United Kingdom
Netherlands Organization for Scientific Research
Research Council for Earth and Life Sciences in the Netherlands
Swiss National Science Foundation

Domestic and international proposal reviews (not counting panel reviews): 4 (2025), 5 (2024), 3 (2023), 4 (2022), 8 (2021), 4 (2020), 6 (2019), 12 (2018), 8 (2017), 4 (2016), 9 (2015)

Book proposal reviews for: American Chemical Society; American Geophysical Union; Blackwell Publishing; Cambridge University Press; Princeton University Press; Oxford University Press

Other professional service activities

1985 Invited workshop participant (and invited presentation), Cretaceous Black Shales Workshop sponsored by JOI-USSAC

1987 Invited workshop participant (and invited presentation), Chesapeake Bay Sediment Processes and Sediment Modeling Workshop - sponsored by the U.S. Army Corps of Engineers Waterways Experiments Station

1990 Invited workshop participant, Marine Organic Geochemistry, Review and Future Challenges - sponsored by NSF and ONR (1990)

1991 Invited workshop participant, The Measurement of Dissolved Organic Carbon and

Nitrogen in Natural Waters – sponsored by NSF, NOAA and DOE (1991)

Session chair, 1991 Spring AGU Meeting, "Marine Geochemical Processes"

1992 Secretary (1992-3), Tidewater Virginia Chapter of Sigma Xi

1993 Member, grant review panel, New York Bight National Undersea Research Center (NOAA) - November 1993

1994 Invited workshop participant (and invited presentation), Tributary/Ecosystem Modeling Workshop - sponsored by the Scientific and Technical Advisory Committee of the Chesapeake Bay Program (1994)

Member, Directed Toxics Assessment Workgroup, Chesapeake Bay Program (1994 - 1999)

1995 Invited speaker, 1995 Gordon Research Conference on Chemical Oceanography

Invited discussion leader, 1995 Gordon Research Conference on Chemical Oceanography

1996 Member (1996-8), Best Paper Committee, Organic Geochemistry Division of the Geochemical Society

Invited workshop participant (and invited presentation), ONR Harbor Processes Workshop

Invited workshop participant (and invited presentation), ONR Coastal Benthic Optical Properties Workshop

1997 Invited workshop participant (and invited presentation), ONR Coastal Benthic Optical Properties Workshop

1998 Chair, Best Paper Committee, Organic Geochemistry Division of the Geochemical Society

Session chair, 1998 AGU/ASLO Ocean Sciences Meeting, "Trace Metals, Metal Complexation and Speciation, and Plankton Interactions" (co-chair)

Member, Programs Committee of the Geochemical Society (1998-2001)

Member, grant review panel, NOAA North Atlantic and Great Lakes National Undersea Research Center (November)

Invited workshop participant (and invited presentation), ONR Coastal Benthic Optical Properties Workshop

1999 Invited participant, Climate Science and Education Day Event, sponsored by the Union of Concerned Scientists (Washington, DC; June 27-8, 1999)

Invited workshop participant (and invited presentation), ONR Harbor Processes Workshop

Invited workshop participant (and invited presentation), ONR Coastal Benthic Optical Properties Workshop

2000 Member, Univ. of Delaware Research Vessel Committee (2000-5)

Invited workshop participant (and invited presentation), ONR Coastal Benthic Optical Properties Workshop

Invited workshop participant, Workshop on Opportunities in Geochemistry for Post-2003 Drilling - sponsored by JOI-ODP

2001 Invited workshop participant (and invited presentation), ONR Harbor Processes Workshop

Invited workshop participant (and invited presentation), ONR Coastal Benthic Optical Properties Workshop

Invited workshop participant, RioMar Workshop (The transport, transformation and fate of carbon in river-dominated ocean margins) – sponsored by Tulane Univ., NSF and NASA

Member, Univ. of Delaware Research Vessel Committee (2000-5)

2002 Invited workshop participant (and invited presentation), International Workshop for the SEECS Project (Seagrass Ecosystem Ecoengineering and Carbon Sequestration) – sponsored by the New Energy Development Organization of Japan

Member, Univ. of Delaware Research Vessel Committee (2000-5)

2003 Member, Univ. of Delaware Research Vessel Committee (2000-5)

2004 Invited Plenary Speaker – 2004 CoOP Workshop on Coastal Benthic Exchange Dynamics (declined invitation due to a time conflict with a research cruise)

Invited external reviewer, M.S. program in Marine Sciences at Univ. of North Carolina, Wilmington, 2004 (declined invitation due to a time conflict with a research cruise)

Invited instructor, 2004 International Summer Course in GeoBiology at Catalina Island (sponsored by the Agouron Institute and the Univ. of Southern Calif.)

Member, Univ. of Delaware Research Vessel Committee (2000-5)

2005 Outside Expert, Faculty Appointments Board for the position of Senior Lecturer (tenured) in Biogeochemistry, Department of Geology and Geochemistry, Stockholm University, Sweden (2005-6)

Member, Univ. of Delaware Research Vessel Committee (2000-5)

2006 Member, grant review panel, NSF Chemical Oceanography program (May)

2007 Invited workshop participant, Ocean Carbon Biogeochemistry Summer 2007 Workshop – sponsored by NSF and WHOI

Invited workshop participant, Ocean Acidification Workshop – sponsored by NSF and SIO-UCSD (October)

2009 Vice-chair, 2009 Gordon Research Conference on Chemical Oceanography

Invited speaker - 2009 Gordon Research Conference on Chemical Oceanography

2010 Member, grant review panel, NSF Chemical Oceanography program (May)

Invited panel member, Darwin Center for Biogeosciences (The Netherlands) grant review panel (declined due to a time conflict)

Invited workshop participant (and invited presentation), Workshop for Future Directions in Geobiology and Low-Temperature Geochemistry – sponsored by NSF

2011 Chair, 2011 Gordon Research Conference on Chemical Oceanography

Member, ASLO John Martin Award Committee

2012 Invited participant, Eastern U.S. continental shelf coastal carbon synthesis workshop – sponsored by NASA and NSF

Member, ASLO John Martin Award Committee

2013 Invited speaker, "Biogeochemistry of Earth Processes", symposium honoring Robert A Berner, winner of the 2013 Benjamin Franklin Medal in Earth and Environmental Sciences, The Franklin Institute, Philadelphia, PA

Member, ASLO John Martin Award Committee

2014 Session Co-chair (with T. Komada and R.C. Aller), 2014 Goldschmidt Conference, "Early diagenesis through time: The contrasting roles of remineralization in surficial bioturbated zones and the deep subsurface in marine biogeochemistry through geologic time"

Invited speaker, "What's life got to do with it: Integrating microbiology and geochemistry", workshop held at the 2014 Goldschmidt Conference

Member, ASLO John Martin Award Committee

2015 Invited speaker, "International Workshop on Organic Carbon Cycle and Biogeochemistry in Marginal Sea", Ocean University of China, Qingdao, China.

2016 Invited workshop participant, COME ABOARD (The Chemical Oceanography Meeting: A Bottom-up Approach to Research Directions) – sponsored by NSF

Invited workshop participant and speaker, Microbial contribution and impact on soil organic matter, structure, and genesis (SOMmic) – sponsored by the Deutsche Forschungsgemeinschaft (DFG) and the Deutsche Bodenkundliche Gesellschaft (DBG)

Co-Guest Editor (with G.A. Cutter) of a special issue of the journal *Aquatic Geochemistry* (vol. 22, no. 4 2016) entitled "Coastal Chemical Oceanography: A Tribute to Thomas M. Church"

2017 Invited speaker, South China Sea Scientific Conference – sponsored by National Sun Yat-Sen University, Ministry of Science & Technology (Taiwan)

Invited to serve on the American Chemical Society Board Standing Committee on the Petroleum Research Fund (3 year appointment; renewed in 2020)

2018 Invited speaker (declined due to prior commitments), 'International Workshop on Organic Carbon Cycling in Marine Environments: Estuarine to Open Ocean Systems", Ocean University of China, Qingdao, China

Proposal Review Panel, Petroleum Research Fund of the American Chemical Society

Invited to serve as an outside external reviewer of the Department of Earth and Environmental Sciences, Brooklyn College, City University of New York (declined due to prior commitments)

Member, ACS-PRF Grant Review Panel (October)

2019 Invited discussion leader, Gordon Research Conference on Chemical Oceanography

Member, ACS-PRF Grant Review Panel (October)

2020 Co-Guest Editor (with Wm. Berry Lyons) of a special issue of the journal *Aquatic Geochemistry* (vol. 26, #3) entitled "Microbial Biogeochemistry: A Special Issue Honoring the Late Mark Hines" (published Sept. 2020)

Member, ACS-PRF Grant Review Panel (May and October)

Invited workshop participant, US GEOTRACES planning meeting for cruise GP-17

2021 Member, ACS-PRF Grant Review Panel (May and October)

2022 Co-Guest Editor of a special issue of *Frontiers in Earth Sciences* entitled "Carbon Cycling in Aquatic Critical Zones: From weathering to reverse-weathering" (published Sept. 2022)

Member, ACS-PRF Grant Review Panel (May and October)

Appointed to the selection committee for the Robert A. Berner Memorial Lecture of the Geochemical Society

2023 Member, ACS-PRF Grant Review Panel (May and October)

Invited participant and speaker, OCB Benthic Ecosystem and Carbon Synthesis workshop

Member of the selection committee for the Robert A. Berner Memorial Lecture of the Geochemical Society

2024 Invited to serve as a member of a grant review panel for the NSF Chemical Oceanography program (November; declined due to health reasons)

Member of the selection committee for the Robert A. Berner Memorial Lecture of the Geochemical Society

2025 Member of the selection committee for the Robert A. Berner Memorial Lecture of the Geochemical Society

UNIVERSITY AND DEPARTMENTAL SERVICE

University and College Service

Member (1988-95) and Chair (1992-5), University Student Conduct Committee
Member, Science and Engineering Shop Infrastructure Advisory Committee (1994-5)
Co-Organizer, College of Sciences 1996 Distinguished Visiting Seminar Program "Global Change and 'Geophysiology': Man's Impact on Biogeochemical Cycles"
Member, ODU Faculty Senate (1995-6)
Member (1998-2000), Steering Committee for the College of Sciences Accelerated Track Programs in Marine and Environmental Sciences
Member (1998-9), University Student Conduct Committee
Member, Department of Chemistry and Biochemistry Faculty Search Committee (4 position in biogeochemistry; 1999-2000)
Member, College of Science Graduate Committee (1999-2002)
Member, ODU Faculty Senate Committee C (Graduate Studies) (2002-5)
Member, ODU Faculty Senate (2006 - present)
Member (2007-9; 2010-14), Acting Chair (2008-9), and Chair (2010-12), ODU Faculty Senate Committee D (Scholarly Activity and Research)
Member, ODU Faculty Senate Executive Committee (2007 - present)
Member (2025 -) and Chair (2008-10; 2022-2024), ODU Faculty Senate Committee I (Administration, Finance & Academic Support Services)
Member, ODU University Space Committee (2009-16)
Member, College of Science Graduate Committee (2011-12)
Vice Chair, ODU Faculty Senate (2012-16)
Member, President's Ad Hoc Advisory Committee on Research Opportunities at ODU (2012)
Chair, ODU Faculty Senate University Library Advisory Committee (2013-16)
Invited panelist: The Role of Faculty in Student Success. Sponsored by the Office of Academic Affairs (2/17/16)

Member, College of Sciences Undergraduate Curriculum Committee (2016-2023)
Chair, ODU Faculty Senate (2017-19)
Member, ODU Provost's Council (2017-19)
Member, ODU Strategic Planning Steering Committee (2018-19)
Faculty Senate representative, ODU Board of Visitors Committee on University Advancement (2018-22)
Member, SACSCOC Institutional Effectiveness-Academic Committee (2020-21)
Member, Ad Hoc committee examining faculty early retirement options (joint committee organized by Academic Affairs, the Dept. of Human Resources, and the Faculty Senate; 2020-21)
Member, ODU Strategic Plan Budget Sub-Committee (2022)
Faculty Senate representative, ODU Board of Visitors Committee on Student Enhancement and Engagement (2022 - 2023)
Member, Eminent Scholars Selection Committee (2022 - present)
Faculty Senate representative, ODU Board of Visitors Committee on Academic and Research Advancement (2023 - present)

<u>Departmental Service</u>

Departmental Faculty Search Committees:
Biological Oceanographer (1987); Slover Professor of Oceanography (1987); Biological Oceanographer (1992); Physical Oceanographer (1994-5); Environmental Geochemist/ Hydrogeologist/ Remote Sensing (3 faculty positions; 1997-8); Department Chair (1998-9); Earth Scientist (2000-1); Department Chair (2001-2); Coastal Physical Oceanographer (2005-7); Chemical Oceanographer (2006-8); Geological Oceanographer (search committee chair; 2007-8); Marine Microbial Ecology (2011-12); Coastal Processes (2011-12); Climate Science (search committee chair; 2013-14); Coastal Processes (search committee chair; 2015-16); Remote Sensing/Ocean Color (search committee chair; 2018-19)

Departmental Ad Hoc Committees:
Research Planning Committee (1986-7); Barrier Island Program Advisory Committee (1987); Student and Admissions Issues (1988); Curriculum Review Committee (1990); Undergraduate Oceanography Options (1997); Graduate Programs Committee (1999-2000; chair, 2000); Future Faculty Hires Committee (2002); Chair, Scheduling Committee (2003)

Member (1986-89), Department Graduate Admissions Committee
Member (1986-94, 1996-2001, 2007-10), Department Written Comprehensive Examination Committee
Coordinator, *John C. Ludwick Scholarly Lecture Series in Oceanography and Marine Science* (1989-92)
Departmental Seminar Coordinator (1989-91, 2003)
Chair (1991-2), Department Written Comprehensive Examination Committee
Member (1992-97), Department Graduate Admissions Committee
Chair (1997-2005), Department Graduate Admissions Committee
Chair (1997-2005), Department Graduate Committee
Chair (1998-2001), Department Written Comprehensive Examination Committee
Chair (2000-1), Faculty Course Portfolio Review Committee
Coordinator, *John C. Ludwick Scholarly Lecture Series in Oceanography and Marine Science* (2001)
Member (2005-11) Department Graduate Committee
Chair (2011-12) and Member (2011-15), Department Graduate Education Committee
Chair (2015-23) and Member (2015 - 2025), Department Undergraduate Education Committee

Member (2016-2023), Department Executive Committee
Member (2025-), Department Recruitment Committee

COMMUNITY ENGAGEMENT

2003	Invited presentation on climate change, Kempsville Ruritans
2005-10	Judge, Ghent Elementary School Science Fair
2010-14	Science Judge, NOSB Blue Crab Bowl
2015	Invited presentation on climate change, Kempsville Ruritans
	Invited speaker, ODU Friends of the Library, "Writing Books in the Sciences, Giving New Meaning to Publish or Perish"
2015-16	Science Judge, NOSB Blue Crab Bowl
2016	Discussion leader (summer 2016) in the ODU BLAST (Building Leaders to Advance Science and Technology) program, sponsored by ODU and the Virginia Space Grant Consortium. This was a three-day hands-on intensive summer program for 80 rising 9th & 10th-grade Virginia students and exposes the students to multiple STEM disciplines in relationship to how best to understand and address climate change and sea level rise resilience.
2017	Discussion leader (summer 2017) in the ODU BLAST (Building Leaders to Advance Science and Technology) program, sponsored by ODU and the Virginia Space Grant Consortium.
2017-21	Science Judge, NOSB Blue Crab Bowl
2021	Panelist member - "Playing by the Numbers", sponsored by the ICAR Coastal Resilience and Adaptation Economy Consortium, Local Best Practices Working Group
2022	Science Judge, NOSB Blue Crab Bowl
2025	Invited presentation "Discussing climate change with skeptics", Coastal Virginia Sierra Club