

DAVID JAY BURDIGE

Department of Ocean and Earth Sciences
Old Dominion University
(last up-dated 7/10/2022)

EDUCATION

- 1983 Ph.D. in Oceanography, Scripps Institution of Oceanography, University of California at San Diego, Co-Advisors: J.M. Gieskes and K.H. Nealson
- 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

- 2016 – Co-Editor in Chief, *Estuarine, Coastal and Shelf Science*
- 2015 – 2018 Associate Editor, *Marine Chemistry*
- 2015 – Chief Departmental Advisor, BS degree in Ocean and Earth Sciences, Department of Ocean and Earth Sciences, Old Dominion University (formerly the Department of Ocean, Earth and Atmospheric Sciences)
- 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, ODU
- 2007 – Eminent Scholar, Department of Ocean, Earth and Atmospheric Sciences, ODU
- 2000 – 2012 Associate Editor, *Geochimica et Cosmochimica Acta*
- 1999 – 2010 Associate Editor, *Marine Chemistry*
- 1999 – Full Professor, Department of Ocean, Earth and Atmospheric Sciences, ODU
- 2003 – 2005 Graduate Program Director, MS Program in Geology, Department of Ocean, Earth and Atmospheric Sciences, ODU
- 1997 – 2005 Graduate Program Director, MS and PhD Programs in Oceanography, Department of Ocean, Earth and Atmospheric Sciences (formerly the Department of Oceanography), ODU
- 1996 Visiting Research Scientist, Challenger Division for Seafloor Processes, Southampton Oceanography Centre (U.K.)
- 1995 – 97 Advisor, Undergraduate Minor, Department of Oceanography,

1992 –	Joint faculty appointment, Department of Chemistry and Biochemistry, ODU
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, UCSD
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 that pdf copies of many of the papers are available at

<https://fs.wp.odu.edu/dburdige/publications/>)

Total number of refereed publications, books and other media = 99; Total number of citations = 9,896; *h*-index = 51; source: *Google Scholar*, 7/10/22

(<https://scholar.google.com/citations?user=rx8JDq0AAAAJ&hl=en>)

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 tetraphenylporphyrinatoiron(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 slurring 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 ΣCO_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. *Mar. 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 *Spherospongia vesparium* (Lamarck, 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 whittings 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 the 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. $\delta^{13}\text{C}$ 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 CO_2 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. Geosyst.*, 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.

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- * 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
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- 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.
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- * 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.
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- * Forsch, K., Hahn-Woernle, L., Sherrell, R., Rocanova, 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. Acta* 326:288-313

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

- 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.
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Non-refereed publications, book reviews and comments

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- 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.
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- 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.
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- 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 CO₂ 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.
- * Najjar, 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 ¹⁴C and ¹³C 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 CO₂ 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 ^1H 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 ^1H 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 ^1H 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 CO₂ 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., Coffey, 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).
- Suddes, L., Abdulla, H., Burdige, D. and Komada, T., 2022. Comparison of DOM composition in mixed-redox and anoxic sediment porewaters using ^1H -NMR. Presented at the 2022 Ocean Sciences Meeting, Honolulu, HI (virtual).

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.
- ¹⁵N 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) – 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 CO₂ (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); 3/15/18-8/31/22.

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, Su = summer semester)

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

OEAS 310, *The Global Earth System*: F 2004, F 2006, F 2007

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

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

OCEN 412/512, *Global Environmental Change*: S 1996 – 2004

OEAS 413/513, *Environmental Geochemistry*: S 2020, S 2021, S2022

OEAS 441-442, *Ocean and Earth Sciences Field Study I and II* (team taught): Su 2006 – 8; F and S 2010 –12

ODU (graduate level only)

OEAS 610, *Advanced Chemical Oceanography*: F 1986 – 94; S 2007 – 8

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

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. Opo Sakhar (M.S. student)

Malee Jinuntuya (Ph.D. dissertation committee)
Alfonso Marcia Tapia (Ph.D. guidance committee only)
Yifan Zhu (Ph.D. dissertation committee)
Rhianne Cofer (Ph.D. guidance 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. candidate)

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

Thesis or dissertation committees (other universities)

Peter Pruyzers (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)

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

Youth Foundation Scholarship, New York, N.Y. (1974-79)
ODU Summer Faculty Research Fellowship (1986)
Elected to Sigma Xi, The Scientific Research Society (1990)
Elected to Phi Kappa Phi (2004)
ODU Faculty Development Fund Award (2008)
Outstanding Limnology & Oceanography Reviewer (*Limnol. & Ocean. Bull.* 2008. vol. 17(4), p. 109)
Citation by *Discover* magazine in 2009 of Neuweiler et al. (2009, *Geology*) as the #12 scientific discovery of the year

Outstanding Reviewer 2014-15 *Marine Geology*

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

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

ODU Outstanding Undergraduate Advisor (2019-20 AY)

‘Reign On’ ODU Faculty Recognition Award, awarded for helping students succeed academically, professionally, or personally inside and outside the classroom setting (Spring semester 2020)

Named in the listing of the top 2% of most-cited scientists worldwide for the years 2020 and 2021 (original citation [listing now up-dated annually]: Ioannidis et al. 2020. Updated science-wide author databases of standardized citation indicators. *PLOS Biology*.

<https://doi.org/10.1371/journal.pbio.3000918>)

2020: field: Geochemistry and Geophysics; ranking: 488 [out of 70,197; top 0.7%]

2021: (career-long citation impact): field: Geochemistry and Geophysics; ranking: 465 [out of 81,218; top 0.6%]

2021: (current-year citation impact): field: Geochemistry and Geophysics; ranking: 265 [out of 81,218; top 0.3%]

MEMBERSHIP IN PROFESSIONAL SOCIETIES

American Chemical Society (currently inactive)

American Geophysical Union

Association for the Sciences of Limnology and Oceanography

Coastal & Estuarine Research Federation (currently inactive)

Geochemical Society

Geological Society of America (currently inactive)

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, SUNY at Stony Brook
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
 2107: 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)

Manuscript reviews for:

American Journal of Science; Applied Geochemistry; Aquatic Geochemistry; Aquatic Microbial Ecology
Biogeochemistry; Biogeoscience Discussions
Chemical Geology; Chemical Reviews; Computers and Geosciences; Continental Shelf Research
Deep-Sea Research
Earth and Planetary Science Letters; Earth Surface Dynamics; Environmental Science and Technology; Environmental Science and Technology: Letters; Estuaries; Estuaries and Coasts; Estuarine, Coastal and Shelf Science
Geochimica et Cosmochimica Acta; Geochemical Perspectives; Geochemistry, Geophysics, & Geosystems; Geology; Geoscientific Model Development; Geomicrobiology Journal; Global Biogeochemical Cycles
Hydrobiologia
Journal of Geoscience Education; Journal of Geophysical Research – Biogeosciences; Journal of Geophysical Research – Oceans; Journal of Marine Research; Journal of Sedimentary Petrology
Limnology and Oceanography; Limnology and Oceanography: Methods; Limnology and Oceanography e-Lectures
Marine Chemistry; Marine Ecology-Progress Series; Marine Geology
Nature; Nature Geosciences; Nature Communications; NOAA Technical Memorandum Series
Oceanologica Acta; Organic Geochemistry
Paleoceanography; Polar Science; PLOS One; Proceedings of the National Academy of Sciences; Proceedings of the Ocean Drilling Program
Science Advances; Sedimentology
Water Resources Research

Domestic proposal reviews for:

National Science Foundation - programs in: 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 necessarily 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
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

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 - 1998), 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 (2000-2005)
- 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
- 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
- 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 Agouyon Institute and the Univ. of Southern Calif.)
- 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)
- 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)
- 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)
- Invited workshop participant, US GEOTRACES planning meeting for cruise GP-17
- Member, ACS-PRF Grant Review Panel (October)
- 2021 Co-Guest Editor of a special issue of *Frontiers in Earth Sciences* entitled “Carbon Cycling in Aquatic Critical Zones: From weathering to reverse-weathering” (in progress)
- Member, ACS-PRF Grant Review Panel (May)
- Member, ACS-PRF Grant Review Panel (October)
- 2022: Member, ACS-PRF Grant Review Panel (May)

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) (2002-2005)
 Member, ODU Faculty Senate Committee I (Finance) (2006-2010)
 Member, ODU Faculty Senate (2006 -)
 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)
 Chair, ODU Faculty Senate Committee I (Finance) (2008-2010)
 Member, ODU University Space Committee (2009-2016)
 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 - present)
 Chair, ODU Faculty Senate (2017-19)
 Member, ODU Provost’s Council (2017-19)
 Member, ODU Strategic Planning Steering Committee (2018-19)
 Member, SACSCOC Institutional Effectiveness-Academic Committee (2020-21)
 Member, Ad Hoc committee examining faculty early retirement options (joint committee organized by Academic Affairs, Human Resources and the Faculty Senate; 2020-21)

Departmental Service

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 (2000-2001)
- Department Chair (2001-2)
- Coastal Physical Oceanographer (2005-7)
- Chemical Oceanographer (2006-2008)
- 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 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 Admissions Committee
Chair (1997-2005), Department 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 - present), Department Undergraduate Education Committee
Member, (2016- present), Department Executive Committee

COMMUNITY ENGAGEMENT

2003 Invited presentation on climate change, Kempsville Ruritans
2005 – 10 Judge, Ghent Elementary School Science Fair
2010, 11 – 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 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.

Science Judge, NOSB Blue Crab Bowl

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– 22 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