

2 November 2019

CURRICULUM VITAE

FRED C. DOBBS

Professor and Chair, Department of Ocean, Earth and Atmospheric Sciences
Old Dominion University
Norfolk, VA 23529 USA

EDUCATION

Ph.D., Oceanography, The Florida State University
M.S., Zoology, The University of Connecticut
A.B., Biology, Departmental Honors, Franklin & Marshall College

RESEARCH AREAS

Marine microbial ecology; microbiology of ships' ballast tanks; microorganisms on plastics in the sea; disease ecology; bioelectrics; symbioses between invertebrates and microorganisms

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Marine microbial ecology; microbiology of ships' ballast tanks; disease ecology;
bioelectrics; symbioses between invertebrates and microorganisms

EXPERIENCE

2016-present Chair, Department of Ocean, Earth & Atmospheric Sciences
2015-2016 ODU Provost's Fellow
2008 Visiting Scientist, USGS Western Fisheries Research Center, Seattle, WA
2006-present Professor, Old Dominion University
2001 Visiting Scientist, NOAA's Great Lakes Environmental Research Laboratory
1999-2006 Associate Professor, Old Dominion University
1993-99 Assistant Professor, Old Dominion University
1989-93 Assistant Researcher, The University of Hawaii
1989-91 SOEST Post-Doctoral Fellow, The University of Hawaii
1987-89 Coastal Marine Scholar (post-doctoral appointment), State University of
New York at Stony Brook
1986 Summer Course in Microbiology, The Marine Biological Laboratory,
Woods Hole, MA (as a NASA Planetary Biology Intern)
1986 Laboratory of Prof. J.M. Larkin, Louisiana State University (as a President's
Fellow, American Society for Microbiology)
1985-87 University Fellow, The Florida State University
1984-85 Research assistant, The Florida State University
1983-84 Teaching assistant, The Florida State University
1982-83 Visiting investigator, Institute of Genetics and Ecology, Aarhus University,
Denmark
1980-82 Assistant scientist, Millstone Environmental Laboratory, Waterford, CT
1978-80 Research assistant, Marine Research Laboratory, The University of
Connecticut
1977 Environmental intern, Coastal Area Management, CT; administered by the
Massachusetts Audubon Society
1976-77 Teaching assistant, The University of Connecticut
1975, 1976 Summer intern, Chesapeake Biological Laboratory

1976 Laboratory teaching assistant, Franklin & Marshall College

HONORS AND DISTINCTIONS

- 2019-present Chair, Board of Trustees, Chesapeake Research Consortium
2018-present Pool of Overseas Distinguished Scientists for the Qingdao (China)
National Laboratory of Marine Science and Technology
2015-2016 ODU Provost's Fellow
2013-2018 Member, Peer Review Panel, Danish Council for Strategic Research
2010-11 Member, Committee on Assessing Numeric Limits for Living Organisms in
Ballast Water, Water Science and Technology Board, National Research
Council, National Academy of Sciences
2010-11 Member, Ecological Processes and Effects Committee Augmented for Ballast
Water Advisory, Science Advisory Board, Environmental Protection Agency
(Review of the Availability and Efficacy of Ballast Water Treatment Technology)
2010 Invited Speaker, Gordon Conference on Oceans and Human Health
2009 Nominee, Virginia Outstanding Faculty Award
2008 Visiting Scientist, USGS Western Fisheries Research Center, Seattle, WA
2006 Nominee, Tonelson Teaching Award, Old Dominion University
2001 Visiting Scientist, NOAA's Great Lakes Environmental Research Laboratory
1998 Nominee, Hirschfield Faculty Excellence Award, Old Dominion University
1993-2000 Affiliate Faculty, Department of Oceanography, University of Hawaii
1989 SOEST Post-Doctoral Fellowship (School of Ocean, Earth, and Science
Technologies), University of Hawaii
1989 Alexander Hollaender Fellowship, U.S. Department of Energy, Oak Ridge National
Laboratory (offer declined to accept SOEST Post-Doctoral Fellowship)
1989 Danish Bicentennial Fund Award, American-Scandinavian Foundation
1987 Sigma Xi Grant-in-Aid of Research
1986 NASA Planetary Biology Internship
1986 President's Fellowship, American Society for Microbiology
1985,86 Marshall-Vickland Scholarship, The Florida State University
1985-87 University Fellowship, The Florida State University
1978 Sigma Xi Grant-in-Aid of Research
1974-76 Dean's List, Franklin & Marshall College

REFEREED PUBLICATIONS

- 2019 Shang, L., Z. Hu, Y. Deng, Y. Liu, X. Zhai, Z. Chai, X. Liu, Z. Zhan, F.C. Dobbs,
and Y. Z. Tang. Metagenomic sequencing identifies highly diverse assemblages of
dinoflagellate cysts in sediments from ships' ballast tanks. *Microorganisms* 7, 250.
<http://dx.doi.org/10.3390/microorganisms7080250>
- 2019 Petersen, N.B., T. Madsen, M.A. Glaring, F.C. Dobbs, and N.O.G. Jørgensen.
Ballast water treatment and bacteria: Analysis of bacterial activity and diversity
after treatment of simulated ballast water by electrochlorination and UV exposure.
Sci. Total Environ. 648:408-421. <https://doi.org/10.1016/j.scitotenv.2018.08.080>

- 2017 Cohen, A.N, F.C. Dobbs, and P.M. Chapman. Revisiting the basis for US ballast water regulations. *Mar. Pollut. Bull.* 1-2:348-353. doi.org/10.1016/j.marpolbul.2017.03.020
- 2017 Lympelopoulou, D.S., and F.C. Dobbs. Bacterial diversity in ships' ballast water, ballast-water exchange, and implications for ship-mediated dispersal of microorganisms. *Environ. Sci. & Technol.* 51:1962-1972. [doi: 10.1021/acs.est.6b03108](https://doi.org/10.1021/acs.est.6b03108)
- 2016 Kramer, A.M., J. E. Ward, F.C. Dobbs, M.L. Pierce, and J.M. Drake. The contribution of marine aggregate-associated bacteria to the accumulation of pathogenic bacteria in oysters: an agent-based model. *Ecol. Evol.* 2016:1-12. [doi: 10.1002/ece3.2467](https://doi.org/10.1002/ece3.2467)
- 2016 Hung, C.C., S.C. Tsao, J.P. Jang, H.K. Kuang Chang, and F.C. Dobbs. A highly sensitive underwater video system for use in turbid aquaculture ponds. *Sci. Rep.* 6:31810. [doi: 10.1038/srep31810](https://doi.org/10.1038/srep31810)
- 2016 Kaul, R., A.M. Kramer, F.C. Dobbs, and J.M. Drake. Experimental demonstration of an Allee effect in microbial populations. *Biology Letters* 12:20160070. <http://dx.doi.org/10.1098/rsbl.2016.0070>
- 2015 Cohen, A.N, and F.C. Dobbs. Failure of the public health testing program for ballast water treatment systems. *Mar. Pollut. Bull.* 91:29-34.
- 2014 Pierce, M.L., J.E. Ward, and F.C. Dobbs. False positives in Biolog EcoPlates™ and MT2 MicroPlates™ caused by calcium. *J. Microbiol. Meth.* 97:20-24.
- 2013 Kramer, A.M., M.M. Lyons, F.C. Dobbs, and J.M. Drake. Bacterial colonization and extinction on marine aggregates: Stochastic model of species presence and abundance. *Ecol. Evol.* 3(13):4300-4309.
- 2013 Dobbs, F.C., A.L. Goodrich, F.K. Thomson III, and W. Hynes. Pandemic serotypes of *Vibrio cholerae* isolated from ships' ballast tanks and coastal waters: Assessment of antibiotic resistance and virulence genes (*tcpA* and *ctxA*). *Microb. Ecol.* 65:969-974.
- 2012 Lyons, M.M., and F.C. Dobbs. Differential utilization of carbon substrates by aggregate-associated and water-associated heterotrophic bacterial communities. *Hydrobiologia* 686:181-193.
- 2011 Carlton, J.T., G.M. Ruiz, J.E. Byers, A. Cangelosi, F.C. Dobbs, E.D. Grosholz, B. Leung, H.J. MacIsaac, and M.J. Wonham. Assessing the relationship between propagule pressure and invasion risk in ballast water. The National Academies Press. http://www.nap.edu/catalog.php?record_id=13184

- 2010 Lyons, M.M., J.E. Ward, H. Gaff, R. Hicks, J. Drake, and F.C. Dobbs. Theory of island biogeography on a microscopic scale: Are organic aggregates islands for aquatic pathogens? *Aquat. Microb. Ecol.* 60:1-13. ("feature article" <http://www.int-res.com/articles/feature/a060p001.pdf>)
- 2008 Tang, Y.Z., X.P. Lu, M. Laroussi, and F.C. Dobbs. Sublethal and killing effects of atmospheric-pressure, nonthermal plasma on eukaryotic microalgae in aqueous media. *Plasma Processes and Polymers* 5:552-558.
- 2007 Dobbs, F.C. Après le déluge: Microbial landscape of New Orleans after the hurricanes. *Proc. Natl. Acad. Sci.* 104: 9103-9104.
- 2007 Doblin, M.A., K.J. Coyne, J.M. Rinta-Kanto, S.W. Wilhelm, and F.C. Dobbs. Dynamics and short-term survival of cyanobacteria species in ballast water—implications for HAB invasions. *Harmful Algae* 6:519-530.
- 2007 Tang, Y.Z., and F.C. Dobbs. Green autofluorescence in dinoflagellates, diatoms, and other microalgae and its implications for vital staining and morphological study. *Appl. Environ. Microbiol.* 73:2306-2313.
- 2007 Tang, Y.Z., and F.C. Dobbs. Green autofluorescence of dinoflagellate cysts can be used instead of primuline staining for cyst visualization and enumeration in sediments. *J. Phycol.* 43:65-68.
- 2007 Drake, L.A., M.A. Doblin, and F.C. Dobbs. Potential microbial bioinvasions via ships' ballast water, sediment, and biofilm. *Mar. Pollut. Bull.* 55:333-341.
- 2006 Heinemann, S., and F.C. Dobbs. Microbiological 'bottle effects' are not to be ignored (a comment on Mimura et al. 2005). *Mar. Pollut. Bull.* 52:1310.
- 2006 Laroussi, M., O. Minayeva, F.C. Dobbs, and J. Woods. Spores survivability after exposure to low-temperature plasmas. *IEEE Trans. Plasma Sci.* 34 (4):1253-1256.
- 2006 Doblin, M.A., and F.C. Dobbs. Setting a size-exclusion limit to remove toxic dinoflagellate cysts in ships' ballast water. *Mar. Pollut. Bull.* 52:259-263.
- 2005 Drake, L.A., A.E. Meyer, R.L. Forsberg, R.E. Baier, M.A. Doblin, S. Heinemann, W.P. Johnson, M. Koch, P.A. Rublee, and F.C. Dobbs. Potential invasion of microorganisms and pathogens via 'interior hull fouling': Biofilms inside ballast-water tanks. *Biol. Invasions* 7:969-982.
- 2005 Dobbs, F.C., and A. Rogerson. Ridding ships' ballast water of microorganisms. *Environ. Sci. Technol.* 39 (12):259A-264A.

- 2005 Drake, L.A., P.T. Jenkins, and F.C. Dobbs. Domestic and international arrivals of NOBOB (no ballast on board) vessels to lower Chesapeake Bay. *Mar. Pollut. Bull.* 50:560-565.
- 2005 Drake, L.A., and F.C. Dobbs. Do viruses affect the fecundity and survival of the copepod *Acartia tonsa* Dana? *J. Plankt. Res.* 27(2):167-174.
- 2004 Doblin, M.A., L.A. Drake, K.J. Coyne, P.A. Rublee and F.C. Dobbs. *Pfiesteria* species identified in ships' ballast water and residuals: a possible vector for introductions to coastal areas, pp. 317-319 in K.A. Steidinger, J.H. Landsberg, C.R. Tomas and G.A. Vargo (eds.) *Harmful Algae 2002*. Florida Fish and Wildlife Conservation Commission, Florida Institute of Oceanography, and Intergovernmental Oceanographic Commission of UNESCO.
- 2004 Doblin, M.A., Popels, L.C., Coyne, K.J., Hutchins, D.A., Cary, S.C., and F.C. Dobbs. Transport of the harmful bloom alga *Aureococcus anophagefferens* by ocean-going ships and coastal boats. *Appl. Environ. Microbiol.* 70:6495-6500.
- 2004 Dobbs, F.C., R.C. Zimmerman, and L.A. Drake. Occurrence of intracellular crystals in leaves of *Thalassia testudinum*. *Aquat. Bot.* 80:23-28.
- 2004 Aridgides, L.J., M.A. Doblin, T. Berke, F.C. Dobbs, D.O. Matson, and L.A. Drake. Multiplex PCR allows simultaneous detection of pathogens in ships' ballast water. *Mar. Pollut. Bull.* 48:1096-1101.
- 2003 Drake, L.A., F.C. Dobbs, and R.C. Zimmerman. Effects of epiphyte load on optical properties and photosynthetic potential of the seagrasses *Thalassia testudinum* Banks ex König and *Zostera marina* L. *Limnol. Oceanogr.* 48:456-463.
- 2002 Abou-Ghazala, A., S. Katsuki, K.H. Schoenbach, F.C. Dobbs, and K.R. Moreira. Bacterial decontamination of water by means of pulsed-corona discharges. *IEEE Trans. Plasma Sci.* 30(4):1449-1453.
- 2002 Laroussi, M., F.C. Dobbs, Z. Wei, M.A. Doblin, L.G. Ball, K.R. Moreira, F.F. Dyer, and J.P. Richardson. Decontamination of water by excimer UV radiation. *IEEE Trans. Plasma Sci.* 30(4):1501-1504.
- 2002 Laroussi, M., J.P. Richardson, and F.C. Dobbs. Effects of nonequilibrium atmospheric pressure plasmas on the heterotrophic pathways of bacteria and on their cell morphology. *Appl. Physics Lett.* 81:772-774.
- 2002 Drake, L.A., G.M. Ruiz, B.S. Galil, T.L. Mullady, D.O. Friedman, and F.C. Dobbs. Microbial ecology of ballast water during a trans-oceanic voyage and the effects of open-ocean exchange. *Mar. Ecol. Prog. Ser.* 233:13-20.

- 2001 Drake, L.A., K.-H. Choi, G.M. Ruiz, and F.C. Dobbs. Global redistribution of bacterioplankton and virioplankton communities. *Biol. Invasions* 3:193-199.
- 2001 Balkwill, D., J. Chen, M. DeFlaun, F. Dobbs, and 20 others. Breakthroughs in field-scale bacterial transport. *EOS, Trans. Amer. Geophys. Union* 82(38): 417, 423-425.
- 2001 Zhang, P., W.P. Johnson, T.D. Scheibe, K.-H. Choi, F.C. Dobbs, and B.J. Mailloux. Extended tailing of bacteria following breakthrough at the Narrow Channel Focus Area, Oyster, Virginia. *Water Resources Res.* 37:2687-2698.
- 2001 Choi, K.-C., F.C. Dobbs, and R.K. Cowen. Short-term temporal and spatial dynamics of bacterioplankton near Barbados in the Caribbean Sea. *Aquat. Microb. Ecol.* 25:43-53.
- 2000 Ruiz, G.M., T.K. Rawlings, F.C. Dobbs, L.A. Drake, T. Mullady, A. Huq, and R.R. Colwell. Global spread of microorganisms by ships. *Nature* 408:49-50.
- 2000 Schoenbach, K.H., R.P. Joshi, R.H. Stark, F.C. Dobbs, and S.J. Beebe. Bacterial decontamination of liquids with pulsed electric fields. *IEEE Trans. Dielect. Elect. Insulation*, 7(5):637-645.
- 2000 Robertson, D.N, M.J. Butler IV, and F.C. Dobbs. An evaluation of lipid- and morphometric-based indices of nutritional condition for early benthic stage spiny lobsters, *Panulirus argus*. *Mar. Freshwater Behav. Physiol.* 33:161-171.
- 1999 Choi, K.-C., and F.C. Dobbs. Comparison of two kinds of Biolog microplates (GN and ECO) in their ability to distinguish among aquatic microbial communities. *J. Microbiol. Meth.* 36:203-213.
- 1998 Drake, L.A., K.-H. Choi, A.G.E. Haskell, and F.C. Dobbs. Vertical profiles of virus-like particles and bacteria in the water column and sediments of Chesapeake Bay. *Aquat. Microb. Ecol.* 16:17-25.
- 1998 Moyer, C.L., J.M. Tiedje, F.C. Dobbs, and D.M. Karl. Diversity of deep-sea hydrothermal vent *Archaea* from Loihi Seamount, Hawaii. *Deep-Sea Res. II* 45:303-317.
- 1998 Karl, D.M., and F.C. Dobbs. Molecular approaches to microbial biomass estimation in the sea. Chapter 2 (pp. 29-89) in Molecular Approaches to the Study of the Ocean, K.E. Cooksey (ed.); Chapman & Hall, London. *Invited publication.*
- 1998 Lonsdale, D.J., F.C. Dobbs, R.P. Hassett, and J. Yen. Physiological traits associated with a reproductive-resting stage in *Coullana canadensis* (Copepoda: Harpacticoida). *Mar. Biol.* 131:123-131.

- 1997 Smith, C.R., W. Berelson, D.J. DeMaster, F.C. Dobbs, D. Hammond, D.J. Hoover, R.H. Pope, and M. Stephens. Latitudinal variations in benthic processes in the abyssal equatorial Pacific: control by biogenic particle flux. *Deep-Sea Res. II* 44:2295-2317.
- 1997 Dobbs, F.C., and K.A. Selph. Thermophilic bacterial activity in a deep-sea sediment from the Pacific Ocean. *Aquat. Microb. Ecol.* 13:209-212.
- 1997 Carman, K.R., and F.C. Dobbs. Epibiotic microorganisms on copepods and other aquatic crustaceans. *Micros. Res. Tech.* 37:116-135.
- 1996 Moyer, C.L., J. Tiedje, F.C. Dobbs, and D.M. Karl. A computer-simulated RFLP analysis of bacterial SSU rRNA genes: Efficacy of selected tetrameric restriction enzymes for studies of microbial diversity in nature. *Appl. Environ. Microbiol.* 62: 2501-2507.
- 1996 Smith, C.R., D.J. Hoover, S.E. Doan, R.H. Pope, D.J. DeMaster, F.C. Dobbs, and M.A. Altabet. Phytodetritus at the abyssal seafloor across 10° of latitude in the central equatorial Pacific. *Deep-Sea Res. II* 43:1309-1338.
- 1995 Williams, A.B., and F.C. Dobbs. A new genus and species of caridean shrimp (Crustacea: Decapoda: Bresiliidae) from hydrothermal vents on Loihi Seamount, Hawaii. *Proc. Biol. Soc. Wash.* 108:228-237.
- 1995 Moyer, C.L., F.C. Dobbs, and D.M. Karl. Phylogenetic diversity of the bacterial community from a microbial mat at an active, hydrothermal vent system, Loihi Seamount, Hawaii. *Appl. Environ. Microbiol.* 61:1555-1562.
- 1994 Moyer, C.L., F.C. Dobbs, and D.M. Karl. Estimation of diversity and community structure through restriction fragment length polymorphism distribution analysis of bacterial 16S rRNA genes from a microbial mat at an active, hydrothermal vent system, Loihi Seamount, Hawaii. *Appl. Environ. Microbiol.* 60:871-879.
- 1993 Lonsdale, D.J., P. Weissman, and F.C. Dobbs. A reproductive-resting stage in a harpacticoid copepod, and the significance of genetically based differences among populations. *Bull. Mar. Sci.* 53:180-193.
- 1993 Corgiat, J., F.C. Dobbs, M. Burger, and P. Scheuer. Organohalogen constituents of the acorn worm *Ptychodera bahamensis*. *Comp. Biochem. Physiol.* 106B:83-86.
- 1993 Dobbs, F.C., and R.H. Findlay. Analysis of microbial lipids to determine biomass and detect the response of sedimentary microorganisms to disturbance. Chapter 40 in Handbook of Methods in Aquatic Microbial Ecology. (P.F. Kemp, B.F.

- Sherr, E.B. Sherr, and J.J. Cole, editors), pp. 347-358. Lewis Publishers, Boca Raton.
- 1993 Findlay, R.H., and F.C. Dobbs. Quantitative description of microbial communities using lipid analysis. Chapter 32 in Handbook of Methods in Aquatic Microbial Ecology. (P.F. Kemp, B.F. Sherr, E.B. Sherr, and J.J. Cole, editors), pp. 271-284. Lewis Publishers, Boca Raton.
- 1989 Dobbs, F.C., and P.A. LaRock. Freezing marine sediment for subsequent extraction of adenosine triphosphate. *J. Microbiol. Meth.* 10:113-117.
- 1989 Dobbs, F.C., J.B. Guckert, and K.R. Carman. Comparison of three techniques for administering radiolabeled substrates to sediments for trophic studies: Incorporation by microbes. *Microb. Ecol.* 17:237-250.
- 1989 Carman, K.R., F.C. Dobbs, and J.B. Guckert. Comparison of three techniques for administering radiolabeled substrates to sediments for trophic studies: Uptake of label by harpacticoid copepods. *Mar. Biol.* 102:119-125.
- 1988 Dobbs, F.C., and J.B. Guckert. *Callianassa trilobata* (Crustacea: Thalassinidea) influences abundance of meiofauna and biomass, composition, and physiologic state of microbial communities within its burrow. *Mar. Ecol. Prog. Ser.* 45:69-79.
- 1988 Dobbs, F.C., and J.B. Guckert. Microbial food resources of the macrofaunal deposit feeder *Ptychodera bahamensis* (Hemichordata: Enteropneusta). *Mar. Ecol. Prog. Ser.* 45:127-136.
- 1988 Carman, K.R., F.C. Dobbs, and J.B. Guckert. Consequences of thymidine catabolism to estimates of bacterial production: An example from a coastal marine sediment. *Limnol. Oceanogr.* 33:1595-1606.
- 1987 Tuovila, B.J., F.C. Dobbs, P.A. LaRock, and B.Z. Siegel. Preservation of ATP in hypersaline environments. *Appl. Environ. Microbiol.* 52:2749-2753.
- 1986 Dobbs, F.C., and T.A. Scholly. Sediment processing and selective feeding in *Pectinaria koreni* (Polychaeta: Pectinariidae). *Mar. Ecol. Prog. Ser.* 29:165-176.
- 1983 Dobbs, F.C. Monitoring defecation activity of infaunal deposit feeders. *Mar. Ecol. Prog. Ser.* 12:47-50.
- 1983 Dobbs, F.C., and J.M. Vozarik. Immediate effects of a storm on coastal infauna. *Mar. Ecol. Prog. Ser.* 11:273-279.
- 1983 Waslenchuk, D.G., E.A. Matson, R.N. Zajac, F.C. Dobbs, and J. Tramantano. Geochemistry of burrow waters vented by a bioturbating shrimp in Bermuda. *Mar. Biol.* 72:219-225.

1982 Dobbs, F.C., and R.B. Whitlatch. Aspects of deposit feeding by the polychaete *Clymenella torquata*. *Ophelia* 21:159-166.

RESEARCH FUNDING

Current

None at present

Pending

None at present

Prior

- 2014-2018 “A joint mathematical and experimental study on cholera transmission dynamics”, (1 Sep 2014—31 Aug 2018), \$180,000, National Science Foundation, Mathematical Biology. Co-PI was Jin Wang, University of Tennessee.
- 2016-2017 “Microplastics as vectors for bacteria and human pathogens in coastal environments” (1 Jun 2016—31 May 2017), \$5,000, Virginia Water Resources Research Center. Served as administrator for award to MS graduate student Amanda Lavery.
- 2012-2015 “Maritime Environmental Resource Center” (Mar 1, 2012—Dec 21, 2015), \$79,000, University of Maryland.
- 2009-2014 “Collaborative Research--Microscopic islands: Modeling the theory of island biogeography for aquatic pathogens colonizing marine aggregates” (5 years), \$2.3M (\$849,832 to ODU), National Science Foundation, Ecology of Infectious Diseases.
- 2011-2014 “Importation of baitworms and their live algal packing materials to the Mid-Atlantic: Vector characterization and management” (3.5 years), \$146,935 (\$7,500 to ODU), Maryland Sea Grant. PIs were A. Whitman Miller, April MH Blakeslee, Joao Canning-Clode, and Greg M. Ruiz, all at Smithsonian Environmental Research Center.
- 2014 “Acting for Scientists: Interdisciplinary pilot research to examine how actor-training tools may help prepare early career scientists for effective verbal

- communication of science” (2 months), \$17,000, Old Dominion University Office of Research. Co-PI was Jenifer Alonzo, ODU.
- 2011 “Scientific awareness through theatre: Inspiring young people to value scientific practice as we adapt to sea level rise and climate change” (6 months), \$44,631, Old Dominion University Office of Research. PIs were Jenifer Alonzo and Victoria Hill; Advisors were Fred Dobbs and Amy Adcock (all at Old Dominion University)
- 2009-2010 “Do marine aggregates facilitate gene transfer of antibiotic resistance in nature?” (15 months), \$81,782, Old Dominion University Seed-Money Grant. Co-PIs were Gary Schafran, Holly Gaff, Wayne Hynes, and Jin Wang, all at Old Dominion University.
- 2007-2010 “Assessing, detecting, and managing the risks to the Great Lakes from non-indigenous microbes introduced by commercial ships” (2.5 years), \$259,094, Great Lakes Protection Fund via Northeast–Midwest Institute.
- 2009 “Evaluation of methods for biological control of bacteria in ships’ ballast water. Stage 1 – literature review” (2 months), \$26,106. Sea Knight, LLC. Co-PI was Andrew Gordon, Old Dominion University.
- 2008 “Pasteurization of packaged food with pulsed electric fields” (6 months), \$41,212, Smithfield Foods. Co-PI was Karl Schoenbach, Old Dominion University.
- 2005-2008 “Effects of non-equilibrium plasma on eukaryotic cells” (1 Dec 2005—30 Nov 2008), \$240,000, Air Force Office of Sponsored Research. Co-PI was Mounir Laroussi, Old Dominion University.
- 2004-2007 “Viability tests relevant to efficacy of ballast-water technologies—basic research.” 3 years, \$178,293, NOAA Ballast Water Technology Demonstration Program. Co-PIs were Martina Doblin and Lisa Drake, Old Dominion University.
- 2005-2007 “Screening of surrogate species for ballast water treatment.” 2.5 years, \$51,368, NSF International.
- 2004-2006 “Identifying, verifying, and establishing options for best management practices for NOBOB vessels” (1 Jan 2004–31 Dec 2006), \$147,702, Great Lakes Protection Fund via Cooperative Institute for Limnology and Ecosystems Research, University of Michigan. Co-PIs were Martina Doblin and Lisa Drake, Old Dominion University.
- 2003-2006 “Sea Grant Aquatic Nuisance Species Research Program: Antibiotic resistance, plasmids, and the potential for lateral gene transfer in *Vibrio*

- cholerae* found in ships' ballast tanks." 2.5 years, \$205,354, National Sea Grant College Program. Co-PI was Wayne Hynes, Old Dominion University.
- 2001-2004 "Assessment of transoceanic NOBOB vessels and low-salinity ballast water as vectors for nonindigenous species introductions to the Great Lakes." 3.5 years, \$268,148, Great Lakes Protection Fund via Cooperative Institute for Limnology and Ecosystems Research, University of Michigan. Co-PI was Martina Doblin, Old Dominion University.
- 2001-2004 "Ballast residuals in NOBOB (NO Ballast On Board) vessels in Chesapeake Bay: Their biological and chemical characterization and a comparison with patterns in the Great Lakes." 3 years, \$349,998, National Sea Grant College Program. Co-PIs were Lisa Drake and Martina Doblin (ODU), Tom Johengen (University of Michigan), Hugh MacIsaac (University of Windsor), Philip Jenkins (Philip T. Jenkins and Associates, Ltd.), and David Reid (NOAA Great Lakes Environmental Research Laboratory).
- 2001-2004 "Aquatic nuisance species: Abundance of microorganisms and pathogens associated with biofilms inside ballast-water tanks and their capacity to act as vertical seed banks." 2.5 years, \$299,998, National Sea Grant College Program. PI was Lisa Drake, Old Dominion University, and co-PIs are Fred Dobbs and Martina Doblin (ODU), William Johnson (University of Utah), and Robert Baier and Anne Meyer (University at Buffalo).
- 2001-2003 "Influence of sedimentary and seagrass microbial communities on shallow-water benthic optical properties—data mining proposal." 2 years, \$56,747, Office of Naval Research. PI was Lisa Drake, Old Dominion University, Co-PI was Fred Dobbs.
- 1999-2002 "Top-down controls on growth of groundwater bacteria from a coastal plain aquifer." 3 years, \$240,000, Department of Energy, Office of Biological and Environmental Research.
- 1999-2002 "Research and outreach to prevent and control aquatic nuisance species invasions: Presence, dynamics, and fate of pathogenic microorganisms in ballast water and ballast water microcosms." 2.5 years, \$148,533, National Sea Grant College Program.
- 2001-2002 "Proof-of-concept: Microarray technology (DNA chips) to detect pathogens in ships' ballast water." 8 months, \$15,000, Cooperative Institute for Coastal Environmental Engineering and Technology (CICEET). PIs were Drs. L.A. Drake, M.A. Doblin, F.C. Dobbs (ODU), Tamás Berke, Jason Jiang, and David Matson (Center for Pediatric Research, Eastern Virginia Medical School).

- 2000-2001 "Biological characterization for assessment of aquatic nuisance species invasion risk from NOBOB (no ballast on board) vessels." 15 months, \$80,000, US Coast Guard, US Environmental Protection Agency, and NOAA via Cooperative Institute for Limnology and Ecosystems Research, University of Michigan.
- 1999-2001 "Ballast water treatment and management: Inactivation of human pathogens through photon engineering." 1.5 years, \$99,903, National Sea Grant College Program. Co-PI was Mounir Laroussi, Old Dominion University.
- 1996-2001 "Influence of sedimentary and seagrass microbial communities on shallow-water benthic optical properties." 5 years, \$422,775, Office of Naval Research. Co-PI for last two years was Lisa Drake, Old Dominion University.
- 1999-2000 "Bioelectrics Program at Old Dominion University." 1 year, \$50,000, Old Dominion University (internal funding). Co-PIs were Karl Schoenbach and Robert Stark, Old Dominion University.
- 2000 "Ballast-water treatment and management: Acoustic screen filtration for control of non-indigenous species in ballast water." 7 months, \$9,617, Virginia Sea Grant College Program. Co-PI was Karl Schoenbach, Old Dominion University.
- 1998-2000 "Effects of macro- and microzooplankton grazing on transformations of colored dissolved organic matter (CDOM)." 2 years, \$142,544, Office of Naval Research. Co-PI was David Burdige, Old Dominion University.
- 1998-2000 "Measuring the transfer, dynamics, and risk of invasion for microbial communities associated with the ballast water of ships." 2 years, \$41,472, Maryland Sea Grant College Program.
- 1997-1999 "Protozoa population dynamics and bacterivory in groundwater at the DOE site in Oyster, Virginia." 21 months, \$99,701, Department of Energy subcontract through Pacific Northwest National Laboratory.
- 1997 "Evaluation of a benchtop treatment system for non-point source discharges." 1.5 months, \$5,000. Wilson J. Browning, Jr. Co-PIs were Raymond Alden and Joseph Winfield, Old Dominion University.
- 1996 "Summer Faculty Research Fellowship Grant." 2 months, \$6,000. Old Dominion University.
- 1993-1995 "Microbial processes and biodiversity at an active, hydrothermal-vent system, Loihi Seamount, Hawaii." 2 years, \$60,698, University of Hawaii Sea Grant College Program. Co-PI with David Karl, University of Hawaii.

- 1993-1995 "Microbiological aspects of point- and nonpoint-source pollution in Mamala Bay, Oahu, Hawaii." 2 years, \$100,000, Mamala Bay Study Commission. Co-PI with Michael Landry and Lisa Campbell, University of Hawaii.
- 1995 "Carbon cycling near the Charleston Bump: Relative importance of benthic macrofauna and sedimentary microbes." 1 year, \$0 (ship time only), North Carolina Oceanography Consortium. Associate investigator with Lisa Clough (P.I.), East Carolina University.
- 1991-1994 "Sedimentary microbiological communities across the Equatorial Pacific carbon-flux gradient: Biomass, composition, carbon-utilization rates, and production." 2.5 years, \$141,360, NSF, Chemical Oceanography.
- 1991-1994 "Benthic community disturbance and succession following simulated manganese-nodule mining in the Equatorial Pacific Ocean." 4 years, \$801,500, University of Hawaii Sea Grant College Program. Associate Investigator with Craig Smith (P.I.), Department of Oceanography, University of Hawaii.
- 1993 "Submersible support to study microbial processes and biodiversity at the summit of Loihi Seamount." 1 year, \$0 (ship time only), NOAA's National Undersea Center at the University of Hawaii. Associate investigator was David Karl, Department of Oceanography, University of Hawaii.
- 1991-1993 "Microbiology and chemistry of active hydrothermal vents on Loihi Seamount." 2 years, \$139,514, University of Hawaii Sea Grant College Program. Associate Investigator was David Karl, Department of Oceanography, University of Hawaii.
- 1992 "Submersible support to study microbial processes and biodiversity at the base of Loihi Seamount." 1 year, \$0 (ship time only), NOAA's National Undersea Center at the University of Hawaii. Associate investigator was David Karl, Department of Oceanography, University of Hawaii.
- 1991-1992 "Microorganisms on burrow walls of infauna: Predictable or fortuitous occurrence?" 1.5 years, \$44,042, NSF, Biological Oceanography.
- 1990-1991 "Pathogenesis in a widespread, estuarine copepod: Etiology and demographic effects." 1.5 years, \$45,699, NSF Biological Oceanography. Co-principal investigator with Darcy Lonsdale, Marine Sciences Research Center, SUNY at Stony Brook.
- 1990-1991 "Purchase of an Iatroscan for analysis of lipids." 1 year, \$24,025, University of Hawaii Professional Development Fund, with matching funds from the School of Ocean, Earth, and Science Technology. Co-principal investigator

with Brian Popp, Department of Geology and Geophysics, University of Hawaii.

- 1990-1991 "Epicuticular bacteria on crustaceans: Their contributions to metabolic activity in marine sediments." 1 year, \$5,000, University of Hawaii Research and Training Revolving Fund Award.
- 1989 "Is cellulose digestion in oysters prokaryotically or eukaryotically mediated?" 5 weeks, \$2,000, American-Scandinavian Foundation.
- 1988-1989 "Degradation of polychlorinated biphenyls (PCBs) by bacteria from enteropneust worm burrows." 1 year, \$9,996, New York Sea Grant.

INVITED LECTURES

- 2019 Virginia Aquarium and Marine Science Center; Clark Nexen (architectural firm); Virginia Academy of Sciences; Chesapeake Bay Program, Scientific and Technical Advisory Committee; Hampton Roads Planning District Commission
- 2018 Institute of Oceanology, Chinese Academy of Sciences, Qingdao; State Key Laboratory of Ballast Water Research, Jiangyin, China
- 2017 National Sun Yat-sen University, Taiwan
- 2015 Rotary Club of Oyster Point, VA; Hampton University
- 2014 Hampton University; National Sun Yat-sen University, Taiwan; Kiwanis Club of Smithfield, VA; CMA-CGM America; Korea Institute of Ocean Science & Technology; Institute of Oceanology, Chinese Academy of Sciences, Qingdao
- 2012 Franklin & Marshall College; Florida State University
- 2011 Larchmont Elementary School, Norfolk, VA; University of Connecticut
- 2010 Blair Middle School, Norfolk, VA; Gordon Conference on Oceans and Human Health (University of New England)
- 2009 Virginia Living Museum; Larchmont United Methodist Church, Norfolk, VA; Cape Henry Collegiate School, Virginia Beach, VA
- 2008 Larchmont Elementary School, Norfolk, VA; University of Minnesota Duluth; University of Copenhagen (Denmark); Chesapeake Biological Laboratory
- 2007 All Scientist Meeting, Southern Research Station, USDA Forest Service; US Geological Survey, Western Fisheries Research Center, Seattle
- 2006 “Global Challenges, Local Solutions” Annual Research Exposition sponsored by Old Dominion University, Norfolk State University, and Eastern Virginia Medical School; Millersville University
- 2005 Estuarine Research Federation; US Coast Guard; Pacific Marine States Fisheries Commission; United Nations ICES/IOC/IMO Working Group on Ballast and other Ship Vectors
- 2004 Johns Hopkins University; American Institute of Biological Sciences (Annual Meeting, Washington, D.C.); Chesapeake Biological Laboratory; Hampton University
- 2003 Johns Hopkins University
- 2002 University of North Carolina Greensboro; Louisiana State University; The Environmental Forum 2002
- 2001 Legal Institute of the Great Lakes, University of Toledo; NOAA Great Lakes Environmental Research Laboratory
- 2000 Eastern Virginia Medical School
- 1998 Smithsonian Environmental Research Center
- 1997 University of Connecticut
- 1996 Virginia Union University; East Carolina University
- 1995 Naval Research Laboratory; Chesapeake Biological Laboratory
- 1994 Virginia Institute of Marine Sciences; The Oceanography Society Meeting, Honolulu
- 1993 North Carolina State University; Old Dominion University
- 1992 University of Southwestern Louisiana
- 1990 Louisiana State University

- 1989 Oak Ridge National Laboratory; University of Hawaii; Vassar College
1988 General Electric, Research and Development Center; University of New
Hampshire; University of Connecticut; Summer Course in Marine Ecology,
Marine Biological Laboratory, Woods Hole, MA

REVIEWER

Journals

Aquatic Ecosystem Health & Management; Antarctic Research Series (AGU); Applied and Environmental Microbiology; Aquatic Biology; Aquatic Ecosystem Health & Management; Aquatic Microbial Ecology; Archives of Microbiology; Astrobiology; Biofouling; BioInvasions Records; Biological Oceanography; BMC Biotechnology; Conservation Biology; Continental Shelf Research; Deep-Sea Research Part I; Deep-Sea Research II; Ecological Applications; Ecology; Ecology Letters; Estuaries and Coasts; Estuarine, Coastal and Shelf Science; Environment Protection Engineering; Environmental Microbiology; Environmental Monitoring and Assessment; Environmental Science and Technology; Environmental Science and Technology Letters; Environmental Toxicology and Chemistry; Environments; Estuarine, Coastal and Shelf Science; FEMS Microbiology Ecology; Frontiers in Aquatic Microbiology; Geo-Marine Letters; Heliyon; Hydrobiologia; IEEE Transactions on Plasma Science; Journal of Applied Ecology; Journal of Applied Microbiology; Journal of Eukaryotic Microbiology; Journal of Experimental Marine Biology and Ecology; Journal of Marine Research; Journal of Marine Systems; Journal of Microbiological Methods; Journal of Sea Research; Limnology and Oceanography; L&O Bulletin; L&O Methods; Management of Biological Invasions; Marine Biotechnology; Marine Ecology Progress Series; Marine Biology; Marine Environmental Research; Marine Pollution Bulletin; Microbial Ecology; Oceanography; Oceanologia; PLOS ONE; Proceedings National Academy of Sciences; Proceedings Royal Society B; Tropical Medicine & Surgery

Books

Aquatic Pollution, 4th edition, Wiley Interscience, 2018
Aquatic Pollution, 3rd edition, Wiley Interscience, 2000
The Microbiology of Deep-Sea Hydrothermal Vents, CRC Press, 1995
Handbook of Methods in Aquatic Microbial Ecology, Lewis Publishers, 1993

Funding Agencies

American Society for Engineering Education; California Bay-Delta Authority Science Program (CALFED); Danish Agency for Science, Technology and Innovation; Danish Council for Strategic Research; Department of Defense, Strategic Environmental Research and Development Program; Department of Energy, Environmental Sciences Division; Environmental Protection Agency, Graduate Education Fellowships; Georgian-U.S. Bilateral Grants Program; Hudson River Foundation; Israeli Ministry of Science and Technology; National Science Foundation (Division of Ocean Sciences, Biological Oceanography, Chemical Oceanography; Division of Environmental Biology, Life in Extreme Environments; Division of Earth Sciences, Biocomplexity in the Environment; Office of Polar Programs, Antarctic Biology and Medicine); Natural Environment Research Council (Directorate of Science and Technology) (United Kingdom); Naval Research Laboratory; NOAA (National Sea Grant College Program; State Sea Grant Programs (CA, DE, HI, MS-AL, NY, OR, SC); Office of Ocean Exploration; National Undersea Research Program); Gulf of Maine Regional Marine Research Program; Science & Engineering Research Council (Singapore)

Promotion and Tenure (external)

College of Charleston; College of William & Mary (Virginia Institute of Marine Science); Franklin & Marshall College; Louisiana State University; Marshall University; Smithsonian Institution; University of Maryland; University of South Carolina

Program Review (external)

Millersville University, Department of Earth Sciences (Apr 2007); University of North Carolina at Wilmington, MS in Marine Science Program (Mar 2011)

Ph.D. Dissertation proposal (external)

University of Connecticut, Department of Marine Sciences (Nov 2013)

EDITOR

Associate Editor, *Limnology and Oceanography Bulletin* (2002—2007)

Guest Editor for the journal, *Microscopy Research and Technique*. Initiated, coordinated, and edited two issues (144 pages, 9 articles) focused on "Microscopic Studies of Aquatic Microorganisms". The first issue was published January 1996, the second April 1997.

STUDENTS AND POST-DOCTORAL SCHOLARS

(Department affiliation is ODU OEAS unless indicated otherwise)

Post-Doctoral Supervisor: Despoina Lympelopoulou (2013—2014); Maille Lyons (2008—2012); Martha Stokes (2008—2009); Yingzhong Tang (2005—2006); Keun-Hyung Choi (2000—2002); Martina Doblin (2000—2001); Lisa Drake (1998—2001)

Major Professor for Ph.D. students: Frank K. Thomson III (graduated 2009); Stefan Heinemann (left program 2007); Keun-Hyung Choi (graduated 2000); Lisa A. Drake (graduated 1997)

Major Professor for M.S. students: Alexandra DuPree Townsend (graduated 2018); Amanda Laverty (graduated 2018); Wenda Li (2010—present); Patrick Tennis (graduated 2015); Manju Nagarajan (graduated 2012); Amy Hansen (graduated 2007); Silvia Rondón Delgado (2006 only, transferred to another college); Amanda Goodrich (graduated 2006); Stefan Heinemann (graduated 2004); Elif Demir (graduated 2001); John Paul Richardson (graduated 2001); Jason Williams (graduated 2000); Kurt Clemente (graduated 1995)

Ph.D. Dissertation Committees: Ashley Molinaro (ODU Biological Sciences); Janis Doss (ODU Biological Sciences); Marla Valentine (ODU Biological Sciences, graduated 2019); Drew Posny (ODU Mathematics and Statistics, graduated 2014); Samantha Bickel (Virginia Institute of Marine Sciences, graduated 2013); Danielle Morgan-Smith

(graduated 2012); Heidi Mahon (ODU Biological Sciences, left program); George Boniello (graduated 2010); Martha Stokes (graduated 2007); Scott Kline (left program); Tonya Rawlings (University of Maryland, COMB, graduated 2005); Jean-Paul Simjouw (graduated 2004); Denice Robertson (ODU Biological Sciences, graduated 2001); Gary Schultz (Virginia Institute of Marine Sciences, graduated 1999); Amr Abou-Ghazala (ODU Electrical and Computer Engineering, graduated 1998); Robin Pope (North Carolina State University, Department of Marine, Earth and Atmospheric Sciences, graduated 1996); Surya Dhakar (ODU Oceanography, graduated 1995); Sheryl McCarthy (University of Hawaii, Department of Oceanography, left program); Craig Moyer (University of Hawaii, Department of Oceanography, graduated 1995); Andrew Brittain, (University of Hawaii, Department of Microbiology, graduated 1993)

Ph.D. Advisory Committees: Ashley Molinaro (ODU Biological Sciences, admitted to candidacy 2018); Janis Doss (ODU Biological Sciences, admitted to candidacy 2017); Marla Valentine (ODU Biological Sciences, admitted to candidacy 2016); Molly Mikan (admitted to candidacy 2014); Ariel Degree (admitted to candidacy 2014); Carmen Zayas-Santiago (admitted to candidacy 2014); Cecelia Monroe (ODU Biological Sciences, left program); Danielle Morgan-Smith (admitted to candidacy 2009); Leo Procise (admitted to candidacy 2009); Stacy Beharry (admitted to candidacy 2009); Heidi Mahon (ODU Biological Sciences; admitted to candidacy 2006); Dina Bower (admitted to candidacy 2007); Joy Davis (admitted to candidacy 2004); Andrea Rocha (changed to MS status 2005); George Boniello (admitted to candidacy 2006); Jose Luis Blanco (admitted to candidacy 2003); Michelle Watson (admitted to candidacy 2001); Jean-Paul Simjouw (admitted to candidacy 2001); Scott Kline (admitted to candidacy 2000); Shannon Meseck (admitted to candidacy 2000); Mario Caceres (admitted to candidacy 2000); Hector Sepulveda (admitted to candidacy 2000); Shilong Zheng (admitted to candidacy 1996); Rick Koehler (resigned from program 1996)

M.S. Advisor: Tony Vonderau (resigned from program 2010); Philip Balitsky (graduated 2009); Carrie Bateman; Amanda Goodrich (2002-03); Jennifer Thurmond; Karen Clark (graduated 2000); Chris Lynch (graduated 1996); Brett Wheless (graduated 1996); Andrew Haskell (1995-96 only, changed to another advisor)

M.S. Committees: Amy Perez (ODU Biological Sciences; non-thesis); Zuzy Abdala; Kayla Culbertson (ODU Biological Sciences; changed to non-thesis); Rachel McMahon (graduated 2018); Ashley Molinaro (ODU Biological Sciences; transferred to PhD program); Bonnie Bailey (graduated 2014); Zachary Howerton (graduated 2014); Cody Garrison (graduated 2014); Stephanie Toro (graduated 2010); Lara Orensky (ODU Biological Sciences, left program); Mark Prinz (ODU Biological Sciences, left program); Amanda Simmons (ODU Biological Sciences; graduated 2010); Danna Palladino (graduated 2010); Sharon Tatem (ODU Biological Sciences; graduated 2008); Danielle Morgan-Smith (graduated 2007); Andrea Rocha (graduated 2007); Kelly Wyatt (ODU Biological Sciences; graduated 2007); Eric Robillard (graduated 2006); Ryan Morse (changed to Ph.D. status 2005); Robert Ellison (graduated 1999); Steven Kibler (graduated 1999)

Undergraduate Research Supervisor: Katie Darr (NSF REU 2015); Chanton Phan (NSF REU 2014); Amanda Laverty (2013—2014; awarded the Provost's Award for Outstanding Undergraduate Researcher); Chris Coles (*Granby High School*, 2012--2013); Lauren Jarlenski (2012); Patrick Tennis (2012); James Mason (*Granby High School*, 2010); Sofie Jönsson (2004--2005); Jaelyn Wood (NSF REU 2004); Brenda Tipping (2002); Frank Thomson (2000); John Paul Richardson (1998--1999); Leslie Ball (1998); Jason Williams (1998); Krista Madaris (1997); C. John Neely (1995--1996)

UNIVERSITY, COLLEGE, AND DEPARTMENT COMMITTEES and SERVICE

Provost's Fellow (2015-2016)

University Electronic Portfolio (eP) Committee (2015-present)

University Selection Committee for Outstanding Graduate Teaching Assistant Awards, ad hoc Chair (2007)

College of Sciences, Biomedical Graduate Program Advisory Committee (2013)

College of Sciences, Graduate Committee (2007–2011)

Department Chair (2016—present)

Department Graduate Program Director (2005–2008; 2009–2011)

Department Graduate Academics (Chair) (2004–2008; 2009–2011)

Department Undergraduate Academics (2004–2011)

Curriculum Committee, Department of Ocean, Earth and Atmospheric Sciences (1998–2001; 2003–2004)

Chief Departmental Advisor, Department of Oceanography (1997), Department of Ocean, Earth and Atmospheric Sciences (1998–2001)

Admissions/Recruitment Committee, Department of Oceanography (1997), Department of Ocean, Earth and Atmospheric Sciences (1998–2001)

Chair's Advisory Committee, Department of Oceanography (1997), Department of Ocean, Earth and Atmospheric Sciences (1998–1999)

Advisor, Graduate Student Organization, Department of Oceanography (1994–1997), Department of Ocean, Earth and Atmospheric Sciences (1998–2001)

Search Committees:

Chair of Department of Psychology (as committee chair, 2019—present)
Biological Oceanographer, OEAS (as committee chair, 2011-2012; new search 2012–2013)
Physical Oceanographer, OEAS (as committee chair, 2011–2012)
Fiscal Technician, OEAS (2010)
Fiscal Technician, OEAS (2009)
Administrative Assistant, OEAS (2009)
Science Reference Librarian, ODU Perry Library (2007–2008)
Office Manager, OEAS (2007)
Faculty Member, Department of Biological Sciences (2004–2005)
Biological Oceanographer, OEAS (as committee chair, 2002–2004)
Department Chair, OEAS (2002–2003)
Biological Oceanographer, OEAS (as committee chair, 2000)
Physical Oceanographer, OEAS (1999–2000)
Department Chair, OEAS (1998–1999)
Faculty Member, Department of Biological Sciences (1998–1999)
Associate Director, Applied Marine Research Laboratory (1995–1996)
Physical Oceanographer, Department of Oceanography (1993–1995)
Slover Distinguished Professor, Department of Oceanography (1995–1996)
Fiscal Technician, Department of Oceanography (1994, 1996, 2000)

COMMUNITY, NATIONAL, AND INTERNATIONAL SERVICE

Virginia Sea Grant Research and Education Advisory Committee—Member. Jan 2017—present.

Chesapeake Research Consortium—Institutional Representative. Jan 2017—present.
Chair, Board of Trustees, Feb 2019—present.

National Association for Marine Laboratories (and associated Southern Association for Marine Laboratories) —Member representative. Jan 2017—present.

Consortium for Ocean Leadership—Member representative. Jan 2017—present.

University Corporation for Atmospheric Research. Member representative. Jan 2017—present.

National Research Council, Water Science and Technology Board—Member, Committee on Assessing Numeric Limits for Living Organisms in Ballast Water. May 2010—May 2011.

Environmental Protection Agency, Science Advisory Board—Ecological Processes and Effects Committee Augmented for Ballast Water Advisory. (Review of the Availability and Efficacy of Ballast Water Treatment Technology). July 2010—May 2011.

Ballast Water Treatment Technology Panel, administered by NSF International under the ETV (Environmental Technology Verification) program, Environmental Protection Agency and the U.S. Coast Guard (2001—2016, when program sunsetted, following a 2-year time extension)

Advisory Panel member, Marine Invasive Species Program, California State Lands Commission (2008—present); Technical Advisory Group member (2015—present)

Elizabeth River Project's Watershed Action Team 2015 (Feb 2015—present)

Lafayette River Steering Committee, Norfolk, VA (2009—present)

Larchmont Marsh Watch Steering Committee, Norfolk, VA (2009—present)

Organizing Committee, Daniel and Helen Sonenshine Endowed Lectureship in Infectious Diseases (2005–2018)

Science Team, Technology Evaluations, Maritime Environmental Resource Center, University of Maryland (2012—2015), <http://www.maritime-enviro.org/Team.php>

Advisory Board member, Maritime Environmental Resource Center, University of Maryland (2008—2012)

Earth and Sky (heard on National Public Radio) Global Science Advisor (2006–2014)

Session co-organizer with Karen Shapiro (UC Davis), “Let it Snow! Aquatic Exopolymers, Suspended Particles, and Organic Aggregates” Aquatic Sciences Meeting, New Orleans, 17-22 Feb 2013.

Invited Participant and Presenter, “Monitoring Microbes in the Great Lakes: Monitoring Benefits, Needs, and Methods”, Great Lakes Commission, Northeast Midwest Institute, and Cornell University (Romulus, MI, 18-19 Dec 2008)

Invited Participant, “Evaluating Ballast Water Treatment Systems Onboard Ships: Technical and Scientific Approaches”, Aquatic Bioinvasion Research and Policy Institute in collaboration with the Pacific States Marine Fisheries Commission (Portland, Oregon 14–15 Jun 2005)

Session co-organizer with Mark Peterson (University of Mississippi), “Coastal Invasive Species: Impacts, Management and the Role of Modified Habitats” Symposium SYM-02, 18th Biennial Conference of the Estuarine Research Federation, Norfolk, Virginia (2005)

Organizer, Seminar Series for Department of Ocean, Earth, and Atmospheric Sciences, Old Dominion University (academic year 2002–2003)

Organizing Committee, College of Sciences Distinguished Visitor Seminar Series, “PORTS—Portal to the World” (2005-2006); also "Emerging Infectious Diseases" (1998–1999)

Organizing Committee, Center for Marine Pathogenesis and Molecular Technology (a joint venture between Old Dominion University and Eastern Virginia Medical School) (1998–1999)

Moderator, National Ocean Science Bowl, Consortium for Oceanographic Research and Education (1998, 1999); Science Judge (2002, 2006, 2007, 2008, 2009, 2018,2019)

Judge, Tidewater Science Fair (1994, 1995, 1997, 1998)

U.S. Coast Guard Workshops

Invited Participant, United States Coast Guard Technical Workshop, “NOBOB II Workshop” (Chicago, 10–12 Sep 2007)

Invited Participant, “Technical Issues for Testing and Evaluating Ballast Water Treatment Technologies”, Sponsored by the Naval Research Laboratory, United States Fish & Wildlife Service, and the United States Coast Guard (Key West, 8–10 Aug 2006)

Invited Participant, United States Coast Guard Technical Workshop, “Management of Residual Water on NOBOB Vessels Entering the Great Lakes” (Cleveland, 10–12 May 2005)

Invited Participant, “International Workshop on Technical Aspects of Ballast Water Treatment Standards”, sponsored by the U.S. Coast Guard and the U.S. Department of State in cooperation with the National Science Foundation (Washington D.C. 12–14 Feb 2003)

Invited Participant, “Ballast-Water Exchange Verification Workshop”, sponsored by the U.S. Coast Guard in cooperation with the Smithsonian Environmental Research Center (Edgewater, Maryland, 3–4 Aug 2000)

International Council for the Exploration of the Sea (ICES)

Chair, RGALIEN Review Group, by correspondence, 19-24 Mar 2009.

Advice Drafting Group QSR, Copenhagen, Denmark, 30-31 Mar 2009

Advisory Committee and Participant, ICES/IOC/IMO Working Group on Ballast and other Ship Vectors, Lisbon, Portugal, 12-14 March 2012 (ICES/IOC/IMO International Council for the Exploration of the Sea/Intergovernmental Oceanographic Commission/International Maritime Organization)

Participant, as above, Hamburg, Germany, 8-10 March 2010; Washington, D.C. 9-11 March 2009; Copenhagen, Denmark, 10-12 March 2008; Dubrovnik, Croatia, 19-21 March 2007

Participant and Session Rapporteur, as above, Arendal, Norway 14-18 March 2005

**THESES and DISSERTATION; ARTICLES FOR A GENERAL AUDIENCE;
TECHNICAL REPORTS and LETTERS; BOOK REVIEWS; CONGRESSIONAL
TESTIMONY; MISCELLANY**

THESES and DISSERTATION

1987 Dobbs, F.C. Microbiology of bioturbated sediments: The burrows of *Callianassa* and the deposit-feeding system of *Ptychodera*. Ph.D. Dissertation, The Florida State University, xiii + 96 pp.

1981 Dobbs, F.C. The ecology of a shallow subtidal sandflat community, with emphasis on sediment reworking by *Clymenella torquata* (Polychaeta, Maldanidae). M.S. Thesis, The University of Connecticut, xviii + 144 pp.

1976 Dobbs, F.C. A comparative study of diatom communities in a limestone and a serpentine stream. A.B. Thesis, Franklin & Marshall College, 70 pp.

ARTICLES FOR A GENERAL AUDIENCE

2013 Northeast-Midwest Institute. Harmful microbes in ballast water: Protecting the Great Lakes ecosystem.

2009 Dobbs, F. Questions about about tiny, tiny stowaways in ballast water. Quest Summer 2009, Vol. 12 (1):1. <http://www.odu.edu/ao/instadv/quest/CommentSummer09.html>

2008 Dobbs, F.C. Ship ballast tanks: how microbes travel the world. Microbiology Today 35(2): 78-81. U.K. Society for General Microbiology.

2002 Drake, L.A., G.M. Ruiz, B.S. Galil, T.L. Mullady, D.O. Friedmann, and F.C. Dobbs. Voyage aboard the bulk carrier Hadera: Changes in microorganism abundance and biomass over time and with respect to ballast-water exchange. Aquatic Invaders 13(3): 6-12.

2001 Dobbs, F.C. Microscopic stowaways in ballast water. Coastlines 11.2, pp.1, 4-5.

2001 Dobbs, F.C., and M. Laroussi. Microorganisms in ships' ballast waters and strategies for their control. Sustainable Development International (Strategies and Technologies for Agenda 21 Implementation), pp. 203-206. (Note that the publisher placed another author's abstract in our article!)

1984 Dobbs, F.C. Subseabed disposal poses biological questions. Sierra Club Energy Report 45:6-7.

TECHNICAL REPORTS and LETTERS

2016 Dobbs, F.C. 2016. Provost's Fellow Report: Overview of Electronic Portfolio Efforts at Old Dominion University. 33 pp. + supplement

2015 Cohen, A.N, F.C. Dobbs, R. Diaz, P.M. Chapman, J. Burkholder, and L.L. Conquest. Correcting an erroneous conclusion in "Efficacy of Ballast Water Treatment Systems," a report by the EPA Science Advisory Board (EPA-SAB-11-009).

2013 Bain, M., Bowser, P., Cangelosi, A., Casey, J., Dobbs, F., Desai Meghana, Eder, T., Hicks, R. Mays, N., and J. Winton. Harmful microbes in ballast water: Protecting the Great Lakes ecosystem. Prepared by The Northeast-Midwest Institute.

2012 Cohen, A.N., F. Dobbs, J.T. Carlton, J. Burkholder, W. Landis, E. Grosholz, M. Wonham, T.W. LaPoint, P.M. Chapman, B. Leung, R. Diaz, J.E. Byers, and L.L. Conquest. Comments on the Proposed General Permit for Discharges Incidental to the Normal Operation of a Vessel: Ballast Water Discharges. Docket EPA-HQ-OW-2011-0141.

2011 Ecological Processes and Effects Committee Augmented for the Ballast Water Advisory. Efficacy of ballast water treatment systems: A report by the EPA Science Advisory Board.

[http://yosemite.epa.gov/sab/sabproduct.nsf/02ad90b136fc21ef85256eba00436459/6FFF1BFB6F4E09FD852578CB006E0149/\\$File/EPA-SAB-11-009-unsigned.pdf](http://yosemite.epa.gov/sab/sabproduct.nsf/02ad90b136fc21ef85256eba00436459/6FFF1BFB6F4E09FD852578CB006E0149/$File/EPA-SAB-11-009-unsigned.pdf)

2009 Dobbs, F.C., and A. Gordon. Evaluation of potential biocontrol strategies for IMO-regulated bacteria in ships' ballast water. Phase 1: Literature review. Final Report to Sea Knight, LLC, Suffolk, VA (30 pp. + Appendices 1 and 2)

2008 Anderson, D., Cordell, J., Dobbs, F. (corresponding author); Herwig, R., and Rogerson, A. Screening of surrogate species for ballast water treatment. Final report to NSF International for Contract No. 03/06/394, Work Order 2, to Woods Hole Oceanographic Institution, Woods Hole, MA 02543 (97 pp. + Appendices V and VI)

2007 Woodruff, D., K.L. Wahl, N.B. Valentine, F.C. Dobbs. 2007. Application of MALDI-MS to identification of phytoplankton in ballast water. SI-1248. Prepared for Strategic Environmental Research and Development Program. [http://stage.serdp-estcp.org/Program-Areas/Resource-Conservation-and-Climate-Change/Natural-Resources/Living-Marine-Resources-Ecology-and-Management/RC-1248/RC-1248/\(language\)/eng-US](http://stage.serdp-estcp.org/Program-Areas/Resource-Conservation-and-Climate-Change/Natural-Resources/Living-Marine-Resources-Ecology-and-Management/RC-1248/RC-1248/(language)/eng-US)

2007 Reid, D.F., Johengen, T.H., MacIsaac, H., Dobbs, F., Doblin, M., Drake, L., Ruiz, G., and Jenkins, P. Identifying, verifying, and establishing options for best management practices for NOBOB vessels. Executive Summary (vii pp.) and Final Report (173 pp.) to the Great Lakes Protection Fund.

http://www.glerl.noaa.gov/res/Task_rpts/2004/nobob_b_executive_summary.pdf and http://www.glerl.noaa.gov/res/Task_rpts/2004/nobob_b_final_report.pdf

2005 Johengen, T., D. Reid, G. Fahnensteil, H. MacIsaac, F. Dobbs, M. Doblin, P. Jenkins. Assessment of transoceanic NOBOB vessels and low-salinity ballast water as vectors for non-indigenous species introductions to the Great Lakes. Final Report to the Great Lakes Protection Fund, xiv + 265 pp.

<http://www.glerl.noaa.gov/res/projects/nobob/nobob.html>

1996 Landry, M.R., L. Campbell, and F.C. Dobbs. Microbial aspects of point- and nonpoint-source pollution in Mamala Bay: Bather and light effects on sewage-indicator bacteria. In Mamala Bay Study Final Report, Vol. II, x + 95 pp.

1995 Landry, M.R., L. Campbell, and F.C. Dobbs. Microbial aspects of point- and nonpoint-source pollution in Mamala Bay: Bather and light effects on sewage-indicator bacteria. Report to the Mamala Bay Commission, 38 pp. + appendices.

1979 Dobbs, F.C. An introduction to the benthic biology of Long Island Sound. Technical Report, Connecticut Coastal Area Management, 44 pp.

BOOK REVIEWS

2010. Dobbs, F.C. Animal, Vegetable, Miracle: A year of food life (book review). The Larchmont Light 29(3):15-17.

2008. Dobbs, F.C. Three Cups of Tea (book review). The Larchmont Light 27(10):16-17.

2007. Dobbs, F.C. Editor's Bookshelf. Limnol. Oceanogr. Bull. 16(1):5.

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