

Joel Eric Baker

Port of Tacoma Chair in Environmental Science and Professor

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Education

- 1988 Ph.D., Civil and Environmental Engineering
University of Minnesota, Department of Civil Engineering
- 1985 M.S., Civil and Environmental Engineering
University of Minnesota, Department of Civil Engineering
- 1981 B.S., Environmental Chemistry
State University of New York, College of Environmental Science & Forestry

Professional Background

- Elected Member, Washington State Academy of Sciences (2021-)
- Port of Tacoma Chair in Environmental Science and Professor (2008-) University of Washington Tacoma.
- Director, UW Puget Sound Institute (2011-)
- Science Director (2008-) The Center for Urban Waters, Tacoma, Washington.
- Adjunct Professor (2009-) Department of Civil and Environmental Engineering, University of Washington.
- Associate Vice Chancellor for Research (2014-2016), Special Assistant to the Chancellor for Research, UW Tacoma (2012-2014)
- Professor (1999-2008), Associate Professor (1995-1999), Assistant Professor (1989-1995), Research Associate (1988-1989), Chesapeake Biological Laboratory, University of Maryland Center for Environmental Science.
- Adjunct Professor (2004-2008) Department of Civil and Environmental Engineering, University of Maryland Baltimore County.
- Visiting Scientist (2002) Institute for Environment and Sustainability, European Commission Joint Research Centre, Ispra, Italy.
- Visiting Scientist (1999) Laboratory for Aquatic Ecotoxicology, Institutionen för Tillämpad Miljövetenskap (ITM), Stockholm University.

Research Interests

Modeling contaminant transport and fate in natural waters; Atmospheric chemistry and deposition of organic contaminants; Modeling accumulation of persistent chemicals in aquatic food webs; Aqueous physical chemistry of hydrophobic chemicals; Environmental analytical chemistry, Synthesis and integration of science for informed policy.

Publications (*graduate student in J. Baker's laboratory)

1. Georgiadis, N. and J.E. Baker (2023) A multidecadal oscillation in precipitation and temperature series in pronounced in low flow series from Puget Sound streams. *J. Amer. Water Resource Assn.*, in press.
2. James, C.A., Francis, T.B., Baker, J.E., Georgiadis, N., Kinney, A., Magel, C., Rice, J., Roberts, T. and Wright, C.W. (2022) A boundary spanning system supports large-scale ecosystem based management. *Environmental Science and Policy*, 133, 137-145..
3. Kaya, D., Sowers, K., Demirtepe, H., Stiell, B., Baker, J. and Imamoglu, I. (2019). Assessment of PCB contamination, the potential for in situ microbial dechlorination and natural attenuation in an urban watershed at the East Coast of the United States. *Science of the Total Environment*, 683, 154-165.
4. Barboza, L.G.A., João P.G.L. Frias, J.P.G.L., Booth, A.M., Vieira, L.R., Masura, J., Baker, J.E., Foster, G., and L. Guilhermino (2019) Microplastic pollution in the marine environment. World Seas: An Environmental Evaluation, Chapter 18, <https://doi.org/10.1016/B978-0-12-805052-1.00020-6>.
5. Du, B.W., Lofton, J.M., Peter, T.T., Gipe, A.D., James, C.A., McIntyre, J.K., Scholz, N.L., Baker, J.E., and E.P. Kolodziej (2017) Development of suspect and non-target screening methods for detection of organic contaminants in highway runoff and fish tissue with high-resolution time-of-flight mass spectrometry. *Environ. Science—Processes & Impacts*, 19(9), 1185-1196.
6. James, C.A., Miller-Schulz, J.P., Ultican, S., Gipe, A., and J.E. Baker (2016) Evaluating contaminants of emerging concern as tracers of wastewater from septic systems. *Water Res.*, 101, 241-251.
7. Ashley, J.T.F., Soroka, R., Cintron, Y., Sarno, A., Zaoudeh, L., Velinsky, D. and J.E. Baker (2016) Can polychlorinated biphenyls be removed from Chesapeake Bay by a commercial fishery? *Integr. Environ. Assess. Manag.*, 12, 405-406.
8. Adams, C.I.M., Baker, J.E., and B.V. Kjellerup (2016) Toxicological effects of polychlorinated biphenyls (PCBs) on freshwater turtles in the United States. *Chemosphere*, 154, 148-154, <http://dx.doi.org/10.1016/j.chemosphere.2016.03.102>.
9. GESAMP (2015) Sources, fate, and effects of microplastics in the marine environment: a global assessment. (Kershaw, P.J., ed.). (IMP/FAO/UNESCO-IOC/UNIDO/WMO/IAEA/UN/UNEP/UNDP Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection. Rep. Stud. GESAMP No. 90, 96 p.
10. Kjellerup, B.V., C. Naff, S.J. Edwards, U. Ghosh, J.E. Baker, and K.R. Sowers (2014) Effects of activated carbon on reductive dechlorination of PCBs by organohalide respiring bacteria indigenous to sediments. *Water Res.*, 52, 1-10.
11. Dinglasan-Panlilo, M.J., S. Prakash, and J.E. Baker (2013) Perfluorinated compounds in the surface waters of Puget Sound, Washington and Clayoquot Sound, British Columbia. *Marine Pollut. Bull.*, <http://dx.doi.org/10.1016/j.marpolbul.2013.10.046>
12. Fang, M.D.; Lee, C.L., Jiang, J.J., Ko, F.C., and J.E. Baker (2012) Diffusive exchange of PAHs across the air-water interface of the Kaohsiung Harbor lagoon, Taiwan. *J. Environ. Management*, 110, 179-187.
13. Ko, F.C., J.E. Baker, and K.S. Tew (2012) Kinetics of polychlorinated biphenyl partitioning to marine Chrysophyte *Isochrysis galbana*. *Sci. Total Environ.*, 416, 410-417.
14. Klosterhaus*, S.L., Dries, E. and J.E. Baker (2011) Bioaccumulation kinetics of polybrominated diphenyl ethers from estuarine sediments to the marine polychaete, *Nereis virens*. *Environ. Toxicol. Chem.*, 30(5), 1204-1212.

15. Spengler, J., J. Lwebuga-Mukasa, J. Vallarino, S. Melly, S. Chillrud, J. Baker, and T. Menegishi* (2011) Air toxics exposure from vehicle emissions at a U.S. border crossing: Buffalo Peach Bridge Study. *Res. Rep. Health Eff Inst.* July (158), 5-132.
16. Jiang, J.J, C.L. Lee, M.D. Fang, F.C. Ko, and J.E. Baker (2011) Polybrominated diphenyl ethers and polychlorinated biphenyls in sediments of southwest Taiwan: regional characteristics and potential sources. *Marine Pollut. Bull.*, 62, 815-823.
17. Klosterhaus*, S.L. and J.E. Baker (2010) Bioavailability of decabromodiphenyl ether to the marine polychaete *Nereis virens*., *Environ. Toxicol. Chem.*, 29(4), 860-868.
18. Rowe, C.L., Mitchelmore, C.L. and J.E. Baker (2009) Lack of biological effects of water accommodated fractions of chemically- and physically-dispersed oil on molecular, physiological, and behavioral traits of juvenile snapping turtles following embryonic exposure. *Sci. Total Environ.*, 407(20), 5344-5355.
19. Ashley, J.T.F., M.L. Webster*, R.J. Horwitz, D.J. Velinsky, and J.E. Baker (2009) Polychlorinated biphenyls in sediment and biota from the Delaware River estuary. *Proc. Acad. Nat. Sci. Philadel.*, 158, 89-105.
20. Kelly, S.M., Eisenreich, K.M., J.E. Baker, and C.L. Rowe (2008) Accumulation and maternal transfer of polychlorinated biphenyls in snapping turtles of the upper Hudson River, New York, USA. *Environ. Toxicol. Chem.*, 27(12), 2565-2574.
21. Fang*, M.D., Ko, F.C., Baker, J.E., and C.L. Lee (2008) Seasonality of diffusive exchange of polychlorinated biphenyls and hexachlorobenzene across the air-sea interface of Kaohsiung Harbor, Taiwan. *Sci. Total Environ.*, 407, 548-565.
22. Boynton, W.R., J.D. Hagy, J.C. Cornwell, W.M. Kemp, S.M. Greene, M.S. Owens, J.E. Baker, and R.K. Larsen (2008) Nutrient budgets and management actions in the Patuxent River estuary, Maryland. *Estuaries and Coasts*, 31(4), 623-651.
23. Fang*, M.D., Hsieh, P.C., Ko, F.C., Baker, J.E., and C.L. Lee (2007) Sources and distribution of polycyclic aromatic hydrocarbons in the sediments of Kaoping River and submarine canyon system, Taiwan. *Marine Pollut. Bullet.*, 54(8), 11179-1189.
24. Schneider*, A.R., Porter, E.T., and J.E. Baker (2007) Polychlorinated biphenyl release from resuspended Hudson River sediment. *Environ. Sci. Technol.*, 41(14), 1097-1103.
25. Ko*, F.C., Baker, J.E., Fang, M.D., and C.L. Lee (2007) Composition and distribution of polycyclic aromatic hydrocarbons in the surface sediments from the Susquehanna River. *Chemosphere*, 66, 277- 285.
26. Fang*, M.D., Fang, H.T., Lee, C.L., Ko, F.C. and J.E. Baker (2006) Concentrations of polychlorinated biphenyl congeners in cultivated oysters (*Crassostrea gigas*) in western Taiwan. *Archiv. Environ. Contam. Toxicol.*, 51(2), 223-231.
27. Crimmins*, B.S. and J.E. Baker (2006) Improved GC/MS methods for measuring hourly PAH and nitro-PAH concentrations in urban particulate matter. *Atmos. Environ.*, 40(35), 6764-6779.
28. Schneider*, A.R. and J.E. Baker (2006) The use of solid phase microextraction to rapidly measure dissolved PCBs in natural waters. *Internat. J. Environ. Analyt. Chem.*, 86(11), 789-803.
29. Hornbuckle, K.C., D.L. Carlson, D.L. Swackhamer, J.E. Baker, and S.J. Eisenreich (2006) Polychlorinated biphenyls in the Great Lakes. In *Handbook of Environmental Chemistry*, Volume 5, R.A. Hites, Ed., Springer-Verlag, Berlin.
30. Offenberger*, J., M. Simcik, J. Baker, and S.J. Eisenreich (2005) The impact of urban areas on the deposition of air toxics to adjacent surface waters: a mass budget of PCBs in Lake Michigan in 1994. *Aquatic Sci.*, 67, 79-85.
31. Tuerk, K., J.S., Kucklick, Becker, J.R., Stapleton*, H.M. and J.E. Baker (2005) Toxaphene and PBDEs in Atlantic white-sided dolphins (*Lagenorhynchus acutus*) and rough-toothed dolphins (*Steno bredanensis*), *Environ. Sci. Technol.*, 39, 692-698.

32. Crimmins*, B.S., R.R. Dickerson, B.G. Doddridge and J.E. Baker (2004) Particulate polycyclic aromatic hydrocarbons (PAHs) in the Atlantic and Indian Ocean atmospheres during INDOEX and AEROSOLs99: Continental sources to the marine atmosphere. *J. Geophys. Res. Atmos.*, 109(D5), doi:10.1029/2003JD004192.
33. Stapleton*, H.M., Letcher, R.J. and J.E. Baker (2004) Debromination of polybrominated diphenyl ether congeners BDE 99 and BDE 183 in the intestinal tract of the common carp (*Cyprinus carpio*). *Environ. Sci. Technol.*, 38(4); 1054-1061.
34. Stapleton*, H.M., Letcher, R.J., Li, J., and J.E. Baker (2004) Dietary accumulation and metabolism of polybrominated diphenyl ethers (BDEs) by juvenile carp (*Cyprinus carpio*). *Environ. Toxicol. Chem.*, 23(8); 1939-1946.
35. Stapleton*, H.M., Alaei, M., Letcher, R.J. and J.E. Baker (2004) Debromination of the flame retardant decabromodiphenyl ether by juvenile carp (*Cyprinus carpio*) following dietary exposure. *Environ. Sci. Technol.*, 38, 112-119.
36. Ko*, F.C. and J.E. Baker (2004) Seasonal and annual loads of hydrophobic organic contaminants from the Susquehanna River basin to the Chesapeake Bay. *Marine Poll. Bull.*, 48(9-10), 840-851.
37. Stapleton*, H.M. and J.E. Baker (2003) Comparing polybrominated diphenyl ether and polychlorinated biphenyl bioaccumulation in a food web in Grand Traverse Bay, Lake Michigan. *Arch. Environ. Contam. Toxicol.*, 45, 227-234.
38. Coleman, J., Baker, J.E., Cooper, C., Fingas, M., Hunt, G., Kvenvolden, K., Michel, K., Michel, J., McDowell, J., Phinney, J., Pond, R., Rabalais, N., Roesner, L., and Spies, R.B. (2003) *Oil in the Sea III: Inputs, Fates, and Effects*. The National Academies Press, Washington, D.C., 265 pp.
39. Ko*, F.C., L.P. Sanford, and J.E. Baker (2003) Internal recycling of particle reactive organic chemicals in the Chesapeake Bay water column. *Marine Chem.*, 81(3-4), 163-176.
40. Larsen*, R.K. and J.E. Baker (2003) Source apportionment of polycyclic aromatic hydrocarbons in the urban atmosphere: a comparison of three methods. *Environ. Sci. Technol.*, 37, 1873-1881.
41. Bamford*, H.A. and J.E. Baker (2003) Sources and concentrations of nitro-PAHs in urban and sub-urban atmospheres of Maryland. *Atmos. Environ.*, 37 (15): 2077-2091.
42. Bamford*, H.A., D.Z. Bezabeh, M.M. Schantz, S.A. Wise, and J.E. Baker (2003) Determination and comparison of nitrated polycyclic aromatic hydrocarbons measured in air and diesel particulate reference materials. *Chemosphere*, 50, 575-587.
43. Tsai, P., Hoenicke, R., Yee, D., Bamford*, H.A., and J. E. Baker (2002) Atmospheric concentrations and fluxes of organic compounds in the northern San Francisco Estuary. *Environ. Sci. Technol.*, 36(22), 4741-4747.
44. Bamford*, H.A., Poster, D.L., Huie, R. and J.E. Baker (2002) Using extrathermodynamic relationships to model the temperature dependence of Henry's Law constants of 209 PCB congeners. *Environ. Sci. Technol.*, 36, 4395-4402.
45. Bamford*, H.A., Ko, F.C., and J.E. Baker (2002) Seasonal and annual air-water exchange of polychlorinated biphenyls across Baltimore Harbor and the northern Chesapeake Bay, *Environ. Sci. Technol.*, 36, 4245-4252.
46. Offenberg*, J.H. and J.E. Baker (2002) Precipitation scavenging of polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs) along an urban to over-water transect. *Environ. Sci. Technol.*, 36, 3763-3771.
47. Offenberg*, J.H. and J.E. Baker (2002) The influence of aerosol size and organic carbon content on the gas/particle partitioning of polycyclic aromatic hydrocarbons (PAHs). *Atmos. Environ.*, 36/7 pp. 1205-1220.
48. Schneider*, A.R., Eadie, B.J., and J.E. Baker (2002) Episodic particle transport events controlling PAH and PCB cycling in Grand Traverse Bay, Lake Michigan. *Environ. Sci. Technol.*, 36(6); 1181-1190.

49. Stapleton*, H.M., Skubinna, J., and J.E. Baker (2001) Seasonal dynamics of PCB accumulation in a Lake Michigan food web. *J. Great Lakes Res.*, 28 (1): 52-64.
50. Stapleton*, H.M., Letcher, R.J. and J.E. Baker (2001) PCB metabolism in a freshwater fish. *Environ. Sci. Technol.*, 35, 4747-4752.
51. Larsen*, R.K. and J.E. Baker (2001) Atmospheric ammonia concentrations and deposition to the Chesapeake Bay, *Environ. Sci. Technol.*, 35, 4731-4738.
52. Schneider*, A.R., H.M. Stapleton*, J. Cornwell, and J.E. Baker (2001) Recent declines in PAH, PCB, and toxaphene levels in the northern Great Lakes as determined from high resolution sediment cores. *Environ. Sci. Technol.*, 35, 3809-3815.
53. Lorah*, M.M., L.D. Olsen, D.G. Capone, and J.E. Baker (2001) Biodegradation of trichloroethylene and its anaerobic daughter products in freshwater wetland sediments. *Bioremed. J.*, 5, 101-118.
54. Stapleton*, H.M., C. Masterson, P. Ostrom, N. Ostrom, J. Skubinna, T. Coon, and J.E. Baker (2001) Accumulation of atmospheric and sedimentary PCBs and toxaphene in a Lake Michigan food web. *Environ. Sci. Technol.*, 35, 3287-3293.
55. Kucklick, J.R. and J.E. Baker (2000) Comparison of persistent organochlorine pollutant behavior in the food webs of Lakes Baikal and Superior. In: *Lake Baikal: A Mirror in Time and Space for Understanding Global Change Processes*, K. Minoura, Ed., Elsevier Press, 247-261.
56. Bamford*, H.A., D.L. Poster, and J.E. Baker (2000) Henry's Law constants of polychlorinated biphenyl congeners and their variation with temperature. *Journal of Chemical and Engineering Data*, 49, 1069-1074.
57. Offenberg*, J.H. and J.E. Baker (2000) PCBs and PAHs in southern Lake Michigan in 1994 and 1995: long term declines and urban atmospheric influences. *J. Great Lakes Res.*, 26(2), 196-208.
58. Ashley*, J.T.F., D.H. Secor, E. Zlokovitz, S.Q. Wales, and J.E. Baker (2000) Linking habitat use of Hudson River striped bass to accumulation of polychlorinated biphenyl congeners. *Environ. Sci. Technol.*, 34, 1023-1029.
59. Harman-Fetcho*, J.A., L.L. McConnell, C.P. Rice, and J.E. Baker (2000) Wet deposition and air-water gas exchange of currently used pesticides to a sub-estuary of the Chesapeake Bay. *Environ. Sci. Technol.*, 34, 1462-1468.
60. Offenberg*, J.H. and J.E. Baker (2000) Aerosol size distributions of elemental and organic carbon in urban and over-water atmospheres. *Atmos. Environ.*, 34, 1509-1517.
61. Bamford*, H.A., D.L. Poster and J.E. Baker (1999) Method for measuring the temperature dependence of the Henry's Law constants of selected polycyclic aromatic hydrocarbons. *Polycycl. Aromat. Comp.*, 14/15, 11-22.
62. Dalal, V.P., J.E. Baker, and R.P. Mason (1999) Environmental assessment of Poplar Island Dredge Material Placement Site, Talbot County, Maryland. *Estuaries*, 3B, 770-784.
63. McCusker, E.M., P.H. Ostrom, N.E. Ostrom, J.D. Jeremiason and J.E. Baker (1999) Seasonal variation in the biogeochemical cycling of seston in Grand Traverse Bay, Lake Michigan. *Org. Geochem.*, 30(12), 1543-1557.
64. Dachs, J., S.J. Eisenreich, J.E. Baker, F.C. Ko, and J.D. Jeremiason (1999) Coupling of phytoplankton uptake and air-water exchange of persistent organic pollutants. *Environ. Sci. Technol.*, 33(20); 3653-3660.
65. Offenberg*, J.H. and J.E. Baker (1999) Aerosol size distributions of polycyclic aromatic hydrocarbons in urban and over-water atmospheres. *Environ. Sci. Technol.*, 33, 3324-3331.
66. Kleinow, K., J.E. Baker, J. Nichols, F.P.C. Gobas, T. Parkerton, D.G.C. Muir, G. Monteverdi and P. Mastrodone (1999) Chemical exposure, uptake and disposition: implications for reproduction and development in select oviparous vertebrates. In: *DiGulio, R. and D. Tillitt,*

Eds. Reproductive and Developmental Effects of Contaminants in Oviparous Vertebrates, SETAC Press.

67. Turner*, K.A., R.P. Mason, and J.E. Baker (1999) The influence of varying planktonic and periphytic algal biomass on copper exposure in mesocosms, *Chem. Ecol.*, 16, 317-340.
68. Zhang, H., S.J. Eisenreich, T.; Franz, J.E. Baker, and J. Offenberg. (1999) Evidence for the increased gaseous PCB fluxes to Lake Michigan from Chicago. *Environ. Sci. Technol.*, 33, 2131-2137.
69. Bamford*, H.A., J.H. Offenberg, R. Larsen, F.C. Ko, and J.E. Baker (1999) Diffusive exchange of polycyclic aromatic hydrocarbons across the air-water interface of the Patapsco River, an urbanized subestuary of the Chesapeake Bay. *Environ. Sci. Technol.*, 33, 2138-2144.
70. Bamford*, H.A., D.L. Poster and J.E. Baker (1999) Temperature dependence of the Henry's Law constants of thirteen polycyclic aromatic hydrocarbons between 4° C and 31°C. *Environ. Toxicol. Chem.*, 18(9), 1905-1912.
71. Offenberg*, J.H. and J.E. Baker (1999) Influence of Baltimore's urban atmosphere on organic contaminants over the northern Chesapeake Bay. *J. Air Waste Manag. Assoc.*, 49, 959-965.
72. Harman-Fetcho*, J.A., L.L. McConnell, and J.E. Baker (1999) Agricultural pesticides in the Patuxent River, a tributary of the Chesapeake Bay. *J. Environ. Qual.*, 28, 928-938.
73. Ashley*, J.T.F. and J.E. Baker (1999) Hydrophobic organic contaminants in surficial sediments of Baltimore Harbor: inventories and sources. *Environ. Toxicol. Chem.*, 18, 838-849.
74. Ashley*, J.T.F. and J.E. Baker (1999) The influence of varying planktonic and periphytic algal biomass on exposure of polychlorinated biphenyls in mesocosms, *Chemistry and Ecology*, 16 (2-3), 95-118.
75. Datta, S., L. Hansen, L.L. McConnell, J.E. Baker, J. LeNoir, and J. Seiber (1998) Pesticides and PCB contaminants in fish and frogs from the Kaweah River Basin, California, *Bull. Environ. Contam. Toxicol.*, 60(6), 829-836.
76. Jeremiason, J.D., S.J. Eisenreich, J.E. Baker and B.J. Eadie (1998) PCB decline in settling particles and benthic recycling of PCBs and PAHs in Lake Superior. *Environ. Sci. Technol.*, 32, 3249-3256.
77. Offenberg*, J.H. and J.E. Baker (1998) Semi-volatile organic contaminant size distributions in urban and rural atmospheres. In *Measurement of Toxic and Related Air Pollutants '98*, Air and Waste Management Association, 107-113.
78. Bamford*, H.A., F.C. Ko, and J.E. Baker (1998) Exchange of gaseous polychlorinated biphenyls and polycyclic aromatic hydrocarbons across the Chesapeake Bay air-water interface adjacent to an urbanized area. In *Measurement of Toxic and Related Air Pollutants '98*, Air and Waste Management Association, 107-113.
79. Kucklick, J.R. and J.E. Baker (1998) Organochlorines in Lake Superior's food web, *Environ. Sci. Technol.*, 32, 1192-1198.
80. Nelson*, E., L.L. McConnell, and J.E. Baker (1998) Diffusive exchange of gaseous PAH and PAH across the air-water interface of the Chesapeake Bay, *Environ. Sci. Technol.*, 32, 912-919.
81. Datta, S., L.L. McConnell, J.E. Baker, J. LeNoir, and J.N. Seiber (1998) Evidence for atmospheric transport and deposition of polychlorinated biphenyls to the Lake Tahoe Basin, California-Nevada, *Environ. Sci. Technol.*, 32, 1378-1385.
82. McConnell, L.L., E. Nelson, C.P. Rice, J. E. Baker, W.E. Johnson, J.A. Harman, and K. Bialek (1997) Chlorpyrifos in the air and surface waters of the Chesapeake Bay: predictions of atmospheric deposition fluxes. *Environ. Sci. Technol.*, 31, 1390-1398.
83. Offenberg*, J.H. and J.E. Baker (1997) Polychlorinated biphenyls in Chicago precipitation: enhanced wet deposition to near-shore Lake Michigan. *Environ. Sci. Technol.*, 31, 1534-1538.

84. Poster*, D.L. and J.E. Baker (1997) Mechanisms of wet deposition of organic contaminants. In: Atmospheric Deposition of Contaminants to the Great Lakes and Coastal Waters, J.E. Baker (Ed.), 51-72.
85. Baker, J.E., T.M. Church, G. Cutter, R.M. Dickhut, J. Ondov, D.L. Poster, and J. Scudlark (1997) Atmospheric deposition of trace elements and organic contaminants to the Chesapeake Bay, 1990-1992. In: Atmospheric Deposition of Contaminants to the Great Lakes and Coastal Waters, J.E. Baker (Ed.), 171-194.
86. Baker, J.E., Editor (1997) Atmospheric Deposition of Contaminants to the Great Lakes and Coastal Waters, SETAC Press, Pensacola, Florida, 451 pp.
87. Kucklick, J.R., H.R. Harvey, N.E. Ostrom, P. Ostrom, and J.E. Baker (1996) Organochlorine dynamics in the pelagic food web of Lake Baikal. *Environ. Toxicol. Chem.*, 15, 1388-1400.
88. Poster*, D.L. and J.E. Baker (1996) Influence of submicron particles on hydrophobic organic contaminants in precipitation. 2. Scavenging of polycyclic aromatic hydrocarbons by precipitation. *Environ. Sci. Technol.*, 30, 349-354.
89. Poster*, D.L. and J.E. Baker (1996) Influence of submicron particles on hydrophobic organic contaminants in precipitation. 1. Concentrations and distributions of organic contaminants in rainwater. *Environ. Sci. Technol.*, 30, 341-348.
90. Lin, Y., G. Gupta, and J.E. Baker (1996) Photodegradation of Aroclor 1254 using diethylamine and simulated sunlight. *J. Hazard. Mater.*, 45, 259-264.
91. Lin, Y., G. Gupta, and J.E. Baker (1996) Photodegradation of Aroclor 1254 using simulated sunlight and various sensitizers. *Bull. Environ. Contam. Toxicol.*, 56, 566-570.
92. Lin, Y., G. Gupta, and J.E. Baker (1995) Photodegradation of polychlorinated biphenyl congeners using simulated sunlight and diethylamine. *Chemosphere*, 31, 3323-3344.
93. Poster*, D.L., R. M. Hoff, and J.E. Baker (1995) Measurement of the particle size distributions of semivolatile organic contaminants in the atmosphere. *Environ. Sci. Technol.*, 29, 1990-1997.
94. Leister*, D.L. and J.E. Baker (1994) Atmospheric deposition of organic contaminants to the Chesapeake Bay. *Atmos. Environ.*, 28, 1499-1520.
95. Ko*, F.C. and J.E. Baker (1995) Partitioning of hydrophobic organic contaminants to resuspended sediments and plankton in the mesohaline Chesapeake Bay. *Marine Chem*, 49, 171-188.
96. Kuwabara, J.S. and J.E. Baker (1993) Trace contaminants and nutrients in estuaries: the importance of process interdependence. *Estuaries*, 16, 383-384.
97. Eisenreich, S.J., J.E. Baker, T. Franz, M. Swanson, R.A. Rapaport, W.M.J. Strachan, and R.A. Hites (1992) Atmospheric deposition of hydrophobic organic contaminants to the Laurentian Great Lakes. J. Schnoor, Ed., *Fate of Pesticides and Chemicals in the Environment*, John Wiley & Sons, Inc., 51-78.
98. Baker, J.E., N.J. Jaworski, J.R. Scudlark, T.M. Church, J. Ondov, D.L. Leister, and R.M. Dickhut (1991) Atmospheric deposition of nutrients, trace elements, and organic contaminants to the Chesapeake Bay region. In *New Perspectives in the Chesapeake System: A Research and Management Partnership*, Chesapeake Research Consortium Publication No. 137, 707-718.
99. Baker, J.E., S.J. Eisenreich and D.L. Swackhamer (1991) Field-measured associations between polychlorinated biphenyls and suspended solids in natural waters: an evaluation of the partitioning paradigm. In *Organic Substances and Sediments in Water*, Volume 2, Baker, R.A., Ed., Lewis Publishers, Ann Arbor, MI, 79-89.
100. Eisenreich, S.J., D. Achman, K. Hornbuckle, and J.E. Baker (1991) Volatilization of PCBs from the Great Lakes. In *Air-Water Mass Transfer Second International Symposium*, J.S. Gulliver and S.C. Wilhelms, Eds., U.S. Army Waterways Experiment Station/American Society of Civil Engineering.

101. Baker, J.E. and D.L. Leister* (1991) Development of a strategy to estimate atmospheric deposition of semivolatile organic contaminants to the Chesapeake Bay. *Proceedings of the 84th Annual Meeting of the Air and Waste Management Association*, 91-60.2.
102. Baker, J.E., S.J. Eisenreich and B.J. Eadie (1991) Sediment trap fluxes and benthic recycling of organic carbon, polycyclic aromatic hydrocarbons, and polychlorobiphenyl congeners in Lake Superior. *Environ. Sci. Technol.*, 25, 500-509.
103. Baker, J.E. and S.J. Eisenreich (1990) Concentrations and fluxes of polycyclic aromatic hydrocarbons and polychlorinated biphenyls across the air-water interface of Lake Superior. *Environ. Sci. Technol.*, 24, 342-352.
104. Baker, J.E. and S.J. Eisenreich (1989) PCBs and PAHs as tracers of particle dynamics in large lakes. *J. Great Lakes Research.*, 15, 84-103.
105. Eisenreich, S.J., P.D. Capel, J.E. Baker, and B.B. Looney (1988) Chemical limnology of PCBs in Lake Superior -- a case study. In *Toxic Contamination in Large Lakes*, Schmidke, N.W., Ed., Vol. III.
106. Baker, J.E., P.D. Capel, and S.J. Eisenreich (1986) Influence of colloids on the sediment-water partition coefficients of polychlorobiphenyl congeners in natural waters. *Environ. Sci. Technol.*, 20, 1136-1143.
107. Rapaport, R.A., N.R. Urban, P.D. Capel, J.E. Baker, B.B. Looney, S.J. Eisenreich, and E. Gorham (1985) "New" DDT inputs to North America: atmospheric deposition. *Chemosphere*, 14, 1167-1173.
108. Baker, J.E., S.J. Eisenreich, T.C. Johnson, and B.M. Halfman (1985) Chlorinated hydrocarbon cycling in the benthic nepheloid layer of Lake Superior. *Environ. Sci. Technol.*, 19, 854-861.
109. Eisenreich, S.J., R.A. Rapaport, N.R. Urban, P.D. Capel, B.B. Looney, and J. E. Baker (1984) Accumulation and processing of chlorinated hydrocarbons in lake and bog sediments: relationship to atmospheric deposition. In *Proceedings of a Workshop on Progress and Problems in the Paleolimnological Analysis of the Impact of Acid Precipitation and Related Pollutants on Lake Ecosystems*, University of Maine, Orono.

Awards and Professional Recognition

- Elected Member, Washington State Academy of Sciences, 2021.
- Conservation Research Award, Seattle Aquarium Society, 2010
- President's Award for Excellence in Application of Science, University of Maryland Center for Environmental Science, 2008.
- Outstanding Graduate Advisor, University of Maryland Marine, Estuarine and Environmental Program, 2007.
- Guest Scientist, National Sun Yat-sen University, Kaohsiung, Taiwan, 2004.
- Board of Directors, Society for Environmental Toxicology and Chemistry, 2003-2005, elected term.
- Member, National Research Council Ocean Studies Board, Oil in the Sea Committee, 1999-2002
- United States Department of Agriculture Certificate of Appreciation, 1994
- American Chemical Society Division of Environmental Chemistry Graduate Student Award, 1988
- National Sea Grant Association Award for Doctoral Research, 1987

Professional Service

Peer Review Activities

- Puget Sound Partnership Science Panel, 2008-present, Chair 2008-2009, *Ex Officio* 2010-present.
- Upper Hudson River PCB Dredging Evaluation peer review group, 2016-2018.
- Co-Director, Washington Stormwater Center, 2009-2013.
- Board of Directors, Foss Waterway Seaport Museum, 2011-2013.
- Board of Advisors, Salish Sea Expeditions, 2010-present.
- San Francisco Estuary Institute Contaminant Fate Workgroup, 2001-2014.
- Chair, NY/NJ Harbor Contamination Assessment and Reduction Project Model Evaluation Group, 2000-2007.
- Delaware River Basin Commission Toxics Modeling Expert Panel, 2000-2007.
- Co-Chair, Baltimore County LNG Task Force, 2006.
- National Research Council Ocean Studies Board, Oil in the Sea Committee, 1999-2002.
- Tampa Bay Atmospheric Deposition Advisory Panel, 1995-2001.
- Maryland Sea Grant Scientific Advisory Committee, Chair 1994-1996 and Member 1993-1996.
- Air Quality Coordination Group (then Air Subcommittee) Chesapeake Bay Program, 1993-2000.

Symposia Organized/Chaired for Professional Meetings (Last 10 years)

- Organizing Committee, Wellspring 2019, Tacoma, WA October.
- Session Chair, Salish Sea Ecosystem Conference, Seattle, WA April 2018.
- Organizing Committee, Wellspring 2014, Tacoma, WA October.
- Organizing Committee, Wellspring 2013, Tacoma, WA October.
- Member, Organizing Committee and Co-Chair, Keynote and Special Sessions, 33rd Annual Meeting of the Society of Environmental Toxicology and Chemistry, Long Beach CA, November 2012.
- Organizer, 2011 UW Water Symposium, Seattle, WA, April 2010, 2011, 2012, 2013.
- Organizer, 2nd International Workshop on the Occurrences, Sources, and Impacts of Marine Microplastic Pollution. Tacoma, WA October 2010.
- Organizer, International Workshop on the Occurrences, Sources, and Impacts of Marine Microplastic Pollution. Tacoma, WA September 2008.

Recent University Service

UW Tacoma Faculty Search Committees

- Associate Professor, freshwater scientist, chaired (E. Kolodziej hired)
- Assistant Professor, geologist, chaired (D. Shugar hired)
- Assistant Professor, wildlife biologist, chaired (C. Schell hired)

UW Leadership Search Committees

- Dean, UW College of the Environment

- Director, Washington Sea Grant College

Faculty Promotion and Tenure Committees

- Tom Koontz, SIAS
- Rob Friedman, IT
- John Finke, SIAS (twice)
- Anne Beaufort, SIAS
- Amos Nascimento, SIAS
- Jim Gawel
- Julie Masura
- Ed Kolodziej

UW College of the Environment EarthLab Advisory Board of Deans (2017-present)

Cbair, UW School of Oceanography 10-Year External Program Review (2023)

Associate Vice Chancellor for Research (2014-2016), Special Assistant to the Chancellor for Research, UW Tacoma (2012-2014)

Community Engagement and Public Events

- Invited Speaker, American Association of Port Authorities, Jersey City NJ (2018)
- Invited seminar, Centralia College (2018)
- Navigating the Future of Water Conference, Milwaukee WI (2017)
- Keynote Speaker, Washington College Chemistry Teachers annual conference (2017)
- Urban Waters Informed Discussion Series: Exploring the Science Underlying the Proposed Methanol Production Plant (2016)
- Invited Speaker, Tacoma Waterfront Association (Jan 2015)
- Invited Speaker, Tacoma Rotary 8 (2014 and 2017)
- Port of Tacoma Commission briefings (annual)
- Wellspring Conference keynote (2014)
- Keynote Speaker, Pacific Shellfish Growers (2010)
- Science Advisor, Burke Museum of Natural History and Culture, plastics exhibit (2010)
- Invited Speaker, Pacific Lutheran University International Symposium on Water (2010)

Active Memberships in Professional Societies

- American Chemical Society
- American Association for the Advancement of Science
- American Geophysical Union

Teaching and Training

Courses Taught at the University of Washington

CEE 577, Spring 2008 Water Quality Management (3 cr, 7 students)

TESC 333, Winter 2009 Environmental Chemistry (6 cr, 14 students, w/J. Dinglasan-Panlilio)

TESC 433, Spring 2010 Fate and Transport of Pollutants (6 cr, 3 students)
 TESC 433, Spring 2011 Fate and Transport of Pollutants (6cr, 12 students)
 TIAS 305, Spring 2012 Environmental History of Tacoma (2 cr, 30 students)
 ESRM 429, Autumn 2012, UW Water Seminar (1 cr, 85 students)
 TESC 261, Winter 2013 Organic Chemistry II (5 cr, 17 students)
 ESRM 429, Autumn 2013, UW Water Seminar (1 cr, 125 students)
 TESC 305, Winter 2014, IAS Seminar, (2 cr, 71 students)
 ESRM 429, Autumn 2014, UW Water Seminar (1 cr, 225 students, w/B. Njissen)
 ESRM 429, Autumn 2015, UW Water Seminar (1 cr, 210 students)
 TESC 333, Autumn 2015, Environmental Chemistry (6 cr, 13 students)
 TIAS 305, Spring 2016, Interdisciplinary Arts and Science Seminar (2 cr., 56 students)
 TESC 333, Autumn 2016, Environmental Chemistry (6 cr, 5 students)
 CEE 545, Winter 2017, Environmental Organic Chemistry (3 cr, 17 students)
 CEE 349, Autumn 2017, Case Studies in Environmental Engineering (4 cr, 16 students)
 TCHEM 333, Spring 2017, Environmental Chemistry (6 cr, 7 students)
 TCHEM 333, Spring 2018, Environmental Chemistry (6 cr, 8 students)
 CEE 349, Autumn 2018, Case Studies in Environmental Engineering (4 cr, 26 students)
 TCHEM 333, Spring 2019, Environmental Chemistry (6 cr, 6 students)
 CEE 349, Autumn 2019, Case Studies in Environmental Engineering (4 cr, 20 students)
 CEE 349, Autumn, 2020, Case Studies in Environmental Engineering (4 cr, 24 students)
 TESC 201, Autumn 2020, The Science of Sustainability (5 cr, 50 students)
 CEE 349, Autumn, 2021, Case Studies in Environmental Engineering (4 cr, 19 students)
 TESC 201, Autumn 2021, The Science of Sustainability (5 cr, 48 students)
 CEE 349, Autumn, 2022, Case Studies in Environmental Engineering (4 cr, 19 students)
 CEE 356, Spring 2022, Quantitative and Conceptual Tools for Sustainability (4 cr, 21 students)
 TCE 304, Autumn 2022, Civil Engineering Systems (3 cr, 7 students)

Graduate Students Mentored

Leister (Poster), Dianne L Ph.D. UMCP-Chemistry (w/G. Helz).
 Atmospheric deposition of organic contaminants to the Chesapeake Bay, December 1993
 Ko, Fung Chi Ph.D. MEES
 Particle-related biogeochemical cycles of hydrophobic organic contaminants in estuarine waters, September 1994
 Nelson, Eric M.S. MEES
 Water column inventories, partitioning, and air-water exchange of hydrophobic organic contaminants in the Chesapeake Bay, July 1996
 Nakanishi, Koichiro M.S. MEES
 Hydrophobic organic contaminants in sediments of the Chesapeake Bay, July 1996.
 Harman, Jennifer M.S. MEES
 Atmospheric deposition of current use agrichemicals to the Chesapeake Bay region, December, 1996
 Turner, Arnold M.S. MEES
 Biological controls on copper speciation in benthic-pelagic mesocosms, December 1996
 Ashley, Jeffrey Ph.D. MEES
 Habitat use and trophic status as determinants of hydrophobic organic contaminant bioaccumulation within shallow systems, December 1998
 Offenberg, John Ph.D. UMCP-Chemistry (w/G. Helz)
 Semi-volatile organic compounds in urban and over-water atmospheres, December 1998
 Bamford, Holly M.S. MEES

Determination of the Henry's law constants and air-water exchange fluxes of polycyclic aromatic hydrocarbons across the Patapsco River and the northern Chesapeake Bay, December 1998

Merten, Amy M.S. MEES

Bioavailability of different forms of polycyclic aromatic hydrocarbons to the estuarine amphipod *Leptcheirus plumulosus*, June 1999

Lorah, Michelle Ph.D. MEES

Natural attenuation of chlorinated volatile organic compounds in a freshwater tidal wetland, June 1999

Hetzer, Paul M.S. MEES

Comparative effects of cultivation practices (vegetative mulch vs. polyethylene mulch) on pesticide-related ambient toxicity in estuarine habitats, 2000.

Stapleton, Heather M.S. MEES

Accumulation of atmospheric and sedimentary PCBs and toxaphene in a Lake Michigan food web, 2000.

Cohen, Abby M.S. MEES

Episodic particle events and PAH and PCB cycling in Lake Michigan, 2000.

Chang, Chi-wei M.S. MEES

Modeling contaminant transport in an urbanized estuary, 2001

Steinbacher, Joseph M.S. MEES

Sentinel species living in the Hudson River: PCBs in the American Eel, 2001

Larsen, Randolph K Ph.D. MEES

Atmospheric exchange of PAHs, PCBs, and ammonia with the Chesapeake Bay, 2002

Bamford, Holly A. Ph.D. MEES

Sources and transport of trace organic contaminants in a mid-Atlantic urban atmosphere, 2002.

Stapleton, Heather M. Ph.D. MEES

Assimilation and metabolism of polybrominated diphenyl ethers by the common carp, 2003.

Toaspern, Megan L. M.S. MEES

Bioaccumulation of polychlorinated biphenyls in the Delaware River estuary, 2003

Schneider, Abby Ph.D. MEES

PCB desorption from resuspended Hudson River sediment, 2005

Liebert, Daniel M.S. MEES

PCBs in Maryland fish, 2006

Crimmins, Bernard Ph.D. MEES

Characterization of carbonaceous aerosol: improved methods, sources and size distributions, 2006

Minegishi, Taeko M.S. MEES

Characterization of PAH composition patterns in diesel emission, 2007

Klosterhaus, Susan Ph.D. MEES

The bioavailability of brominated diphenyl ethers from urban estuarine sediments to deposit feeding invertebrates, 2007

Chang, Chi-wei Ph.D. MEES

Modeling the impact of sediment resuspension and flocculation on the fate of polychlorinated biphenyls, 2008.

Haskell, Daniel A. M.S. Civil and Environmental Engineering

Source apportionment of phthalate esters to the Thea Foss Waterway by statistical analysis and positive matrix factorization analysis, 2013.

J.E. Baker, Principal Investigator Awards, University of Washington

Title	Sponsor	Start	End	
PCB DECHLORINATION	U.S. DOD SERDP	9/19/08	9/18/09	\$225,683
STORMWATER PROTOCOLS	Maryland Department of Environment	2/1/10	6/30/11	\$371,503
TASK III MICROPLASTICS	NOAA	7/1/10	6/30/14	\$53,304
TASK III MICRODEBRIS	NOAA	7/1/10	6/30/16	\$67,220
MOD 10 STUDY PANELS	U.S. EPA	10/1/10	9/30/17	\$41,879
MOD 10-IS & SYNTHESIS	U.S. EPA	10/1/10	9/30/17	\$290,385
MOD 10 COMMUNICATIONS	U.S. EPA	10/1/10	9/30/17	\$233,852
PUGET SOUND INSTITUTE	U.S. EPA	10/1/10	9/30/17	\$4,358,188
STORMWATER PROG INC	Maryland Department of Environment	12/1/10	6/30/11	\$8,000
PSP INTERAGENCY	Puget Sound Partnership	5/15/11	12/31/14	\$971,249
TAPE FEES	Washington Dept. of Ecology	10/16/11	10/16/12	\$42,000
STORMWATER BMP	Washington Dept. of Ecology	11/1/11	11/1/12	\$25,979
WSC-TAPE	Washington Dept. of Ecology	6/21/12	6/30/13	\$154,078
KITSAP COUNTY/RUSSELL	Russell Family Foundation	1/1/13	6/30/15	\$37,753
TAPE FEES	Washington Dept. of Ecology	1/1/13	12/31/15	\$63,688
PTMSC ROOF RUNOFF	Port Townsend Marine Science Center	5/1/13	6/30/14	\$4,385
WAPATO LAKE	Washington Dept. of Ecology	7/31/13	6/30/15	\$43,204
WSC-TAPE	Washington Dept. of Ecology	10/31/13	6/30/15	\$192,935
TASK III MICROPLASTIC2	NOAA	5/1/14	6/30/16	\$29,724
SANNE - GRAD STUDENT	U.S. EPA	6/1/14	9/30/15	\$44,058
SKAGIT COUNTY CONTRACT	Skagit County Health Department	8/22/14	12/31/16	\$112,407
PSEMP TOXIC WG YR1	Puget Sound Partnership	10/13/14	6/30/15	\$36,408
COMMUNICATIONS TASK	Puget Sound Partnership	5/5/15	6/30/15	\$50,000
PSEMP TOXIC WG YR2	Puget Sound Partnership	7/1/15	6/30/16	\$38,123
VULCAN - SALISH SEA	Vulcan Philanthropy	8/24/15	8/28/15	\$20,000
IMPLEMENT STRATEGIES2	U.S. EPA	10/1/15	12/31/16	\$120,124
SALISH SEA CONFERENCE	U.S. EPA	10/1/15	12/31/16	\$103,422
MODELING FORUMS	U.S. EPA	10/1/15	9/30/17	\$69,790
TAPE RENEWAL	Washington Dept. of Ecology	11/1/15	5/31/17	\$185,465
SYMER WEBSITE SUPPORT	City of Tacoma	11/16/15	12/31/17	\$20,687
SSEC APP - SYMER	Western Washington University	12/1/15	5/31/16	\$9,484
TAPE FEES II	Washington Dept. of Ecology	4/1/16	12/31/17	\$23,726
PSP KB 2016-17	Puget Sound Partnership	5/31/16	6/30/17	\$34,965
MASURA SEAL SCAT	NOAA	7/1/16	4/30/17	\$3,259
TAPE RENEWAL 2017-19	Washington Dept. of Ecology	10/1/17	5/31/19	\$160,931
PSAA- PSI RENEWAL 2017	Puget Sound Partnership	10/1/17	9/30/21	\$4,401,835
MARINE NEARSHORE LO 2	Washington Dept. of Fish & Wildlife	11/1/17	1/15/19	\$81,677
TAPE FEES III	Washington Dept. of Ecology	11/14/17	12/31/23	\$124,087

HDR WATER QUAL REVIEW	HDR, Inc.	5/7/18	12/31/19	\$15,000
UW-ECY B-IBI IS	Washington Dept. of Ecology	10/1/18	12/30/20	\$130,660
ECOLOGY CONTRACT_TAPE	Washington Dept. of Ecology	7/1/19	6/30/21	\$240,103
UWT MODELING CENTER	City of Tacoma	6/1/20	5/30/22	\$396,005
Ecology Contract_TAPE	Washington State Department of Ecology	7/1/21	6/30/23	\$276,346
PSI_PSP_2021-2025	Puget Sound Partnership	10/1/21	9/30/25	\$2,607,975
HSIL1.0 Synthesis	Washington Department of Fish and Wildlife	11/1/21	1/31/24	\$396,850
Modeling King County	King County Department of Natural Resources and Parks	3/1/22	2/28/23	\$500,000
Total				\$17,418,396