

PHILIP M. COOK

Senior Research Chemist

218-529-5202

cook.philip@epa.gov

Education:

B.S., Chemistry, Tufts University, Medford, MA, 1961

M.S., Geochemistry, Colorado School of Mines, Golden, CO, 1968

Ph.D., Inorganic/Physical Chemistry, Univ. of Wisconsin, Madison, 1972

Employment:

1996-2007 Senior Research Chemist and Acting Management Assignments
1992-1996 Senior Research Chemist and Dioxin Eco-risk Research Coordinator
1990-1992 Special Assistant to Director for Great Lakes Research
1987-1990 Associate Director for Research Operations
1982-1987 Chief, Hazardous Waste Research Branch
1974-1982 Research Chemist, Fine Particles Research Team Leader
1972-1974 Technical Case Coordinator for Reserve Mining Case

Research Interests and Skills:

Experiments to define a sensitive measure of ecological risk of dioxins and PCBs to Great Lakes fish and endangered fish species; methods for estimating water and sediment-based bioaccumulation factors for organic chemicals; use of field data to measure rates of metabolism of organic chemicals by aquatic organisms in complex food webs; development of a TCDD toxicity equivalence approach for measuring risks to fish and wildlife populations associated with complex mixtures of planar halogenated aromatic chemicals, and integration of these findings into water and sediment criteria that may be applied on a watershed basis using chemical mass balance models and the total maximum daily loading (TMDL) approach. Continued involvement in models for assessing health risks associated with environmental exposures to asbestos and similar durable fibers. Also interested in energy resources, global climate and landscape change and fundamentals of sustainability.

Professional Societies:

American Chemical Society

Society for Toxicology and Environmental Chemistry

International Association for Great Lakes Research

Sigma Xi

Selected Appointments/Honors/Major Awards:

World Health Organization Expert Consultation for Derivation of Toxicity Equivalence Factors, 1997-1998

Lake Michigan Mass Balance Study Technical Coordination Committee, 1993-1996

Expert Panel to Advise the Great Lakes Fishery Commission on TFM Lampricide, 1995

Wisconsin Governor's Committee on the Use of Fish Toxicants, 1970-1973

U.S. EPA Scientific and Technological Achievement Awards (seven)

U.S. EPA Silver Medal, 1996 (plus five U.S. EPA Bronze Medals)

EPA National Honor Award for Scientific Achievement - 2004

Selected Recent Publications:

Burkhard, L.P., P.M. Cook, and M.T. Lukasewycz. 2007. Sediment-water column concentration quotients (Π_{socwS}): measuring chemical disequilibrium and exploring the impact of black carbon in Lake Michigan. *Environmental Science & Technology*, submitted for publication.

Hornung, M.W., P.M. Cook, P.N. Fitzsimmons, D.W. Kuehl, and J.W. Nichols. 2007. Tissue Distribution and Metabolism of Benzo[a]pyrene in Embryonic and Larval Medaka (*Oryzias latipes*). *Tox. Sci.*, submitted for publication.

Burkhard, L.P., P.M. Cook, and M.T. Lukasewycz. 2006. A hybrid empirical/modeling approach for extrapolating BSAFs across species, time, and/or ecosystems. *Environmental Toxicol. and Chem.*, 25, 1946-1952.

- Burkhard, L.P., P.M. Cook, and M.T. Lukasewycz. 2005. Comparison of biota-sediment accumulation factors across ecosystems. *Environmental Science & Technology*, 39, 5716-5721.
- Burkhard, L.P., P.M. Cook, M.T. Lukasewycz. 2004. Biota-sediment accumulation factors for polychlorinated biphenyls, dibenzo-p-dioxins, and dibenzofurans in southern Lake Michigan lake trout (*salvelinus namaycush*). *Environ. Sci. Technol.*, 38, 5297-5305.
- Burkhard, L.P., P.M. Cook, and D.R. Mount. 2003. The relationship of bioaccumulative chemicals in water and sediment to residues in fish: a visualization approach. *Environ. Toxicol. Chem.*, 22: 2822-2830.
- Cook, P.M., D.D. Endicott, J. Robbins, K. B. Lodge, M.K. Walker, E.W. Zabel, P.D. Guiney, and R.E. Peterson. 2003. Effects of Ah receptor mediated early life stage toxicity on lake trout populations in Lake Ontario during the 20th Century. *Environ. Sci. Technol.* 37, 3864-3877.
- Fernandez, J., P.M. Cook, B.C. Butterworth, and S. P. Bradbury. 1999. Determination of temporal changes in purity and specific activity of tritiated 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD): Radiopurity model for toxicity tests. *Environ. Sci. Technol.* 33:3558-3567.
- Van den Berg, M. et al. (23 authors including P.M. Cook). 1998. Toxic equivalency factors (TEFs) for PCBs, PCDDs, PCDFs for humans and wildlife. *Environ. Health Perspect.* 106:775-792.
- Cook, P.M. and L.P. Burkhard. 1998. Development of bioaccumulation factors for the Great Lakes. Proceedings of the National Sediment Bioaccumulation Conference, Bethesda, MD, Sept. 11-13, 1996. EPA 823-R-98-002. U.S. EPA Office of Water, pp. 3-19 to 3-27.
- Elonen, G.E., R.L. Spehar, G.W. Holcombe, R.D. Johnson, J.D. Fernandez, R.J. Erickson, J.E. Tietge, and P.M. Cook. 1998. Comparative toxicity of 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) to seven freshwater species during early-life-stage development. *Environ. Toxicol. Chem.* 17:472-483.