

PATRICIA K. SCHMIEDER

Research Toxicologist, Branch Chief
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Education:

B.S., Water Science, University of Wisconsin, Stevens Point, 1978
M.S., Environmental Science, Rutgers University, New Brunswick, NJ, 1981
Ph.D., Toxicology, Oregon State University, Corvallis, Oregon, 1990

Employment:

2000-Present Research Toxicologist, Chief: Molecular and Cellular Mechanisms Research Branch, U.S. EPA, Duluth, MN
2000 (Feb-Jun) Acting Associate Director for Science, U.S. EPA, Duluth, MN
1995-2000 Toxicologist, Biochemical and Cellular Toxicology Team Leader, U.S. EPA, Duluth, MN
1990-1995 Research Toxicologist, U.S. EPA, Duluth, MN
1985-1989 Research Aquatic Biologist, U.S. EPA, Duluth, MN
1982-1984 Junior Scientist, Center for Lake Superior Environmental Studies, University of Wisconsin-Superior

Research Interests and Skills:

Predictive toxicology; delineating toxicity pathways for the purpose of developing predictive models of chemical toxic potential; chemical, species and endpoint extrapolation methods; *in vitro* assays for EDCs, metabolic activation, electrophile/pro-electrophile reactivity; measuring and predicting chemical metabolism and potential for bioactivation; developing metabolism and degradate databases for OPP; metabolism simulations for hypothesis generation and testing

Professional Societies:

Society of Environmental Toxicology and Chemistry
International Society for the Study of Xenobiotics
Society of Toxicology- Northland Chapter

Selected Appointments/Honors/Major Awards:

NHEERL Award for Leadership in the Environmental Research Community: for outstanding effort in organizing & hosting the McKim Conference on the Use of QSARs and Aquatic Toxicology in Risk Assessment, 2006
NHEERL Award for Science Integration-Interdivisional/Laboratory Research for outstanding efforts in developing the NHEERL Safe Pesticides/Safe Products Multi-Year Implementation Plan, 2005
ORD Science Communications Award: ES&T Ecotoxicology Special Issue Group, 2004
ORD Computational Toxicology New Start Competed Award: for Simulating Metabolism of Xenobiotic Chemicals as a Predictor of Toxicity, 2004
NHEERL Award- Science Integration: collaboration across NHEERL health and eco-divisions to investigate the utility of small fish models for use in human health risk assessment, 2003
ORD Endocrine Disruptor Internal Award Competition: for Xenobiotic Binding to the Estrogen Receptor: A Comparison of Species-Specific Responses Utilizing In Vitro Test Systems and Quantitative Structure-Activity Relationships, 1997
STAA: TCDD uptake and elimination kinetics of medaka, 1995
STAA: Honorable Mention, Blood and Water Flow Limitations on Gill Uptake of Organic Chemicals in the Rainbow Trout, 1993

Selected Publications:

Schmieder, P. (book chapter) Eaton, D; Hooper, M; Gallagher, E; Schlenk, D; Schmieder, P. 2006. Chapter 3: Species differences in response to toxic substances: Shared Pathways of Toxicity; in, *Genomic Approaches for Cross-Species Extrapolation in Toxicology*, Eds, Benson and DiGuilio, Taylor & Francis Group.
Schmieder, P., Tapper, M, Denny, J., Kolanczyk, R., Sheedy, B, Henry, T, Veith, G. 2004. Use of trout liver slices to enhance mechanistic interpretation of ER binding for cost-effective prioritization of chemicals within large inventories. *Environ Sci Tech.* 38:6333-6342.

- Schmieder, P., Mekenyan, O., Bradbury, S., Veith, G. 2003. QSAR Prioritization of Chemical Inventories for Endocrine Disruptor Testing. *Pure Appl. Chem.* Vol 75 (11/12):2389-2396.
- Schmieder, P., G. Ankley, O. Mekenyan, J. Walker, and S. Bradbury. 2003. QSAR Models for Predicting ER Binding Affinity of Structurally Diverse Chemicals. *Environ Toxicol Chem-Annual Review Issue.* Vol 22(8):1844-1854.
- Schmieder, P., M. Tapper, R. Kolanczyk, D. Hammermeister, B. Sheedy, and J. Denny. 2003. Discriminating Pathways of Reactive Chemical Toxicity Using Isolated Trout Hepatocytes: Redox Cycling and Arylation. *Toxicol Sci.* 72: 66-76.
- Schmieder, P.K., Y. Koleva, and O. G. Mekenyan. 2002. A reactivity pattern for discrimination of ER agonism and antagonism based on 3-D molecular attributes. *SAR/QSAR Environ Res.* 13:353-364.
- Schmieder, P.K., A.O. Aptula, E. J. Routledge, J.P. Sumpter, and O.G.Mekenyan. 2000. Estrogenicity of Alkylphenolic Compounds: A 3-D Structure Activity Evaluation of Gene Activation. *Environ. Toxicol. Chem.* 19(7):1727-1740.
- Schmieder, P., M. Tapper, A. Linnum, J. Denny, R. Kolanczyk and R. Johnson. 2000. Optimization of a Precision-Cut Trout Liver Tissue Slice Assay as a Screen for Vitellogenin Induction: Comparison of Slice Incubation Techniques. *Aquatic Toxicol.* 49:251-268.