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EDUCATION AND TRAINING

2002 M.S., Geology, Portland State University
1996 B.S., Geology, Eastern Washington University

RESEARCH AND PROFESSIONAL EXPERIENCE

2009-Present, **Senior Scientist**, Earth Systems Science Division, Pacific Northwest National Laboratory, Richland, Washington *Research on characterizing the geochemical and physical processes within hyporheic zones, assessing exposure of sensitive organisms to contaminant via groundwater/surface water exchange.*

2003-2008, **Scientist**, Environmental Technology Division, PNNL, *Research on groundwater/surface water interaction within large river systems, assessing the impact of hyporheic processes on contaminant transport.*

2000-2003, **Science and Engineering Associate**, Environmental Technology Division, PNNL, *research on In situ Hydraulic Testing, Water Quality Sampling, and in situ sample collection within the Hyporheic Zone of large river systems.*

1997-2000, **Student Intern**, Environmental Technology Division, PNNL, *research on assessing habitat quality, development/refinement of methods to quantify physico-chemical gradients in aquatic habitats.*

SELECTED PUBLICATIONS

Geist, D.R., T.P. Hanrahan, E.V. Arntzen, G.A. McMichael, C.J. Murray, and Y. Chien. 2002. Physiocochemical characteristics of the hyporheic zone affect redd site selection of chum and fall chinook salmon, Columbia River. *North American Journal of Fisheries Management* 22: 1077-1085.

Moser, D.P., J.K. Fredrickson, D.R. Geist, E.V. Arntzen, A.D. Peacock, S.W. Li, T. Spadoni, and J.P. McKinley. 2003. Biogeochemical Processes and Microbial Characteristics Across Groundwater - Surface Water Boundaries of the Hanford Reach of the Columbia River. *Environmental Science and Technology* 37 (22): 5127-5134.

Hanrahan, T.P., D.R. Geist, E.V. Arntzen, and G.A. McMichael. 2005. Habitat quality of historic Snake River fall Chinook salmon spawning locations and implications for incubation survival: part 1, substrate quality. *River Research and Applications* 21: 455-467.

Arntzen, E.V., D.R. Geist, and P.E. Dresel. 2006. Effects of Fluctuating River flow on Groundwater/Surface Water Mixing in the Hyporheic Zone of a Regulated, Large Cobble Bed River. *River Research and Applications* 22 (8): 937-946.

Fritz, B.G. and E.V. Arntzen. 2007. Effect of rapidly changing river stage on uranium flux through the hyporheic zone. *GroundWater* 45 (6): 753-760.

Geist, D.R., E.V. Arntzen, C.J. Murray, K.E. McGrath, Y.J. Bott, and T.P. Hanrahan. 2008. Influence of river level on temperature and hydraulic gradients in chum and fall Chinook salmon spawning areas downstream of Bonneville Dam, Columbia River. *North American Journal of Fisheries Management* 27: 30-41.

Arntzen, E.V., Geist, D.R., Murray, K.J., Dawley, E.D., Vavrinc, J., and D.E. Schwartz. 2009. Influence of the Hyporheic Zone on Supersaturated Gas Exposure to Incubating Chum Salmon. *North American Journal of Fisheries Management* 29: 1714-1727.

Baldwin, B.R., Peacock, A.D., Gan, M., Resch, C.T., Arntzen, E.V., Smithgall, A.N., Piffner, S., White, D.C., and P.E. Long. 2009. In-Well Sediment Incubators to Evaluate Microbial Community Stability and Dynamics following Bioimmobilization of Uranium. *Remediation* 19 (4): 73-89.

Williams, K., Kemna, A., Wilkins, M., Druhan, J., Arntzen, E., N'Guessan, L., Long, P., Hubbard, S., and Banfield, J. 2009. Geophysical monitoring of coupled microbial and geochemical processes during stimulated subsurface bioremediation. *Environmental Science and Technology* 43 (17): 6717-6723.

Fritz, B.G., Mackley, R.D., and E.V. Arntzen. (In Press). Conducting slug tests in mini-piezometers. *GroundWater*.

SYNERGISTIC ACTIVITIES

- American Geophysical Union
- Geological Society of America
- American Fisheries Society