TIMOTHY D. SCHEIBE
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EDUCATION AND TRAINING

1993 Ph.D., Civil Engineering, Stanford University
1987 M.S., Civil Engineering, University of Washington
1984 B.S., Geological Engineering, Washington State University

RESEARCH AND PROFESSIONAL EXPERIENCE

2014-Present, **Lead Scientist for Multiscale Modeling and High Performance Computing**, Environmental Molecular Sciences Laboratory (EMSL), Pacific Northwest National Laboratory, Richland, Washington, *Leads development of multiscale modeling capability on EMSL's supercomputing systems, and application to projects within the EMSL, a national user facility that supports a community of scientists with focus on the missions of DOE's Biological and Environmental Research programs. Co-PI Subsurface Biogeochemical Research Science Focus Area project; Co-PI IDEAS project; technical integration lead for ASCEM project.*

2013-2014, **Interim Associate Director for Molecular Sciences Computing**, Environmental Molecular Sciences Laboratory (EMSL), Pacific Northwest National Laboratory, Richland, Washington, *Management of computational science activities and capabilities within the EMSL.*

2003-2014, **Staff Scientist**, Hydrology Technical Group, Pacific Northwest National Laboratory, Richland, Washington, *Research on pore scale and multiscale modeling of biogeochemically reactive transport in subsurface systems, with applications in contaminant transport and remediation, geological carbon sequestration, microbial communities and carbon cycling, and geothermal energy development. PI SciDAC project on multiscale numerical methods; modeling lead for Carbon Sequestration Initiative and Microbial Communities Initiative; PI field project on uranium bioremediation at the Oak Ridge Field Research Center; co-PI on integration of microbial metabolic models with reactive transport simulations; platform thrust lead for ASCEM project.*

2000-2002, **Senior Research Scientist II**, Hydrology Technical Group, Pacific Northwest National Laboratory, Richland, Washington, *Research on simulation of physical heterogeneity impacts on solute transport in groundwater systems. Co-PI on the Oyster Site bacterial transport research project.*

1996-1999, **Senior Research Scientist I**, Hydrology Technical Group, Pacific Northwest National Laboratory, Richland, Washington, *Co-PI applied research on web-based data management for river and fisheries management, Columbia and Snake Rivers (Bonneville Power Administration); Technical contributor to application of Data Quality Objectives process to environmental management problems; technical contributor to Hanford Site Wide Groundwater Modeling project.*

1992-1995, **Research Scientist**, Hydrology Technical Group, Pacific Northwest National Laboratory, Richland, Washington, *Applied modeling of radionuclide transport for low-level nuclear waste repository; research on physical heterogeneity impacts on solute transport in groundwater systems.*

SELECTED PUBLICATIONS *(h-index of 22 from 55 publications)*

Scheibe, T. D., W. A. Perkins, M. C. Richmond, M. I. McKinley, P. D. J. Romero-Gomez, J. A. Serkowski, and J. M. Zachara, 2015. "Pore-scale direct numerical simulation of flow and transport in a laboratory-scale column," *Water Resources Research*, submitted.

Scheibe, T. D., E. M. Murphy, X. Chen, K. C. Carroll, A. K. Rice, B. J. Palmer, A. M. Tartakovsky, I. Battiato, and B. D. Wood. 2014. "An analysis platform for multiscale hydrogeologic modeling with emphasis on hybrid multiscale methods," *Ground Water*, published online March 13, doi:10.1111/gwat.12179.

Richmond, M. C., W. A. Perkins, T. D. Scheibe and B. D. Wood. 2013. "Flow and axial dispersion in a wavy-walled tube: Effects of inertial and unsteady flows," *Advances in Water Resources* 62: 214-226, doi:10.1016/j.advwatres.2013.06.014.

Zhao, J., R. T. D. Scheibe, and R. Mahadevan. 2013. "Model-based analysis of mixed uranium(VI) reduction by biotic and abiotic pathways during in situ bioremediation," *Chemical Geology* 357: 215-222, doi:10.1016/j.chemgeo.2013.08.037.

Tartakovsky, G. D., A. M. Tartakovsky, T. D. Scheibe, Y. Fang, R. Mahadevan and D. R. Lovley. 2013. "Pore-scale simulation of microbial growth using a genome-scale metabolic model: Implications for Darcy-scale reactive transport", *Advances in Water Resources* 59: 256-270, doi:10.1016/j.advwatres.2013.05.007.

Scheibe, T. D., Z. Hou, B. J. Palmer and A. M. Tartakovsky. 2013. "Pore-scale simulation of intragranular diffusion: Effects of incomplete mixing on macroscopic manifestations," *Water Resources Research* 49(7): 4277-4294,doi:10.1002/wrcr.20333.

Yang, X., T. D. Scheibe, M. C. Richmond, W. A. Perkins, S. J. Vogt, S. L. Codd, J. D. Seymour, and M. I. McKinley. 2013. "Direct Numerical Simulation of Pore-Scale Flow in a Bead Pack: Validation against Magnetic Resonance Imaging Observations", *Advances in Water Resources*, 54:228-241, doi:10.1016/j.advwatres.2013.01.009.

Tartakovsky, A. M. and T. D. Scheibe. 2011. "Dimension reduction method for advection-diffusion-reaction systems," *Advances in Water Resources*, 34(12): 1616-1626, doi:10.1016/j.advwatres.2011.07.011.

Battiato, I., D. M. Tartakovsky, A. M. Tartakovsky, and T. D. Scheibe, "Hybrid models of reactive transport in porous and fractured media," *Advances in Water Resources*, 34(9): 1140-1150, doi:10.1016/j.advwatres.2011.01.012, 2011.

SYNERGISTIC ACTIVITIES

- National Ground Water Association Henry Darcy Distinguished Lecturer, 2010
- Member of editorial board of the journal *Groundwater* (2001-current)
- Co-organizer, DOE workshop on "Computational Challenges for Mechanistic Modeling of Terrestrial Environments" (2014)
- Past member of editorial board of *Hydrogeology Journal* (2003-2007)
- Past chair of the AGU Groundwater Technical Committee
- International Scientific Advisory Committee, CMWR 2014 and ISSM 2014 conferences