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EDUCATION AND TRAINING

1985 Postdoctoral Fellowship, USDA-ARS, Pullman, Washington
1984 Ph.D., Soil Microbiology, Washington State University
1982 M.S., Soil Chemistry, Washington State University
1978 B.S., Soil Science, University of Wisconsin-Stevens Point

RESEARCH AND PROFESSIONAL EXPERIENCE

2003-Present**, Laboratory Fellow, Chief Scientist**, Biological Sciences Division, Pacific Northwest National Laboratory, Richland, Washington. *Research on subsurface biogeochemistry, microbial transformations of redox-sensitive metals and contaminants, and interactions among members of self-organizing microbial communities.*

1985-2003, **Staff Scientist,** Environmental Sciences Division, PNNL. *Research on subsurface microbial ecology and biogeochemistry.*

1984-1985, **Postdoctoral Research Associate**, USDA-ARS, Pullman, Washington. *Research on root growth-inhibiting microbial inhabitants of the wheat rhizosphere.*

SELECTED PUBLICATIONS *(h-index of 60 from 255 publications)*

Cole, J. K., Hutchison, J. R., Renslow, R. S., Kim, Y.-M., Chrisler, W. B., Engelmann, H. E., Dohnalkova, A. C., Hu, D., Metz, T. O., Fredrickson, J. K., and Lindemann, S. R., 2014. Phototrophic biofilm assembly in microbial-mat-derived unicyanobacterial consortia: model systems for the study of autotroph-heterotroph interactions. *Frontiers in Microbiology* **5**, doi: 10.3389/fmicb.2014.00109.

Liu, Y., Wang, Z., Liu, J., Levar, C., Edwards, M. J., Babauta, J. T., Kennedy, D. W., Shi, Z., Beyenal, H., Bond, D. R., Clarke, T. A., Butt, J. N., Richardson, D. J., Rosso, K. M., Zachara, J. M., Fredrickson, J. K., and Shi, L., 2014. A trans-outer membrane porin-cytochrome protein complex for extracellular electron transfer by *Geobacter sulfurreducens* PCA. *Environmental Microbiology Reports*, 10.1111/1758-2229.12204.

Wilkins M. J., Kennedy D. W., Castelle C. S., Field E. K., Stepanauskas R., Fredrickson J. K., and Konopka A. (2014) Single-cell genomics reveal metabolic strategies for growth and survival in an oligotrophic aquifer. *Microbiology*, 160, 362-372.

Wilkins, M. J., Daly, R., Mouser, P. J., Trexler, R., Wrighton, K. C., Sharma, S., Cole, D. R., Biddle, J. F., Denis, E., Fredrickson, J. K., Kieft, T. L., Onstott, T. C., Petersen, L., Pfiffner, S. M., Phelps, T. J., and Schrenk, M. O., 2014. Trends and Future Challenges in Sampling the Deep Terrestrial Biosphere. *Frontiers in Microbiology* **5**. 10.3389/fmicb.2014.00481

Lee J.-H., Zachara J. M., Fredrickson J. K., Heald S. M., McKinley J. P., Plymale A. E., Resch C. T., and Moore D. A. (2013) Fe(II)- and sulfide-facilitated reduction of $^{99}Tc(VII)O_4^-$ in microbially reduced hyporheic zone sediments. *Geochimica et Cosmochimica Acta*, doi.org/10.1016/j.gca.2013.08.017.

Lindemann S. R., Moran J. J., Stegen J. C., Renslow R. S., Hutchison J. R., Cole J. K., Dohnalkova A. C., Tremblay J., Singh K., Malfatti S. A., Chen F., Tringe S. G., Beyenal H., and Fredrickson J. K. (2013) The epsomitic phototrophic microbial mat of Hot Lake, Washington: Community structural responses to seasonal cycling. *Frontiers in Microbiology* 4.

Song, H. S., Ramkrishna, D., Pinchuk, G. E., Beliaev, A. S., Konopka, A. E., and Fredrickson, J. K., 2013. Dynamic modeling of aerobic growth of *Shewanella oneidensis*. Predicting triauxic growth, flux distributions, and energy requirement for growth. *Metab. Eng.* **15**, 25-33.

Stegen J. C., Lin X., Fredrickson J. K., Chen X., Kennedy D. W., Murray C. J., Rockhold M. L., and Konopka A. (2013) Quantifying community assembly processes and identifying features that impose them. *ISME J* 7, (11) 2069-2079.

Zachara J. M., Long P. E., Bargar J., Davis J. A., Fox P., Fredrickson J. K., Freshley M. D., Konopka A. E., Liu C., McKinley J. P., Rockhold M. L., Williams K. H., and Yabusaki S. B. (2013) Persistence of uranium groundwater plumes: Contrasting mechanisms at two DOE sites in the groundwater–river interaction zone. *Journal of Contaminant Hydrology* 147, 45-72.

Lee J. H., Fredrickson J. K., Kukkadapu R. K., Boyanov M. I., Kemner K. M., Lin X. J., Kennedy D. W., Bjornstad B. N., Konopka A. E., Moore D. A., Resch C. T., and Phillips J. L. (2012) Microbial reductive transformation of phyllosilicate Fe(III) and U(VI) in Fluvial subsurface sediments. *Environmental Science & Technology* 46, 3721-3730.

Lin X. J., McKinley J., Resch C. T., Kaluzny R., Lauber C. L., Fredrickson J., Knight R., and Konopka A. (2012) Spatial and temporal dynamics of the microbial community in the Hanford unconfined aquifer. *ISME Journal* 6, (9) 1665-1676.

Stegen J. C., Lin X. J., Konopka A. E., and Fredrickson J. K. (2012) Stochastic and deterministic assembly processes in subsurface microbial communities. *ISME Journal* 6, (9) 1653-1664.

Plymale A. E., Fredrickson J. K., Zachara J. M., Dohnalkova A. C., Heald S. M., Moore D. A., Kennedy D. W., Marshall M. J., Wang C. M., Resch C. T., and Nachimuthu P. (2011) Competitive reduction of pertechnetate ($^{99}TcO_4^-$) by dissimilatory metal reducing bacteria and biogenic Fe(II). *Environmental Science & Technology* 45, 951-957.

Marshall M. J., Dohnalkova A., Kennedy D. W., Plymale A. E., Thomas S. H., Loffler F. E., Sanford R. A., Zachara J. M., Fredrickson J., and Beliaev A. S. 2009. Electron donor-dependent radionuclide reduction and nanoparticle formation by *Anaeromyxobacter dehalogenans* strain 2CP-C. *Environmental Microbiology* 11, 534-543.

Moser, D. P., J. K. Fredrickson, D. R. Geist, E. V. Arntzen, A. D. Peacock, S.-M. 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. *Env. Sci. Tech.* 37:5127-5134.

Takai, K., M. R. Mormile, J. P. McKinley, F. J. Brockman, W. E. Holben, W. P. Kovacik, and J. K. Fredrickson. 2003. Shifts in archaeal communities associated with lithological and geochemical variations in subsurface Cretaceous rock. *Environ. Microbiol.* 5:309-320.

SYNERGISTIC ACTIVITIES

- Elected Fellow of the American Association for the Advancement of Science (2007)
- Elected Fellow of the American Academy of Microbiology, 1999
- 2010 - Editorial Board Member of *The ISME Journal* (2010)
- Editorial Board Member of *Geobiology* (2009)
- Chair, Local Organizing Committee, International Symposium for Microbial Ecology (ISME) 13, August 2010, Seattle, WA (2008-present)
- Chief Scientist for DOE-BER Genomics GTL Program (2005-2009)
- Editor-in-Chief of *Microbial Ecology* (1995-2005)
- Research Coordinator for the U.S. Department of Energy's Subsurface Science Program (1991-2001)
- Editorial Board Member of *Applied and Environmental Microbiology* (1991-1995)
- Editorial Board Member of *Environmental Microbiology* and *Microbial Biotechnology* (1999-present)