

## SCOTT C. BROOKS

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### EDUCATION

1995	University of Virginia	Ph.D.	Environmental Sciences
1991	University of Virginia	M.S.	Environmental Sciences
1984	University of Virginia	B.A.	Psychology

### PROFESSIONAL POSITIONS

2005 – Present	Team Leader, Subsurface Science, Environmental Sciences Division (ESD), Oak Ridge National Laboratory (ORNL).
2005 – 2006	Group Leader, Earth Sciences, ESD, ORNL.
2004 – Present	Senior Scientist, ESD, ORNL.
1997 – 2003	Research Staff Scientist, ESD, ORNL.
1994 – 1997	Postdoctoral Research Associate, ESD, ORNL (under the direction of Dr. Philip Jardine).
1991 – 1994	Research Assistant, project funded by the Co-contaminant Chemistry Subprogram of the Subsurface Science Program, U. S. Department of Energy.
1989 – 1991	Research Microbiologist, part-time, Hydrosystems, Inc., Sterling, VA.
1990	Research Assistant, project funded by Virginia Department of Waste Management.

### PROFESSIONAL SERVICE, AFFILIATIONS, AND HONORS

**Member:** American Geophysical Union; American Chemical Society, Environmental Chemistry and Geochemistry Divisions; Sigma Xi.

**Honors:** Distinguished Scientific Achievement Award, Environmental Sciences Division, Oak Ridge National Laboratory, 2003.

Award of Excellence, Society for Technical Communication/ East Tennessee Chapter, 2000; 2001.

Award of Achievement, Society for Technical Communication/ East Tennessee Chapter, 1997.

Ph.D. Student Award, Physical Sciences, University of Virginia Chapter, Sigma Xi, 1994.

DuPont Fellowship of the University of Virginia, 1993-1994.

Society of Sigma Xi, inducted April 1992.

Governor's Fellowship of the University of Virginia, 1990-1991.

Sigma Gamma Epsilon, earth science honor society, inducted September 1990.

Raven Fellowship for Independent Research, University of Virginia, April 1990.

**Editorial Board:** Water Resources Research, Associate Editor (2004-2005).

**Reviewer:** *Ad hoc* manuscript and proposal reviewer for various journals and agencies.

### SELECT RECENT PUBLICATIONS (from >40)

Dong, W., L. Liang, S. Brooks, G. Southworth, and B. Gu. 2010. Roles of dissolved organic matter in the speciation of mercury and methylmercury in a contaminated ecosystem in Oak Ridge, Tennessee. *Environ. Chem.* 7:94-102.

Miller, C., G. Southworth, S.C. Brooks, L. Liang, and B. Gu. 2009. Kinetic controls on the complexation between mercury and dissolved organic matter in a contaminated environment. *Environ. Sci. Technol.* 43:8548-8553.

Dong, W. and S.C. Brooks. 2008. Formation of aqueous  $\text{MgUO}_2(\text{CO}_3)_3^{2-}$  complex and uranium anion exchange mechanism onto an exchange resin. *Environ. Sci. Technol.* 42:1979-1983.

- Kelly, S.D., K.M. Kemner, and S.C. Brooks. 2007. X-ray absorption spectroscopy identifies calcium-uranyl-carbonate complexes at environmental concentrations. *Geochim. Cosmochim. Acta* 71:821-834.
- Zhang, F., G.-T. Yeh, J.C. Parker, S.C. Brooks, M.N. Pace, Y.-J. Kim, P.M. Jardine, and D.B. Watson. 2007. A reaction-based paradigm to model reactive chemical transport in groundwater with general kinetic and equilibrium reactions. *J. Contam. Hydrol.* 92:10-32.
- Scheibe, T.D., Y. Fang, C.J. Murray, E.E. Roden, J. Chen, Y.-J. Chien, S.C. Brooks, and S.S. Hubbard. 2006. Transport and biogeochemical reaction of metals in a physically and chemically heterogeneous aquifer. *Geosphere* 2:220-235.
- Dong, W. and S.C. Brooks. 2006. Determination of the formation constants of ternary complexes of uranyl and carbonate with alkaline earth metals ( $Mg^{2+}$ ,  $Ca^{2+}$ ,  $Sr^{2+}$ , and  $Ba^{2+}$ ) using anion exchange method. *Environ. Sci. Technol.* 40:4689-4695.
- Spalding, B.P. and S.C. Brooks. 2005. Permeable environmental leaching capsules (PELCAps) for in situ evaluation of contaminant immobilization in soil. *Environ. Sci. Technol.* 39:8912-8918.
- Kelly S.D., K.M. Kemner, S.C. Brooks, J.K. Fredrickson, S.L. Carroll, D.W. Kennedy, J.M. Zachara, A.E. Plymale, and S. Fendorf. 2005. Ca-UO<sub>2</sub>-CO<sub>3</sub> complexation - implications for bioremediation of U(VI). *Physica Scripta T115*:915-917.
- Gu, B., S.C. Brooks, Y. Roh, and P.M. Jardine. 2003. Geochemical reactions and dynamics during titration of a contaminated groundwater with high uranium, aluminum, and calcium. *Geochim. Cosmochim. Acta* 67:2749-2761.
- Brooks, S.C., J.K. Fredrickson, S.L. Carroll, D.W. Kennedy, J.M. Zachara, A.E. Plymale, S.D. Kelly, K.M. Kemner, and S. Fendorf. 2003. Inhibition of bacterial U(VI) reduction by calcium. *Environ. Sci. Technol.* 37:1850-1858.
- Brooks, S.C. and S.L. Carroll. 2003. Geochemical reactions governing the fate of Co-NTA in contact with natural subsurface materials. *Appl. Geochem.* 18:423-433.
- Brooks, S.C. and S.L. Carroll. 2002. pH-dependent fate and transport of NTA-complexed cobalt through undisturbed cores of fractured shale saprolite. *J. Contam. Hydrol.* 58:191-207.
- Barnett, M.O., P.M. Jardine and S.C. Brooks. 2002. Uranium(VI) adsorption to heterogeneous subsurface media: application of a surface complexation model. *Environ. Sci. Technol.* 36:937-942
- Saiers, J.E., H. Guha, P.M. Jardine, and S.C. Brooks. 2000. Development and evaluation of a mathematical model for the transport and oxidation-reduction of CoEDTA. *Water Res. Research* 36:3151-3165.
- Barnett, M.O., P.M. Jardine, S.C. Brooks, and H.M. Selim. 2000. Adsorption and transport of uranium(VI) in subsurface media. *Soil Sci. Soc. Am. J.* 64:908-917.
- Fendorf, S.E., P.M. Jardine, R.R. Patterson, D.L. Taylor, and S.C. Brooks. 1999. Pyrolusite surface transformations measured in real-time during the reactive transport of Co(II)EDTA<sup>2-</sup>. *Geochim. Cosmochim Acta* 63:3049-3057.
- Brooks, S.C., S.L. Carroll, and P.M. Jardine. 1999. Sustained bacterial reduction of Co(III)EDTA<sup>-</sup> in the presence of competing geochemical oxidation during dynamic flow. *Environ. Sci. Technol.* 33:3002-3011.
- Brooks, S.C., D.L. Taylor, and P.M. Jardine. 1998. Thermodynamics of bromide exchange on ferrihydrite: implications for bromide transport. *Soil Sci. Soc. Am. J.* 62:1275-1279.
- Brooks, S.C., A.L. Mills, J.S. Herman, and G.M. Hornberger. 1998. Biodegradation of cobalt-citrate complexes: implications for cobalt mobility in groundwater. *J. Cont. Hydrology.* 32:99-115.
- Brooks, S.C. and J.S. Herman. 1998. Rate and extent of cobalt sorption to representative aquifer minerals in the presence of a moderately strong organic ligand. *Appl. Geochem.* 13:77-88.
- Brooks, S.C., D.L. Taylor, and P.M. Jardine. 1996. Reactive transport of EDTA-complexed cobalt in the presence of ferrihydrite. *Geochim. Cosmochim. Acta* 60:1899-1908.

## **COLLABORATORS**

M.O. Barnett (Auburn University); J.K. Fredrickson (Pacific Northwest National Lab); B. Gu (Oak Ridge National Lab); P.M. Jardine (Oak Ridge National Lab); S.D. Kelly (Argonne National Lab); K.M. Kemner (Argonne National Lab); C. Radtke (Idaho National Lab); E.E. Roden (University of Wisconsin-Madison); T.D. Scheibe (Pacific Northwest National Lab); B.P. Spalding (Oak Ridge National Lab); A. Ward (Pacific Northwest National Lab); S. Yabusaki (Pacific Northwest National Lab).