

**Brian A. Powell**

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**(a) Professional Preparation**

University of Montevallo, Montevallo, Al	Chemistry	B.S.	2001
Clemson University, Clemson, SC	Environ. Eng. and Sci.	M.S.	2001
Clemson University, Clemson, SC	Environ. Eng. and Sci.	Ph.D.	2004
Lawrence Berkeley National Lab	Chemical Sciences Division	Postdoc	2005-2006
Lawrence Livermore National Lab	Physical and Life Sciences	Postdoc	2006-2007

**(b) Appointments**

Associate Professor, Environmental Engineering and Earth Sciences, Clemson University 2013-Present  
Assistant Professor, Environmental Engineering and Earth Sciences, Clemson University 2008-2013

**(c) Relevant Products**

1. Emerson, H. P., Hart, A. E., Baldwin, J. A., Waterhouse, T. C., Kitchens, C. L., Mefford, O. T., Powell, B. A., "Characterization of Physical Transformations of Iron Oxide and Silver Nanoparticles from an Intermediate Scale Field Transport Study" *Journal of Nanoparticle Research*, 16, 2247-2258, 2014.
2. Powell, B. A., Dai, Z., Zavarin, M. Z., Zhao, P., Kersting, A. B. "Stabilization of Plutonium Nanocolloids by Epitaxial Distortion on Mineral Surfaces" *Environ. Sci. Tech.*, 45, 2698-2703, 2011.
3. Estes, S. L., Arai, Y., Becker, U., Fernando, S., Yuan, K., Ewing, R. C., Zhang, J., Shibata, T., Powell, B. A. "A Self-Consistent Model Describing the Thermodynamics of Eu(III) Adsorption onto Hematite" *Geochimica et Cosmochimica Acta*, 122, 430-447, 2013.
4. Hixon, A.E.; Arai, Y.; Powell, B.A., "Examination of the effect of alpha radiolysis of plutonium(V) sorption to quartz using multiple plutonium isotopes," *Journal of Colloid and Interface Science*, 403, 105-112, 2013.
5. Begg, J. D., Zavarin, M., Zhao, P., Tumey, S. J., Powell, B. A., Kersting, A. B., "Pu(V) and Pu(IV) sorption to montmorillonite" *Environmental Science and Technology*, 47(10), 5146-5153, 2013.

**Other Significant Products**

1. Emerson, H. P., Xu., C., Ho, Y., Zhang, S., Schwehr, K. A., Lilley, M. S., Kaplan, D. I., Santschi, P. H., Powell, B. A. "Geochemical controls of iodine uptake and transport in Savannah River Site subsurface sediments" *Applied Geochemistry*, 45, 105-113, 2014.
2. Zimmerman, T., Zavarin, M., Powell, B. A., "Influence of humic acid on plutonium sorption to gibbsite: Determination of Pu-humic acid complexation constants and ternary sorption studies" *Radiochimica Acta*, 102(7), 629-643, 2014.
3. Tinnacher, R. M., Powell, B. A., Kersting, A. B., Zavarin, M. "Kinetics of Neptunium(V) Sorption and Desorption Reactions on Goethite: Experiment and Modeling" *Geochimica et Cosmochimica Acta*, 75, 6854-6599, 2011

4. Bhattacharya, P., Conroy, N., Rao, A. M., Powell, B. A., Ladner, D. A., Ke, P., "PAMAM dendrimer for mitigating humic foulant" Royal Society of Chemistry Advances, 2, 7997–8001, 2012.
5. Hixon, A. E., Hu, Y., Kaplan, D. I., Kukkadapu, R. K., Nitsche, H., Qafoku, O., Powell, B. A., "Influence of Iron Redox Transformations on Plutonium Sorption to Sediments" Radiochimica Acta, 98, 685-692, 2010.

**(d) Synergistic Activities**

- Advisory Board: Environmental Protection Agency Science Advisory Board, Radiation Safety Committee (member 2012-present; augmented member for advisory on in situ uranium mining 2011-2012). Committee advises the EPA and EPA SAB on issues related to radiation exposure and nuclear waste disposal.
- Professional Service: American Chemical Society, Guest lecturer at the American Chemical Society Nuclear Chemistry Summer School at San Jose State University 2008-2013; Organized Symposia at National Meeting: Symposia organizer at Fall 2009, Fall 2011, Fall 2014 American Chemical Society National Meetings, Fall 2014 Pu Futures American Nuclear Society
- Advisory Board: National Council on Radiation Protection and Measurements (NCRP), Program Area Committee 5 (PAC 5): Environmental Radiation and Radioactive Waste, Member 2014-Present. The NCRP is a congressionally mandated organization to provide guidance on issues related to radiation protection and dose assessment. The PAC 5 is solely focused on environmental radiation and radioactive waste management.
- Awards: 2013-2018 DOE Early Career Research Program award; 2014 Governor's Young Researcher Award for Excellence in Scientific Research 2011 Clemson University Sigma Xi Young Investigator of the Year
- Mentor/Advisor: Summer research program. Mentor/advisor for South Carolina State University (SCSU, HBCU) undergraduate summer research students to perform research on nuclear waste disposal. The program couples the interest in nuclear waste remediation/disposal from both Clemson and SCSU. 2008, 2013, 2014.

**(e) Collaborators & Other Affiliations**

**Collaborators:** C Bagwell (SRNL), U Becker (U Michigan), R Brinkmeyer (Texas A&M), JT Coates (Clemson U), Z Dai (LLNL), M Denham (SRNL), T DeVol (Clemson U), R Ewing (U Michigan), R Falt (Clemson U), RA Fjeld (Clemson U), Y-J. Hu (ANL), DI Kaplan (SRNL), P-C. Ke (Clemson U), AB Kersting (LLNL), T Knight (U. South Car.), RK Kukkadapu (PNNL), Leif R (LLNL), H-P. Li (Texas A&M), R Lindvall, F Matta (U. South Car.), (LLNL) F Molz (Clemson U), S Moysey (Clemson U), L Murdoch (Clemson U), K Nash (Washington St U), H Nitsche (LBNL), O Qafoku (PNNL), A Rao (Clemson U), A Rao (Clemson U), L Rao (LBNL), K Roberts (SRNL), P Santschi (Texas A&M), K Schwer (Texas A&M), SM Serkiz (SRNL), M Singleton (LLNL), R Tinnacher (LBNL), C Xu (Texas A&M), M Zavarin (LLNL), P Zhao (LLNL), P Zheil (U. South Car.)

**Graduate and Postdoctoral Advisors:** *Postdoctoral Advisors:* A Kersting (LLNL), L Rao (LBNL), M Zavarin (LLNL); *Ph.D. Advisor:* RA Fjeld (Clemson University); *M.S. Advisors:* JD Navratil (Clemson University), C Thompson (SRNL)

**Current Graduate & Postdoctoral Advisees (Total postdocs advised: 5 (currently 2); Total students advised 17 ( currently 10, graduated 7):** M. Wylie (Postdoc), J. Mangold (Postdoc), N. Conroy (Ph.D.), H. Emerson (Ph.D.), S. Estes (Ph.D.), A. Gillens (Ph.D.), J. Wong (Ph.D.), X. Xie (Ph.D.), S. Ely (M.S.), S. Herr, (M.S.), D. Locklair (M.S.), M.A. Williford (M.S.)

**Former Graduate and Postdoctoral Advisees**

M. Witmer (M.S., 2014), R. Chen (Postdoc, 2013), A. Hussein (Visiting Scholar Postdoc, 2012-2013), K Grogan (Postdoc, 2012), A.E. Hixon (Ph.D. 2013), T. Zimmerman (M.S., 2010), T. Miller (M.S., 2010), M. Lilley (M.S., 2010), L. Simpkins (M.S., 2011), J. Jablonski (M.S., 2012)