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EDUCATION

2001-2004 Clemson University, Ph.D. Environmental Engineering and Science

1999-2001 Clemson University, M.S. Environmental Engineering and Science

1995-1999 University of Montevallo, B.S. Chemistry

PROFESSIONAL POSITIONS

- 2015- Fjeld Professor of Nuclear Environmental Engineering and Earth Science, Environmental Engineering and Earth Sciences, Clemson University, Oversee teaching and research programs related to environmental radiochemistry through the Nuclear Environmental Engineering and Science track. Advise graduate students and postdocs in radiochemistry/geochemistry research; 28 students advised (13 current) and 9 postdocs advised (4 current).
- 2012-2015 Associate Professor, Environmental Engineering and Earth Sciences, Clemson University
- 2008-2012 Assistant Professor, Environmental Engineering and Earth Sciences, Clemson University
- 2006-2008 Postdoctoral Fellow, Physical and Life Sciences Directorate, Glenn T. Seaborg Institute, Lawrence Livermore National Laboratory
- 2004-2006 Postdoctoral Fellow, Chemical Sciences Division, Glenn T. Seaborg Center, Lawrence Berkeley National Laboratory

SELECTED PUBLICATIONS

- Dogan, M., Moysey, S.M., Ramakers, R. M., DeVol, T. A., Beekman, F. J., Grown, H. C., Powell, B. A., High-resolution 4D pre-clinical SPECT/CT imaging of technetium transport within a heterogeneous porous media." Environmental Science and Technology, In Press, 2017
- Mannion, J. M., Wellons, M. S., Shick, C. R., Fugate, G. A., Powell, B. A., Husson, S. M., " Ambient Aging of Rhenium Filaments Used in Thermal Ionization Mass Spectrometry: Growth of Oxo-Rhenium Crystallites and Anti-Aging Strategies" Helion, In Press, 2017
- Conroy, N., Zavarin, M., Kersting, A. B., Powell, B. A., "The Effect of natural organic matter on Pu sorption to goethite" In Review, Environmental Science and Technology, 2017, 51, 699-708.
- Hao, N., Moysey, S. M., Powell, B. A., Ntarlagiannis, D. "Comparison of the surface ion density of silica gel evaluated via Spectral Induced Polarization versus Acid-base titration. Journal of Applied Geophysics, 2016, 135, 427-435.
- Davis, K., Cole, B., Ghelardini, M., Powell, B. A., Mefford, O. T., "Quantitative Measurement of Ligand Exchange with Small-Molecule Ligands on Iron Oxide Nanoparticles via Radioanalytical Techniques" Langmuir, 2016, 32(51), 13716-13727.

- Taylor, S., Powell, B. A., Becker, U., "Influence of the goethite (α -FeOOH) surface on the stability of distorted fcc PuO₂ and PuO_{2-x} phases" *Radiochimica Acta*, 2016, 102(12), 821-841.
- Conroy, N., Wylie, E. M., Powell, B. A. "A novel method for tracer concentration Pu(V) solution preparation" *Analytical Chemistry*, 2016, 88(8), 4196-4199.
- Emerson, H. P., Kickok, K., Powell, B. A., "Experimental evidence for Colloid-facilitated Transport of Tetravalent Actinides on Hematite Colloids in the Presence of Suwanee River Fulvic Acid" *Journal of Environmental Radioactivity*, 2016, 165, 168-181.
- Xie, Y., Helvenston, E., Shuller-Nickles, L., Powell, B. A., "Surface Complexation Modeling and Quantum-mechanical Calculations of Eu(III) and U(VI) Interactions with Graphene Oxide" *Environmental Science and Technology*, 2016, 50(4), 1921-1827.
- Wylie, E. M., Olive, D., Powell, B. A., "Effects of titanium doping in titanomagnetite on neptunium sorption and speciation", *Environmental Science and Technology*, 2016, 50(4), 1853-1858.
- Wong, J. C., Zavarin, M., Begg, J. C., Kersting, A. B., Powell, B. A. "Effect of Equilibration Time on Pu Desorption from Goethite" *Radiochimica Acta*, 103(10), 695-705, 2015.
- Zhang, L. X., Manard, B. T., Powell, B. A., Marcus, R. K., "Preliminary assessment of potential for metal-ligand speciation in aqueous solution via the Liquid Sampling Atmospheric Pressure Glow Discharge (LS-APGD) ionization source: uranyl acetate" *Analytical Chemistry*, 87(14), 7218-7225, 2015.
- Kaplan, D. I., Miller, T. J., Diprete, D., Powell, B. A., "Long-term radiostrontium interactions and transport through sediment" *Environmental Science and Technology*, 48, 8919-8925, 2014
- 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.
- Hixon, A. E., and Powell, B. A., "Observed changes in the mechanism and rates of Pu(V) reduction on hematite as a function of total plutonium concentration" *Environmental Science and Technology*, 48, 9255-9262, 2014.
- 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.
- Powell, B. A., Dai, Z., Zavarin, M. Z., Zhao, P., Kersting, A. B. "Stabilization of Plutonium Nanocolloids by Epitaxial Distortion on Mineral Surfaces" *Environmental Science and Technology*, 45, 2698-2703, 2011.

SELECTED PROFESSIONAL SERVICE, AFFILIATIONS, AND HONORS

1. Advisory Board: Environmental Protection Agency Science Advisory Board, Radiation Safety Committee (member 2012-present). Committee advises the EPA and EPA SAB on issues related to radiation exposure and nuclear waste disposal.

2. Professional Service: American Chemical Society (ACS), Treasurer DNCT Division (2017-) Guest lecturer at the ACS Nuclear Chemistry Summer School 2008-2013; Organized Symposia at 2009, 2011, 2014 ACS National Meetings and Fall 2014 Pu Futures American Nuclear Society
3. 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.
4. Awards: 2013-2018 DOE Early Career Research Program award; 2014 Governor's Young Researcher Award for Excellence in Scientific Research; 2011 Clemson Sigma Xi Young Investigator of the Year
5. 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, 2016

COLLABORATORS & OTHER AFFILIATIONS

Collaborators and Co-editors

Y. Arai, (U Illinois UC); U Becker (U Michigan), J. Begg (LLNL), M Boggs (LLNL); T DeVol (Clemson U), R Ewing (Stanford U), RA Fjeld (Clemson U), S Husson (Clemson U); DI Kaplan (SRNL), P-C. Ke (Clemson U), AB Kersting (LLNL), RK Kukkadapu (PNNL), R Marcus (Clemson U); H Mason (LLNL); F Molz (Clemson U), S Moysey (Clemson U); K Nash (Washington St U), H Nitsche (LBNL), D Olive (LANL); A Rao (Clemson U), L Rao (LBNL), K Roberts (SRNL), P Santschi (Texas A&M), L. Shuller-Nickles (Clemson), K Schwer (Texas A&M), SM Serkiz (SRNL), M Singleton (LLNL), R Tinnacher (LBNL), M Zavarin (LLNL)

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 (4/7/6, Postdoc/PhD/MS): X. Xie (Postdoc), Andreas Schnurr (Postdoc), Melody Maloubeir (Postdoc), Valery Bliznyuk (Postdoc), K. Collins (Ph.D.), N. Conroy (Ph.D.), B. Ferguson (Ph.D.), I. Johnson (Ph.D.), D. Montgomery (Ph.D), K. Peruski (Ph.D.) J. Wong (Ph.D.), K. Barber (M.S.), E. Black (M.S.), R. Dozier (M.S.), R. Pope (M.S.), A. Sams (M.S.), S. Santos (M.S.)

Former Graduate and Postdoctoral Advisees (5/4/10, Postdoc/PhD/MS)

E. M. Wylie (2014-2016), J. Mangold (Postdoc, 2013-2014), R. Chen (Postdoc, 2013), A. Hussein (Visiting Scholar Postdoc, 2012-2013), K Grogan (Postdoc, 2012), A. Gillens (Ph.D., 2016), X. Xie (Ph.D., 2016), H. Emerson, (Ph.D., 2014), S. Estes (Ph.D., 2014), A.E. Hixon (Ph.D. 2013), S. Ely (M.S., 2016), D. Locklair (M.S. 2015), M. Williford (M.S., 2014), M. Witmer (M.S., 2014), S. Herr (M.S., 2013), J. Jablonski (M.S., 2012), L. Simpkins (M.S., 2011), T. Zimmerman (M.S., 2010), T. Miller (M.S., 2010), M. Lilley (M.S., 2010).