

Michael C. Cheshire
Oak Ridge National Laboratory (ORNL)

EDUCATION

Indiana University, Bloomington, IN	Ph.D.	2011	Geology
Texas Tech University, Lubbock, TX	M.S.	2003	Geology
Texas Tech University, Lubbock, TX	B.A.	2001	Geology

PUBLICATIONS

- WoldeGabriel, G., Boukhalfa, H., Ware, S. D., Cheshire, M., Reimus, P., Heikoop, J., Conradson, S. D., Batuk, O., Havrilla, G., House, B., Simmons, A., Clay, J., Basu, A., Christensen, J. N., Brown, S. T., and DePaolo, D. J. (2014) Characterization of cores from an in-situ recovery mined uranium deposit in Wyoming: Implications for post-mining restoration. *Chemical Geology*, **390**, 32-45.
- Cheshire, M.C., Caporuscio, F.A., Jove-Colon, C., and McCarney, M.K. (2014) Bentonite evolution at elevated pressures and temperatures: An experimental study for generic nuclear repositories. *American Mineralogist*, **99**, 1662-1675.
- Cheshire, M.C., Hardin, E., Caporuscio, F.A., Jove-Colon, C., and McCarney, M.K. (2014) Geochemical Investigation in an Effort to Increase Bentonite Barrier's Thermal Load Capacity to Accommodate 32-PWR Dual Purpose Canisters. *Proceedings from the International Conference on the Performance of Engineered Barriers*, 185-190.
- Cheshire, M.C., Caporuscio, F.A., Jové-Colón, C., and McCarney, M.K. (2013) Alteration of clinoptilolite into high-silica analcime within a bentonite barrier system under used nuclear fuel repository conditions.
- Cheshire, M.C. and Bish, D.L. (2012) Mineralogical and sulfur isotopic evidence for sulfate reducing and disproportionating bacteria influencing pyrite and marcasite formation in the Georgia kaolins.
- Cheshire, M.C., Bish, D.L., and Brassell, S. (2012) Organic geochemical signatures of Georgia kaolins and their diagenetic evolution. *Clays and Clay Minerals*, **60**, 419-439.
- Cheshire, M.C. and Guven, N. (2005) Conversion of chrysotile asbestos to magnesian smectite. *Clays and Clay Minerals*, **53**, 155-161.
- Jones, J.E., Cheshire, M.C., Casadonte, Jr., D.J., and Phifer, C.C. (2004) Facile sonochemical synthesis of graphite intercalation compounds. *Organic Letters*, **6**, 1915-1917.

PROFESSIONAL EXPERIENCE

- Post-Doctoral Fellow, Oak Ridge National Laboratory, Oak Ridge, TN, 2014 - present
- Post-Doctoral Associate, Los Alamos National Laboratory, Los Alamos, NM, 2012 - 2014
- Internship, Imerys Performance Minerals, Deepstep, GA, Summer 2008
- Research Scientist, Oil Dri Corporation of America, Vernon Hills, IL, 2004 - 2007
- Research Assistant, Texas Tech University, Lubbock, TX, 2000 - 2003

INVITED TALKS

- Cheshire, M.C., Caporuscio, F.A., and Jove-Colon, C. (2014) Bentonite, Host Rock, and Canister Metal Interactions Under Used Fuel Repository Conditions. Sandia National Laboratory Repository Science Seminar.

- Cheshire, M.C., Hardin, E., Caporuscio, F.A., Jove-Colon, C., and McCarney, M.K. (2014) Geochemical Investigation in an Effort to Increase Bentonite Barrier's Thermal Load Capacity to Accommodate 32-PWR Dual Purpose Canisters. International Conference on the Performance of Engineered Barriers, Hanover, Germany.
- Cheshire, M.C., Caporuscio, F.A., Jove-Colon, C., and McCarney, M.K. (2014) Increased bentonite stability or: How I learned to stop worrying and love the interlayer cations. 2013 Annual Meeting on Fuel Cycle Technology, Lemont, IL.
- Cheshire, M.C. and Bish, D.L. (2009) Organic matter of the middle Georgia kaolins. 45th Forum on the Geology of Industrial Minerals. Delaware, Ohio.

PROFESSIONAL AFFILIATIONS

- Member, Clay Minerals Society (CMS)
Clays and Clay Minerals reviewer
Councilor, 2014 – present
Program Development Committee, 2014 – present
- Member, Association Internationale Pour L'Etude des Argiles (AIPEA)
Co-Organizer for the United States' bid to host the 2017 International Clay Conference.

AWARDS

- 2011 Clay Minerals Society Student Travel Grant
- 2011 Los Alamos Neutron Scattering School participant
- 2011 Departmental Citizenship Award, Indiana University
- 2010, 2011 Grassmann Fellowship in Clay Mineralogy, Indiana University
- 2009 Robert L. Bates Scholar, Industrial Minerals Forum
- 2009 SME Gerald V. Henderson Industrial Minerals Memorial Scholarship, competitive award of \$2,500 for graduate research.
- 2005 SME Industrial Minerals Division Young Scientist Award