

## Clay Nelson, Physical Scientist, in EPA's National Exposure Research Laboratory

Exposure Methods and Measurements Division

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**Area of Expertise:** Clay's research supports the development and application of bioavailability tools for improved human health risk assessments for toxic metals in soil. This effort focuses on developing new or refining existing in vitro metal bioaccessibility assays that simulate the human gut, and determining the mechanisms that control metal bioavailability. Clay also specializes in trace metal analysis via ICP-MS, HPLC-ICP-MS, ICP-OES, and AA.

### Select Publications:

Karen D. Bradham, Clay Nelson, Albert L. Juhasz, Euan Smith, Kirk Scheckel, Daniel R. Obenour, Bradley W. Miller, David J. Thomas. 2015. Independent data validation of an in vitro method for prediction of relative bioavailability of arsenic in contaminated soils. *Environ Sci Technol* 49: 6312-6318.

Lenibel Santiago-Rodríguez, Jennifer L. Griggs, Karen D. Bradham, Clay Nelson, Todd Luxton, William E. Platten III, Kim R. Rogers. 2015. Assessment of the Bioaccessibility of Micronized Copper Wood in Synthetic Stomach Fluid. *Environmental Nanotechnology, Monitoring & Management*, (4) 85-92.

Juhasz AL, Smith E, Nelson C, Thomas D, Karen Bradham. 2014. Variability Associated with As in Vivo-in Vitro Correlations When using Different Bioaccessibility Methodologies. *Environ Sci Technol* 48: 11646-11653.

James M. Harrington, Clay M. Nelson, Frank X. Weber, Karen D. Bradham, Keith E. Levine, Joann Rice. 2014. Evaluation of Methods for Analysis of Lead in Air Particulates: An Intra-Laboratory and Inter-Laboratory Comparison. *Environ. Sci.: Processes Impact*, 16, 256-261

Nelson C, Gilmore T, Harrington J, Scheckel K, Miller B, Bradham K. 2013. Evaluation of a low-cost commercially available extraction device for assessing lead bioaccessibility in contaminated soils. *Environ. Sci.: Processes Impacts* 15, 573-578.

Samuel K. Mwilu, Amro M. El Badawy, Karen Bradham, Clay Nelson, David Thomas, Kirk G. Scheckel, Thabet Tolaymat, Longzhou Ma, Kim Rogers. 2013. Changes in silver nanoparticles exposed to human synthetic stomach fluid: Effects of particle size and surface chemistry. *Science of The Total Environment*, Volume 447, 1 March 2013, Pages 90-98.

View more research publications by [Clay Nelson](#).

**Education:**

- M.E.M., Environmental Health and Toxicology, Duke University, 2008
- B.A., Biology, Dartmouth College, 2003

**Professional Experience:**

- Physical Scientist, USEPA, ORD, NERL-HEASD, RTP, NC 2011-present
- ORISE Research Fellow, USEPA, ORD, NERL-HEASD, RTP, NC 2010-2011
- Student Services Contractor, USEPA, ORD, NERL-HEASD, RTP, NC 2010-2011
- Research Coordinator, Laboratory of Molecular Aquatic Toxicology, Duke University, NC 2008-2009
- Research Assistant, Laboratory of Molecular Aquatic Toxicology, Duke University, NC 2007-2008
- Staff Scientist, MB Consulting Engineers, San Diego, CA 2003-2006