

UEBL Projects

Project: Stable isotopes for evaluating micronutrient metal bioavailability

Summary: In urban environments two of the most common metal contaminants are copper and zinc. In addition to being contaminants, these metals are regulated micronutrients in most organisms. Both have stable isotopes (^{65}Cu and ^{68}Zn) that are readily quantified and differentiated from the more abundant isotopes (^{63}Cu and ^{66}Zn) by modern instrumental techniques (ICP-MS).

Products:

Rodgers, D.W., S.M. Lev, J.W. Snodgrass, D.R. Ownby, L.M. Prince, R.E. Casey. 2011. An enriched stable isotope technique to estimate the availability of soil zinc to *Lumbricus terrestris* (L.) across a salinization gradient. *Environmental Toxicology and Chemistry*. 30(3):607-615. [Link to Full Article](#)

Relationship between ^{68}Zn : ^{66}Zn turnover rate and soil zinc toxicity in *Lumbricus terrestris* (L.). J. Serrano, S.M. Lev, D.R. Ownby, R.E. Casey. Poster. 13th Annual Undergraduate Research Symposium in the Chemical and Biological Sciences, Cantonsville, MD. 2010.

A stable isotope approach to investigating zinc toxicity and internal transport in barley (*Hordeum vulgare* L.). J.J. New, J.W. Snodgrass, D.R. Ownby, R.E. Casey, S.M. Lev. Poster. SETAC North America Meeting 2011.

Developing a Copper Isotope Ratio Method for Estimating Copper Availability to *Eisenia fetida*. M.C. Mazzei, S.M. Lev, D.R. Ownby. Poster. SETAC North America Meeting 2011.

Stable isotope ratio measurements on biological samples by cryo-LA-ICP-TOF-MS. S.M. Monk, S.M. Lev. Poster. 2012 Winter Conference on Plasma Spectrochemistry.