

Arsenic Relative Bioavailability Study – Publication List

(updated December 2016)

Peer-reviewed publications

- Alpers, C.N., Myers, P., Millsap, D., and Regnier, T.B., 2014, Arsenic associated with historical gold mining in the Sierra Nevada: Case study and field trip guide for Empire Mine State Historic Park, California. *In*: Bowell, R., Alpers, C.N., Nordstrom, D.K., Jamieson, H.E., and Majzlan, J. (eds), Arsenic – Environmental Geochemistry, Mineralogy, and Microbiology, Reviews in Mineralogy and Geochemistry v. 79, p. 553-587. <http://www.minsocam.org/msa/RIM/index2.html>
- Basta, N.T., and Juhasz, A., 2014, Using in vivo bioavailability and/or in vitro gastrointestinal bioaccessibility testing to adjust human exposure to arsenic from soil ingestion. *In*: Bowell, R., Alpers, C.N., Nordstrom, D.K., Jamieson, H.E., and Majzlan, J. (eds), Arsenic – Environmental Geochemistry, Mineralogy, and Microbiology, Reviews in Mineralogy and Geochemistry v. 79, p. 451-472. <http://www.minsocam.org/msa/RIM/index2.html>
- Bowell, R., Alpers, C.N., Nordstrom, D.K., Jamieson, H.E., and Majzlan, J., 2014, Arsenic -- Environmental Geochemistry, Mineralogy, and Microbiology, Reviews in Mineralogy and Geochemistry v. 79, 627 p. <http://www.minsocam.org/msa/RIM/index2.html>
- Bowell, R., Alpers, C.N., Nordstrom, D.K., Jamieson, H.E., and Majzlan, J., 2014, The Environmental Geochemistry of Arsenic – An Overview, *In*: Bowell, R., Alpers, C.N., Nordstrom, D.K., Jamieson, H.E., and Majzlan, J. (eds.), Arsenic -- Environmental Geochemistry, Mineralogy, and Microbiology, Reviews in Mineralogy and Geochemistry v. 79, p. 1-16. <http://www.minsocam.org/msa/RIM/index2.html>
- Foster, A.L., and Kim, C.S., 2014, Arsenic speciation in solids using X-ray absorption spectroscopy. *In*: Bowell, R., Alpers, C.N., Nordstrom, D.K., Jamieson, H.E., and Majzlan, J. (eds), Arsenic – Environmental Geochemistry, Mineralogy, and Microbiology, Reviews in Mineralogy and Geochemistry v. 79, p. 257-369.
- Mitchell, V.L., 2014 Health risks associated with chronic exposures to arsenic in the environment. *In*: Bowell, R., Alpers, C.N., Nordstrom, D.K., Jamieson, H.E., and Majzlan, J. (eds), Arsenic – Environmental Geochemistry, Mineralogy, and Microbiology, Reviews in Mineralogy and Geochemistry v. 79, p. 435-449.

Master's Thesis

- Burlak, T., 2012, Geochemistry of iron- and arsenic-bearing minerals in soil and bedrock associated with gold-quartz vein mineralization at Empire Mine State Historic Park, Nevada County, California. M.Sc. thesis, Department of Geology, California State University, Sacramento, CA, 142 p. <http://csus-dspace.calstate.edu/handle/10211.9/1885>

Abstracts and Presentations

2010

Burlak, T., Alpers, C.N., Foster, A.L., Brown, A., Hammersley, L., and Petersen, E., 2010, Tracking the mineralogical fate of arsenic in weathered sulfides from the Empire Mine gold-quartz vein deposit using X-ray analytical techniques: Potential implications for arsenic bioavailability in mine waste. 2010 Fall Meeting, American Geophysical Union, December 17–20, San Francisco, CA. (POSTER, presented by Burlak) <http://abstractsearch.agu.org/meetings/2010/FM/sections/V/sessions/V51C/abstracts/V51C-2220.html>

Mitchell, V., Alpers, C., Basta, N., Berry, D., Christopher, J., Eberl, D., Fears, R., Foster, A., Kim, C.S., Myers, P., and Parsons, B., 2010, Identifying predictors for bioavailability of arsenic in arsenic in soil at mining sites. Society of Toxicology, 49th Annual Meeting, Salt Lake City, UT, March 7–11, 2010. *Toxicologist*, v. 114, p. 412. (POSTER, presented by Mitchell)

Brown, A., Foster, A., Alpers, C.N., Dale, J. G., Hansel, C., Lentini, C., Kim, C. S., Stegemeier, J.P., Factors Affecting Principal Component Analysis (PCA) of X-ray Absorption Fine Structure Spectral Datasets of Arsenic and Iron Compounds. Fall Annual Meeting of Geological Society of America, Oct.2010 (POSTER, presented by Foster)

2011

Alpers, C.N., Burlak, T., Foster, A., Hammersley, L., and Petersen, E., 2011, Mineralogy and speciation of arsenic in weathered waste rock from the Empire mine low-sulfide gold-quartz vein deposit, California. Annual Meeting of the National Association of Abandoned Mine Land Programs, Squaw Valley, CA, October 10–12, 2011. (TALK, presented by Alpers)

Foster, A., and Alpers, C.N., 2011, Synchrotron x-ray studies of arsenic species in sediments from the Empire Mine, CA. Annual Meeting of the National Association of Abandoned Mine Land Programs, Squaw Valley, CA, October 10–12, 2011. (TALK, presented by Foster)

Mitchell, V., Alpers, C., Basta, N., Burlak, T., Casteel, S.W., Fears, R.L., Foster, A.L., Kim, C.S., Myers, P.A., and Petersen, E., 2011, The role of iron in the reduced bioavailability of arsenic in soil. Society of Toxicology, 50th Annual Meeting, March, 2011. *Toxicologist*, v. 120 (Supp 2), p. 415 (POSTER, presented by Mitchell)

Myers, P.A., Mitchell, V.L., Alpers, C.N., Basta, N.T., Casteel, S.W., Foster, A.L., and Kim, C.S., 2011, Methods and tools for the evaluation of bioavailability of arsenic at abandoned mine lands: the search for a more cost-effective approach to site clean-up. Annual Meeting of the National Association of Abandoned Mine Land Programs, Squaw Valley, CA, October 10–12, 2011. (TALK, presented by Myers and Mitchell)

2012

Alpers, C.N., Burlak, T.L., Foster, A.L., Basta, N.T., and Mitchell, V.L., 2012, Arsenic and old gold mines: mineralogy, speciation, and bioaccessibility. 2012 Goldschmidt Meeting, Montreal, Canada, June 24-29, 2012. (INVITED TALK, KEYNOTE ADDRESS, presented by Alpers) http://www.minersoc.org/files/Goldschmidt2012_Conference_Abstracts_A.pdf

Alpers, C.N., Mitchell, V.L., Basta, N.T., Casteel, S.W., Foster, A.L., Blum, A.E., Kim, C.S., Myers, P., Burlak, T.L., and Hammersley, L., 2012, Evaluating the bioavailability, bioaccessibility,

mineralogy, and speciation of arsenic in mine waste and soils: Empire Mine low-sulfide gold-quartz vein deposit, Nevada County, California. U.S. Environmental Protection Agency Hardrock Mining Conference, Denver, CO, April 3–5, 2012. (TALK, presented by Alpers) http://www.clu-in.org/download/issues/mining/Hard_Rock/ConferenceHandout/HRM_2012_Handout.pdf

Foster, A., 2012, Identification and quantification of arsenic species in gold mine wastes using synchrotron-based x-ray techniques. U.S. Environmental Protection Agency Hardrock Mining Conference, Denver, CO, April 3–5, 2012. (TALK, presented by Foster) http://www.clu-in.org/download/issues/mining/Hard_Rock/ConferenceHandout/HRM_2012_Handout.pdf

Mitchell, V.L., Alpers, C.N., Basta, N.T., Casteel, S.W., Foster, A.L., Kim, C.S., Naught, L., and Myers P.A., 2012, Alternative methods for the prediction of bioavailability of arsenic in mining soils. Society of Toxicology, 51st Annual Meeting, March, 2012. *Toxicologist*, v. 126, p. 321. (POSTER, presented by Mitchell)

Mitchell, V.L., Myers P.A., 2012, Alternative Methods for the Evaluation of Arsenic Bioavailability: Reclaiming Mine-Scarred Lands While Protecting Human Health. Reclaiming the Sierra, Green Solutions to Abandoned Mines Conference, Nevada City, CA, May 3-5, 2012. (TALK, presented by Mitchell) <http://reclaimingthesierra.org/wp-content/uploads/2012/06/Mitchell-Myers-Arsenic-Study-RTS-2012.pdf>

Mitchell, V.L., 2012, Alternative Methods for the Evaluation of Bioavailability of Arsenic in Mining Soils, Risk Assessment Specialty Section, Society of Toxicology (WEBINAR, presented by Mitchell) http://www.toxicology.org/ISOT/SS/RiskAssess/RASS_Webinar_10_10_2012.pdf

Whitacre, S.D., Basta, N.T., Mitchell, V.L., and Myers, P. 2012. Bioavailability Measures for Arsenic in Gold Mine Tailings. Presentation 412-1, ASA, CSSA, and Soil Science Society International Annual Meeting, Cincinnati, OH. Oct. 21 to 24, 2012.

2013

Whitacre, S.D., N.T. Basta, V.L. Mitchell, and P. Myers. 2013. Bioavailability Measures for Arsenic in Gold Mine Tailings Using Agricultural Soil Tests to Estimate Total and Bioaccessible Pb in Urban Soils. Joint MERA/ICOBTE Sponsored Symposium: Trace Element Bioavailability for Human and Ecological Risk Assessment: Concepts and Recent Advances. Organizers: N. Basta, E. Van Genderen, and C. Schlegel. 12th International Conference for Trace Element Biogeochemistry (ICOBTE), Athens, GA, USA. June 16-20, 2013.

2014

Basta, N.T., Whitacre, S., Meyers, P., Mitchell, V.L., Alpers, C.N., Foster, A.L., Casteel, S.W., and Kim, C.S., 2014, Using in vitro gastrointestinal and sequential extraction methods to characterize site-specific arsenic bioavailability. Goldschmidt 2014, Sacramento, CA, June 8–13, 2014. (TALK, presented by Basta) <http://goldschmidt.info/2014/abstracts/abstractView?abstractId=2172>

Buckendorf, L., and Kim, C.S., 2014, Relationships between particle size, arsenic concentration, surface area, and bioaccessibility of mine tailings from the Empire Mine, CA. Goldschmidt 2014, Sacramento, CA, June 8–13, 2014. (POSTER, presented by Buckendorf) <http://goldschmidt.info/2014/abstracts/abstractView?abstractId=3209>

Foster, A.L., Alpers, C.N., Burlak, T., Blum, A.E., Petersen, E.U., Basta, N.T., Whitacre, S., Casteel,

- S.W., Kim, C.S., and Brown, A.L., 2014, Arsenic chemistry, mineralogy, speciation, and bioavailability/bioaccessibility in soils and mine waste from the Empire Mine, CA, USA. Goldschmidt 2014, Sacramento, CA, June 8–13, 2014. (TALK, presented by Foster) <http://goldschmidt.info/2014/abstracts/abstractView?abstractId=3341>
- Foster, A.L., and Kim, C.S., 2014, The environmental legacy of California's gold rush: Arsenic and mercury contamination from historic mining. Goldschmidt 2014, Sacramento, CA, June 8–13, 2014. (PLENARY TALK, presented by Foster and Kim, introduced by Alpers) <http://goldschmidt.info/2014/abstracts/abstractView?abstractId=4857> <https://www.youtube.com/watch?v=ZvsmiiYL-OU&feature=youtu.be>
- Kim, C.S., Anthony, T.L., Buckendorf, L., O'Connor, K.P., and Rytuba, J.J., 2014, Transport, bioaccessibility and risk assessment of fine-grained arsenic-bearing mine tailings. Goldschmidt 2014, Sacramento, CA, June 8–13, 2014. (TALK, presented by Kim) <http://goldschmidt.info/2014/abstracts/abstractView?abstractId=4645>
- Stevens, B., Basta, N., Whitacre, S., Naber, S., Scheckel, K., Casteel, S., Bradham, K., and Thomas, D., 2014, Evaluation of bioaccessibility methods to predict relative bioavailability of arsenic in contaminated soils. Goldschmidt 2014, Sacramento, CA, June 8–13, 2014. (POSTER, presented by Stevens) <http://goldschmidt.info/2014/abstracts/abstractView?abstractId=2161>
- Whitacre, S., Basta, N., Casteel, S., Foster, A., Myers, P., and Mitchell, V., 2014, Bioavailability measures for arsenic in California gold mine tailings. Goldschmidt 2014, Sacramento, CA, June 8–13, 2014. (POSTER, presented by Whitacre) <http://goldschmidt.info/2014/abstracts/abstractView?abstractId=2081>
- Alpers, C.N., 2014, Arsenic Associated with Historical Gold Mining in the Sierra Nevada Foothills. Short Course on “Environmental Geochemistry, Mineralogy and Microbiology of Arsenic,” Mineralogical Society of America and the Geochemical Society, Nevada City, CA, June 2014 (ORAL, presented by Alpers)
- 2015**
- Alpers, C.N., 2015, (planned) Environmental geochemistry and mineralogy of arsenic in the Sierra Nevada foothills gold belt, California. 27th International Applied Geochemistry Symposium (IAGS) hosted by the Association of Applied Geochemists (AAG) to be held in Tucson, Arizona, to be held April 20-24, 2015 (INVITED KEYNOTE TALK, to be presented by Alpers)
- Foster, A. L., 2015, Spectroscopic Methods for Arsenic Characterization. Reclaiming the Sierra Conference, Sacramento, CA, April 2015 (ORAL, presented by Foster)
- Mitchell, V.M., Whitacre, S., Casteel S.W., Myers, P.A., Basta, N.T., 2015 (planned) New *In Vitro* Gastrointestinal Model Accurately Predicts Arsenic Bioavailability in Soils, Society of Toxicology, 54th Annual Meeting, March, 2015. (POSTER, presented by Mitchell)
- Mitchell, V.L., Bioavailability of Arsenic in California Mining Soils: Geochemical Influences and the Development of a Predictive *in vitro* Method, Presentation at the Interstate Technology & Regulatory Council 2015 Spring Meeting, April 2015. (Invited presentation to the Bioavailability in Contaminated Soils Team).

Hanley, VM, Bioavailability of Arsenic in California Mining Soils: Development of a Predictive *in vitro* Method, Presentation to the Sacramento Professional Environmental Marketers Association, November 2015. (Invited Speaker)