

## UNM METALS Publications

### 2022

**DeVore, C.L., Rodriguez-Freire, L.,** Villa, N., Soleimanifar, M., **Gonzalez-Estrella, J., Ali, A.M.S., Lezama-Pacheco, J.,** Ducheneaux, C. and **Cerrato, J.M.**, 2022. Mobilization of As, Fe, and Mn from Contaminated Sediment in Aerobic and Anaerobic Conditions: Chemical or Microbiological Triggers?. *ACS Earth and Space Chemistry*. <https://doi.org/10.1021/acsearthspacechem.1c00370>

**Beene, D.**, Collender, P., Cardenas, A., Harvey, C., Huhmann, L., **Lin, Y., Lewis, J.,** Lolacono, N., Navas-Acien, A., Nigra, A. and Steinmaus, C., 2022. A mass-balance approach to evaluate As intake and excretion in different populations. *Environment International*, p.107371. <https://doi.org/10.1016/j.envint.2022.107371>

Van Horne YO, Alcalá CS, Peltier RE, Quintana PJ, Seto E, **Gonzales M**, Johnston JE, Montoya LD, Quirós-Alcalá L, Beamer PI. An applied environmental justice framework for exposure science. *Journal of Exposure Science & Environmental Epidemiology*. 2022 Mar 8:1-1. <https://doi.org/10.1038/s41370-022-00422-z>

**Du R, Luo L, Hudson LG, Nozadi S, Lewis J.**(2022): An adjusted partial least squares regression framework to utilize additional exposure information in environmental mixture data analysis, *Journal of Applied Statistics*. 2022 Mar 5:1-22. <https://doi.org/10.1080/02664763.2022.2043254>

**Nozadi SS, Li L, Luo L, MacKenzie D, Erdei E, Du R, Roman CW, Hoover J, O'Donald E,** Burnette C, **Lewis J.** Prenatal Metal Exposures and Infants' Developmental Outcomes in a Navajo Population. *International Journal of Environmental Research and Public Health*. 2022 Jan;19(1):425. <https://doi.org/10.3390/ijerph19010425>

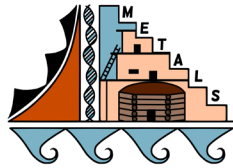
### 2021

**Miller C.** Marginal probabilities and point estimation for conditionally specified logistic regression. *Communications in Statistics-Simulation and Computation*. 2021 Dec 2;50(12):4338-63. <https://doi.org/10.1080/03610918.2019.1643478>

Feric Z, Agostini NB, **Beene D**, Signes-Pastor AJ, Halchenko Y, Watkins D, **MacKenzie D,** Karagas M, Manjourides J, Alshawabkeh A, Kaeli D. A Secure and Reusable Software Architecture for Supporting Online Data Harmonization. In 2021 IEEE International Conference on Big Data (Big Data) 2021 Dec 15 (pp. 2801-2812). IEEE.  
**DOI:** [10.1109/BigData52589.2021.9671538](https://doi.org/10.1109/BigData52589.2021.9671538)

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Hoover JH, **Bolt AM**, Burchiel SW, Cerrato JM, **Dashner-Titus EJ**, Erdei E, Estrella JG, **Hayek EE**, Hudson LG, Luo L, MacKenzie D. , **Medina S.**, Schilz J.R., **Velasco C.A.**, **Zychowski K.**, Lewis J.L. A Transdisciplinary Approach for Studying Uranium Mobility, Exposure, and Human Health Impacts on Tribal Lands in the Southwest United States. In Practical Applications of Medical Geology 2021 (pp. 193-213). Springer, Cham. ISBN 978-3-030-53893-4.  
[https://link.springer.com/chapter/10.1007/978-3-030-53893-4\\_6](https://link.springer.com/chapter/10.1007/978-3-030-53893-4_6)

Cooper KL, **Volk LB**, **Dominguez DR**, Duran AD, Liu KK, Hudson LG. Contribution of NADPH oxidase to the retention of UVR-induced DNA damage by arsenic. Toxicology and Applied Pharmacology. 2021 Nov 16:115799. <https://doi.org/10.1016/j.taap.2021.115799>

Schilz JR, **Dashner-Titus EJ**, Luo L, Simmons KA, MacKenzie DA, Hudson LG. Co-exposure of sodium arsenite and uranyl acetate differentially alters gene expression in CD3/CD28 activated CD4+ T-cells. Toxicology Reports. 2021 Nov 27.  
<https://doi.org/10.1016/j.toxrep.2021.11.019>

**Velasco CA**, Brearley AJ, **Gonzalez-Estrella J**, Ali AM, Meza MI, Cabaniss SE, Thomson BM, Forbes TZ, **Lezama Pacheco JS**, **Cerrato JM**. From Adsorption to Precipitation of U (VI): What is the Role of pH and Natural Organic Matter?. Environmental Science & Technology. 2021 Nov 19.  
<https://doi.org/10.1021/acs.est.1c05429>

Scieszka D, **Hunter R**, **Begay J**, **Bitsui M**, Lin Y, **Galewsky J**, Morishita M, Klaver Z, Wagner J, Harkema J, Herbert G, Lucas S, McVeigh C, **Bolt A**, Bleske B, Canal C, Mostovenko E, Ottens A, Gu H, **Campen M**, Noor S. Neuroinflammatory and neurometabolic consequences from inhaled 2020 California wildfire smoke-derived particulate matter at a remote location. 2021. In review, Nature Aging. Preprint, Research Square. <https://doi.org/10.21203/rs.3.rs-722777/v1>

Zhou X, **Speer RM**, **Volk L**, Hudson LG, Liu KJ. Arsenic co-carcinogenesis: inhibition of DNA repair and interaction with zinc finger proteins. In Seminars in Cancer Biology 2021 May 10. Academic Press, 2021. <https://doi.org/10.1016/j.semcancer.2021.05.009>

**EI Hayek E**, **Medina S**, Guo J, Nouredine A, Zychowski KE, Hunter R, Velasco CA, Wiese M, Maestas-Olguin A, Brinker CJ, Brearley A, ... & Cerrato J. Uptake and Toxicity of Respirable Carbon-Rich Uranium-Bearing Particles: Insights into the Role of Particulates in Uranium Toxicity. Environmental Science & Technology. 2021 Jul 8. <https://doi.org/10.1021/acs.est.1c01205>

**Medina S**, **Bolt AM**, Zhou X, Wan G, Xu H, **Lauer FT**, Liu KJ, and **Burchiel SW**. Arsenite and Monomethylarsonous Acid Disrupt Erythropoiesis Through Combined Effects on Differentiation and Survival Pathways in Early Erythroid Progenitors. Toxicology Letters. 2021 Jul 15.  
<https://doi.org/10.1016/j.toxlet.2021.07.008>

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**DeVore CL, El Hayek E**, Busch T, Long B, Mann M, Rudgers JA, **Ali AM**, Howard T, Spilde MN, **Brearley A**, Ducheneaux C, and **Cerrato JM**. Arsenic Accumulation in Hydroponically Grown *Schizachyrium scoparium* (Little Bluestem) Amended with Root-Colonizing Endophytes. *ACS Earth and Space Chemistry*. 2021 Jun 3. <https://doi.org/10.1021/acsearthspacechem.0c00302>

Wilson A, **Velasco CA**, Herbert GW, Lucas SN, **Sanchez BN**, **Cerrato JM**, Spilde M, Li QZ, **Campen MJ**, **Zychowski KE**. Mine-site derived particulate matter exposure exacerbates neurological and pulmonary inflammatory outcomes in an autoimmune mouse model. *Journal of Toxicology and Environmental Health, Part A*. 2021 Mar 5:1-5. <https://doi.org/10.1080/15287394.2021.1891488>

Shankar P, **Dashner-Titus EJ**, Truong L, Hayward K, **Hudson LG**, Tanguay RL. Developmental toxicity in zebrafish (*Danio rerio*) exposed to uranium: A comparison with lead, cadmium, and iron. *Environmental Pollution*. 2021 Jan 15;269:116097. <https://doi.org/10.1016/j.envpol.2020.116097>

Zhou X., **Xue B.**, **Medina S.**, **Burchiel S.W.**, **Liu, K.J.** (2021) Uranium directly interacts with the DNA Repair Protein 1 Poly (ADP-ribose) Polymerase 1, *Toxicology and Applied Pharmacology* 2021 Jan 1;410:115360. <https://doi.org/10.1016/j.taap.2020.115360>

**Medina S.**, Zhou X., **Lauer F.T**, **Zhang H.**, **Liu K.J.**, **Lewis J.**, **Burchiel S.W.**(2021) Modulation of PARP Activity by Monomethylarsonous (MMA+3) Acid and Uranium in Mouse Thymus, *Toxicology and Applied Pharmacology*. 2021 Jan 15;411:115362. <https://doi.org/10.1016/j.taap.2020.115362>

**Begay, J.**, Sanchez, B., Wheeler, A. Baldwin F., Lucas, S., Herbert, G., Ordonez Suarez J., **Shuey, C.**, Klaver, Z. Harkema, Wagner, J.G., Morishita, M., Bleske, B., **Zychowski, K.E.**, & **Campen, M.J.** (2021) Assessment of particulate matter toxicity and physicochemistry at the Claim 28 uranium mine site in Blue Gap, AZ, *Journal of Toxicology and Environmental Health, Part A*. 2021 January 2;84(1):31-48.<https://doi.org/10.1080/15287394.2020.1830210>

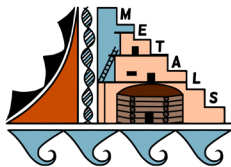
## 2020

**Rodriguez-Freire, L., DeVore, C.L., El Hayek, E.**, Berti, D., **Ali, A.S.**, **Lezama Pacheco, J.S.**, Blake, J.M., Spilde, M.N., **Brearley, A.J.**, **Artyushkova, K.**, and **Cerrato, J.M.** (2020). Entrapment of uranium-phosphorous nanocrystals inside root cells of *Tamarix* plants from a mine waste site. *Environmental Science: Processes and Impacts*. Dec 16. <https://doi.org/10.1039/D0EM00306A>

**Dashner-Titus, E.J., Schilz, J.R., Simmons, K.A., Duncan, T.R.**, Alvarez, S. C., & **Hudson, L. G.** 2020. Differential response of human T-lymphocytes to arsenic and uranium. *Toxicology Letters*, 333, 269-278.

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<https://doi.org/10.1016/j.toxlet.2020.08.013>

**Gonzalez-Estrella, J., Meza, I.**, Burns, A.J., **Ali, A.M.S.**, **Lezama-Pacheco, J.S.**, Lichtner, P., **Shaikh, N.**, **Fendorf, S.** and **Cerrato, J.M.**, 2020. Effect of Bicarbonate, Calcium, and pH on the Reactivity of As(V) and U(VI) Mixtures. *Environmental science & technology*, 54(7), pp.3979-3987. <https://doi.org/10.1021/acs.est.9b06063>

**Avasarala, S.**; **J. Brearley, A.**; Spilde, M.; **Peterson, E.**; Jiang, Y.-B.; Benavidez, A.; **Cerrato, J.M.** Crystal Chemistry of Carnotite in Abandoned Mine Wastes. *Minerals* 2020, 10, 883. <https://doi.org/10.3390/min10100883>

**Lin, Y.**, **Hoover, J.**, **Beene, D.**, **Erdei, E.** and **Liu, Z.**, 2020. Environmental risk mapping of potential abandoned uranium mine contamination on the Navajo Nation, USA, using a GIS-based multi-criteria decision analysis approach. *Environmental Science and Pollution Research International*. 27, 30542–30557. <https://doi.org/10.1007/s11356-020-09257-3>

Sanchez, B., Zhou, X., Gardiner, A.S., Herbert, G., Lucas, S., Morishita, M., Wagner, J.G., Lewandowski, R., Harkema, J.R., **Shuey, C.**, **Campen, M.J.** and **Zychowski, K.E.**, 2020. Serum-borne factors alter cerebrovascular endothelial microRNA expression following particulate matter exposure near an abandoned uranium mine on the Navajo Nation. *Particle and Fibre Toxicology*, 17(1), pp.1-14. <https://doi.org/10.1186/s12989-020-00361-3>

**Medina, S.**, **Lauer, F.T.**, **Castillo, E.F.**, **Bolt, A.M.**, **Ali, A.M.S.**, **Liu, K.J.** and **Burchiel, S.W.**, 2020. Exposures to uranium and arsenic alter intraepithelial and innate immune cells in the small intestine of male and female mice. *Toxicology and Applied Pharmacology*, p.115155. <https://doi.org/10.1016/j.taap.2020.115155>

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Roberts, M.H. and **Erdei, E.**, 2020. Comparative United States autoimmune disease rates for 2010–2016 by sex, geographic region, and race. *Autoimmunity reviews*, 19(1), p.102423. <https://doi.org/10.1016/j.autrev.2019.102423>

## 2019

**Velasco, C.A.**, **Artyushkova, K.**, **Ali, A.M.S.**, **Osburn, C.L.**, **Gonzalez-Estrella, J.**, **Lezama-Pacheco, J.S.**, **Cabaniss, S.E.** and **Cerrato, J.M.**, 2019. Organic functional group chemistry in

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mineralized deposits containing U (IV) and U (VI) from the Jackpile Mine in New Mexico. *Environmental science & technology*, 53(10), pp.5758-5767.  
<https://doi.org/10.1021/acs.est.9b00407>

**El Hayek, E., Brearley, A.J.**, Howard, T., Hudson, P., Torres, C., Spilde, M.N., Cabaniss, S., **Ali, A.M.S. and Cerrato, J.M.**, 2019. Calcium in Carbonate Water Facilitates the Transport of U (VI) in Brassica juncea Roots and Enables Root-to-Shoot Translocation. *ACS Earth and Space Chemistry*, 3(10), pp.2190-2196.  
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Blake, J.M., **Avasarala, S.**, **Ali, A.M.S.**, Spilde, M., **Lezama-Pacheco, J.S.**, Latta, D., **Artyushkova, K.**, Ilgen, A.G., **Shuey, C.**, Nez, C. and **Cerrato, J.M.**, 2019. Reactivity of As and U co-occurring in Mine Wastes in northeastern Arizona. *Chemical geology*, 522, pp.26-37.  
<https://doi.org/10.1016/j.chemgeo.2019.05.024>

**Avasarala, S.**, Torres, C., **Ali, A.M.S.**, Thomson, B.M., Spilde, M.N., **Peterson, E.J.**, **Artyushkova, K.**, **Dobrica, E.**, **Lezama-Pacheco, J.S.** and **Cerrato, J.M.**, 2019. Effect of bicarbonate and oxidizing conditions on U (IV) and U (VI) reactivity in mineralized deposits of New Mexico. *Chemical Geology*, 524, pp.345-355.  
<https://doi.org/10.1016/j.chemgeo.2019.07.007>

**Erdei, E.**, **Shuey, C.**, **Pacheco, B.**, **Cajero, M.**, **Lewis, J.** and Rubin, R.L., 2019. Elevated autoimmunity in residents living near abandoned uranium mine sites on the Navajo Nation. *Journal of autoimmunity*, 99, pp.15-23.  
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Wong, C.P., **Dashner-Titus, E.J.**, Alvarez, S.C., Chase, T.T., **Hudson, L.G.** and Ho, E., 2019. Zinc deficiency and arsenic exposure can act both independently or cooperatively to affect zinc status, oxidative stress, and inflammatory response. *Biological trace element research*, 191(2), pp.370-381.  
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**Bolt, A.M., Medina, S., Lauer, F.T., Liu, K.J. and Burchiel, S.W.**, 2019. Minimal uranium immunotoxicity following a 60-day drinking water exposure to uranyl acetate in male and female C57BL/6J mice. *Toxicology and applied pharmacology*, 372, pp.33-39.  
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**Hoover, J., Erdei, E., Nash, J. and Gonzales, M.**, 2019. A Review of Metal Exposure Studies Conducted in the Rural Southwestern and Mountain West Region of the United States. *Current epidemiology reports*, 6(1), pp.34-49.  
<https://doi.org/10.1007/s40471-019-0182-3>

**Luo, L., Hudson, L.G., Lewis, J. and Lee, J.H.**, 2019. Two-step approach for assessing the health effects of environmental chemical mixtures: application to simulated datasets and real data from the Navajo Birth Cohort Study. *Environmental Health*, 18(1), p.46.  
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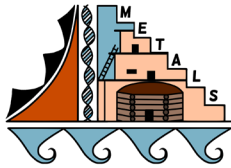
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<https://doi.org/10.1080/03610918.2019.1643478>

**Nozadi, S.S., Li, L., Clifford, J., Du, R., Murphy, K., Chen, L., Navajo Birth Cohort Study Team, Seanez, P., Burnette, C., MacKenzie, D. and Lewis, J.L.**, 2019. Use of Ages and Stages Questionnaires™ (ASQ) in a Navajo population: Comparison with the US normative dataset. *Child: care, health and development*, 45(5), pp.709-718.  
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## 2018

**El Hayek, E., Torres, C., Rodriguez-Freire, L., Blake, J.M., De Vore, C.L., Brearley, A.J., Spilde, M.N., Cabaniss, S., Ali, A.M.S. and Cerrato, J.M.**, 2018. Effect of calcium on the bioavailability of dissolved uranium (VI) in plant roots under circumneutral pH. *Environmental science & technology*, 52(22), pp.13089-13098.  
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**Zychowski, K.E., Kodali, V., Harmon, M., Tyler, C.R., Sanchez, B., Ordonez Suarez, Y., Herbert, G., Wheeler, A., Avasarala, S., Cerrato, J.M., Kunda, N.K., Muttill, P., Shuey, C., Brearley, A., Ali, A.M.S., Lin, Y., Shoeb, M., Erdely, A. and Campen, C.** 2018. Respirable uranyl-vanadate-containing particulate matter derived from a legacy uranium mine site exhibits potentiated cardiopulmonary toxicity. *Toxicological Sciences*, 164(1), pp.101-114.  
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Gaulke, C.A., Rolshoven, J., Wong, C.P., **Hudson, L.G.**, Ho, E. and Sharpton, T.J., 2018. Marginal zinc deficiency and environmentally relevant concentrations of arsenic elicit combined effects on the gut microbiome. *mSphere*, 3(6).  
<https://doi.org/10.1128/MSPHERE.00521-18>

Harmon, M.E., **Lewis, J.**, **Miller, C.**, **Hoover, J.**, **Ali, A.M.S.**, **Shuey, C.**, **Cajero, M.**, Lucas, S., **Pacheco, B.**, **Erdei, E.** and Ramone, S., 2018. Arsenic association with circulating oxidized low-density lipoprotein in a Native American community. *Journal of Toxicology and Environmental Health, Part A*, 81(13), pp.535-548.  
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**Bolt, A.M.**, **Medina, S.**, **Lauer, F.T.**, Xu, H., **Ali, A.M.**, **Liu, K.J.** and **Burchiel, S.W.**, 2018. Minimal uranium accumulation in lymphoid tissues following an oral 60-day uranyl acetate exposure in male and female C57BL/6J mice. *PloS one*, 13(10), p.e0205211.  
<https://doi.org/10.1371/journal.pone.0205211>

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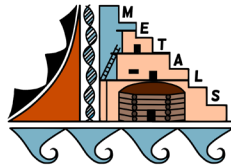
**Hoover, J.H.**, Coker, E., Barney, Y., **Shuey, C.** and **Lewis, J.**, 2018. Spatial clustering of metal and metalloid mixtures in unregulated water sources on the Navajo Nation—Arizona, New Mexico, and Utah, USA. *Science of The Total Environment*, 633, pp.1667-1678.  
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## 2017

**Avasarala, S.**, Lichtner, P.C., **Ali, A.M.S.**, González-Pinzón, R., Blake, J.M. and **Cerrato, J.M.**, 2017. Reactive transport of U and V from abandoned uranium mine wastes. *Environmental science & technology*, 51(21), pp.12385-12393.

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<https://doi.org/10.1021/acs.est.7b03823>

Ding, X., Zhou, X., **Cooper, K.L.**, **Huestis, J.**, **Hudson, L.G.** and **Liu, K.J.**, 2017. Differential sensitivities of cellular XPA and PARP-1 to arsenite inhibition and zinc rescue. *Toxicology and applied pharmacology*, 331, pp.108-115.

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