

UNM METALS Publications

2025

Hudson LG, Dashner-Titus EJ, MacKenzie D. Zinc as a Mechanism-Based Strategy for Mitigation of Metals Toxicity. *Current Environmental Health Reports*. 2025 Jan 18;12(1):5.

<https://doi.org/10.1007/s40572-025-00474-x>

2024

Rodriguez VG, Majumdar A, **Meza I**, Corcoran L, Pierson A, **Gagnon K**, Cano C, **Ali AM, Shuey CM, Jojola G**, Tan W, et al. Radiological Analyses of 226Ra and 238U in Surface Water and Sediments from the Jackpile Member of the Morrison Formation, Pueblo of Laguna, New Mexico. *Environmental Science & Technology*. 2024 Aug 13. <https://pubs.acs.org/doi/full/10.1021/acs.est.4c01257>

Atanga R, Appell LL, Thompson MN, Lauer FT, Brearley A, Campen MJ, Castillo EF, In JG. Single cell analysis of human colonoids exposed to uranium-bearing dust. *Environmental Health Perspectives*. 2024 May 21;132(5):057006. <https://doi.org/10.1289/EHP13855>

Wardhani K, **Yazzie S**, Edeh O, Grimes M, Dixson C, **Jacquez Q, Zychowski KE.** Neuroinflammation is dependent on sex and ovarian hormone presence following acute woodsmoke exposure. *Scientific Reports*. 2024 Jun 6;14(1):12995.

<https://doi.org/10.1038/s41598-024-63562-2>

Wardhani K, **Yazzie S, McVeigh C**, Edeh O, Grimes M, **Jacquez Q**, Dixson C, Barr E, Liu R, **Bolt AM**, Feng C, **Zychowski K.** Systemic immunological responses are dependent on sex and ovarian hormone presence following acute inhaled woodsmoke exposure. *Particle and Fibre Toxicology*. 2024 May 27;21(1):27. <https://doi.org/10.1186/s12989-024-00587-5>

Couig MP, Lavin R, Rogers HH, Nugent SB. The Public Health Crisis Conceptual Model: Historical Application to the World's First Nuclear Bomb Test. *Social Sciences*. 2024; 13(4):186.

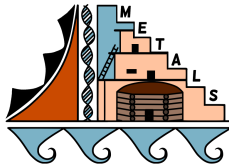
<https://doi.org/10.3390/socsci13040186>

Miller C, Neidhart A, Hess K, **Ali AM**, Benavidez A, Spilde M, **Peterson E, Brearley A**, Wang X, Dhanapala BD, **Cerrato JM.** Uranium accumulation in environmentally relevant microplastics and agricultural soil at acidic and circumneutral pH. *Science of The Total Environment*. 2024 May 20;926:171834. <https://doi.org/10.1016/j.scitotenv.2024.171834>

Levin R, Villanueva CM, **Beene D**, Cradock AL, Donat-Vargas C, **Lewis J**, Martinez-Morata I, Minovi D, Nigra AE, Olson ED, Schaidler LA. US drinking water quality: exposure risk profiles for seven legacy and emerging contaminants. *Journal of Exposure Science & Environmental Epidemiology*. 2024 Jan;34(1):3-22. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10907308/>

Updated 3/2/2025

METALS Team members denoted in **bold text**; Trainees (Past and Present) denoted in **red Text**.



2023

Hoover JH, Coker ES, Erdei E, Luo L, Begay D, MacKenzie D, NBCS Study Team, Lewis J. Preterm Birth and Metal Mixture Exposure among Pregnant Women from the Navajo Birth Cohort Study. *Environmental Health Perspectives*. 2023 Dec 18;131(12):127014.

<https://doi.org/10.1289/EHP10361>

Meza I, Hua H, Gagnon K, Mulchandani A, Gonzalez-Estrella J, Burns PC, Ali AM, Spilde M, Peterson E, Lichtner P, Cerrato JM. Removal of Aqueous Uranyl and Arsenate Mixtures after Reaction with Limestone, PO₄³⁻, and Ca²⁺. *Environmental Science & Technology*. 2023 Nov 29.

<https://doi.org/10.1021/acs.est.3c03809>

(A 2024 NIEHS Paper of the Year)

Dashner-Titus EJ, Schilz JR, Alvarez SA, Wong CP, Simmons K, Ho E, Hudson LG. Zinc supplementation alters tissue distribution of arsenic in *Mus musculus*. *Toxicology and Applied Pharmacology*. 2023 Oct 4:116709.

<https://doi.org/10.1016/j.taap.2023.116709>

Jiang M, Hu CJ, Rowe CL, Kang H, Gong X, Dagucon CP, Wang J, **Lin Y**, Sood A, Guo Y, Zhu Y. Application of artificial intelligence in quantifying lung deposition dose of black carbon in people with exposure to ambient combustion particles. *Journal of Exposure Science & Environmental Epidemiology*. 2023 Oct 17:1-9. <https://doi.org/10.1038/s41370-023-00607-0>

Gong X, **Liu L, Huang Y**, Zou B, Sun Y, **Luo L, Lin Y**. A pruned feed-forward neural network (pruned-FNN) approach to measure air pollution exposure. *Environmental monitoring and assessment*. 2023 Oct;195(10):1183. <https://doi.org/10.1007/s10661-023-11814-5>

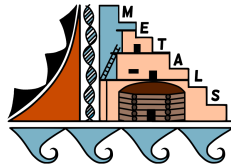
Atanga R, Appell LL, **Lauer FT, Brearley A, Campen MJ, Castillo EF, In JG**. Uranium-bearing dust induces differentiation and expansion of enteroendocrine cells in human colonoids. *bioRxiv*. 2023 Aug 10. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10441413/>

Meza I, Jemison N, **Gonzalez-Estrella J**, Burns PC, Rodriguez V, Sigmon GE, Szymanowski JE, **Ali AM**, Gagnon K, **Cerrato JM**, Lichtner P. Kinetics of Na- and K-uranyl arsenate dissolution. *Chemical Geology*. 2023 Jul 26:121642. <https://doi.org/10.1016/j.chemgeo.2023.121642>

Scieszka DP, Garland D, **Hunter R**, Herbert G, Lucas S, Jin Y, Gu H, **Campen MJ**, Cannon JL. Multi-omic assessment shows dysregulation of pulmonary and systemic immunity to e-cigarette exposure. *Respiratory research*. 2023 May 25;24(1):138. PubMed PMID: 37231407; PubMed Central PMCID: PMC10209577; DOI: 10.1186/s12931-023-02441-2.

Updated 3/2/2025

METALS Team members denoted in **bold text**; Trainees (Past and Present) denoted in **red Text**.



Huang Y, Gong X, **Liu L**, **Luo L**, Leng S, Lin Y. Maternal exposure to metal components of PM_{2.5} and low birth weight in New Mexico, USA. *Environmental Science and Pollution Research*. 2023 Sep;30(43):98526-35. <https://doi.org/10.1007/s11356-023-29291-1>

Erdei E, **Shuey C**, **Miller C**, **Hoover J**, **Cajero M**, **Lewis J**. Metal mixture exposures and multiplexed autoantibody screening in Navajo communities exposed to uranium mine wastes. *Journal of Translational Autoimmunity*. 2023 Jan 1;6:100201. <https://doi.org/10.1016/j.jtauto.2023.100201>

Quiambao J, Hess KZ, Johnston S, **El Hayek E**, Nouredine A, **Ali AM**, Spilde M, **Brearley A**, Lichtner P, **Cerrato JM**, Howe KJ, **Gonzalez-Estrella, J**. Interfacial Interactions of Uranium and Arsenic with Microplastics: From Field Detection to Controlled Laboratory Tests. *Environmental Engineering Science*. 2023 Jun 12. <https://doi.org/10.1089/ees.2023.0054>

(Awarded the “**AEESP/Mary Ann Liebert Award for Publication Excellence in Environmental Engineering Science**”)

Girlando, C., Lin, Y., Hoover, J., **Woldeyohannes, T.**, **Beene, D.**, Liu, Z. **Campen, M.**, **MacKenzie, D.**, and **Lewis, J.** 2023. Meteorological Data Source Comparison – a Case Study in Geospatial Modeling of Potential Environmental Exposure to Abandoned Uranium Mine Sites on Navajo Nation. *Environmental Monitoring and Assessment*. 195, 834.

<https://doi.org/10.1007/s10661-023-11283-w>

Erdei E, Zhou X, **Shuey C**, Ass' ad N, Page K, Gore B, Zhu C, **Kanda D**, **Luo L**, **Sood A**, **Zychowski KE**. Serum autoantibodies and exploratory molecular pathways in rural miners: A pilot study. *Journal of Translational Autoimmunity*. 2023 Mar 9:100197.

<https://doi.org/10.1016/j.jtauto.2023.100197>

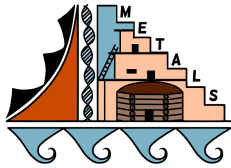
El Hayek E, **Castillo E**, In **JG**, Garcia M, **Cerrato J**, **Brearley A**, **Gonzalez-Estrella J**, Herbert G, Bleske B, Benavidez A, Hsiao H. Photoaging of polystyrene microspheres causes oxidative alterations to surface physicochemistry and enhances airway epithelial toxicity. *Toxicological Sciences*. 2023 Mar 7:kfad023. <https://doi.org/10.1093/toxsci/kfad023>

Portman TA, Granath A, Mann MA, **El Hayek E**, Herzer K, **Cerrato JM**, **Rudgers JA**. Characterization of root-associated fungi and reduced plant growth in soils from a New Mexico uranium mine. *Mycologia*. 2023 Mar 3:1-3. <https://doi.org/10.1080/00275514.2022.2156746>

Medina S, Zhang H, Santos-Medina LV, Yee ZA, Martin KJ, Wan G, **Bolt AM**, Zhou X, Stýblo M, **Liu KJ**. Arsenite Methyltransferase Is an Important Mediator of Hematotoxicity Induced by Arsenic in Drinking Water. *Water*. 2023 Jan 22;15(3):448. <https://doi.org/10.3390/w15030448>

Updated 3/2/2025

METALS Team members denoted in **bold text**; Trainees (Past and Present) denoted in **red Text**.



Liu Z, **Lin Y**, **Hoover J**, **Beene D**, Charley PH, Singer N. Individual level spatial-temporal modelling of exposure potential of livestock in the Cove Wash watershed, Arizona. *Annals of GIS*. 2023 Jan 2;29(1):87-107. <https://doi.org/10.1080/19475683.2022.2075935>

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*. 2023 Jan;33(1):1-1. <https://doi.org/10.1038/s41370-022-00422-z>

Speer RM, **Zhou X**, **Volk LB**, **Liu KJ**, **Hudson LG**. Arsenic and cancer: Evidence and mechanisms. *InAdvances in Pharmacology* 2023 Jan 1 (Vol. 96, pp. 151-202). Academic Press. <https://doi.org/10.1016/bs.apha.2022.08.001>

Bolt AM. Tungsten toxicity and carcinogenesis. *InAdvances in Pharmacology* 2023 Jan 1 (Vol. 96, pp. 119-150). Academic Press. <https://doi.org/10.1016/bs.apha.2022.10.004>

2022

Meza I, **Gonzalez-Estrella J**, Burns PC, Rodriguez V, **Velasco CA**, Sigmon GE, Szymanowski JE, Forbes TZ, Applegate LM, **Ali AM**, Lichtner P, and **Cerrato JM**. Solubility and Thermodynamic Investigation of Meta-Autunite Group Uranyl Arsenate Solids with Monovalent Cations Na and K. *Environmental Science & Technology*. 2022 Dec 16. <https://doi.org/10.1021/acs.est.2c06648>

Volk LB, **Cooper KL**, Jiang T, Paffett ML, **Hudson LG**. Impacts of arsenic on Rad18 and translesion synthesis. *Toxicology and Applied Pharmacology*. 2022 Nov 1;454:116230. <https://doi.org/10.1016/j.taap.2022.116230>

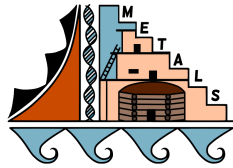
Medina S, Zhang H, Santos-Medina LV, Wan G, **Bolt AM**, Zhou X, **Burchiel SW**, **Liu KJ**. Arsenic impairs the lineage commitment of hematopoietic progenitor cells through the attenuation of GATA-2 DNA binding activity. *Toxicology and applied pharmacology*. 2022 Oct 1;452:116193. <https://doi.org/10.1016/j.taap.2022.116193>.

Schilz JR, **Dashner-Titus EJ**, **Simmons KA**, **Erdei E**, **Bolt AM**, **MacKenzie DA**, **Hudson LG**. The immunotoxicity of natural and depleted uranium: From cells to people. *Toxicology and Applied Pharmacology*. 2022 Sep 21;116252. <https://doi.org/10.1016/j.taap.2022.116252>

Gong X, Lu Y, **Beene D**, Li Z, Hu T, Morgan M, Lin Y. Understanding public perspectives on fracking in the United States using social media big data. *Annals of GIS*. 2022 Sep 12:1-5. <https://doi.org/10.1080/19475683.2022.2121856>

Updated 3/2/2025

METALS Team members denoted in **bold text**; Trainees (Past and Present) denoted in **red Text**.



Nozadi SS, Aguiar A, **Du R**, Enright EA, Schantz SL, **Miller C**, Rennie B, **Quetawki M**, **MacKenzie D**, **Lewis JL**. Cross-cultural applicability of eye-tracking in assessing attention to emotional faces in preschool-aged children. *Emotion*. 2022 Sep 15. <https://doi.org/10.1037/emo0001124>

Shaikh N, Qian J, Kim S, Phan H, **Lezama-Pacheco JS**, **Ali AM**, Cwiertny DM, Forbes TZ, Haes AJ, **Cerrato JM**. U (VI) Binding onto Electrospun Polymers Functionalized with Phosphonate Surfactants. *Journal of Environmental Chemical Engineering*. 2022 Aug 17:108448. <https://doi.org/10.1016/j.jece.2022.108448>

Lopez K, Camacho A, **Jacquez Q**, Amistadi MK, **Medina S**, **Zychowski K**. Lung-Based, Exosome Inhibition Mediates Systemic Impacts Following Particulate Matter Exposure. *Toxics*. 2022 Aug 7;10(8):457. <https://doi.org/10.3390/toxics10080457>

National Academies of Sciences, Engineering, and Medicine. Guidance on PFAS exposure, testing, and clinical follow-up. Washington, DC: The National Academies Press; 2022. 300 p. Jul 28. <https://doi.org/10.17226/26156>

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*. 2022 Jun 28;6(7):1644-54. <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>

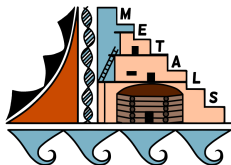
Du R, Luo L, Hudson LG, Nozadi S, Lewis J.(2022): An adjusted partial least squares regression framework to utilize additional exposure information in environmental mixture data analysis, *Journal of Applied Statistics*. 2022 Mar 5:1-22. <https://doi.org/10.1080/02664763.2022.2043254>

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>

Gao X, Li L, Luo L. Decomposition of the total effect for two mediators: A natural mediated interaction effect framework. *Journal of causal inference*. 2022 Jan 1;10(1):18-44. <https://doi.org/10.1515/jci-2020-0017>

Updated 3/2/2025

METALS Team members denoted in **bold text**; Trainees (Past and Present) denoted in **red Text**.



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*. 2022 Jan 1;434:115799. <https://doi.org/10.1016/j.taap.2021.115799>

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)

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

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>

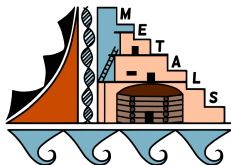
Schilz JR, Dashner-Titus EJ, Luo L, Simmons KA, MacKenzie DA, Hudson LG. Co-exposure of sodium arsenite and uranyl acetate differentially alters gene expression in CD3/CD28 activated CD4+ T-cells. *Toxicology Reports*. 2021 Nov 27. <https://doi.org/10.1016/j.toxrep.2021.11.019>

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. Research Square. <https://doi.org/10.21203/rs.3.rs-722777/v1>

Updated 3/2/2025

METALS Team members denoted in **bold text**; Trainees (Past and Present) denoted in **red Text**.



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.semcan.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>

DeVore CL, **EI 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>

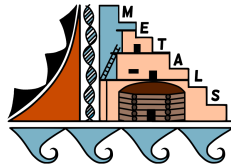
Zhou X., **Xue B.**, **Medina S.**, **Burchiel S.W.**, **Liu, K.J.** (2021) Uranium directly interacts with the DNA Repair Protein 1 Poly (ADP-ribose) Polymerase 1, *Toxicology and Applied Pharmacology* 2021 Jan 1;410:115360. <https://doi.org/10.1016/j.taap.2020.115360>

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

Updated 3/2/2025

METALS Team members denoted in **bold text**; Trainees (Past and Present) denoted in **red Text**.



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.

<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.

Updated 3/2/2025

METALS Team members denoted in **bold text**; Trainees (Past and Present) denoted in **red Text**.



<https://doi.org/10.1016/j.taap.2020.115155>

Sharma P, Caldwell TS, Rivera MN, **Gullapalli RR**. Cadmium exposure activates Akt/ERK Signaling and pro-inflammatory COX-2 expression in human gallbladder epithelial cells via a ROS dependent mechanism. *Toxicology in Vitro*. 2020 Jun 6:104912.

<https://doi.org/10.1016/j.tiv.2020.104912>

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 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.

<https://doi.org/10.1021/acsearthspacechem.9b00171>

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.

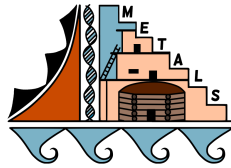
<https://doi.org/10.1016/j.chemgeo.2019.05.024>

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.

<https://doi.org/10.1016/j.jaut.2019.01.006>



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.

<https://doi.org/10.1007/s12011-019-1631-z>

Cao, A.L., Beaver, L.M., Wong, C.P., **Hudson, L.G.** and Ho, E., 2019. Zinc deficiency alters the susceptibility of pancreatic beta cells (INS-1) to arsenic exposure. *BioMetals*, 32(6), pp.845-859.

<https://doi.org/10.1007/s10534-019-00217-0>

Zhou, X., Ding, X., Shen, J., Yang, D., **Hudson, L.G.** and **Liu, K.J.**, 2019. Peroxynitrite contributes to arsenic-induced PARP-1 inhibition through ROS/RNS generation. *Toxicology and Applied Pharmacology*, 378, p.114602.

<https://doi.org/10.1016/j.taap.2019.114602>

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.

<https://doi.org/10.1016/j.taap.2019.04.003>

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.

<https://doi.org/10.1186/s12940-019-0482-6>

Miller, C., 2019. Marginal probabilities and point estimation for conditionally specified logistic regression. *Communications in Statistics-Simulation and Computation*, pp.1-26.

<https://doi.org/10.1080/03610918.2019.1643478>

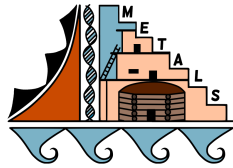
Nozadi, S.S., Li, L., Clifford, J., Du, R., Murphy, K., Chen, L., Navajo Birth Cohort Study Team, Seanez, P., Burnette, C., MacKenzie, D. and Lewis, J.L., 2019. Use of Ages and Stages Questionnaires™ (ASQ) in a Navajo population: Comparison with the US normative dataset. *Child: care, health and development*,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

<https://doi.org/10.1111/cch.12704>

2018

Updated 3/2/2025

METALS Team members denoted in **bold text**; Trainees (Past and Present) denoted in **red Text**.



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.

<https://doi.org/10.1021/acs.est.8b02724>

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.

<https://doi.org/10.1093/toxsci/kfy064>

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.

<https://doi.org/10.1080/15287394.2018.1443860>

Dashner-Titus, E.J., **Hoover, J.**, **Li, L.**, **Lee, J.H.**, **Du, R.**, **Liu, K.J.**, **Traber, M.G.**, **Ho, E.**, **Lewis, J.** and **Hudson, L.G.**, 2018. Metal exposure and oxidative stress markers in pregnant Navajo Birth Cohort Study participants. *Free Radical Biology and Medicine*, 124, pp.484-492.

<https://doi.org/10.1016/j.freeradbiomed.2018.04.579>

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>

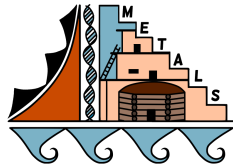
Gonzales, M., **Erdei, E.**, **Hoover, J.** and Nash, J., 2018. A review of environmental epidemiology studies in southwestern and mountain west rural minority populations. *Current epidemiology reports*, 5(2), pp.101-113.

<https://doi.org/10.1007/s40471-018-0146-z>

Gonzales, M., King, E., Bobelu, J., Ghahate, D.M., Madrid, T., Lesansee, S. and Shah, V., 2018. Perspectives on Biological Monitoring in Environmental Health Research: A Focus Group Study

Updated 3/2/2025

METALS Team members denoted in **bold text**; Trainees (Past and Present) denoted in **red Text**.



in a Native American Community. *International Journal of Environmental Research and Public Health*, 15(6), p.1129.

<https://doi.org/10.3390/ijerph15061129>

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.

<https://doi.org/10.1016/j.scitotenv.2018.02.288>

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.

<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.

<https://doi.org/10.1016/j.taap.2017.05.031>