



Juan Lezama Pacheco

Physical Science Research Scientist, Earth System Science

Bio

ACADEMIC APPOINTMENTS

- Physical Science Research Scientist, Earth System Science

Publications

PUBLICATIONS

- **Effect of Natural Organic Matter on the Fate of Cadmium During Microbial Ferrihydrite Reduction.** *Environmental science & technology*
Zhou, Z., Muehe, E. M., Tomaszewski, E. J., Lezama-Pacheco, J., Kappler, A., Byrne, J. M.
2020
- **FeS colloids - formation and mobilization pathways in natural waters** *ENVIRONMENTAL SCIENCE-NANO*
Noel, V., Kumar, N., Boye, K., Barragan, L., Lezama-Pacheco, J. S., Chu, R., Tolic, N., Brown, G. E., Bargar, J. R.
2020; 7 (7): 2102–16
- **Effect of Bicarbonate, Calcium, and pH on the Reactivity of As(V) and U(VI) Mixtures.** *Environmental science & technology*
Gonzalez-Estrella, J., Meza, I., Burns, A. J., Ali, A. S., Lezama-Pacheco, J. S., Lichtner, P., Shaikh, N., Fendorf, S., Cerrato, J. M.
2020
- **Redox Heterogeneities Promote Thioarsenate Formation and Release into Groundwater from Low Arsenic Sediments.** *Environmental science & technology*
Kumar, N. n., Noël, V. n., Planer-Friedrich, B. n., Besold, J. n., Lezama-Pacheco, J. n., Bargar, J. R., Brown, G. E., Fendorf, S. n., Boye, K. n.
2020
- **Arsenic Fate in Peat Controlled by the pH-Dependent Role of Reduced Sulfur.** *Environmental science & technology*
Eberle, A. n., Besold, J. n., Kerl, C. F., Lezama-Pacheco, J. S., Fendorf, S. n., Planer-Friedrich, B. n.
2020
- **Organic compounds alter the preference and rates of heavy metal adsorption on ferrihydrite.** *The Science of the total environment*
Engel, M. n., Lezama Pacheco, J. S., Noël, V. n., Boye, K. n., Fendorf, S. n.
2020; 750: 141485
- **Multivalence states and optical band-tail effect in heavily V-doped ZnS thin films** *MATERIALS LETTERS*
Colina-Ruiz, R. A., Hoy-Benitez, J. A., Lezama-Pacheco, J. S., Mustre de Leon, J., Espinosa-Faller, F. J.
2019; 257
- **Effect of Bicarbonate and Oxidizing Conditions on U(IV) and U(VI) Reactivity in Mineralized Deposits of New Mexico.** *Chemical geology*
Avasarala, S., Torres, C., Ali, A. S., Thomson, B. M., Spilde, M. N., Peterson, E. J., Artyushkova, K., Dobrica, E., Lezama-Pacheco, J. S., Cerrato, J. M.
2019; 524: 345–55
- **Organic Functional Group Chemistry in Mineralized Deposits Containing U(IV) and U(VI) from the Jackpile Mine in New Mexico** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*

- Velasco, C. A., Artyushkova, K., Ali, A. S., Osburn, C. L., Gonzalez-Estrella, J., Lezama-Pacheco, J. S., Cabaniss, S. E., Cerrato, J. M.
2019; 53 (10): 5758–67
- **Antimonite Complexation with Thiol and Carboxyl/Phenol Groups of Peat Organic Matter** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Besold, J., Kumar, N., Scheinost, A. C., Pacheco, J., Fendorf, S., Planer-Friedrich, B.
2019; 53 (9): 5005–15
 - **Organic Functional Group Chemistry in Mineralized Deposits Containing U(IV) and U(VI) from the Jackpile Mine in New Mexico.** *Environmental science & technology*
Velasco, C. A., Artyushkova, K. n., Ali, A. S., Osburn, C. L., Gonzalez-Estrella, J. n., Lezama-Pacheco, J. S., Cabaniss, S. E., Cerrato, J. M.
2019
 - **Antimonite Complexation with Thiol and Carboxyl/Phenol Groups of Peat Organic Matter.** *Environmental science & technology*
Besold, J. n., Kumar, N. n., Scheinost, A. C., Lezama Pacheco, J. n., Fendorf, S. n., Planer-Friedrich, B. n.
2019
 - **Reactivity of As and U co-occurring in Mine Wastes in northeastern Arizona.** *Chemical geology*
Blake, J. M., Avasarala, S. n., Ali, A. S., Spilde, M. n., Lezama-Pacheco, J. S., Latta, D. n., Artyushkova, K. n., Ilgen, A. G., Shuey, C. n., Nez, C. n., Cerrato, J. M.
2019; 522: 26–37
 - **Copper Mobilization and Immobilization along an Organic Matter and Redox Gradient-Insights from a Mofette Site** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Mehlhorn, J., Besold, J., Pacheco, J., Gustafsson, J., Kretzschmar, R., Planer-Friedrich, B.
2018; 52 (23): 13698–707
 - **The coordination chemistry of CmIII, AmIII, and AcIII in nitrate solutions: an actinide L3-edge EXAFS study.** *Chemical science*
Ferrier, M. G., Stein, B. W., Bone, S. E., Cary, S. K., Ditter, A. S., Kozimor, S. A., Lezama Pacheco, J. S., Mocko, V., Seidler, G. T.
2018; 9 (35): 7078-7090
 - **The coordination chemistry of Cm-III, Am-III, and Ac-III in nitrate solutions: an actinide L-3-edge EXAFS study** *CHEMICAL SCIENCE*
Ferrier, M. G., Stein, B., Bone, S. E., Cary, S. K., Ditter, A. S., Kozimor, S. A., Lezama Pacheco, J. S., Mocko, V., Seidler, G. T.
2018; 9 (35): 7078–90
 - **Physical and chemical mechanisms of uranium (U) and arsenic (As) sorption onto limestone**
Estrella, J., Meza, I., Ali, A., Lezama-Pacheco, J., Fendorf, S., Cerrato, J.
AMER CHEMICAL SOC.2018
 - **Redox-Active vs Redox-Innocent: A Comparison of Uranium Complexes Containing Diamine Ligands** *INORGANIC CHEMISTRY*
Pattenaude, S. A., Mullane, K. C., Schelter, E. J., Ferriere, M. G., Stein, B. W., Bone, S. E., Pacheco, J., Kozimor, S. A., Fanwick, P. E., Zeller, M., Bart, S. C.
2018; 57 (11): 6530–39
 - **Partitioning of uranyl between ferrihydrite and humic substances at acidic and circum-neutral pH** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Dublet, G., Pacheco, J., Bargar, J. R., Fendorf, S., Kumar, N., Lowry, G. V., Brown, G. E.
2017; 215: 122–40
 - **Redox Controls over the Stability of U(IV) in Floodplains of the Upper Colorado River Basin** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Noel, V., Boye, K., Pacheco, J., Bone, S. E., Janot, N., Cardarelli, E., Williams, K. H., Bargar, J. R.
2017; 51 (19): 10954–64
 - **Evaluating the electronic structure of formal LnII ions in LnII(C5H4SiMe3)31- using XANES spectroscopy and DFT calculations.** *Chemical science*
Fieser, M. E., Ferrier, M. G., Su, J., Batista, E., Cary, S. K., Engle, J. W., Evans, W. J., Lezama Pacheco, J. S., Kozimor, S. A., Olson, A. C., Ryan, A. J., Stein, B. W., Wagner, et al
2017; 8 (9): 6076-6091
 - **Polyoxovanadate-Alkoxide Clusters as a Redox Reservoir for Iron.** *Inorganic chemistry*
Li, F., Carpenter, S. H., Higgins, R. F., Hitt, M. G., Brennessel, W. W., Ferrier, M. G., Cary, S. K., Lezama-Pacheco, J. S., Wright, J. T., Stein, B. W., Shores, M. P., Neidig, M. L., Kozimor, et al
2017

- **Understanding controls on redox processes in floodplain sediments of the Upper Colorado River Basin.** *The Science of the total environment*
Noël, V., Boye, K., Kukkadapu, R. K., Bone, S., Lezama Pacheco, J. S., Cardarelli, E., Janot, N., Fendorf, S., Williams, K. H., Bargar, J. R.
2017
- **Synthesis and Characterization of the Actinium Aquo Ion.** *ACS central science*
Ferrier, M. G., Stein, B. W., Batista, E. R., Berg, J. M., Birnbaum, E. R., Engle, J. W., John, K. D., Kozimor, S. A., Lezama Pacheco, J. S., Redman, L. N.
2017; 3 (3): 176-185
- **Synthesis and Characterization of the Actinium Aquo Ion** *ACS CENTRAL SCIENCE*
Ferrier, M. G., Stein, B. W., Batista, E. R., Berg, J. M., Birnbaum, E. R., Engle, J. W., John, K. D., Kozimor, S. A., Pacheco, J. S., Redman, L. N.
2017; 3 (3): 176-185
- **Examining the Effects of Ligand Variation on the Electronic Structure of Uranium Bis(imido) Species.** *Journal of the American Chemical Society*
Kiernicki, J. J., Ferrier, M. G., Lezama Pacheco, J. S., La Pierre, H. S., Stein, B. W., Zeller, M., Kozimor, S. A., Bart, S. C.
2016: -?
- **Monomers, Dimers, and Helices: Complexities of Cerium and Plutonium Phenanthrolinecarboxylates.** *Inorganic chemistry*
Cary, S. K., Ferrier, M. G., Baumbach, R. E., Silver, M. A., Lezama Pacheco, J., Kozimor, S. A., La Pierre, H. S., Stein, B. W., Arico, A. A., Gray, D. L., Albrecht-Schmitt, T. E.
2016; 55 (9): 4373-80
- **Physico-Chemical Heterogeneity of Organic-Rich Sediments in the Rifle Aquifer, CO: Impact on Uranium Biogeochemistry** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Janot, N., Pacheco, J. S., Pham, D. Q., O'Brien, T. M., Hausladen, D., Noel, V., Lallier, F., Maher, K., Fendorf, S., Williams, K. H., Long, P. E., Bargar, J. R.
2016; 50 (1): 46-53
- **Physico-Chemical Heterogeneity of Organic-Rich Sediments in the Rifle Aquifer, CO: Impact on Uranium Biogeochemistry.** *Environmental science & technology*
Janot, N., Lezama Pacheco, J. S., Pham, D. Q., O'Brien, T. M., Hausladen, D., Noël, V., Lallier, F., Maher, K., Fendorf, S., Williams, K. H., Long, P. E., Bargar, J. R.
2016; 50 (1): 46-53
- **Spectroscopic and computational investigation of actinium coordination chemistry.** *Nature communications*
Ferrier, M. G., Batista, E. R., Berg, J. M., Birnbaum, E. R., Cross, J. N., Engle, J. W., La Pierre, H. S., Kozimor, S. A., Lezama Pacheco, J. S., Stein, B. W., Stieber, S. C., Wilson, J. J.
2016; 7: 12312-?
- **Long-Term in Situ Oxidation of Biogenic Uraninite in an Alluvial Aquifer: Impact of Dissolved Oxygen and Calcium** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Lezama-Pacheco, J. S., Cerrato, J. M., Veeramani, H., Alessi, D. S., Suvorova, E., Bernier-Latmani, R., Giammar, D. E., Long, P. E., Williams, K. H., Bargar, J. R.
2015; 49 (12): 7340-7347
- **Multiscale Speciation of U and Pu at Chernobyl, Hanford, Los Alamos, McGuire AFB, Mayak, and Rocky Flats** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Batuk, O. N., Conradson, S. D., Aleksandrova, O. N., Boukhalfa, H., Burakov, B. E., Clark, D. L., Czerwinski, K. R., Felmy, A. R., Lezama-Pacheco, J. S., Kalmykov, S. N., Moore, D. A., Myasoedov, B. F., Reed, et al
2015; 49 (11): 6474-6484
- **Investigation of the Electronic Ground States for a Reduced Pyridine(diimine) Uranium Series: Evidence for a Ligand Tetraanion Stabilized by a Uranium Dimer.** *Journal of the American Chemical Society*
Anderson, N. H., Odoh, S. O., Williams, U. J., Lewis, A. J., Wagner, G. L., Lezama Pacheco, J., Kozimor, S. A., Gagliardi, L., Schelter, E. J., Bart, S. C.
2015; 137 (14): 4690-4700
- **X-ray Accelerated Photo-Oxidation of As(III) in Solution** *JOURNAL OF PHYSICAL CHEMISTRY A*
Canche-Tello, J., Cristina Vargas, M., Hernandez-Cobos, J., Ortega-Blake, I., Leclercq, A., Solari, P. L., Lezama-Pacheco, J., Den Auwer, C., Mustre de Leon, J.

2015; 119 (12): 2829-2833

- **Stable Isotopes and Iron Oxide Mineral Products as Markers of Chemodenitrification** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Jones, L. C., Peters, B., Pacheco, J. S., Casciotti, K. L., Fendorf, S.
2015; 49 (6): 3444-3452
- **Speciation and Reactivity of Uranium Products Formed during in Situ Bioremediation in a Shallow Alluvial Aquifer** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Alessi, D. S., Lezama-Pacheco, J. S., Janot, N., Suvorova, E. I., Cerrato, J. M., Giammar, D. E., Davis, J. A., Fox, P. M., Williams, K. H., Long, P. E., Handley, K. M., Bernier-Latmani, R., Bargar, et al
2014; 48 (21): 12842-12850
- **Competing retention pathways of uranium upon reaction with Fe(II)** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Massey, M. S., Lezama-Pacheco, J. S., Jones, M. E., Ilton, E. S., Cerrato, J. M., Bargar, J. R., Fendorf, S.
2014; 142: 166-185
- **Uranium incorporation into aluminum-substituted ferrihydrite during iron(ii)-induced transformation.** *Environmental science. Processes & impacts*
Massey, M. S., Lezama-Pacheco, J. S., Michel, F. M., Fendorf, S.
2014; 16 (9): 2137-2144
- **Uranium Incorporation into Amorphous Silica** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Massey, M. S., Lezama-Pacheco, J. S., Nelson, J. M., Fendorf, S., Maher, K.
2014; 48 (15): 8636-8644
- **The product of microbial uranium reduction includes multiple species with U(IV)-phosphate coordination** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Alessi, D. S., Lezama-Pacheco, J. S., Stubbs, J. E., Janousch, M., Bargar, J. R., Persson, P., Bernier-Latmani, R.
2014; 131: 115-127
- **Biogeochemical Controls on the Product of Microbial U(VI) Reduction** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Stylo, M., Alessi, D. S., Shao, P. P., Lezama-Pacheco, J. S., Bargar, J. R., Bernier-Latmani, R.
2013; 47 (21): 12351-12358
- **Relative Reactivity of Biogenic and Chemogenic Uraninite and Biogenic Noncrystalline U(IV)** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Cerrato, J. M., Ashner, M. N., Alessi, D. S., Lezama-Pacheco, J. S., Bernier-Latmani, R., Bargar, J. R., Giammar, D. E.
2013; 47 (17): 9756-9763
- **Uranium redox transition pathways in acetate-amended sediments** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Bargar, J. R., Williams, K. H., Campbell, K. M., Long, P. E., Stubbs, J. E., Suvorova, E. I., Lezama-Pacheco, J. S., Alessi, D. S., Stylo, M., Webb, S. M., Davis, J. A., Giammar, D. E., Blue, et al
2013; 110 (12): 4506-4511
- **Adsorption of Uranium(VI) to Manganese Oxides: X-ray Absorption Spectroscopy and Surface Complexation Modeling** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Wang, Z., Lee, S., Catalano, J. G., Lezama-Pacheco, J. S., Bargar, J. R., Tebo, B. M., Giammar, D. E.
2013; 47 (2): 850-858
- **Effect of diffusive transport limitations on UO₂ dissolution** *WATER RESEARCH*
Giammar, D. E., Cerrato, J. M., Mehta, V., Wang, Z., Wang, Y., Pepping, T. J., Ulrich, K., Lezama-Pacheco, J. S., Bargar, J. R.
2012; 46 (18): 6023-6032
- **Quantitative Separation of Monomeric U(IV) from UO₂ in Products of U(VI) Reduction** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Alessi, D. S., Uster, B., Veeramani, H., Suvorova, E. I., Lezama-Pacheco, J. S., Stubbs, J. E., Bargar, J. R., Bernier-Latmani, R.
2012; 46 (11): 6150-6157
- **Effect of Ca²⁺ and Zn²⁺ on UO₂ Dissolution Rates** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Cerrato, J. M., Barrows, C. J., Blue, L. Y., Lezama-Pacheco, J. S., Bargar, J. R., Giammar, D. E.
2012; 46 (5): 2731-2737

- **Uranium speciation and stability after reductive immobilization in aquifer sediments** *GEOCHIMICA ET COSMOCHIMICA ACTA*
Sharp, J. O., Lezama-Pacheco, J. S., Schofield, E. J., Junier, P., Ulrich, K., Chinni, S., Veeramani, H., Margot-Roquier, C., Webb, S. M., Tebo, B. M., Giammar, D. E., Bargar, J. R., Bernier-Latmani, et al
2011; 75 (21): 6497-6510
- **Oxidative Dissolution of Biogenic Uraninite in Groundwater at Old Rifle, CO** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Campbell, K. M., Veeramani, H., Urich, K., Blue, L. Y., Giammar, D. E., Bernier-Latmani, R., Stubbs, J. E., Suvorova, E., Yabusaki, S., Lezama-Pacheco, J. S., Mehta, A., Long, P. E., Bargar, et al
2011; 45 (20): 8748-8754
- **Local Structure Instability Across the Martensitic Transition in Nb₃Sn** *JOURNAL OF SUPERCONDUCTIVITY AND NOVEL MAGNETISM*
Acosta-Alejandro, M., Lezama-Pacheco, J., Falconi, R., Escudero, R., Mustre de Leon, J.
2011; 24 (3): 1219-1223
- **Non-uraninite Products of Microbial U(VI) Reduction** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*
Bernier-Latmani, R., Veeramani, H., Vecchia, E. D., Junier, P., Lezama-Pacheco, J. S., Suvorova, E. I., Sharp, J. O., Wigginton, N. S., Bargar, J. R.
2010; 44 (24): 9456-9462