Camila Leite Madeira

Department of Civil, Environmental, and Construction Engineering, University of Texas at El Paso
500 W. University Ave, El Paso TX, 79968
Phone: +1 (915)747-5404 - e-mail: cleitemadeira@utep.edu

Education

The University of Arizona – U.S.
Ph.D. in Environmental Engineering, 05/2016 – 05/2020
MS in Environmental Engineering, 08/2014 – 05/2016

Federal University of Itajubá – Brazil
BS in Environmental Engineering, 02/2008 – 12/2013

Employment History

University of Texas at El Paso (UTEP) – USA
Assistant Professor at the Department of Civil, Environmental, and Construction Engineering, 09/2023 – Current

State University of Campinas (UNICAMP) – Brazil
Postdoctoral Researcher at the Department of Analytical Chemistry, 05/2022 – 06/2023

Federal University of Minas Gerais (UFMG) – Brazil
Postdoctoral Researcher at the Department of Sanitary and Environmental Engineering, 08/2020 – 03/2022

University of Arizona – U.S.
Graduate Research Assistant at the Department of Chemical and Environmental Engineering, 08/2015 – 06/2020

Grupo Astras S/A – Brazil
Product Engineer, 01/2014 – 07/2014

Johnson & Johnson – Brazil
Business Improvement Intern, 01/2013 – 12/2013

Research Grants

University of Texas at El Paso (UTEP) – U.S.

Assessment of Microbial Communities in Biologically Activated Carbon Columns Treating Refinery Wastewater. 2025-2026. Funded. $16,442. Funding source: El Paso Water Utilities.

Separation of High-Value Elements for National Defense (SHIELD). 2025-2026. Co-PI. Funded. $59,908. Funding source: UTEP Institute for Strategic and Sustainable Resources Award

Pilot Plant for Advanced Purification at the John T. Hickerson Water Reclamation Facility. 2025-2026. Co-PI. Funded. $119,659. Funding source: El Paso Water Utilities.

Proposal for the Creation of a Water Research Institute at UTEP. 2025-2030. PI. Funded. Funds include salary of tenured professor and two research professors. Funding source: UT System Board of Regents

Biologically Activated Carbon for the Removal of Organic Contaminants from the Marathon Petroleum Corporation Primary Effluent. 2023-2025. PI. Funded. $111,337. Funding source: El Paso Water Utilities.

State University of Campinas (UNICAMP) – Brazil

Characterization of pesticide sorption processes onto plastic debris in freshwater systems at laboratory scale, in mesocosm, and environmental samples. 2021. PI. Funded. $45,000. Funding source: São Paulo Research Foundation (FAPESP).

Educational Grants

University of Texas at El Paso (UTEP) – U.S.

US-Brazil RISE: Recycling Innovative Solutions for a Sustainable Environment. 2025-2026. Co-PI. Funded. $40,000. Funding source: Partners of America / U.S. Department of State.

Fellowships

Federal University of Minas Gerais (UFMG) – Brazil

Anammox process for nitrogen removal from landfill leachate diluted with anaerobic effluent. 2020. PI. Funded. $12,000. Funding source: Brazilian National Council for Scientific and Technological Development (CNPq).

University of Arizona – U.S.

Fate and toxicity of nitro and amino aromatics in natural environments. 2016. PI. Funded. $83,400. Funding source: Brazilian National Council for Scientific and Technological Development (CNPq).

Peer-Reviewed Publications

1. **Madeira, C. L.**, Cho, J., Boisseau Gomez, R. D., & Montagner, C. C. (2025). Natural Organic Matter Decreases the Sorption Capacity of Fipronil and Its Degradation Products onto Polyethylene Microplastics: Combined Experimental and Theoretical Insights. ACS ES&T Water.
2. Convertino, C., Frausto Hernandez, I., Pinilla, R. K., **Madeira, C.L.**, Houghtalen, L. M., Pankow, R. M., ... & Bitner, E. C. (2024). Faculty Reflections on Implementing Servingness into Research and Teaching: How Professional Development Around Servingness Fosters Latinx Student Success. Journal of Latinos and Education, 1-11.
3. **Madeira, C. L.**, Acayaba, R. D., Santos, V. S., Villa, J. E. L., Jacinto-Hernández, C., Azevedo, J. A. T., Elias, V. O., Montagner, C. C. (2023). Uncovering the impact of agricultural activities and urbanization on rivers from the Piracicaba, Capivari, and Jundiaí basin in São Paulo, Brazil: A survey of pesticides, hormones, pharmaceuticals, industrial chemicals, and PFAS. Chemosphere 341, 139954.
4. de Araújo, J. C., **Madeira, C. L.**, Bressani, A., Leal, C., Leroy, D., Machado, E.C., Fernandes, L.A., Espinosa, M. F., Freitas, G. T. O., Leão, T. and Chernicharo C. A. L. T. (2023). Quantification of SARS-CoV-2 in wastewater samples from hospitals treating COVID-19 patients. Science of the Total Environment 860: 160498.
5. Fernandes, L. A., **Madeira, C. L.**, de Araújo, J. C. (2022). Nitrogen removal based on anammox processes applied to mature leachate diluted with domestic wastewater: A review. Environmental Technology Reviews, 11(1), 243-265.
6. Menezes, O., Kocaman, K., Wong, S., Rios-Valenciana, E.E., Baker, E.J., Hatt, J.K., Zhao, J., **Madeira, C.L.**, Krzmarzick, M.J., Spain, J.C. and Sierra-Alvarez, R. (2022). Quinone moieties link the microbial respiration of natural organic matter to the chemical reduction of diverse nitroaromatic compounds. Environmental science & technology. 9387-9397.
7. de Araújo, J.C., Mota, V.T., Teodoro, A., Leal, C., Leroy, D., **Madeira, C. L.**, Machado, E.C., Dias, M.F., Souza, C.C., Coelho, G. and Bressani, T. (2022). Long-term monitoring of SARS-CoV-2 RNA in sewage samples from specific public places and STPs to track COVID-19 spread and identify potential hotspots. Science of The Total Environment, 155959.
8. Kadoya, W.M*, **Madeira, C. L.***, Hoppe-Jones, C.*, Solsten, T., Snyder, S.A., Root, R.A., Sierra-Alvarez, R., Chorover, J. and Field, J.A. (2021) The role of manganese dioxide in the natural formation of organochlorines. ACS ES&T Water, 1(12), 2523-2530. *Authors contributed equally to this work.
9. **Madeira, C. L.** and de Araújo, J. C. (2021). Inhibition of anammox activity by municipal and industrial wastewater pollutants: A review. Science of the total environment, 149449.
10. **Madeira, C. L.***, Menezes, O.*, Park, D., Jog, K. V., Hatt, J. K., Gavazza, S., Krzmarzick, M.J., Sierra-Alvarez, R., Spain, J.C., Konstantinidis, K.T. and Field, J. A. (2021). Bacteria make a living breathing the

nitroheterocyclic insensitive munitions compound 3-nitro-1, 2, 4-triazol-5-one (NTO). Environmental science & technology. 55(9), 5806-5814. *Authors contributed equally to this work.

11. **Madeira, C. L.**, Jog, K. V., Vanover, E. T., Brooks, M. D., Taylor, D. K., Sierra-Alvarez, R., Waidner, L. A., Spain, J. C., Krzmarzick, M. J. and Field, J. A. (2019). Microbial enrichment culture responsible for the complete oxidative biodegradation of 3-amino-1, 2, 4-triazol-5-one (ATO), the reduced daughter product of the insensitive munitions compound 3-nitro-1, 2, 4-triazol-5-one (NTO). Environmental science & technology. 53(21), 12648-12656.
12. **Madeira, C. L.**, Kadoya, W., Li, G., Wong, S., Sierra-Alvarez, R. and Field J. A. (2019). Reductive biotransformation as a pretreatment to enhance in situ chemical oxidation of nitroaromatic and nitroheterocyclic explosives. Chemosphere, 222, 1025-1032.
13. Li, G., Field, J. A., Zeng, C., **Madeira, C. L.**, Nguyen, C. H., Jog, K. V., Speed, D. and Sierra-Alvarez, R., (2019). Diazole and triazole inhibition of the nitrification process in return activated sludge. Chemosphere, 241, 124993.
14. **Madeira, C. L.**, Field, J. A., Simonich, M. T., Tanguay, R. L., Chorover, J. and Sierra-Alvarez, R. (2018). Ecotoxicity of the insensitive munitions compound 3-nitro-1, 2, 4-triazol-5-one (NTO) and its reduced metabolite 3-amino-1, 2, 4-triazol-5-one (ATO). Journal of hazardous materials, 343, 340-346.
15. Olivares, C. I., **Madeira, C. L.**, Sierra-Alvarez, R., Kadoya, W., Abrell, L., Chorover, J. and Field, J. A. (2017). Environmental Fate of 14C Radiolabeled 2, 4-Dinitroanisole in Soil Microcosms. Environmental science & technology, 51(22), 13327-13334.
16. **Madeira, C. L.**, Speet, S. A., Nieto, C. A., Abrell, L., Chorover, J., Sierra-Alvarez, R. and Field, J. A. (2017). Sequential anaerobic-aerobic biodegradation of emerging insensitive munitions compound 3-nitro-1, 2, 4-triazol-5-one (NTO). Chemosphere, 167, 478-484.
17. de Oliveira, C. C., Alvarenga, M. I. N., Melloni, R., Neto, J. N. P., Pinheiro, L. B. A., Melloni, E. G. P. and **Madeira, C. L.** (2016). Coffee crop (*Coffea arabica* L.) shaded with araucarias (*Araucaria angustifolia* L.) and their effects on macrofauna and soil physical attributes. Revista Brasileira de Geografia Física, 9(6), 1668-1676.

Peer-Reviewed Book Chapters

1. Domingues, R., Dias, M. A., **Madeira, C. L.**, Starling, M. C. V., de A. Neves, T., & Montagner, C. C. (2025). Occurrence of pesticides and emerging contaminants in the Pampulha Lake: anthropic pollution of a UNESCO heritage site. In *Emerging Pollutants: Protecting Water Quality for the Health of People and the Environment* (pp. 11-33). Cham: Springer Nature Switzerland.
2. Tomei, M. C., Stazi, V., de Araújo, J. C., & **Madeira, C. L.** (2024). Anaerobic treatment of low-strength wastewater: applicability and hygienization potential. Anaerobic Treatment of Domestic Wastewater, 3.

Presentations

1. *Madeira, C.L., Abdulsalam, A., Segovia, S. Giving GAC a second chance: Use of retired GAC to treat high-strength primary effluent from a petroleum refinery. Poster presentation at the Association of Environmental Engineering and Science Professors Conference, May 20-22, 2025. Durham, NC.
2. Convertino, C., Pinilla, R.K., *Madeira, C.L., Villanueva, L., Cho, J. Panelist. Elevating Student Success through Collaboration and Innovation (2024), Volume El Paso TX, UTEP InSPIRE Conference. October 9-11, 2024. El Paso, TX.
3. Ajiboye, S., Madeira, C.L. Assessment of RO Concentrate and UF Backwash Impact on Biological Reactors in WWTPs: Enabling Safe Direct Potable Reuse Waste Stream Sewer Disposal. Poster presentation at the Society of Environmental Toxicology and Chemistry North America 45th Annual Meeting. October 20-24, 2024. Fort Worth, TX.
4. Segovia, S., Abdulsalam, A., Madeira, C.L. Assessment of Microbial Communities in Biologically Activated Carbon Systems Treating Refinery Effluent. Poster presentation at the Society of Environmental Toxicology and Chemistry North America 45th Annual Meeting. October 20-24, 2024. Fort Worth, TX.

5. Luna, V., Ramirez, A., Madeira, C.L. Microbial Degradation of Tire Waste. Poster presentation at the Society of Environmental Toxicology and Chemistry North America 45th Annual Meeting. October 20-24, 2024. Fort Worth, TX.
6. Abdulsalam, A., Segovia, S., Madeira, C.L. Pretreatment of Refinery Wastewater Using Biologically Activated Carbon. Poster presentation at the Society of Environmental Toxicology and Chemistry North America 45th Annual Meeting. October 20-24, 2024. Fort Worth, TX.
7. *Madeira, C.L., Engineered Microbial Processes for a Cleaner Environment: An Investigation of Microbes' Strategies for Dealing with Complex Contaminants, Department of Earth, Environmental and Resource Sciences Symposium. October 2, 2023. El Paso, TX.
8. *Madeira, C.L. Moderator at Health Disparities and Environmental Justice Panel. UTEP Viva la Salud Conference. September 13, 2024. El Paso, TX.
9. *Madeira, C.L. Panelist at Panel on Women in Engineering/Physical Sciences in Action (2024), Supporting Hispanic Women in Physical Sciences and Engineering. August 6-8, 2024. Santa Cruz, CA.
10. *Madeira, C.L., Montagner, C.C. Organic matter reduces the sorption capacity of the pesticide Fipronil onto polyethylene microplastics in surface water. Poster presentation at the Gordon Research Conference on Environmental Sciences: Water. June 23-28, 2024. Holderness, NH.
11. *Madeira, C.L., Kennedy, L., Santiago, I. Panelist at Breaking Barriers: Navigating Public Acceptance of Direct Potable Reuse. UTEP World Water Week Panel. March 18, 2024. El Paso, TX.
12. *Madeira, C.L., Montagner, C.C. Interaction of the pesticide fipronil and its biodegradation products with polyethylene microplastics in ultrapure and river water. Oral presentation at UNESCO-IWRA Online Conference: Emerging Pollutants: Protecting Water Quality for the Health of the People and the Environment. January 17-19, 2023.
13. Fernandes, L., Madeira, C.L., *de Araújo, J.C. Anammox process for the cotreatment of mature leachate and real anaerobic effluent: effect of different dilutions. Oral presentation at 17th IWA World Conference on Anaerobic Digestion; 2022 June 17-22; Ann Arbor, MI.
14. *Madeira, C.L., de Araújo, J.C. Inhibition of anammox activity by municipal and industrial wastewater pollutants: A review. Oral presentation at SETAC Latin America 14th Biennial Meeting; 2021 September 26-29; Virtual.
15. *Madeira, C.L., Kadoya, W.M., Li,G., Wong, S., Sierra-Alvarez, R., Field, J.A., Reductive biological pretreatment to enhance in situ chemical oxidation of insensitive munitions compounds. Oral presentation at AEESP 2019 Research and Education Conference; 2019 May 14-16; Phoenix, AZ.
16. *Madeira, C. L., Jog, K. V., Vanover, E. T., Brooks, M. D., Taylor, D. K., Sierra-Alvarez, R., Spain, J. C., Krzmarzick, M. J., Field, J. A., Enrichment culture that biodegrades the reduced metabolite of the insensitive munitions compound 3-nitro-1,2,4-triazol-5-one (NTO) to inorganic products. Poster presentation at the Symposium of the Strategic Environmental Research and Development Program (SERDP) and Environmental Security Technology Certification Program (ESTCP); 2018 November 27-29; Washington, D.C.
17. *Madeira, C. L., Kadoya, W. M., Li, G., Wong, S., Sierra-Alvarez, R., Field, J. A., Reductive biological pretreatment to enhance in situ chemical oxidation of insensitive munitions compounds. Poster presentation at the Symposium of the Strategic Environmental Research and Development Program (SERDP) and Environmental Security Technology Certification Program (ESTCP); 2018 November 27-29; Washington, DC.
18. *Madeira, C.L., Simonich, M. T., Tanguay, R. L., Chorover, J., Sierra-Alvarez, R., Field, J.A. Ecotoxicity of the insensitive munitions compound 3-nitro- 1,2,4-triazol- 5-one (NTO) and its reduced metabolite 3-amino-1,2,4-triazol-5-one (ATO). Poster presention at the SETAC North America 38th Annual Meeting. Nov. 14, 2017; Minneapolis, MN.
19. *Madeira, C.L.; Chorover, J.; Sierra-Alvarez, R.; Field, J. A. Biodegradation of the Insensitive Munitions Compound 3-Nitro-1,2,4-Triazol-5-one (NTO) by Soil Microorganisms. Platform presentation at Battelle's

Fourth International Symposium on Bioremediation and Sustainable Environmental Technologies; 2017 May 22-25; Miami, FL.

20. *Madeira, C.L., Speet S. A., Abrell, L., Chorover, J., Sierra-Alvarez, R., Field, J.A. Biotransformation of the insensitive munition 5-nitro-1,2,4-triazol-3-one (NTO) in soil. Poster presentation at the 7th SETAC World Congress/SETAC North America 37th Annual Meeting. Nov. 9, 2016; Orlando, FL.
21. *Olivares, C.I., Madeira, C.L., Abrell, L., Sierra-Alvarez, R., Chorover, J., Field, J.A. Environmental fate of 14C- ring labeled 2,4-dinitroanisole (DNAN) in anaerobic saturated soils. Platform presentation at 250th American Chemical

Mentoring and Supervising

Antônio Shibata – Ph.D. student in Civil Engineering – 9/2024 – current (dissertation advisor)

Samuel Ajiboye – Ph.D. student in Environmental Science and Engineering – 1/2024 – current (dissertation advisor)

Abdullahi Abdulsalam – Ph.D. student in Environmental Science and Engineering – 9/2023 – current (dissertation advisor)

Vianney Luna – M.E. in Civil and Environmental Engineering – 9/2023 – 12/2024 (graduate project advisor)

Sydney Segovia – M.S. in Environmental Engineering – 9/2023 – 12/2024 (graduate project advisor)

Teaching

University of Texas at El Paso (UTEP) – U.S.

CE3342 – Water and Wastewater Engineering – Spring 2024 and 2025, Fall 2024 and 2025 (37 to 47 students)

CE5312 – Environmental Processes – Spring 2025 (22 students)

Academic Training / Certificates

Certificate in the Effective Teaching Practice Framework – The Association of College and University Educators
Certificate in College Teaching – 10 credits - University of Arizona, USA
Mentorship Program for Career Consolidation – 12h workshop training - São Paulo Research Foundation, Brazil
Intro to Teaching Online – 10h coursework **–** University of Arizona, USA
Leader in Classroom Diversity & Inclusion – 6h workshop training – University of Arizona, USA
Science, Gender, and Diversity – 36h coursework – Federal University of Santa Catarina, Brazil
Training Core – NIEHS Superfund Research Program - 4 credits - University of Arizona, USA

Reviewer for International Journals

Journal of Hazardous Materials
Environmental Science and Technology Letters
Environmental Pollution
Journal of Environmental Management
Water Science and Technology

Professional Memberships

Association of Environmental Engineering & Science Professors
American Chemical Society
Society of Environmental Toxicology and Chemistry

Service

UNICAMP and UFMG, Brazil, 07/2020 – current. Revision and translation (Portuguese-English) of several research papers, abstracts, conference papers, reports, and research proposals from lab members.

Tucson Casineros, Tucson, AZ, USA, 04/2016 - 06/2020. Cuban salsa instructor, organization of dance events.

Tucson's Cause for Canines, Tucson, AZ, USA, 09/2017 - 04/2019. Assistance with adoption applications and participation in the weekly adoption events.

Arizona Welcomes Refugees, Tucson, AZ, USA, 05/2016 - 05/2020. Participation in donation drives and bake sales.

Household Hazardous Waste Program, Tucson, AZ, USA, 02/2017 - 09/2017. Assistance with greeting the public, unloading household waste from vehicles, identifying, and sorting hazardous materials.

Junta Comunal de las Cumbres, Panama City, Panama, 02/2010 - 03/2010. Assistance with environmental projects related to waste, water, and soil management for the Las Cumbres community.

Castillo Country Club, Heredia, Costa Rica, 12/2009 - 01/2010. Participation in environmental projects related to the creation of a seed nursery.

Curso Assistencial Amigos de Itajubá, Itajubá, MG, Brazil, 02/2009 – 07/2009. Biology instructor helping students to prepare for college admission exams.

Languages

English – advanced
French – intermediate
Spanish – intermediate
Portuguese – native speaker