

Caleb McLaughlin

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EDUCATION

B.S.E. Environmental Engineering, Arizona State University (ASU), Tempe, AZ May 2022
M.S. Civil, Environmental and Sustainable Engineering, ASU, Tempe, AZ *expected* May 2024

RESEARCH BACKGROUND

Microbial-chain elongation, water treatment using biochemical reactors, contaminant degradation

PUBLICATIONS

In preparation: Robles A, Silverman MI, **McLaughlin C**, Delgado AG, The role of microbial chain elongation substrate type, substrate ratio, and end products on reductive dechlorination of chlorinated ethenes.

In preparation: Miranda EM, Edgar M, Reep JK, Severson C, Landrum C, **McLaughlin C**, Hansen S, Santisteban L, Hamdan N, Delgado AG. Decoupling pH control and sulfate reduction in lignocellulosic bioreactors treating mining influenced water. To be submitted to *Journal of Hazardous Materials*.

Acknowledged in: Miranda, E. M., Severson, C., Reep, J. K., Hood, D., Hansen, S., Santisteban, L., Hamdan, N., & Delgado, A. G. (2022). Continuous-mode acclimation and operation of lignocellulosic sulfate-reducing bioreactors for enhanced metal immobilization from acidic mining-influenced water. *Journal of Hazardous Materials*, 425.

PRESENTATIONS & CONFERENCES

McLaughlin C, Delgado AG, Miranda EM. Lignocellulosic Characterization of a Sulfate-Reducing Bioreactor Treating Mining-Influenced Water. Fulton Undergraduate Research Initiative, ASU, Apr 22, 2022. (*Poster Presentation*)

Santisteban L, Miranda EM, **McLaughlin C**, Delgado AG, Ramey D, Hamdan N, Nansen S. Evaluating novel organic substrates for sulfate-reducing biochemical reactors treating mine water. Mine Water Solutions Conference, Vancouver, BC, Canada, June 16, 2022. (*Platform Presentation*)

Miranda EM, **McLaughlin C**, Santisteban L, Hamdan N, Delgado AG. Characterization and microbial composition of lignocellulosic materials post mine-influenced water treatment. CBBG-NSF Engineering Research Annual Meeting, ASU, Tempe, AZ, April 2022. (*Poster Presentation*)

PROFESSIONAL & LEADERSHIP EXPERIENCE

CBBG Student Leadership Council, CBBG, ASU, Tempe, Aug 2022 - Present

CBBG Outreach Committee, NSF Engineering Research Center for Bio-mediated and Bio-inspired Geotechnics (CBBG), ASU, Tempe, AZ, July 2021 – Present

Laboratory Research Aide, Biodesign Swette Center for Environmental Biotechnology and CBBG, ASU, Tempe, AZ, July 2021 – Present

All Occasion Catering – Team Lead, Knoxville, TN, March 2016 – August 2018

Counselor, Camp Irish, Knoxville Catholic High School, Knoxville, TN, 2016 – 2018 (Summers)

AWARDS & HONORS

Experiential Learning Travel Grant, Ira A. Fulton Schools of Engineering, ASU, April 2022

Dean's List, School of Sustainable Engineering and the Built Environment, ASU, 2018-2022

Cum Laude, ASU, 2022

