

# William James Johnson

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## RESEARCH FOCUS

Using computational and analytical tools to characterize and monitor complex risks in the environment.

## EDUCATION

### University of Colorado Boulder

*PhD Student, Candidate, Environmental Engineering*

Boulder, CO

Jan 2021 — Present

- Advisor: Professor Cresten Mansfeldt
- Expected Defense: March 2026

### University of Texas at Austin

*BS in Environmental Science, Biology Track*

Austin, TX

Aug 2015 — May 2020

- Capstone Mentor: Dr. Rob Plowes

## HONORS & AWARDS

- **USGS 104B Graduate Student Grant** (2023): *Evaluation of Simulated Wildfire and WUI-fire Ash Through Toxicological Assays*
- **Honorable Mention, GRFP** (National Science Foundation) (2022)
- **Undergraduate Research Fellowship** (UT Austin) (2020)

## PUBLICATIONS

### Nanoparticulate Wood Treatments Contribute to the Aquatic Toxicity of Simulated Urban Wildfire Ashes

**Johnson, W.\***, Mansfeldt, C.

*Environmental Science & Technology*, 2025.

### Effectiveness of building-level sewage surveillance during both community-spread and sporadic-infection phases of SARS-CoV-2 in a university campus population

**Johnson, W.\***, Reeves, K.\*,..., Mansfeldt, C.

*FEMS Microbes*, 2022.

### High-resolution within-sewer SARS-CoV-2 surveillance facilitates informed intervention

Reeves, K.\*, Liebig, J., Feula, A., Saldi, T., Lasda, E., **Johnson, W.**, ..., and Mansfeldt, C.

*Water Research*, 2021.

## CONFERENCE PAPERS

### Lightweight, Reliable, and Efficient Water Recovery Using Treatment with Pressure-Driven Distillation, Biologically Activated Carbon, and UV Disinfection

Jorgenson, N.\*, Lopez, K.\* **Johnson, W.**, Mansfeldt, C., Straub, A.

*Proceedings of the 53rd International Conference on Environmental Systems (ICES), Prague, Czech Republic*, 2025.

## RESEARCH EXPERIENCE

### Graduate Research Assistant

Creative Microbial Bio-Maintenance for Greener Environments and Municipalities Laboratory

Jan 2021 — Present

Boulder, CO

- Advisor: Professor Cresten Mansfeldt (CU Boulder)

### Undergraduate Researcher

Brackenridge Field Lab

Aug 2019 — May 2020

Austin, TX

- Mentors: Dr. Rob Plowes and Dr. Nathan Jones

- Capstone Title: The effects of controlled burns on the fungal microbiomes of KR Bluestem and Silver Bluestem

## **TEACHING EXPERIENCE**

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<b>Teaching Assistant</b> University of Colorado Boulder • EVEN 4424: Environmental Organic Chemistry	Spring 2025 <i>Boulder, CO</i>
<b>Teaching Assistant</b> University of Colorado Boulder • CVEN 5484: Applied Microbiology and Toxicology	Spring 2024 <i>Boulder, CO</i>
<b>Teaching Assistant</b> University of Colorado Boulder • CVEN 4404: Water Chemistry	Fall 2022 <i>Boulder, CO</i>
<b>Teaching Assistant</b> University of Colorado Boulder • CVEN 4484: Introduction to Microbiology	Spring 2021 <i>Boulder, CO</i>

## **CERTIFICATE IN COLLEGE TEACHING**

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### **Certificate in College Teaching (*In Progress*)**

Fulfilling requirements for certification through CU Boulder's Center for Teaching and Learning

## **PRESENTATIONS**

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**Oral: Chemical Legacies of Wildfires: Considering Persistent Hazardous Residues and Those Formed Over Time**

ACS Fall Meeting in Washington, D.C. (August 2025)

**Poster: Monitoring the Formation of Hazardous Oxygenated PAHs in Wildfire-Affected Watersheds**

AGU Fall Meeting in Washington, D.C. (December 2024)

**Oral: Developing a model for the microbial mediation of wildfire impacts on aquatic ecosystems through PAH transport and transformation**

ACS Fall Meeting in Denver, Colorado (August 2024)

**Poster: Microbes at the Interface: The Role of Solubility and Biotransformation in Contaminant Transport after Wildfire**

ASM Microbe in Atlanta, Georgia (June 2024)

**Poster: Can Aquatic Microbes Close the Solubility Gap of Pyrogenic Carbon?**

Front Range Microbiome Symposium at CSU (April 2024)

**Lightning Talk: Wildfire Impacts on Aquatic Biofilms**

Wildfires in the WUI Workshop at CU Boulder (September 2023)

**Oral: Microbial Community Interactions with Wildland-Urban Interface Fire Contamination in Aquatic Systems**

AEESP Conference at Northeastern University (July 2023)

**Oral: Shifts in riverine biofilms induced by WUI-fires and wastewater effluent**

Hydrologic Sciences Symposium at CU Boulder (April 2023)

**Oral: Investigating the Effects of Wastewater Microbes on Nitrogen Cycling in Streams and Rivers**

Rocky Mountain Water Conference in Keystone, Colorado (September 2022)

**Poster: Lessons Learned from Building-Scale Wastewater Monitoring at the University of Colorado Boulder**

AEESP Conference at WUSTL (July 2022)

## **SERVICE & OUTREACH**

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### **Austin Youth River Watch**

Spring 2019

- Mentored and taught under-served high school students about water quality testing and environmental principles