



# OCTOBER 2025 NEWSLETTER

## Welcome to this edition of our newsletter

We highlight groundbreaking research, global collaborations, and upcoming opportunities to connect with colleagues across the region. At Mizzou, our faculty, students, and alumni continue to push the boundaries of knowledge and innovation. From investigating emerging contaminants in drinking water and soil to advancing global conservation efforts, their work demonstrates the power of research to protect public health, strengthen communities, and address pressing environmental challenges.

### In this month's newsletter

You'll read about:

- **PhD student Dibya Kanti Datta's research** on lead and microplastics that is raising awareness about environmental stewardship and inspiring others to pursue impactful careers in environmental engineering.
- **Assistant Professor Allison Pease's work** leading a Fulbright-supported project in Paraguay to examine how ecological shifts impact freshwater fish biodiversity and local food security.
- Faculty achievements, including **Frank Xiao's new editorial role** with *Journal of Hazardous Materials: Organics* and his recent appearance as a panelist at the AEESP Conference.
- The **2025 Great Plains Water Conference: Securing Water Resources for Tomorrow** set for September 18–19 at the University of Nebraska Omaha.

Together, these stories showcase how Mizzou's researchers and students are not only advancing science but also making meaningful contributions locally, regionally, and globally.



## News & Research

Here we highlight several key research moments within the College of Engineering and College of Agriculture, Food and Natural Resources.



## Protecting public health by investigating drinking water and soil contamination

*Mizzou College of Engineering*

PhD student **Dibya Kanti Datta** seeks to raise public awareness about emerging threats like microplastics and highlight the importance of environmental stewardship.



## Dibya Kanti Datta hopes his research and experience inspire others to pursue impactful work in environmental engineering.

Graduate students come to Mizzou to make a difference through meaningful research. For environmental engineering student Dibya Kanti Datta, the drive to minimize pollutant exposure in drinking water and the environment has inspired a career in environmental research and community outreach.

“Observing the direct negative impacts of numerous types of pollution on everyday lives of people motivated me to pursue environmental research,” Datta said. “I believe that making a meaningful difference requires a deep understanding of the scientific and engineering principles behind these challenges.”

Under the guidance of [Maryam Salehi](#), Datta investigates the fate and transport of both legacy and emerging contaminants in environmental and engineered systems.

His research specifically focuses on lead and microplastic contamination.

While using lead in paint and gasoline has been phased out, lead plumbing systems persist in many places throughout the United States. Plastic pipes are commonly installed throughout the country due to their flexibility and low cost, but sometimes they get connected to legacy lead service lines. Lead can move through these hybrid connections, eventually ending up in the human body.

Datta is working to discover the factors influencing the mobility of lead in plumbing and how we can prevent it from contaminating our drinking water.

**“By understanding contaminant behavior in water systems, I hope to inform policies and practices that ensure safe drinking water and minimize pollutant exposure,”** he said.

**“The findings from my other research can also help raise public awareness about emerging threats like microplastics and highlight the importance of environmental stewardship.”**

In the lab with Salehi, Datta is also exploring the redistribution of contaminants, such as microplastics, in coastal environments following hurricanes.

Their goal is to provide insights into how extreme weather impacts pollutant behavior. Datta says that Salehi’s work aligned perfectly with his aspirations and was one of his main reasons for coming to Mizzou.

He also credits Mizzou’s robust academic curriculum and advanced research facilities as motivations to continue his education here.

Over the last three years, Datta has received numerous awards and research scholarships for his work.

“Graduate research can be demanding,” Datta said. “Receiving recognition validates the importance of the work I’m doing and motivates me to continue.”

## Making real world connections.

Outside the lab, Datta is passionate about making sure communities are aware of the environmental issues caused by legacy and emerging contaminants.

Datta and Salehi have partnered with the Missouri Agricultural Experiment Station (MOAES) to raise awareness on agricultural plastic pollution. They were recently invited on as podcast guests to speak about their work.

“We got to connect with the farmers, discuss their agricultural practices and test samples from their fields to understand the real-world impact of plastic usage,” Datta said.

Datta will continue his work this summer in Salehi’s lab. He also plans to continue engaging in outreach opportunities and presenting research at national conferences.

“I aim to develop innovative solutions to pressing environmental challenges, working in research or an academic institution where I can generate knowledge and mentor future environmental professionals,” Datta said. **“I hope my experience inspires others to pursue impactful work in environmental engineering.”**

Conduct leading-edge research and make a difference in peoples’ everyday lives.  
Choose Mizzou Engineering!

## SNR researcher dives into Paraguayan fish conservation with Fulbright Award



Mizzou ecologist **Allison Pease** to study how environmental shifts impact freshwater fish biodiversity and food security.

**June 5, 2025**

*Written by Genevieve Howard*



Aerial view of the Paraguayan city of Ciudad del Este and Friendship Bridge, connecting Paraguay and Brazil through the border over the Parana River.

Allison Pease, assistant professor in the School of Natural Resources at Mizzou's College of Agriculture, Food and Natural Resources, has received a Fulbright U.S. Scholar Award to support an ambitious six-month research project in Paraguay focused on conserving the country's diverse river fish populations.

Pease, a river fish ecologist with extensive experience in tropical freshwater systems, will work alongside researchers at the Paraguayan National Museum of Natural History to study fish species critical to regional river fisheries. Her project aims to assess how environmental conditions and ongoing ecological changes – such as deforestation, increased drought, and fire and land conversion for agriculture – are affecting freshwater fish communities.

**“Paraguay is a country rich in freshwater biodiversity, yet very little research has been done on the fish populations that are essential to both the ecosystem and local food security,”** Pease said. **“This Fulbright will allow us to better understand which fish species are most important to communities and how environmental changes may be impacting them.”**

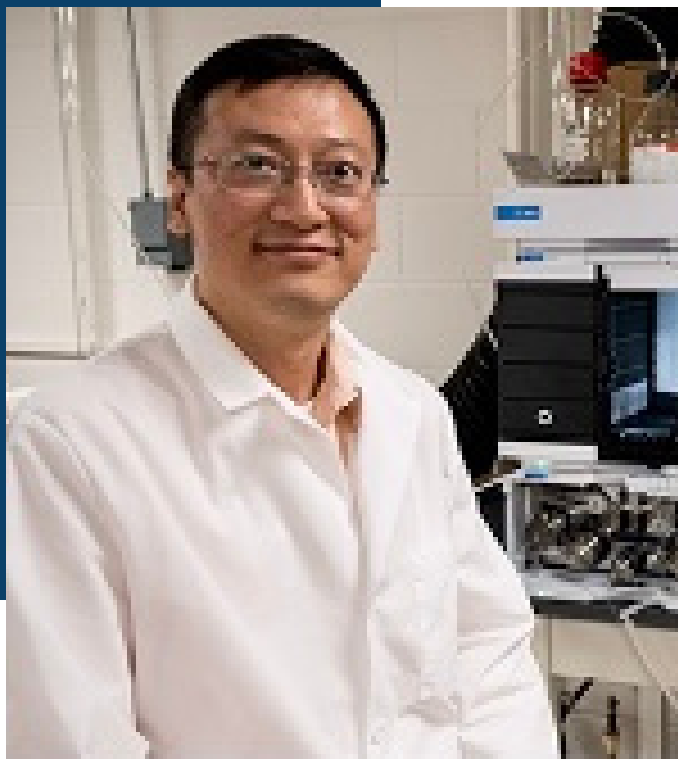
“The project is focused in part on the Chaco region in western Paraguay, where environmental changes are accelerating due to increased cattle grazing and potential soybean development. Pease plans to investigate how these changes affect fish in river systems that are often underrepresented in tropical research.

River fisheries provide vital food and protein sources for local communities,” she said. “Unlike marine fisheries that often feed global markets, these fish are feeding families directly, yet their conservation status is largely unknown.”

The Fulbright award not only supports her research but also fosters cultural exchange. Pease will be accompanied by her husband and two young children during her stay, aligning with the Fulbright program’s emphasis on global connection and shared understanding.

**“This experience will shape not just my research, but also my teaching and future collaborations,”** said Pease, who hopes to develop a long-term partnership in Paraguay and involve Mizzou students in future fieldwork. **“It’s a chance to deepen our global perspective on conservation science.”**

**Pease’s work contributes to CAFNR’s growing international research presence and reinforces the college’s mission to address pressing global challenges through science, sustainability and community impact.**



## Awards

### Xiao named co-editor-in-chief of JHM: Organics

Associate Professor Feng "Frank" Xiao has been appointed co-editor-in-chief of the Journal of Hazardous Materials: Organics.

[Learn more about the journal](#)

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## Conferences

- 2025 Great Plains Water Conference: Securing Water Resources for Tomorrow - September 18 and 19, 2025

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### MWC work highlighted in Nature News

**Pan Ni**, postdoctoral fellow in Mizzou's Department of Civil and Environmental Engineering and research scientist with MWC, was featured in Springer's Nature News.

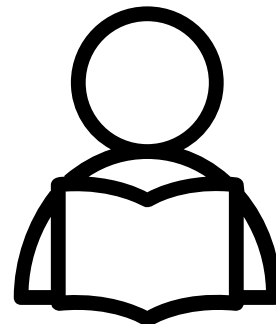
Ni and colleagues' preliminary work is mentioned.

[Read more here.](#)



## Student spotlight

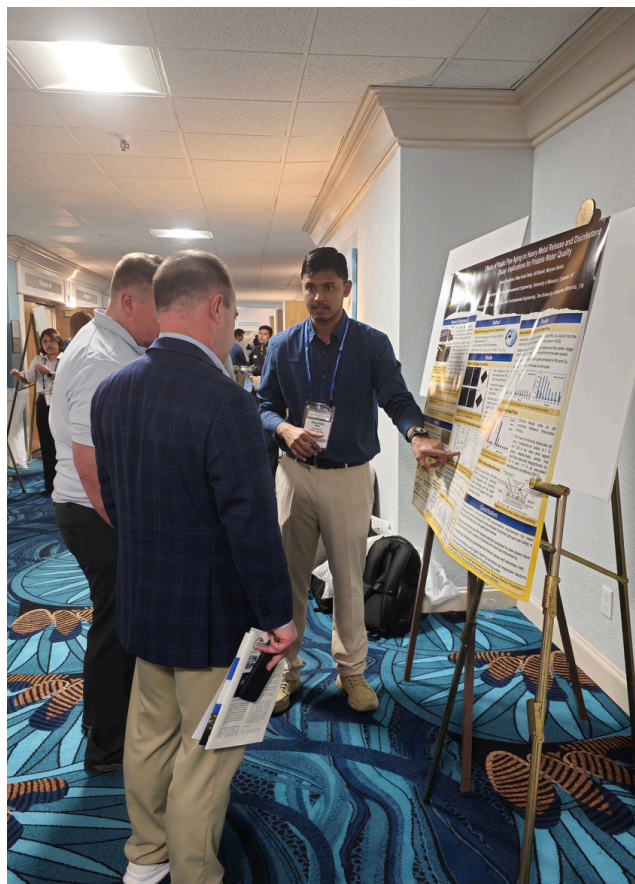
Here we highlight students accomplishments and work.  
MWC is proud to



## MU students win at Missouri Section AWWA & MWEA Annual Joint Conference

PhD student **Dibya Kanti Datta** won first place in the “Fresh Ideas Poster Competition” arranged by the Missouri section of American Water Works Association and the Missouri Water Environmental Association in their joint annual meeting this March.

The competition had two categories: drinking water and wastewater track. However, they only provided first prize for the best poster among all posters in both categories. **Datta won** and got the opportunity to represent MOAWWA and Mizzou at the national level at the **AWWA Annual Conference and Exposition 2025** in Denver, CO. in June.



Also, PhD student **Atif Bashir** won the second place prize in the water track of the Fresh Ideas Student Poster Competition at the 2025 Missouri Joint Conference, representing University of Missouri College of Engineering.



MWC congratulates these students on their winnings! M-I-Z!

## Seminars

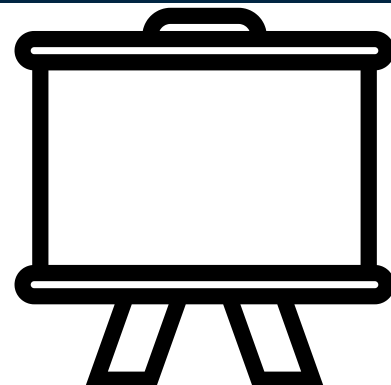
Here we highlight seminars from faculty during September and October.

### Artificial Intelligence (AI) and Spatio-temporal Methodologies for Environmental Factor Analysis

**Dr. Qian Lu**, Assistant Professor in the School of Natural Research presented on Friday October 3, 2025.



**Seminar Description:** Environmental factors and extreme weathers require accurate and effective detection, and estimation, as well as the in-depth understanding of physical and atmospheric process. The increasing availability of remote sensing images, ground-based observations, and model simulations along with the rapid progress of computing technologies have provided us the unprecedented opportunity to better satisfy the above-mentioned requirements. In my research, beyond the traditional methodology for environmental factors and natural disasters' analytics, I pursue high-efficient and automatic approaches by developing a series of AI and spatio-temporal methodologies and frameworks to detect, retrieve, classify and analyze climate factors such as cloud, air pollution, precipitation using various remote sensing data. With the intuitive analytical results, the research directly benefits the scientists, decision-makers, and the public for natural disaster and public health issue research and mitigation purposes.



## Freshwater Salinization: From Ecology & Evolution to Real-World Solutions

**Dr. Rick Relyea**, William J. Rucker Professor in Fisheries and Wildlife at Mizzou presented on Friday September 5, 2025.



**Seminar Description:** Around the world, freshwater habitats are experiencing salinization as a result of human activities, including mining, agriculture, saltwater intrusion, and the applications of road salts to melt ice and snow.

We are rapidly discovering the many unintended effects of salt-pollution in freshwater ecosystems and these effects span multiple levels of ecology, including individuals, populations, communities, and ecosystems. In addition, we are discovering fascinating examples of aquatic taxa evolving increased tolerance to salt, suggesting that some species may be able to persist as we work to mitigate salt pollution.

Fortunately, as the public has learned more about the environmental and economic impacts of salt pollution, new strategies have been developed to apply road salts in smarter ways that allow up to 50% reductions in salt applications without compromising road safety.

Thus, we can protect the environment while also experiencing considerable savings for transportation agencies and taxpayers.

## Science for Missouri's Streams: Research, Recommendations, and Collaboration at MDC

**Emily Tracy-Smith**, Stream and Watershed Program Coordinator in the Missouri Department of Conservation's Science Branch, presented Friday September 26, 2025.



**Seminar Description:** Missouri is home to more than 110,000 miles of streams that shape our landscapes, sustain fish, forest, and wildlife, and provide vital services for people. The Missouri Department of Conservation's Stream and Watershed Unit works to ensure these resources remain healthy and resilient by conducting applied research, providing technical expertise, and collaborating with partners across the state.

This presentation will introduce the Stream and Watershed Unit within MDC's Science Branch, highlighting the diverse expertise we bring to stream and watershed issues and the role we play in advancing science-based management.

Examples of current projects will be shared, including studies of ecological flows, watershed-scale restoration, and aquatic habitat assessments. The talk will also explore how we work across disciplines and agencies to provide technical recommendations, inform policy, and identify future research and data needs.

Together, these efforts reflect a watershed approach—connecting science, management, and partnerships to protect and enhance Missouri's streams for generations to come.



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## Thanks for reading this edition of our newsletter

Missouri Water Center Brief & Highlights is a publication of the Missouri Water Center. For more information about the Center, visit our Web site at [water.missouri.edu](http://water.missouri.edu).

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This Newsletter is published with funds provided by the U.S. Geological Survey, Department of the Interior, as authorized by the Water Resources Act of 1964.

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