MISSOURI WATER CENTER

SEPTEMBER 2026 NEWSLETTER

Welcome

This month, we're celebrating the impact of Mizzou research, innovation, and collaboration. Across Missouri and around the world, our faculty, students, and alumni are tackling important challenges through work that advances scientific discovery, protects natural resources, and strengthens communities.



In our newsletter, you'll find stories that highlight cutting-edge research, meaningful partnerships, and real-world solutions, from improving water quality and understanding environmental contaminants to supporting conservation efforts on a global scale. Together, these accomplishments reflect Mizzou's commitment to creating knowledge that makes a difference, while preparing the next generation of scientists and leaders to address tomorrow's challenges.

We're also excited to share opportunities to connect, collaborate, and engage with colleagues across the region through upcoming events and programs.

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In this issue

Discover how **recent MU graduate Josh Donaldson** is building on his Missouri Water Center experience to help expand access to safe, clean water around the world.

Learn how **Dr. Michael Sunde** is contributing to new flood risk maps that could support residents and decision-makers in St. Louis County.

Explore faculty highlights, including **Dr. Qian Liu's innovative deep-learning research** and **Dr. Allison Pease's studies of killifish populations in Paraguay.**

Plus:

- Highlights from the **CAFNR Showcase**
- **Upcoming events** and opportunities
- Updates from the **CUAHSI Water Science Exchange**, including new resources and engagement opportunities



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News & Research

Tracing the shape of water



Recent Mizzou biological engineering graduate **Josh Donaldson** is turning a passion for water access into a global mission. Motivated by infrastructure challenges in his hometown of St. Joseph, Missouri, Donaldson has focused his academic and service work on advancing water equity and public health. Though experiences in Tanzania, projects with Engineers Without Borders in Panama, leadership of Mizzou's Tiger Pantry and research at the Missouri Water Center, he has learned the importance of pairing technical expertise with community engagement. A Truman Scholar and Marshall Scholar, Donaldson is now pursuing graduate studies in the United Kingdom.

Read the full story

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Flood risk maps could protect St. Louis County residents, visitors



New flood-risk maps developed by MU Extension researchers could help St. Louis-area planners, emergency responders, and transportation agencies better prepare for flooding. Led by **Dr. Michael Sunde** and the **Missouri Resource Assessment Partnership (MoRAP) team**, the project combines NOAA modeling data, terrain analysis, and satellite imagery to identify areas most vulnerable to flooding. The maps provide critical insights into risks facing homes, businesses, schools, and transportation networks across the region, helping communities improve preparedness and resilience. The work supports efforts to protect both residents and the millions of visitors who travel through the St. Louis metropolitan area each year.

Read the full story

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MWC Moments

Back from Paraguay





Dr. Allison Pease, Associate Professor in the School of Natural Resources and advisory faculty in MWC just came back from researching abroad in Paraguay.

This trip came as a result of the Fulbright program and award. Pease spent from January to July in the Chaco region studying Killifish.

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Killifish are a species of fish that live in wetlands that dry during the year. Their eggs can survive drying for months, which is unheard of for other fish species. They also have very short lifespans which make them good models to study aging.

Pease had the opportunity to immerse herself in a new country and learn about a different study system, which she finds fascinating.

Welcome back, Allison!



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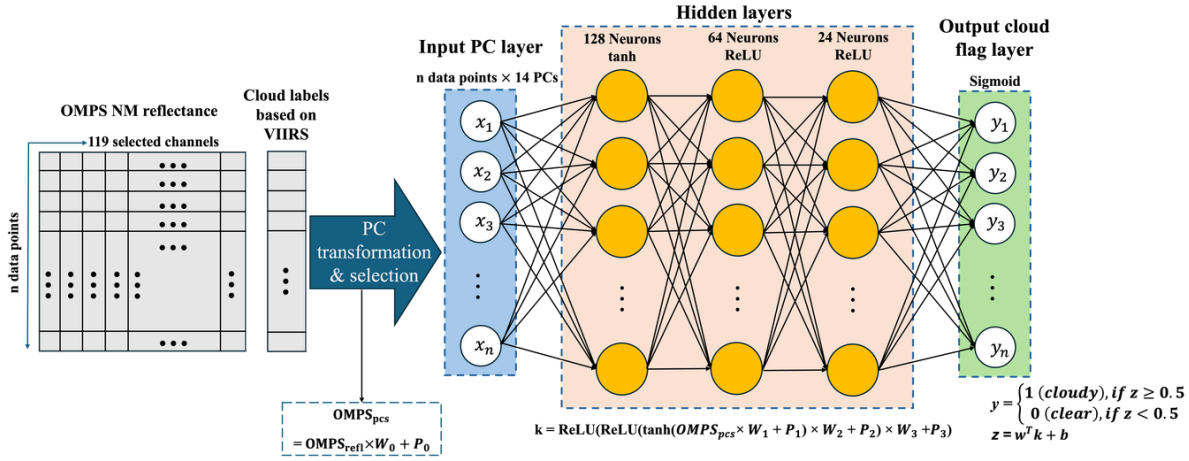
New publication and deep-learning approach!

Read the study

Dr. Qian Liu, Assistant Professor in the School of Natural Resources and core faculty in MWC, and her NOAA collaborator have developed a new deep-learning approach for detecting sub-pixel clouds in NOAA-21 OMPS-NM satellite observations.



The model uses high-resolution VIIRS cloud observations to train a deep neural network to recognize cloud signatures directly from OMPS-NM ultraviolet spectra.



The new model achieves an average global cloud-detection accuracy of 89%, including 90% over oceans and 87% over land, and improves the detection of thin and partially cloudy scenes that can be missed by the operational OMPS-NM method. The model can also produce global cloud-detection results within minutes, providing a promising tool for improving satellite calibration and validation, atmospheric retrievals, and the use of satellite observations in numerical weather prediction.

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CAFNR SHOWCASE

The Missouri Water Center had a booth at this year's CAFNR Showcase at South Farm! We are so glad we had the chance to speak with families about our work researching water and water issues across the state. We shared a tent with our friends at the Mizzou School of Natural Resources.

For Boone County residents, we handed out one-page fact sheets with county drinking water quality, hazards and other water information. Co-Director Dr. Kate Nelson, Senior Program Coordinator Andrea Mayus, Program Coordinator Karen Turner and Strategic Communications Associate Dominique Hodge spent time at the booth.





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Live water demonstration

For families visiting the booth, we had quite the selection of activities. We had coloring pages, bookmarks and watercolors.



Co-Director Kate Nelson led a live water demonstration using elderberries and other household ingredients to create color-changing pH indicator paper and illustrate the process of diffusion of pollutants in soils.



In the activity, kids used lemon juice to create paintings. The acidic solution combined with the natural elderberry pigments turned their paint strokes pink.



On top of this, we also led families through a round of our guessing game, educating them about water embedded in everyday items like backpacks, pencils and their favorite foods.

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Events

CAFNR Research Symposium

OCT. 7 | 9:00 A.M. - 5:00 P.M.
Memorial Student Union - 518 Hitt St, Columbia, MO 65201

The sixth annual CAFNR Research Symposium will highlight the work of CAFNR students, postdoctoral scholars, faculty and staff who are helping create a healthy world. See more about speakers and sessions.

2026 Dunmire Lecture

Oct. 22| 6 p.m. - 7 p.m. | 123 Anheuser-Busch Natural Resources Building

Dr. Jeff Steevens, Acting Center Director and Research Toxicologist at Columbia Environmental Research Center, will present “USGS Priority Research in Aquatic Ecosystems: Invasive Threats, Endangered Species, and Emerging Contaminants.” There will be a light reception starting at 5:30 p.m.

CUAHSI Water Science Exchange

Nov. 12-14| Times and speakers are still being organized.
University of Missouri - Columbia

This is a two-and-a-half-day gathering where water science researchers will come together for skill-building workshops, field trips and science poster and presentation opportunities. Stay up to date with this event’s information, visit this **link.**

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CUAHSI Water Science Exchange Event Updates and Opportunities

Seeking poster presenters!

Present a poster at the inaugural Water Science Exchange! All attendees and especially undergraduate and graduate students are encouraged to present.

The poster session will have an audience of up to 100 event attendees and provides an opportunity to share your research with colleagues across the water science community!

Posters may be submitted on topics related to the Water Science Community or the event theme of Working in Water Landscapes.

The deadline to submit a poster is October 21st. Learn **more**.

Dates to remember

Sept. 10

Early Bird Registration Opens. *Register during the early-bird window for a discounted rate!*

Oct. 8

Early Bird Registration Closes, General Registration Begins

Oct. 21

Poster submission deadline

Oct. 29

General registration closes

Would you like to lead a workshop?

Share your knowledge with early-career researchers, students, and colleagues across the water science community, and help shape a gathering meant to spark new collaborations!

The workshops can be 2-6 hours, geared towards graduate students and early career researchers, and will be hosted throughout The Water Science Exchange.

Topics can include:
- Foundational, innovative, or specialized methods in water science
- Stakeholder involvement in water research
- The Water in Working Landscapes theme

Early Bird Rates

- Student, CUAHSI Member - $110
- Student, Non-Member - $145
- Professional, CUAHSI Member - $250
- Professional, Non-Member - $320

Regular Registration Rates

- Student, CUAHSI Member - $140
- Student, Non-Member - $175
- Professional, CUAHSI Member - $280
- Professional, Non-Member - $350

CUAHSI Member Institution Registration Discount

Those affiliated with MU or other CUAHSI member institutions receive a 20% discount on registration for this event. See if your institution is a member **here**.

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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.

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