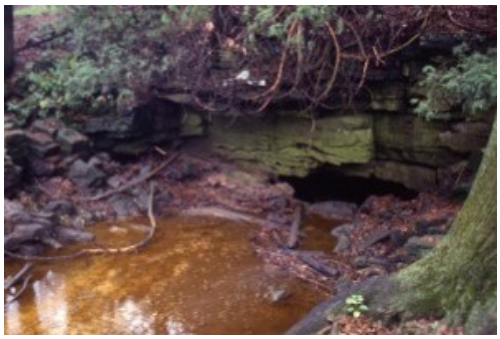
PPCPs in Karst Groundwater in Southwestern Illinois

In May 2014, Wei Zheng, along with collaborators Walt Kelly (Illinois State Water Survey), Steve Taylor (Illinois Natural History Survey), and Sam Panno (Illinois State Geological Survey), received a one-year grant for a project titled "Pharmaceuticals and Personal Care Products (PPCPs) in Karst Groundwater in Southwestern Illinois," allowed them to continue their work on groundwater contamination in karst regions of the state and expand to look at veterinary hormones.

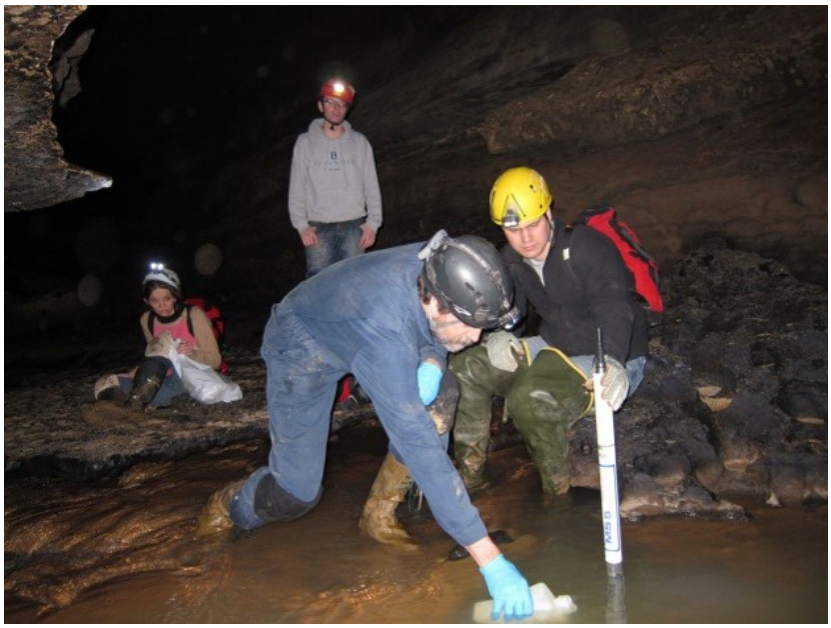


In karst environments, manure-contaminated water can runoff from animal feed lots into caves and contaminate the groundwater.

Groundwater in karst regions frequently contains contaminants and, in previous studies by the researchers on this project, high levels of fecal coliform bacteria have been detected in karst regions of Illinois. Effluent from septic systems is the likely source of this bacterial pollution and may also be contributing to PPCPs (Pharmaceuticals and Personal Care Products) being released into the karst groundwater; however, PPCP and hormone contamination has not been previously examined in southwestern Illinois.

Therefore, this project is systematically sampling springs and caves for PPCPs and other water quality parameters in the Sinkhole Plain of southwestern Illinois, looking at seasonal variations and sewage discharge effects and relationships among various chemical and bacterial parameters. On a broader level, the scientists involved are interested in expanding the Prairie Research Institute's research capabilities with respect to analysis of PPCPs in water samples and understanding the environmental fate of PPCPs and their effects on aquatic biota.

Funding was provided by the Prairie Research Institute's Matching Research Awards Program.



Energy

Pollutants

- **Aquatic Plastic Debris**
- **Metals**
- **Metalworking Fluids**
- **Per- and Polyfluoroalkyl Substances (PFASs)**
- **Agricultural Chemicals**
- **PPCPs in the Environment**

Pilot Study on PPCPs at Champaign and Urbana Wastewater Treatment Plants (WWTPs)

PPCPs: Extending Knowledge and Mitigation Strategies

Fate and Transport of Steroid Hormones and Veterinary Antibiotics Derived from Cattle Farms

Uptake, Translocation, and Accumulation of Pharmaceutical and Hormone Contaminants in Vegetables

Fate of Pharmaceutical and Personal Care Products in Irrigated Wastewater Effluent

Karst Groundwater Contaminants in Western Illinois

PPCPs in Karst Groundwater in Southwestern Illinois

Triclosan in Illinois Rivers and Streams

Tunable Luminescent Carbon Nanospheres with Well-Defined Nanoscale Chemistry for Synchronized Imaging and Therapy

Occurrence and Removal of Pharmaceutical and Hormone Contaminants in Rural Wastewater Treatment Lagoons

Degradation Kinetics and Mechanism of Antibiotic Ceftiofur in Recycled Water Derived from a Beef Farm

Anaerobic Transformation Kinetics and Mechanism of Steroid Estrogenic Hormones in Dairy Lagoon Water

Nano-CarboScavengers

Medicine Collection Boxes

2008 PPCPs Symposium

- 2016 PPCPs in the Environment Conference
- 2017 Emerging Contaminants in the Aquatic Environment Conference
- 2018 Emerging Contaminants in the Aquatic Environment Conference
- 2019 Emerging Contaminants in the Environment Conference
- 2016 Teacher Workshop on Pharmaceutical and Personal Care Products in the Environment
- PPCPs Videos
- Emerging Contaminants Consortium
  - PCBs & PBDEs
  - Polycyclic Aromatic Hydrocarbons (PAHs)
- Waste Utilization
- Water
- Instruments & Equipment
- Hazardous Waste Research Fund

Meet the Scientists

- Wei Zheng

Videos

- Pharmaceutical and personal care products in karst groundwater in Southwestern Illinois

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