

PPCPs: Extending Knowledge and Mitigation Strategies

Wastewater treatment plants (WWTPs) and concentrated animal feeding operations (CAFOs) are identified to be point sources for discharging PPCPs and hormones into the environment.

In July 2014, the University of Illinois Extension awarded a two-year grant to Dr. Wei Zheng and Nancy Holm, along with collaborators Laura Kammin from the Illinois-Indiana Sea Grant Program and Michael Plewa of the U of I Dept. of Crop Sciences, for a research/outreach project titled "Pharmaceuticals and Personal Care Products: Extending Knowledge and Mitigation Strategies." Zheng's team has several objectives for this study:

- Developing better analytical methods to measure the presence of PPCPs and hormones in water
- Determining their concentrations at WWTPs (Wastewater Treatment Plants) and CAFOs (Concentrated animal feeding operations)
- Investigating their fate and transport in water and soil
- Developing methods for remediating or mitigating PPCP (Pharmaceuticals and Personal Care Product) and hormone contamination
- Examining microbial resistance to PPCPs in bacteria from receiving waters

In addition, this grant provides for education and outreach activities emphasizing the proper disposal of PPCPs. It also supports expansion of **PPCP disposal drop-boxes** throughout the state, an effort which is being led by the **IL-IN Sea Grant**.



Collecting treated wastewater effluent from the Urbana WWTP

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 Cefitofur 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**
- **Laurel Dodgen**
- **Nancy Holm**
- **Elizabeth Meschewski**



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