2019 Kentucky Water Resources Annual Symposium  
March 25, 2019  
Marriott Griffin Gate Resort, Lexington, Kentucky

Registration and Continental Breakfast (8:00 a.m. - 8:30 a.m.)

PLENARY SESSION (8:30 a.m. - 10:00 a.m.)
Location: Salons E and F

8:30 Welcome & Introduction, Kelly Pennell, Acting Director, Kentucky Water Resources Research Institute, University of Kentucky.

8:45 Water and Wastewater Industry Challenges, Spencer Bruce, President and CEO, Louisville Water Company.

9:05 What is the Right Project? Donna McNeil, Executive Director, Kentucky Infrastructure Authority.

9:25 Policy and Management Perspectives, Secretary Charles G. Snavely, Kentucky Energy and Environment Cabinet.

9:45 Panel Discussion and Q & A

POSTER SESSION 1 (10:00 a.m. - 11:00 a.m.)
Location: Dixiana & Lands End and Calumet & Darby Dan

SESSION 1 (11:00 a.m. - 12:20 p.m.)
Location: Salons E and F

Track A
1A - Nutrients and Sediment
Moderators: Kelly Pennell & Steven Hoagland


11:20 Advancement in Watershed and Sediment Transport Modeling Using Dynamic Lateral, Longitudinal, and Vertical Sediment (Dis)connectivity Prediction, Tyler Mahoney, Dept. of Civil Engineering, University of Kentucky.

11:40 *Canine Nutrient Contributions to the Urban Environment, Brad Lee, Dept. of Plant & Soil Sciences, University of Kentucky.

12:00 Continuous Nutrient and Turbidity Sensors Reveal the Response of Watershed Sources Connected During Storm Events, Evan Clare, Dept. of Civil Engineering, University of Kentucky.

Track B
1B - Ecological Restoration
Moderators: Steve Evans & Malissa McAlister

The Restoration of Cane Run Creek through Lexington’s Coldstream Park and UK’s Coldstream Research Campus, Jennifer Carey, Division of Water Quality, LFUCG.

Using Multiple Methods for Better Stream Restoration: Including 2-Dimensional Modeling, Wanda Lawson, Stantec Consulting Services, Inc.

An Ongoing Success Story: How Data, Persistence and Patience is Paying Off in the Hanging Fork Watershed, John Webb, Watershed Management Branch, Kentucky Division of Water.

Reclaiming Mill Creek: A Case Study in Urban Stream Restoration, Jonathan Scheibly, Stantec Consulting Services, Inc.

AWARDS LUNCHEON (12:25 p.m. - 1:25 p.m.)
Location: Bluegrass Pavilion
### SESSION 2 (1:30 p.m. - 3:10 p.m.)
**Location: Salons E and F**

**Track A**  
**2A - Ecology, Biology, and Climate**  
Moderators: Steve Evans & Malissa McAlister

1:30  *Ecological Monitoring of WRP Easements in Western Kentucky*, Karen Baumann, Dept. of Biological Sciences, Murray State University.

1:50  *Discussion of Factors Influencing Ecosystem Productivity in the Greenup Pool of the Ohio River*, Mindy Armstead, Dept. of Integrated Science and Technology, Marshall University.

2:10  *Biotic Interactions Between a Bloom-Forming Cyanobacteria and a Planktonic Protist: Implications for Toxin Production*, Sarah Princiotta, Hancock Biological Station, Murray State University.

2:30  *The Use of Multiple Large and Detailed Databases to Evaluate the Impacts of Climate Change on Water Resources in the Ohio River Basin*, Lynn Jarrett, US Army Corp of Engineers (Retired).

2:50  *Evaluating and Addressing Climate Awareness and Water in Kentucky*, Lauren Cagle, Dept. of Writing, Rhetoric, and Digital Studies, University of Kentucky.

### Track B  
**2B - Groundwater and Karst**  
Moderators: Kelly Pennell & Steven Hoagland

1:30  *Incorporating Machine Learning with LiDAR for Delineating Sinkholes*, Junfeng Zhu, Kentucky Geological Survey, University of Kentucky.

1:50  *Advances in Urban Karst Hydrological and Contaminant Monitoring Techniques for Real-Time and High-Resolution Applications*, Jason Polk, CHNGES & HydroAnalytical Lab, Western Kentucky University.

2:10  *Finding the Edge: Assessing How to Apply Edge of Field Monitoring to Karst*, Benjamin Tobin, Kentucky Geological Survey, University of Kentucky.


2:50  *Center-Pivot Irrigation in Western Kentucky: Adding Context to the Discussion*, Glynn Beek, Kentucky Geological Survey, University of Kentucky.

### POSTER SESSION 2 (3:10 p.m. - 4:10 p.m.)
**Location: Dixiana & Lands End and Calumet & Darby Dan**

### SESSION 3 (4:10 p.m. - 5:10 p.m.)
**Location: Salons E and F**

**3A - Drinking Water**  
Moderators: Steve Evans & Malissa McAlister

4:10  *Evaluating Potential Health Threats from Untreated Karst Springs as Community Drinking Water Sources, Monroe County, Kentucky*, Cayla Baughn, Crawford Hydrology Lab, Western Kentucky University.


4:50  *Self-Cleaning Nanocomposite Membranes with Phosphorene-Based Pore Fillers for Water Treatment*, Joyner Eke, Dept. of Chemical and Materials Engineering, University of Kentucky.

**3B - Pollutant Removal**  
Moderators: Kelly Pennell & Steven Hoagland

4:10  *Investigation of PolarClean and Gamma-Valerolactone as Solvents for Polysulfone Membrane Fabrication*, Xiaobo Dong, Dept. of Chemical and Materials Engineering, University of Kentucky.

4:30  *Selenium Removal Using Bacteria Entrapped Alginate Gel Beads in a Packed-Bed Reactor*, Yuxia Ji, Dept. of Civil Engineering, University of Kentucky.

4:50  *Nanotechnology and Membranes: Water Detoxification from Lab Scale to Real Site Applications*, Honygi Wan, Dept. of Chemical and Materials Engineering, University of Kentucky.

### 5:15 p.m. Announcement of Student Awards and Adjourn
**Location: Salon F**

* Denotes project supported by 2018-2019 USGS 104b grant funds.
**Poster Session 1 (10:00 a.m. - 11:00 a.m.)**

2. *Use of eDNA in Detection of Multiple Salamander Species in Eastern Kentucky Streams*, Florene Bell, Dept. of Natural Sciences, Asbury University.
4. *The Impact of Agricultural Development on Nutrient Contamination Hotspots Within a Small, Intermittent Watershed at EKU’s Meadowbrook Farm, Madison County, Kentucky*, Reid Buskirk, Dept. of Geosciences, Eastern Kentucky University.
10. *Chlorophyll a and Primary Productivity Dynamics in Kentucky Lake*, Morgan Franklin, Dept. of Earth and Environmental Sciences, Murray State University.
13. *Assessment of Microbial Respiration and Carbon Loss Rates in the Upper Ohio River and Selected Tributaries in the Northern Panhandle of West Virginia*, Emma McClelland, Dept. of Natural Sciences & Mathematics, West Liberty University.
14. *Fabrication of a Novel Reactive Membrane for Water Treatment*, Alex Mills, Dept. of Chemical and Materials Engineering, University of Kentucky.
17. *Nutrient Export and Remediation at Meadowbrook Farm, Madison County, Kentucky: Steps Toward Improving Local and Regional Water Quality*, Ryan Penn, Dept. of Geosciences, Eastern Kentucky University.
18. *Functionalization of PVDF Membranes with Thiol Groups for Heavy-Metal Capture*, Ronald Vogler, Dept. of Chemical and Materials Engineering, University of Kentucky.

**Poster Session 2 (3:10 p.m. - 4:10 p.m.)**

2. *Assessment of MRSA Presence in Suburban WWTPs Effluent and Receiving Streams in Lexington, Kentucky*, Atena Amirsoleimani, Dept. of Civil Engineering, University of Kentucky.
3. *Heavy Metal Capture and Detection using Colored Synthetic Dithiol*, Shashika Bandara, Dept. of Chemistry, University of Kentucky.
Poster Session 2 (3:10 p.m. - 4:10 p.m.) cont.


7. Impedance Spectroscopy Based Evaluation of Phytoplankton Health, Margaret Jett, Dept. of Mechanical Engineering, University of Louisville.

8. Assessing the Performance of Brookville Flood Control Reservoir, Mingda Lu, Dept. of Mechanical & Civil Engineering, Purdue University Northwest.


11. Insight to the Mineralization of Fine Sediment Organic Matter in Streams Using Stable Isotopes Experiments, Brenden Riddle, Dept. of Civil Engineering, University of Kentucky.


13. Human Exposure Risk Assessment Model: Combining Subsurface and Aboveground Fate and Transport Processes, Elham Shirazi, Dept. of Civil Engineering, University of Kentucky.


* Denotes project supported by 2018-2019 USGS 104b grant funds.

The 2019 Kentucky Water Resources Annual Symposium was made possible with support from:

[Logos of Kentucky Water Resources Research Institute, USGS, Kentucky Geological Survey, Tracy Farmer Institute for Sustainability and the Environment]