KDF

The U.S. Geological Survey, the University of Wisconsin-Milwaukee, and the Water Environment Federation in cooperation with the Great Lakes Protection Fund would like to formally invite you to attend our upcoming Knowledge Development Forum (KDF) on Detection of Sewage Contamination for Rapid Remediation. This event will create a great opportunity for attendees to openly discuss new technology and management practices. Unlike a traditional workshop, the KDF is an interactive gathering of stakeholders brought together to develop new knowledge, identify collaborative efforts to bridge gaps, and facilitate adoption of new and better ways of problem solving in the water sector. Through a series of highly interactive discussions, experts in the field will provide a platform for evaluation and dissemination of information gleaned from recent studies.

REGISTER at https://www.eventbrite.com/e/detection-of-sewage-contamination-knowledge-development-forum-tickets-47180775971

Date: **10-AUG-2018**

Location: Room 3080, School of Freshwater Sciences, University of Wisconsin-Milwaukee
              600 E. Greenfield Ave., Milwaukee, WI 53204

OVERVIEW
Sewage contamination from illicit discharges and leaking sewer infrastructure in the Great Lakes remains a serious source of pollution in tributaries and nearshore waters. These situations result in substantial surface water contamination, and once located, are considered a high priority by municipalities for rapid repair.

One of the major barriers for municipalities responsible for mitigation of these contamination sources is locating them in a time-, labor- and cost-efficient manner. Stormwater sewer systems capture runoff from streets, parking lots and rooftops and discharge water directly to rivers. The point of entry of sewage into the stormwater system is expensive and time intensive to locate with standard methods. With advancements in sensor and analytical technology in recent decades, opportunities for improving the process of sewage contamination tracking exist. Recent studies undertaken through a GLPF grant by the U.S. Geological Survey, University of Wisconsin-Milwaukee, Water Environment Federation (WEF) and its partners investigated the feasibility of using optical sensors to identify wastewater in environmental waters. Additional new technology such as passive samplers and mobile microbiological detection are promising possibilities. The Detection of Sewage Contamination KDF will provide an opportunity for industry leaders to collaborate and discuss current techniques, the vision of improvements to technology and practices, and next steps.

DETECTION OF SEWAGE CONTAMINATION

Room 3080
School of Freshwater Sciences
University of Wisconsin-Milwaukee
600 E. Greenfield Ave
Milwaukee, WI 53204
10-AUG-2018
8:30 AM – 3:30 PM

TIME	TOPIC	INSTRUCTOR AND AFFILIATION
8:30 AM	**Welcome and Introductions** An overview and description of the forum and how it is going to run. The top priorities of the forum will be discussed in order to lay down the foundation for the rest of the day and the rest of the event.	Barry Liner, Ph.D., P.E. (Moderator) Chief Technology Officer Water Environment Federation
8:45 AM	**Sewage contamination detection** Presentations will be provided that define current methods for sewage detection in different spatial contexts for short-term and long-term management goals Speaker 1: Human bacteria markers Speaker 2: Chemistry techniques: strengths, weaknesses, and where chemistry fits best Speaker 3: Canine scent tracking Speaker 4: Optical part 1: background information on sewage detection Optical part 2: case studies	Sandra L. McLellan, Ph.D. University of Wisconsin-Milwaukee School of Freshwater Sciences Great Lakes Water Institute Deb Caraco, P.E. Senior Watershed Engineer Center for Watershed Protection Cheryl Nenn, M.S. Milwaukee River Keeper Steven R. Corsi Research Hydrologist U.S. Geological Survey.
10:15	Networking Break	
10:30	**Sewage Detection Methods Round Table Discussions** • Table 1 Q: What techniques are used within each group? And how. • Table 2 Q: List advantages and limitations for each method • Table 3 Q: What level of information is needed for action to be taken? • Table 4 Q: Are there methods not represented here that should be? • Table 5 Q: What research needs to be done to improve effectiveness? • Table 6 Q: What are the relative cost of methods? • Table 7 Q: How do we interpret results?	
11:45	Lunch and Keynote Presentation	Room 3093
12:45	**Practical applications and future technologies** Session will bring together a panel of municipal and industry experts to share their experiences and lessons learned. Panelist include: Speaker 1: Municipal practitioner: backtracking to source case study 1 • Mobile video, fecal indicator bacteria, visual observations, chemistry kits, acoustical testing, optical brightener passive samplers, and others Speaker 2: Municipal practitioner: backtracking to source case study 2 • Mobile video, fecal indicator bacteria, visual observations, chemistry kits, acoustical testing, optical brightener passive samplers, and others Speaker 3: Future technologies: mobile qPCR, sequencing, and others	Julie Kinzelman, Ph.D., M.S., M.T. Laboratory Director / Research Scientist City of Racine, WI Sandra L. McLellan, Ph.D. University of Wisconsin-Milwaukee School of Freshwater Sciences Great Lakes Water Institute
1:45	Networking Break	
	Practical Applications Round Table Discussions	

	• Table 1 Q: What are the major hurdles for backtracking? Financial, expertise, administrative, research needs, political will.
	• Table 2 Q: Can production labs help? What turn-around time is needed
	• Table 3 Q: What financial barriers are there?
	• Table 4 Q: What needs to happen logistically? Administratively?
	• Table 5 Q: How can effectiveness in results interpretation be through information sharing among agencies?
	• Table 6 Q: Mapping the collection system.
	    ○ staffing/resources/training/proper equipment/expertise
	    ○ tackle manageable areas
	• Table 7 Q: What research needs to be done?	

3:15	Collaboration and Next Steps	Barry Liner, Ph.D., P.E. Chief Technology Officer Water Environment Federation
3:30 PM	Adjourn	