YOUR HEALTH & THE ENVIRONMENT

NEWS FROM THE UNIVERSITY OF ROCHESTER ENVIRONMENTAL HEALTH SCIENCES CENTER

In This Issue

(Pictured from right to left) Thomas Lamb Jr., Alyssa Merrill, Elizabeth Williams-Velasquez, Ian Krout, Emily Quarato, & Joseph Lucas

TOXICOLOGY TRAINING PROGRAM RETREAT

The Toxicology Training Program held the first in-person annual Retreat since 2019! The Retreat was organized by students, and featured a set of workshops, platform style presentations, a poster session and keynote lecture from Dr. Ken Olden, former director of the National Institute of Environmental Health (NIEHS) and National Toxicology Program (NTP). Dr. Olden presented on his work related to epigenetics and environmental exposures' impact on social determinants of health.

Paige Lawrence, PhD, Patrick Murphy, & Nashae Prout

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Toxicology Training Program Retreat

Drs. Ken and Sandra Olden with members of the
Department of Environmental Medicine Diversity and Inclusion Working group.

Toxicology Training Program Awards

- Neuman Award for Exemplary Scholarship and Citizenship: *Alyssa Merrill*
- Weiss Toxicology Scholar Award: *Ian Krout*
- Infurna Publication Awards: *Connor McGuire, PhD; Jasmine Reed, PhD; Jiries Meehan-Atrash, PhD*
- Most Inquisitive Student Award: *Sarah Morgan*
- Best Poster Presentation: *Janine Cubello*
- Best Platform Presentation: *Christina Post, PhD*
- Peoples' Choice Poster Presentation Award: *Elizabeth Plunk*
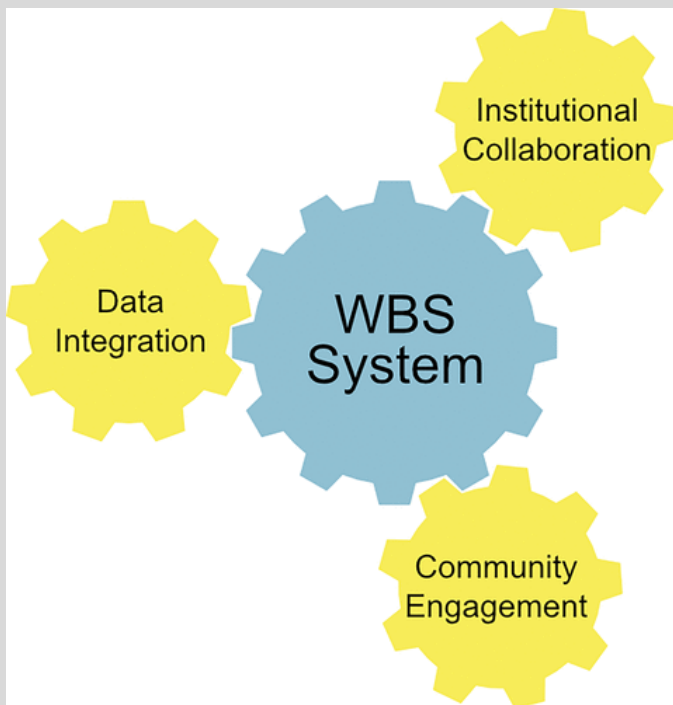- Mentoring Award: *Anthony Franchini, PhD*

You can find more information about the awards on the Program news page:
https://www.urmc.rochester.edu/education/graduate/phd/toxicology/news.aspx

Wastewater Surveillance for COVID-19

Wastewater surveillance can be used to monitor COVID-19 trends in the population of a sewershed. In June 2020, the EHSC Community Engagement Core (CEC) initiated the Monroe County Wastewater Coronavirus Surveillance Working Group. The Working Group includes local colleges, state and local government, and private sector stakeholders and frequently welcomes guests from other counties and states. This group has continued to meet biweekly to coordinate efforts, interpret findings, and educate new stakeholders about the potential of wastewater surveillance to inform public health decisions by individuals, institutions, and governments.

As part of this effort, the CEC created a statewide network for colleges on wastewater surveillance and established connections with national leaders working on this issue. These connections led to a study of wastewater surveillance at 25 colleges. The CEC continues to engage in work to inform the ethical, equitable, and effective use of this data by communities. CEC Director Katrina Smith Korfmacher, PhD, has published several papers with colleagues focusing on decision processes surrounding wastewater surveillance.

"To date, Wastewater-Based Surveillance (WBS) research has focused on developing sampling, analysis, and modeling approaches. An effective WBS system also requires research on how to support institutional collaboration, integration of WBS and clinical data, and community engagement throughout the process." (Korfmacher & Harris-Lovett, 2022)

Wastewater Surveillance for COVID-19

Recently, Korfmacher and Center Member Jim McGrath were awarded pilot funding by the University of Rochester's Translational Immunology and Infectious Disease Institute (TIIDI). The project aims to improve the RNA detection process by pre-concentrating viral genomes using the McGrath laboratory's silicon membranes prior to analysis by PCR. If their pilot is successful, this innovation will advance wastewater-based detection approaches at a fraction of the cost, complexity, and time-to-result compared to current methods. This pilot project has leveraged the partnership with the Monroe County Wastewater Coronavirus Surveillance Working Group to obtain samples from diverse sewersheds for analytical method development.

The Working Group has collaborated closely with researchers at Syracuse University and the New York State Department of Health as they developed the New York State Wastewater Surveillance Network. This network now consists of over 100 wastewater treatment plants across the state and provides weekly updates of trends at each plant.

As clinical testing for COVID-19 declines, wastewater surveillance is a cost-effective approach for monitoring trends in the pandemic. As well, the Working Group is expanding to other counties and exploring interests in surveillance for other pathogens as well as drugs like opioids. The CEC remains focused on supporting community engagement with these efforts to assure that wastewater surveillance results support decisions that reduce health inequities.

Related publications:

Harris-Lovett, S, Korfmacher, K.S, et al. 2021. Wastewater Surveillance for SARS-CoV-2 on College Campuses: Initial Efforts, Lessons Learned, and Research Needs. Int. J. Environ. Res. Public Health 18, no. 9: 4455. https://doi.org/10.3390/ijerph18094455

Korfmacher. K.S. S. Harris-Lovett, and K.L. Nelson. 2021. Campus Collaborations As a Model for Transforming SARS-CoV-2 Wastewater Surveillance Research into Public Health Action. Environ. Sci. Technol. 2021, 55, 19, 12770–12772.

Korfmacher. K.S. S. Harris-Lovett. 2022. Invited Perspective: Implementation of Wastewater-Based Surveillance Requires Collaboration, Integration, and Community Engagement. Environmental Health Perspectives 130:5 CID: 051304 https://doi.org/10.1289/EHP11191

Yewell, John. 2022. Wastewater-based epidemiology comes of age during pandemic. Environmental Factor. https://factor.niehs.nih.gov/2022/1/science-highlights/wastewater-based-epidemiology/index.htm

Welcome to New EHSC Members

The EHSC has welcomed seven new members in 2022, including Danielle Alcéna-Stiner, RN, PhD, Ray Dorsey, MD, MBA, Ehsan Hoque, PhD, Scott McIntosh, PhD, Karen Wilson, MD, MPH, and Collynn Woeller, PhD. Here we introduce three of these new Center members; the remainder will be featured in the next newsletter.

Scott McIntosh, PhD

Scott McIntosh, PhD

Dr. McIntosh is Professor of Public Health Sciences, with secondary appointments in Community Health and Prevention, Dentistry, Orthopaedics, and the Wilmot Cancer Institute. As Director of the New York State funded Center for a Tobacco-Free Finger Lakes, and Co-Director of the Tobacco Cessation and Prevention Research Program, Dr. McIntosh is currently involved with the study of nicotine dependence interventions with various populations and the training of physicians and other medical professionals in guideline-based nicotine dependence interventions.

He has completed an NIH-funded randomized controlled trial studying web-assisted tobacco interventions with community college students. He has been a co-investigator on multiple global health projects concerning distance training platforms, tobacco cessation, maternal health improvement and diabetes prevention. He was a Site Principal Investigator for a study of smoking cessation education in Medical Schools and is currently Site Principal Investigator on an NIH/FDA study of the harms of vaping flavors in vaping products. Dr. McIntosh has collaborated with the EHSC Community Engagement Core for many years, most recently in the development of education programs related to environmental health and vaping.

Welcome to New EHSC Members

Ray Dorsey, MD, MBA

Dr. Ray Dorsey is the David M. Levy Professor of Neurology. His vision is that anyone anywhere can participate in research and receive care. His research has been published in leading journals and has been featured in multiple news outlets.

Ray Dorsey, MD, MBA

In 2020, Dr. Dorsey and his colleagues wrote *Ending Parkinson's Disease*, a book that provides a prescription for ending the world's fastest growing brain disease. His work aims to integrate clinical medicine and environmental exposure research to understand the impact of chemical exposures on Parkinson's Disease.

Dorsey previously directed the movement disorders division and neurology telemedicine at Johns Hopkins and worked as a consultant for McKinsey & Company. In 2015, the White House recognized him as a "Champion for Change" for Parkinson's disease.

Dorsey has partnered with the EHSC Community Engagement Core for several years. On May 25, 2022 Dr. Dorsey presented, "Environmental Contaminants and Parkinson's Disease," to the EHSC's Community Advisory Board (CAB) at their semi-annual meeting. As part of this presentation, he sought CAB input on how to appropriately report back to participants the findings of ongoing research on environmental exposures and Parkinson's Disease.

Welcome to New
EHSC Members

Ehsan Hoque, PhD

Ehsan Hoque, PhD

Associate Professor of Computer Science Ehsan Hoque co-leads the Rochester Human-Computer Interaction (ROC HCI) Lab. Hoque's research program aims to use techniques from artificial intelligence to amplify human ability. He models and captures the dynamics of human behavior and their relationships using machine learning. His current research involves understanding and modeling the attitude-behavior gap of individuals towards climate change and designing interventions to address them.

Over the years, Hoque has identified opportunities in developing technologies that can improve the lives of disadvantaged, ill, disabled, and other individuals who struggle with socio-emotional communication, such as those with autism, severe anxiety, neurodegenerative disease, and terminal illness. He looks forward to building on his environmentally-focused work as a member of the EHSC.

Center Member Honors

Michael O'Reilly, MD

Center member Michael O'Reilly was a featured speaker at the American Thoracic Society Neonatal and Developing Lung Disease Group meeting on April 29, where he was recognized for his seminal contributions to the field.

Irfan Rahman, PhD

Rahman received the 2022 American Thoracic Society Recognition Award for Scientific Accomplishment in honor of his "outstanding scientific contributions in basic or clinical research to enhance the understanding, prevention and treatment of respiratory disease or critical illness."
For more information, see:
https://www.urmc.rochester.edu/labs/rahman/news.aspx?start=01-01-2022&end=12-31-2022

Martha Susiarjo, PhD

Center member Martha Susiarjo, Associate Professor of Environmental Medicine, received the 2022 School of Medicine and Dentistry's Academic Mentoring Award in Basic Sciences.

Michael O'Reilly, MD

Irfan Rahman, PhD

Martha Susiarjo, PhD

Deborah Cory-Slechta, PhD, receives the Susan B. Anthony Lifetime Achievement Award

Deborah Cory-Slechta, PhD

EHSC Deputy Director Dr. Deborah Cory-Slechta was awarded the University of Rochester Susan B. Anthony Center's 2022 Lifetime Achievement Award. Cory-Slechta has long felt a strong responsibility to mentor junior members of the faculty and staff to ensure their success for the future. Her research funded by the National Institutes of Health has included both human studies and animal models and has focused largely on the consequences of developmental exposures to environmental chemicals on brain development and behavior. Among those studies were assessments of the consequences of lead exposure in children and its impact on cognition, including IQ.

Cory-Slechta served on the Advisory Committee for Childhood Lead Poisoning Prevention at the Centers for Disease Control, the committee that ultimately moved the agency to the position of stating that there was no safe level of lead exposure for children and correspondingly reducing the intervention levels for action. Her recent research has turned to studies of the impact of air pollution on brain development and function, particularly focusing on the role of toxic metals in air. Throughout the years, she has continued to dedicate her time and effort to giving back to the community through service on numerous advisory committees of the National Institutes of Health, the Environmental Protection Agency, the National Academy of Sciences, the Food and Drug Administration, and the Agency for Toxic Substances and Disease Registry of the Centers for Disease Control. She continues that service now as a member of the Clean Air Scientific Advisory Committee for the Environmental Protection Agency, as an advisor to the EPA Science Advisory Board for review of the levels of 'forever' chemicals in drinking water, and as a member of the National Academy of Sciences review of the Department of Defense occupational exposure to trichlorethylene guidelines. In 2017, she was the recipient of the Distinguished Neurotoxicologist Award from the Neurotoxicology Specialty Section of the Society of Toxicology and in 2021 was awarded the Distinguished Toxicology Scholar Award from the Society of Toxicology.

(Text adapted from: https://www.rochester.edu/sba/events/susan-b-anthony-legacy-dinner/2022-susan-b-anthony-legacy-awards/)

Capacity Building Project

 The Community Engagement Core is pleased to announce that Cornell Cooperative Extension of Monroe County is the recipient of our first Capacity Building Project award for their "Tree Canopy Initiative." Street trees can advance health in urban neighborhoods by improving air quality and reducing the urban "heat island effect." CCE Monroe County will partner with the Marketview Heights Neighborhood Association and the City of Rochester's Forestry Division to conduct education about urban forestry, obtain community input on tree location, and plant trees along streets in northeast Rochester.

The goal of the EHSC's Capacity Building Project program is to provide funding for local organizations to grow their engagement in environmental health disparities in the greater Rochester region. The Tree Canopy Initiative will build community capacity to address local environmental health problems and to identify opportunities for future partnerships. We look forward to working with CCE Monroe County and their partners on this important project.

For Questions or Comments, Please Contact:

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