

PhD Graduate Research Assistant (GRA) Position at Wayne State University (Michigan)

Dr. Yongli Wager's Sustainable Water-Environment-Energy Technologies Lab (SWEET lab) at Wayne State University (Michigan) invites applications for a PhD GRA position starting from Spring/Summer or Fall 2024. This position is funded by NIEHS Superfund Research Program led by Wayne State University, Center for Leadership in Environmental Awareness and Research (CLEAR). This program provides students great research and training opportunities to *"prepare a generation of leaders for careers that require not only a technical depth of understanding, but also multi-disciplinary and communication skills (translation skills). Trainees will be able to effectively address complex health problems related to VOCs, including their impact on pre-term birth in urban settings, through professional careers in the environmental and/or biomedical sciences."* (WSU CLEAR Website, <https://clear.wayne.edu/>).

The candidate is expected to work on this NIEHS-funded project with research interest in real-time monitoring of vapor intrusion (VI) of volatile organic compounds (VOCs). Particularly, we will integrate the Internet of Things (IoT) sensor network with edge computing (IoTEC), including advanced data collection/processing and a machine learning algorithm for sensor signal pattern recognition under different environmental conditions, for accurate, energy- and cost-efficient VOCs VI monitoring/screening with varying sensor placements and spatial/temporal intervals. Accuracy and energy- and cost-saving of the IoTEC monitoring will be compared with off-line sampling methods and conventional monitoring approaches at field study sites. The monitoring data will be used to develop a risk assessment model to understand temporal and geo-specific exposure risks of vapor intrusion. Dr. Wager's research focuses on water-environment-energy sustainability in an urban environment by using both experimental research and system modeling approach. This project is one of her research focuses, as particularly pertaining to environmental pollution monitoring, remediation, and risk assessment.

Ideal candidates should have earned a Master's degree or an equivalent degree in environmental engineering, chemical engineering, chemistry, or other related fields, with research experience in environmental pollution monitoring (particularly VOCs), gas sensors, analytical instrument such as GC/LC, and computing techniques (programming, cloud-based data processing, and machine learning). Interested applicants please contact Dr. Yongli Wager (zhangyl@wayne.edu) for more details regarding the research project and the application procedure. The information regarding Dr. Wager's group can be found at <https://engineering.wayne.edu/profile/ft4970>.

Found in 1868, Wayne State University (WSU) is Michigan's third-largest university, and is home to nearly 25,000 graduate and undergraduate students from across the United States and 70 countries. Additional information can be found on the WSU website at <https://wayne.edu/>. The Department of Civil and Environmental Engineering at WSU has sixteen faculty with six of them focusing on environmental engineering. The faculty in environmental engineering has close collaboration with local utilities and industries. Further Information about the department can be found at <https://engineering.wayne.edu/civil-environmental>.