

28th Annual Environmental Engineering and Science Symposium Schedule – April 14, 2023

Time	Event	Location
8:15 am	Registration desk and breakfast buffet open	Hydro 1 st floor
8:50–9:00 am	Opening Remarks: Prof. Rosa Espinosa-Marzal	Hydro 1017
9:00–9:55 am	Keynote Speaker¹: Prof. Randall Martin (Prof. Hannah Horowitz introduces)	Hydro 1017
10:00 – 10:50 am	E-Poster Session (Moderator: Sanjeet Motikhane BrahmaPrakash, Arthur Schmidt, Neil Dcosta)	Hydro 3017 & 3019
11:00 am – noon 11:00 am 11:20 am 11:40 am	Podium Session 1A (Moderators: Neil Dcosta, Sowjanya Shankar) Sudheer Salana (Air Quality and Climate Change) - Are health effects of ambient PM _{2.5} proportional to its mass? Relevance of toxicity measurements in predicting PM _{2.5} health effects. Yicen Liu (Air Quality and Climate Change) - Quantifying the impacts of aerosol mixing state on heterogeneous N ₂ O ₅ uptake coefficients with the particle-resolved model PartMC-MOSAIC. P. S. Ganesh Subramanian (Air Quality and Climate Change) - Oxidative potential of the particulate matter emitted from common household sources.	Yeh 1311
11:00 am – noon 11:00 am 11:20 am 11:40 am	Podium Session 1B (Moderators: Iris Dai, Even Hou) Xiaokai Yang (AI) - Atmospheric chemistry surrogate modeling with sparse identification of nonlinear dynamics. Renjing Jiang (AI) - Machine learning based prediction of enzymatic degradation of plastics using encoded protein sequence and effective feature representation. Hunsoo Song (AI) - Unraveling the relationship between 3D urban landscape and urban heat island effect using deep learning.	Yeh 3310
12:00 – 1:00 pm	Lunch	Bridge
1:00 – 1:50 pm	Poster Session (traditional poster) (Moderators: Arthur Schmidt, Neil Dcosta)	Hydro 1st floor
2:00 – 3:00 pm 2:00 pm 2:20 pm 2:40 pm	Podium Session 2A (Moderators: Riya Jadhav, Sudiksha Hegde) Sarang Bhagwat (Sustainability) - Sustainable Production of Sorbic Acid via Triacetic Acid Lactone from Lignocellulosic Biomass. Quanhui Ye (Sustainability) - Lanmodulin-functionalized magnetic nanoparticles as a highly selective biosorbent for recovery of rare earth elements. Yoel Rene Cortes-Pena (Sustainability) - Economic and Environmental Sustainability of Biodiesel Production from Microbial Oil at 1G2G Sugarcane, Energy cane, and Oilcane Biorefineries.	Yeh 1311
2:00 – 3:00 pm 2:00 pm 2:20 pm 2:40 pm	Podium Session 2B (Moderators: Manho Park, Kellyn Powers) Joshua Carpenter (Sustainability) - Forest Mapping from Point Cloud Data. Binxin Fu (Sustainability) - A clue to the effects of temperature on nanoscale friction of calcite. Hakyung Lee (Water Quality) - Effects of combined chemical and biological stressors on <i>Microcystis aeruginosa</i> growth and microcystin production: Implications for preventing harmful algal blooms.	Yeh 3310
3:05 – 4:00 pm	Keynote Speaker¹: Dr. Brian Shoener, PE (Prof. Jeremy Guest introduces)	Yeh 1310
4:10 – 4:25 pm	Announcement of Prizes: Symposium Student Executive Committee	Yeh 1310
4:25 – 4:30 pm	Closing Remarks: Dr. Sotiria Koloutsou-Vakakis	Yeh 1310

¹ Title and abstract at the Symposium website: <https://publish.illinois.edu/2023-environmentalsymposium/>

Poster Sessions

E-Poster Session – 10:00-11:00 am E-Poster Presenters 1-14	Poster Session – 1:00-2:00 pm Poster Presenters 1-20
<p>Room: Hydro 3017</p> <ol style="list-style-type: none"> 1. Adam Sibal - Modeling Biodiesel Use to Reduce Emissions and Policy Approaches in the Transport Sector. 2. Tahsina Alam - Application of Machine Learning in Developing Models to Estimate Oxidative Potential of Particulate Matter from its Chemical Composition across the Midwestern US. 3. Lihui Ji - Toward Building a Virtual Laboratory to Investigate Rainfall Microphysics at Process Scales. 4. Ximin Piao, Manho Park, Yurui Li, Shiyuan Wang - Is there a long-range environmental impact of the chemical spill in East Palestine, OH? 5. Lin Guo - Chemical surrogate modeling with uncertainty quantification using SINDy and UQSINDy. 	<ol style="list-style-type: none"> 1. Manho Park - Computational acceleration of 2-D passive scalar advection by machine-learned discretization. 2. Even Hou - Control of particulate nitrate air pollution in China. 3. Iris Dai - A Spatio-temporal Study of Changes in Air Quality from Pre-COVID Era to Post-COVID Era in Chicago, USA. 4. Riya Jadhav - Effects of the Pandemic on Global Greenhouse Gas Emissions. 5. Jack Hanley - Irrigation Trade Flows and Water Footprints of Grains, Produce, and Animal Feed in the CONUS in 2012 and 2017. 6. Sun Kangdi - Structure and Potential Drug Delivery Application of Polymer/Phospholipid Hybrid Vesicle System. 7. Saumitra Rai - Modelling of Centralized Water Resource Recovery Facilities using QSDsan. 8. Emily Lin - Spatially Explicit Life Cycle Assessment and Techno-Economic Analysis of Miscanthus-Derived Biofuel and Bioproducts. 9. Alex Deptula - Leveraging electrostatic interactions of gel interfaces for responsive biomimetic materials. 10. Gus Greenwood - Measuring Surface Forces of Graphene Nanopores in Aqueous Environments Using the Surface Forces Apparatus. 11. Jingyu Li - Development of hydrogel-based substrates to improve coral larvae settlement and application of coral characterization methodologies. 12. Xuhui Zhang - The behavior of salt-in-ionic-liquid under nanoconfinement. 13. Sammy Aguiar - Elucidating Heterogenous Struvite Nucleation Mechanisms with AFM. 14. Jayne Allen - Modeling novel redox-mediated electro dialysis in the downstream processing of bio-based succinic acid. 15. Sanjeet Motikhane Brahmprakash - Utilization of Plastic Waste in Pavement Construction. 16. Lavanya Kudli - Sustainability evaluation of azelaic acid from techno-economic analysis and environmental life cycle assessment of sustainable Azelaic acid production. 17. Malavika Pothapragada - Powering buildings using transparent solar panels. 18. Guorui Zhang - Distribution of Antibiotic Resistance in Champaign County Communities. 19. Sudiksha Hegde - Strategies for Wastewater Treatment During COVID-19 Pandemic. 20. Sowjanya Shankar - Resource Recovery from wastewater – A review of technologies, challenges and benefits.
<p>Room: Hydro 3019</p> <ol style="list-style-type: none"> 6. Arthur Schmidt - Post-Pandemic Viral Wastewater Epidemiology. 7. Lane To - Modeling the carbon sequestration potential of fecal sludge-derived biochar in a pyrolytic Omni Processor. 8. Gang Zheng - Moringa oleifera seed extract functionalized cotton for effective virus removal in groundwater. 9. Jianan Feng - Sustainable Waste Sludge Management through Hydrothermal Systems. 10. Yongjian Ma - Influence of hydrogel composition on calcium phosphate mineralization. 11. Ming Jun Lee - Tunable Lubricity and Friction Mechanisms of Biocompatible Double Network Hydrogels. 12. Qianlu Zheng - water in the electrical double layer of ionic liquids on graphene. 13. Maria Florencia Bianco - Supply chain modeling of emerging feedstocks for techno-economic analysis (TEA) and life cycle assessment (LCA) of biofuels and bioproducts. 14. Neil Dcosta - Analyzing Properties and Applications of Biodegradable Polymers as Replacement of Commercial Plastics. 	