

31st Annual Environmental Engineering and Science Symposium Schedule – April 17, 2026

Time	Event	Location
8:00 – 8:50 am	Continental Breakfast & Registration	CEEB 1 st floor
8:50 – 9:00 am	Opening Remarks: Prof. Rosa Espinosa-Marzal	CEEB 1017
9:00 – 9:50 am	Keynote Speaker: Dr. Katherine McMahon “From environmental engineer to microbiologist and back again.” (<i>Prof. Ran Mei introduces</i>)	CEEB 1017
10:00 – 10:50 am	Poster Session 1	Crane Bay
11:00 am – noon	Podium Session 1A (Moderators: Marissa Campobasso and Kassandra Estrella) <i>Air Quality, Indoor Air Quality, Climate Change</i>	Newmark 1311
11:00 – 11:20 am	Ganesh Subramanian - Influence of Human Activities and Occupancy on the Emission of Indoor Particles from Respiratory and Nonrespiratory Sources	
11:20 – 11:40 am	Xiaokai Yang - Atmospheric chemistry surrogate modeling with sparse identification of mass action dynamics: Toward 3D online integration	
11:40 am – noon	Tahsina Alam - Calibration Data Source Drives Future Root-Zone Soil Moisture Projections in Illinois	
11:00 am – noon	Podium Session 1B (Moderators: Joyce Yang and Buai Shi) <i>Sustainability and Resource Recovery</i>	Newmark 1310
11:00 – 11:20 am	Don Sim - Exploring valorization pathways for thin stillage	
11:20 – 11:40 am	Keroglou Ioannis - Direct air capture sorbent manufacturing: A comparative life cycle assessment of amine-impregnated solid adsorbents	
11:40 am – noon	John Albin - A Tensor-Based Framework for Integrated Economic and Environmental Assessment of Magnet Recovery Pathways	
12:00 – 1:00 pm	Lunch	Bridge and CEEB 3017
1:00 – 1:50 pm	Keynote Speaker: Dr. Ofelia Romero “Perspectives from an EES graduate working in consulting and a regulatory agency.” (<i>Prof. Helen Nguyen introduces</i>)	CEEB 1017
2:00 – 2:50 pm	Poster Session 2	Crane Bay
3:00 – 4:00 pm	Podium Session 2A (Moderators: Lavanya Kudli and Ganesh Subramanian) <i>Sustainability and Resource Recovery</i>	Newmark 2312
3:00 – 3:20 pm	Yoonjoo Seo - Engineering a Yeast Whole-Cell Biocatalyst for PET Depolymerization via Cell Surface Display of Humicola insolens Cutinase	
3:20 – 3:40 pm	Rishabh Puri - From Theory to Practice: Data-Driven Insights for Designing and Operating Struvite Recovery Systems	
3:40 – 4:00 pm	Ritvik Kumar - Component-Level Circular Strategies to Reduce the Life Cycle Environmental Impacts of Data Center Rack Servers	
3:00 – 4:00 pm	Podium Session 2B (Moderator: Tahsina Alam) <i>Artificial Intelligence, Data Science in Environmental Engineering</i>	Newmark 1310
3:00 – 3:20 pm	Renjing Jiang - PEZy-Extract: Automated data extraction for enzymatic degradation of plastic from research articles with large language models and prompts	
3:20 – 3:40 pm	Abigail Nason - Aragonite Crystallization Pathways in the Presence of Microplastics	
3:40 – 4:00 pm	Camila Cassunde - Tiny house and material selection based on life cycle assessment as a sustainable alternative to enhance disaster resilience in the Southwestern U.S.	
4:10 – 4:25 pm	Announcement of Awards: Symposium Student Executive Committee	Newmark 1310
4:25 – 4:30 pm	Closing Remarks	Newmark 1310

Poster Sessions

Poster Session 1 – 10:00-10:50 am at Crane Bay	Poster Session 2 – 2:00-2:50 pm at Crane Bay
Poster Presenters 1-22	Poster Presenters 1-21
<p style="text-align: center;"><i>Air Quality, Indoor Air Quality, Climate Change</i></p> <ol style="list-style-type: none"> 1. Yuhui Zhai - Assessment of Inter-continental and Seasonal Variability in PM_{2.5} Oxidative Potential for Global SPARTAN Samples 2. Summer Acker - Satellite-Derived vs. Ground Truth: How Environmental Conditions Modify Their Agreement in PM_{2.5} Across the Western United States 3. Shiyuan Wang - The Invisible Cost of War: PM_{2.5} Emissions and Health Impacts from the 2026 Iran War <p style="text-align: center;"><i>Sustainability and Resource Recovery</i></p> <ol style="list-style-type: none"> 4. Maria Florencia Bianco - Multi-scale biorefinery deployment for a diversified bioeconomy using spatial feedstock data and surrogate models 5. Tuan Anh Mai Nguyen - Evaluating Antimicrobial Resistance in Commensal Escherichia coli Isolated from Fecal and Uterine Samples of Swine in Northern Provinces of Vietnam, 2023-2024 6. Kangdi Sun - Electrostatic Balance Tunes the Structure, Mechanics, and Lubrication of Mucin-PEI complexes 7. Ming Jun Lee - Properties of Ovomucin Hydrogel Derived From Egg White 8. Xuhui Zhang - Interfacial Behavior of Salt-in-Ionic Liquid Electrolytes with [FSI] anions 9. Wenjun Guo - Prioritizing early opportunities to enhance carbon efficiency at biorefineries 10. Saint Moon Kim - Antibiotic- and Inducer-Free Whole-Cell Biocatalyst for Polycaprolactone Upcycling 11. Yuan Fang - Flow-Driven Mass Transfer Shapes Syntrophic Metabolism in Anaerobic Microbial Communities 12. Yongjian Ma - Electrochemical Control of Calcium Phosphate Deposition on Gold Interfaces: Effects of Applied Potential and Polymer Additives 13. Rourou Ji - Kinetic model of a determinate nodule reveals plant metabolic characteristics for more efficient nitrogen fixation symbiosis 14. Saumitra Rai - Economic and environmental implications of sanitation infrastructure transitions in Indian cities 15. Xiaozhuo Cao - Electric Double Layer Structuring in Water-in-Salt Electrolytes: Influence of Multivalent Cations and Solvation Structure <p style="text-align: center;"><i>Artificial Intelligence, Data Science in Environmental Engineering</i></p> <ol style="list-style-type: none"> 16. Mukhamad Suhermanto - Development of a Geographical Information System (GIS) Database for Power Grid Infrastructure in Developing Countries: A Case Study of Indonesia 	<p style="text-align: center;"><i>Air Quality, Indoor Air Quality, Climate Change</i></p> <ol style="list-style-type: none"> 1. Mashiat Hossain - Representing Sub-Grid Wildfire Plume Chemistry in GEOS-Chem: Implications for NO_y Partitioning and Downwind Ozone 2. Anson Regi - Physicochemical and Oxidative Properties of Aerosols Emitted from Aviation Fuel Combustion 3. Joseph Abi-Karam - Urban Climate-Energy Coupling Under Extreme Heat Using High-Resolution Climate Modeling <p style="text-align: center;"><i>Sustainability and Resource Recovery</i></p> <ol style="list-style-type: none"> 4. Haotian Yang - Self-Assembled Protein Nanospheres for Selective Rare Earth Element Recovery 5. Lu Cao - From Enzymatic Degradation to Self-Degradable Plastics: New Opportunities for Biodegradable Polymers 6. Xueming Xu - Effects of Transient Oxygen Exposure, Light, and Synechocystis on Methanogenesis in a Defined Syntrophic Community 7. Marissa Campobasso - Prioritizing R&D for the Harmful Algal Bloom Interception, Treatment, and Transformation System (HABITATS) 8. Jingyu Li - How do natural hydraulic lime (NHL)-based substrates influence the growth of juvenile Colpophyllia natans? 9. Qianlu Zheng - Sustainable Energy Storage: In-Situ Investigation of Safer Sodium-Ion Battery Electrolytes 10. Johanna Arita Mendoza - Rethinking Urban Sanitation in Established Cities: Economic and Environmental Characterization of Non-Sewered Sanitation (NSS) Deployment in Paris 11. Genyou Shi - Beyond Lithium: Water-based electrolytes for energy storage 12. Buai Shi - Evaluating the economic and environmental potential of valorizing wastewater VFAs using redox-electrodialysis 13. Gus Greenwood - Interlayer effects of nanoscale friction on van der Waals heterostructure surfaces 14. Zixuan Wang - The potential of thermomechanical and thermochemical processes to enable household non-sewered sanitation <p style="text-align: center;"><i>Artificial Intelligence, Data Science in Environmental Engineering</i></p> <ol style="list-style-type: none"> 15. Juliana Marks - A machine learning approach to elucidating physicochemical drivers of opportunistic pathogen occurrence in drinking water systems 16. Qurat ul ain Fatima - Physics-Informed Symbolic Regression Surrogates for Gas-Particle Partitioning in

17. **Song Jiang** - A 10-meter resolution informal settlement map for the Global South derived from satellite imagery and open datasets
Emerging Technologies for Water Quality and Processes
18. **Elena Cao** - HRAP-Based Wastewater Treatment with Resource Recovery: LCA Comparison of Biogas and Biofertilizer Routes
19. **Do Nhung** - Core resistomes are shared across diverse One Health sources
20. **Jingxian Huang** - Granular Activated Carbon for PFAS Removal in Drinking Water Treatment
21. **Yang Chen** - Environmental Fate and Transport of Contaminants Following the Deepwater Horizon Oil Spill
22. **Changyi Huang** - From Powder to Practical Materials: Macro-Structuring of Metal–Organic Frameworks for Water Treatment

- Inorganic Aerosol: Interpretable Emulation of the E-AIM Thermodynamic Model
Emerging Technologies for Water Quality and Processes
17. **Xiangyi Yang** - Electrocoagulation: A Green and Efficient Technology for Wastewater Treatment
 18. **Kassandra Estrella** - Assessing Performance and Scalability of Low Chemical Addition with Membrane Filtration for Harmful Algal Bloom (HAB) Mitigation
 19. **Paul Lee** - Substrate-specific microbial responses during proteinaceous biomass degradation in a deep-sea sediment enrichment
 20. **Inas Belkadi** - Detection and Removal of Microplastics in Wastewater Treatment Plants: Current and Emerging Methods
 21. **Thando Mawasha** - Evaluation of Bacterial Inhibition by KDF Media in Zero Water Point-of-Use Filters