

## Technical Sessions: Presenting Author and Presentation Titles

### **Tuesday, June 21, 2022: Oral Presentations**

11:00 AM	12:30 PM	<b>Technical Session 1 (Atrium): Applied Ecological Engineering Principles I</b>
Levi	McKercher	A biological-chemical approach to restoring water quality in an urban eutrophic pond
Victoria	Volkis	Specialty Crops and Medical Herbs as Natural Solution for Antifouling Protection
Alex	Horne	Upgrading the wetlands-lake restoration paradigm – Harmful Aquatic Bloom floating cyanobacteria – a “skim & filter method”.
Jay	Martin	Locating and Applying Ecological Engineering to Reduce Lake Erie Algae Blooms
Marc	Beutel	Kadlec's P-k-C* model for nitrate removal: Two case studies in treatment wetland preliminary design and sizing
Mark	Brown	Sustainable water resource planning at the urban/rural interface in Winter Haven, FL: Ecological engineering for watershed health
11:00 AM	12:30 PM	<b>Technical Sessions 2 (Auditorium): River, Stream, and Wetland Restoration/Creation I</b>
Matthew	Chaffee	Impacts of Floating Treatment Wetlands on Biological Systems
Barbara	Doll	Comparing the Performance Standards of the Stream Quantification Tool (SQT) to Southeast Piedmont Streams
Joe	Berg	Benefits of using wood structures to restore streams and reconnect floodplains
Barbara	Doll	Estimating Flood Reduction and Water Quality Benefits of Natural Infrastructure in the Middle Neuse River Basin
Stephen	Stone	Evolution of Wetbud – A Tool for Using Historical Data to Standardize and Improve Wetland Design
Justin	Laughlin	Hershey Mill Dam Stream Restoration and Enhancement Project: Converting a Mill Pond into a Public Park
11:00 AM	12:30 PM	<b>Technical Session 3 (Conference Class): Climate Change, Resiliency, and Eco E. Education</b>
Elliott	Campbell	Evaluating Sustainability and Greenhouse Gas Emissions of Ecological Restoration Projects in Maryland
Randall	Etheridge	Community-engaged capstone projects to promote resiliency and sustainability
JUAN	CASTANO	Local weather station network an adaptation strategy to Climate Change strategy
Amro	Hassanein	Evaluation and life cycle assessment of poultry litter anaerobic digestion and nutrient capture
Joseph	Garner	Beginning a Career in Ecological Restoration and Planning: Insights From an Entry-Level Environmental Scientist
Mike	Galvin	A cooperative approach to stream restoration practice, education and outreach: The MSRA model
1:30 PM	2:30 PM	<b>Technical Session 4 (Atrium): Applied Ecological Engineering Principles II</b>
David	Austin	De facto ecological engineering, where practice is far ahead of theory
Julie	Miller	A Capstone Senior Design Project to assess pilot-scale hybrid constructed wetlands for further reductions of N and P loads at a municipal wastewater treatment plant
Robert	Nairn	Natural Infrastructure, Community Engagement and Service Learning: Bringing Engineering With Nature to the Great Plains
Rafael	Vazquez-Burney	Ecological Solutions are hiding in plain sight in the urban environment

1:30 PM	2:30 PM	<b>Technical Session 5 (Auditorium): River, Stream, and Wetland Restoration/Creation II</b>
Xia	Yang	Hybrid Constructed Wetlands Amended with Zeolite/Biochar for Enhanced Landfill Leachate Treatment
Jonathan	Page	Evaluating long-term channel adjustment of reference streams in the North Carolina Piedmont
Matt	Limmer	Quantifying reducing conditions in soils with IRIS
Eric	Roy	Quantifying phosphorus retention in restored riparian wetlands of the Lake Champlain Basin
1:30 PM	2:30 PM	<b>Technical Session 6 (Conference Class): Agricultural Solutions Using Ecological Principles</b>
Eugene	Lawrence	Weeds3D: A low-cost computer vision platform for integrated weed management applications
Keith	Binsted	Regenerative Stream Conveyance (RSC) as an Agricultural Best Management Practice (BMP)
Jonae	Wood	Wastewater Treatment using poplar plants-processes
Dylan Darius	Mehri	Optimization of next generation aquaponic and hydroponic systems with specialty crops for maximizing environmental, economic and social benefits in the Washington D.C. area: Experimental studies
3:30 PM	5:00 PM	<b>Technical Session 7 (Atrium): Applied Ecological Engineering Principles III</b>
Allison	Lewis	Ocala Wetland Recharge Park: Society Interwoven with its Environment
Sam	Francis	Artificial Reef Substrates to Improve Bioreceptivity: A Boom and a Bust
Jason	Vogel	Analysis of Floating Wetland Breakwater Frame Designs for Wave Reduction to Reduce Reservoir Shoreline Erosion
Jonathan	Resop	Evaluating American Chestnut Blight Resistance using Drone Laser Scanning and Machine Learning Techniques
Peter	May	Ultra-urban proving grounds: The use and influence of unique coastal city spaces for inspiration, design decision making and ecotechnology performance testing in Baltimore, Maryland, Washington, D.C. and New York City
Stephanie	Schmidt	Predicting forested wetland soil carbon using quantitative color sensor measurements in the region of northern Virginia, USA
3:30 PM	5:00 PM	<b>Technical Session 8 (Auditorium): Nutrients and Nutrient Management I</b>
Rachelle	Crow	Evaluation of an edge-of-field stacked conservation practice on a legacy-P field
Allen	Place	Reduced Ammonia Emission in Poultry Houses via Microbial Litter Alteration via Aragonite Addition
Tom	Fisher	Keeping Agricultural Phosphate In The Soil via Aragonite Amendment
Lourdes	Arrueta	The effect of alfalfa (Medicago sativa L.) on subsurface N and P loads across different hydrological event types using edge of field data of two fields in Ohio, USA
Byran	Fuhrmann	Preventing lake eutrophication and reservoir aging
Isabel	Sánchez-Viruet	Floating Wetlands and their potential for nitrogen removal in estuarine waters
3:30 PM	5:00 PM	<b>Technical Session 9 (Conference): Resource Recovery and Eco-Entrepreneurial</b>
Naresh Kumar	Amradi	Dark Fermentation for Volatile Fatty Acids to Produce Bioplastics from Food Waste
Justine	McCann	Addition of Sorptive Amendments to Address Leachability of Trace Metals from Hard Rock Mine Drainage Passive Treatment Residual Solids

Shashi	Kant	Smart water alternatives in urban settings
Marcos	Miranda	Using Industrial Byproducts to Address a Legacy of Coal Mine Drainage
David	Tilley	An Eco-entrepreneurial learning journey to commercialize an Eco-Innovation: epiphanies & excitement, failure & anxiety, success & learning

## Wednesday, June 22, 2022: Oral Presentations

9:00 AM	10:30 AM	<b>Technical Sessions 10 (Atrium): Green Infrastructure &amp; Best Management Practices (BMP) I</b>
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Elizabeth	O'Keefe Markham	Using GIS Modeling to Identify and Implement Green Infrastructure Practices Within a Highly Urbanized Landscape.
Anand	Jayakaran	Using recycled carbon fiber to improve permeable pavement performance
Kathleen	Fast	Greening marinas: Lessons learned from design, construction, and performance monitoring of a bioretention cell and a high flow media filter
Ryan	Bare	When Technology and Nature Collide: Deriving Vertical Vegetative Structural Characteristics of the Urban Tree Canopy in Harris County, Texas Deriving Vertical Vegetative Structural Characteristics of the Urban Tree Canopy in Harris County, Texas
Joseph (Joey)	Smith	Factors that Influence Media Clogging: A Field Study of Aging Bioretention Cells
Janaye	Dorsey-Riley	Balancing Priorities in Ultra-Urban Ecological Engineering: creating multifunctional spaces

9:00 AM	10:30 AM	<b>Technical Session 11 (Auditorium): River, Stream, Wetland Restoration III and Eutrophication</b>
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Lauren	McPhillips	Water quality performance of a constructed floodplain wetland on an urban stream in a central Pennsylvania watershed
Adrian	Wiegman	Numerical modeling of phosphorus retention in restored riparian wetlands that have agricultural legacies
Alexis	Swanson	The Development of an Web-Application for the Quantification of Streambank Erodibility Parameters
Jonathan	Resop	Quantifying Annual and Seasonal Changes in Topographic and Vegetative Stream Metrics using Drone Laser Scanning: A Case Study of Stroubles Creek, Virginia
Michael	Brooker	Targeting Management to Legacy-Phosphorous Fields Provides Opportunity to Treat Excess Nitrogen
Danielle	Delp	Co-digestion of manure and food waste with algae harvested from an algal turf scrubber

9:00 AM	10:30 AM	<b>Technical Session 12 (Conference Classroom): Stormwater Management I</b>
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Sonja	Wixom	Best Management Practices for Waterbody Creation to Address Erosion, Sedimentation, Flood Control Capacity, and Nutrient Management.
Roderick	Lammers	How do climate and design affect how bioretention areas manage urban hydrology at the watershed scale?
John	Schwartz	Development of an Urban Waters Report Card for Tennessee Stormwater Programs
Rouhangiz	Yavari Bajehbaj	Understanding and Managing Hydrologic Impacts of Solar Farms
William	Strosnider	Floating Treatment Wetlands: Challenges and Opportunities
Theresa	Wynn Thompson	Effectiveness of environmental site design in protecting stream channel stability

11:30 AM	12:15 PM	<b>Technical Sessions 13 (Atrium): Watershed Modeling I</b>
Jeffrey	Kast	Modeling Water Quality Impacts of Shifting Farmer Beliefs on the Effectiveness of Nutrient Management Practices
Haley	Kujawa	Using the enhancements of SWAT+ to create models for watershed-estuary management
Haley	Kujawa	Effective messaging of uncertainty in climate change and watershed modeling: Summary from a multi-institutional effort
11:30 AM	12:15 PM	<b>Technical Session 14 (Auditorium): Nutrients and Nutrient Management I</b>
Naivy	Rodal Morales	Water Quality Benefits of Reestablishing Oxidic Conditions in the Bottom of a Hypereutrophic Drinking Water Reservoir
Michael	Burchell	Constructed wetlands as a simple method to improve nitrogen removal from package plant wastewater effluent
Nathan	Stoltzfus	What's going on in the headlands? What we learn by analyzing 220 fields with separate headland soil sampling zones.
11:30 AM	12:15 PM	<b>Technical Session 15 (Conference): Systems Analysis and Environmental Justice</b>
Farshid	Shoushtarian	Simulation and Optimization of an Agricultural Water Reuse Project in the Eastern Shore of Maryland through Agent-Based Modeling
Holly	Yaryan Hall	An Urban Stream Model Integrating Social-Ecological Benefits, Services, Values, and Equity
Sara	McMillan	Enhancing community resilience through multifunctional green infrastructure: Integrating urban agriculture, green infrastructure, and community development

## **Thursday, June 23, 2021: Oral Presentations**

9:00 AM	10:15 AM	<b>Technical Session 16 (Atrium): Green Infrastructure and Best Management Practices (BMP) II</b>
Michelle	Wood-Ramirez	TRWD Rainscapes: Lessons Learned for the Maintenance of Green Stormwater Infrastructure in North Texas
Molly	Landon	Strategic Placement of Floating Treatment Wetlands at Three Urban Waterbodies
Larry	Davis	The use of "Smart" cloud data uploading moisture sensors to monitor the effectiveness of stormwater best management practices in Washington, D.C.
Bishwodeep	Adhikari	Field investigation of metals accumulation in soils of green stormwater infrastructures
Daniel	Hitchcock	Turning Disaster into Appreciation: How Recent Flood Events Have Raised Ecological Awareness for Coastal Southeastern U.S. Communities
9:00 AM	10:15 AM	<b>Technical Session 17 (Auditorium): Stormwater Management II</b>
Aaron	Akin	IMPACT OF REAL-TIME CONTROL ON THE HYDROLOGY AND DESIGN PARAMETERS OF WET PONDS AND DRY EXTENDED DETENTION BASINS
Douglas	Daley	Assessment of Vegetated Biofiltration Media for Stormwater Treatment
Andrea	Ludwig	Gaining Community Support for Green Stormwater Infrastructure in Residential Landscapes
Matthew	Wilfong	Hydrosocial Analysis of Stormwater Management: Roles for Diffused Responsibility and Decentralized Infrastructure

Lauren	McPhillips	Utilization of Internal Water Storage in Stormwater Treatment Basins for Maximum Nitrate Removal and Reduced Greenhouse Gas Emissions
9:00 AM	10:15 AM	<b>Technical Session 18 (Conference): Antimicrobial Resistance and Emerging Contaminants</b>
Josephus	Borsuah	Estimating Neonicotinoids Loading into Urban and Agricultural Watersheds Using Drainage Area Weighting Method Combined with Soil Water Assessment Tool (SWAT)
Matthew	Russell	Assessing Common-use Veterinary Antibiotic Partitioning in Floating Treatment Wetlands at the Micro- and Mesocosm Scale
Shane	Querubin	Assessing the utility of the mummichog and sheepshead minnow as model species for fish reproductive health in rivers with historic contamination
Carlton	Poindexter	Correlating Antibiotic Resistance and Temperature during Anaerobic Digestion of Dairy Manure
10:45 AM	11:30 AM	<b>Technical Session 19 (Atrium): Watershed Modeling II</b>
Adel	Shirmohammadi	Role of Models in Ecosystem/Watershed Restoration and their Uncertainties
Juliana	Vargas	ANALYSIS OF HYDRO CLIMATOLOGICAL TIME-SERIES USING DATA MINING AND ARTIFICIAL INTELLIGENCE FOR RIVER FLOODING PREDICTION: A CASE STUDY OF THE CONSOTÁ RIVER
Trisha	Moore	Watershed water quality in the Prairie Band Pottawatomie Nation: addressing the future of climate and legacy of allotment
10:45 AM	11:30 AM	<b>Technical Session 20 (Auditorium): Nutrients and Nutrient Management II</b>
David	Austin	Geochemical Augmentation with Alumina for Phosphorus Removal in Treatment Marshes
David	Blersch	Wherefore are thou, Floway? A critical review of the algal turf scrubber.
Victoria	Rexhausen	Ecohydrology in urban streams - seasonal and geospatial trends in nitrate processes and transport
10:45 AM	11:30 AM	<b>Technical Session 21 (Conference Classroom): Food, Energy, Water Nexus</b>
Tiffany	Messer	Implications to Tap and Stream Water Chemistry Due to Variations in Sampling Location and Watershed Land Use
Annabelle	Arnold	Food-Energy-Water (FEW) Nexus: Using Rainwater Harvesting and Solar Energy for Next Generation Urban Farming Practices
Assefa	Tadesse	Quantification of Environmental, Economic, and Societal Impacts of Specialty Crops Grown in Aquaponics and Hydroponics through Life Cycle Sustainability Assessment (LCSA)
<b>Wednesday, June 22, 2022: Poster Presentations</b>		
10:30 AM	11:30 AM	<b>Poster Session Presentations</b>
James	Pinkney, Jr	Passive Removal of Pathogens in Agricultural Wastewater using Woodchip Biofilters
Dominae	Smith	The Fate and Removal of Selected Agricultural Pollutants in Constructed Wetland Microcosms
Kyra	Sigler	Emerging Contaminants in Surface Waters and Sediment Following WWTP Processes
William	Rud	Fate and Transport of Nanopesticides in Field Scale Agricultural Applications
Zepei	Tang	Impact of ecological engineering techniques on contaminant uptake by vegetables through irrigation water

Emily	Nottingham	Wetland treatment systems and their treatment effects on runoff mixtures containing emerging contaminant and nutrients: A review
Keith	Bratley	Antifouling Formulations Based on Extracts of Aronia mitchurinii Encapsulated into Biocompatible Polymers
Nora	Wu	Assessing the Effectiveness of Instrumental Neutron Activation Analysis for Environmental Heavy Metal Sampling
Emily	Haight	The Ripple Effect: An Effort to Promote Ecological Resilience
Jillian	Fisher	Designing an Accessible Green Wall
Andrew	Taylor	Designing a Sustainable Culture System to Promote Growth of Fouling Organisms for Ecosystem Services
Leif	Olson	Microbial Activity in Mine Drainage Treatment Bioreactors at the Tar Creek Superfund Site
Elad	Shdaimah	A Green Community Model Based Around an Integrated Anaerobic Digester
Larry	Davis	Time Ecologies: The use of deer exclosures in a Forest Preserve to determine the impact of herbivory on natural forest regeneration.
Nora	Hamovit	Investigating Methanogen Community Composition and Activity in the Soil of a Restored Freshwater Wetland Using 13C-DNA Stable Isotope Probing
Haoyu	Chen	The strategies of combining wastewater treatment carbon sequestration done by fast growing mixotrophic algae, Auxenochlorella Protothecoides AS-1
Stephania	Suarez Grajales	Lisbrán a living lab
Jessica	de Oliveira Demarco	ECOLOGICAL ENGINEERING: EVOLUTION AND IMPACT OF DIFFERENT TERMS BY A BIBLIOMETRIC ANALYSIS
Jorge Andrés	Correa Valencia	GIS TOOLS AS SUPPORT IN THE IMPLEMENTATION OF THE EARLY WARNING SYSTEM, RISARALDA-COLOMBIA.
Alejandro	Herrera González	Communication Strategies for the Risaralda's flood Early Warning System
Niroj	Aryal	Developing an Undergraduate Level Hands-on Ecological Engineering Course
Santiago	Taborda	Low-cost instrumentation for drinking water systems monitoring
Vanessa	Calderón	Community response strategies for emergencies generated by floods and torrential floods in the department of Risaralda
Laura	Vizcaino Herrera	Operational Strategies of the Risaralda's Early Warning System, Colombia
Kyle	Boutin	Economic Analysis of the Potential for Cattail Bioproducts
Michele	Morgado	The effect of a first-flush rainwater harvesting and subsurface irrigation system on E. coli and pathogen concentrations in irrigation water, soil, and produce
Alexander	Brown	Impacts of Salt on Nutrient and Metal Removal in Stormwater Bioretention Mesocosms with Varied Vegetation and Soil Saturation
Kurt	Lawrence	Floating Green Roofs
Drew	Kirschnick	Utilizing Ecological Engineering to Manage Nutrients and Other Pollutants in the Sewage Treatment Process
Finn	Bondeson	Nutrient dynamics and energy and economic performance of a compost aeration and heat recovery system at a commercial composting facility
Osama	Tarabih	EFFECTS OF LAKE OKEECHOBEE OPERATION SCHEMES ON PHOSPHOROUS EXPORTS
Hannah	Johnson	Implementation of an Algal Turf Scrubber at University of Maryland

Sarah	Hobson	An Emerging Issue: Compost Plastic Contamination and Possible Soil Health Implications
Laura	Krueger	The HABs and the HAB - nots: Cyanobacterial Harmful Algal Bloom Risk and Regional Responses
Fouad	Jaber	Characterization of highly urbanized watershed: The case of Rowlett Creek in Plano, TX
Katherine	Porterfield	Resource recovery tradeoffs: Biogas potential and microplastics content of depackaged food waste
Kirkland	Mahoney	Energy Production and Waste Treatment from Food Waste and Black Water through Integrating Anaerobic Digestion, Hydrodynamic Cavitation, Microbial Electrolysis, and Electrocoagulation
Usoshi	Chatterjee	Utilizing Poultry Litter Derived Biochar as Soil Amendment in Ornamental Plants
Sara	Plude	Predicting bed grain size and Snuffbox mussel habitat availability in a mid-Michigan river
Robert	Stewart	Interpretation of Hydraulics Associated With Valley Restoration and Natural Channel Design Projects
Megan	Kramer	Evaluation of Hydrodynamic Effects of Waterway Restoration on an Estuarine Ecosystem
Coral	Hendrix	Evaluating the long-term morphological response of a headwater stream to three restoration techniques.
Joe	Berg	Living or Nature-Based Shorelines in Sandusky Bay, Ohio: Designs for Water Quality and Habitat Improvements
Zeshu	Zhang	Optimizing BMP Allocation in Urban Watersheds
Katherine	Stahl	Investigating Vegetation Dieback in Ditched Coastal Salt Marshes and Restoration Potential Using Runnels
Qianyao	Si	Exploring Internet of Things (IoT) Sensors for Monitoring Stormwater Dynamics at Three Urbanized Campus Catchments in College Park, MD.
Peter	May	A community based model for stream restoration: Canyon Creek and the cooperative housing community in Greenbelt, Maryland
Bruno	Fulco Mancini	Analyzing PRO effectiveness and membrane fouling in two different case study scenarios
Daniel	Ruane	Quantifying the flood mitigation benefits provided by the Shiawassee National Wildlife Refuge, Michigan
Diana Marcela	Mayo Osorio	Analysis of climate change effects on water supply in a small watershed modeling. A case study in La Bananera, Risaralda – Colombia.
Marali	Kalra	A sustainability-focused framework for computational evaluation of ecosystem services
Lauren	Jonas	Biological scrubbing and sequestration of CO2 from power plant smokestacks
Blake	Shewmon	Using algae from the removal of iron and selenium from an impaired Western Colorado stream