

American Ecological Engineering Society, 15th Annual Meeting, Stillwater, OK

TUESDAY, JUNE 2, 2015

4:30 - 7:00 p **EXHIBITOR & POSTER SETUP**
 6:00 - 7:00 p **STUDENT DESIGN COMPETITION KICKOFF MEETING** Wes Watkins Center Lobby
 6:00 - 9:00 p **RECEPTION--MEET & GREET** Finnegan's Pub (716 S. Main St.)

WEDNESDAY, JUNE 3, 2015

7:30 a - 5:00 p **REGISTRATION & CHECK-IN**
 7:30 a - 8:30 a **CONTINENTAL BREAKFAST**

MORNING SESSIONS

Plenary Session (Auditorium)
Moderator: Dan Storm

8:30 - 8:45 Welcome & Conference Overview
 8:45 - 9:30 *Welcome to Oklahoma --Will Rogers (Randall Reeder)*
 9:30 - 10:15 *Conservation and the Growing Need for Collaboration---* Mike Fuhr, State Director, Oklahoma Chapter of The Nature Conservancy

10:15 - 10:30 **BREAK, POSTER VIEWING, VISIT EXHIBITORS**

Session A1 - Sustainability & Services (Room 108) **Session B1 - Green Roofs (Room 109)** **Session C1 - Wetlands (Auditorium)**
Moderator: Andrea Ludwig **Moderator: Jessica D'Ambrosio** **Moderator: Alex Horne**

10:30 - 10:55 *Development of the Tennessee runoff reduction assessment tool (Andrea Ludwig)* *Construction and performance of green roofs in North Texas (Michelle Wood-Ramirez)* *Floating wetlands in Eucha Reservoir: cost-benefit comparisons (Paul Koenig)*
 10:55 - 11:20 *Looking beyond ecological functions to the value of ecosystem services in the urban regions of Houston (Deborah January-Bevers)* *Water and energy benefits of a thin sloped green roof on a sustainable home (Rhea Thompson)* *Enhancement of periphytic community colonization and productivity using 3d printing technologies (David Blersch)*
 11:20 - 11:45 *Resilience of ecologically engineered systems based on emergy information theory (David Tilley)* *A coupled analysis of soil moisture and thermal heat transfer within a thin green roof system (Scott Tjaden)* *Low to no energy nitrification and deammonification in intensified treatment wetlands (David Austin)*
 11:45 - 12:00 Session Wrap-up
 12:00 - 1:30 **LUNCH, POSTER VIEWING, VISIT EXHIBITORS**

AFTERNOON SESSIONS

Session A2 - Land Use (Room 108) **Session B2 - Biochar, Digestors & Bioenergy (Room 109)** **Session C2 - Wetlands (Auditorium)**
Moderator: Cully Hession **Moderator: Christina Cianfrani** **Moderator: Paul Koenig**

1:30 - 1:55 *Exploring land cover change in the Oklahoma cross timbers (Emma L. Kuster)* *Biochar from human waste – steps towards a new sanitation approach (Andreas Schoenborn)* *Restoring a severely disturbed watershed via ecological engineering: the role of passive treatment technologies (Robert W. Nairn)*
 1:55 - 2:20 *Prioritization of subbasins using land use metrics (J.A. McCarty)* *Addition of biochar to improve biogas production in chicken manure digestion (Pan Junting)* *Leaky treatment wetlands for aquifer recharge and water quality recovery: Central Pasco County Beneficial Water Reuse Project (Rafael Vazquez-Burney)*
 2:20 - 2:45 *Measuring the land use impact of us pork production using LCA (Ben Putman)* *Anaerobic digestion for sustainable sanitation linked to agricultural production in Haiti (Stephanie Lansing)* ***CANCELED** Hybrid conservation techniques for Spartina dominated wetlands in concert with oysters (S.G. Hall)*
 2:45 - 3:00 Session Wrap-up
 3:00 - 3:30 **BREAK, POSTER VIEWING, VISIT EXHIBITORS**

Session A3 - LID & Green Infrastructure (Room 108) **Session B3 - Biochar, Digestors & Bioenergy (Room 109)** **Session C3 - Wetlands (Auditorium)**
Moderator: Jason Vogel **Moderator: Stephanie Lansing** **Moderator: Rafael Vazquez-Burney**

3:30 - 3:55 *Monitoring living systems - watershed case study (Scott Tjaden)* *Using digestion combined with microbial electrolysis cell to increase energy production (Freddy Witarasa)* *A hierarchical approach to ecological engineering unit processes (David Austin)*
 3:55 - 4:20 *Combine low impact infrastructure for a more pura vida in the shuabb (Ronald Aguilar)* *Effects of iron addition on biogas quality and methanogenic communities during anaerobic digestion of dairy manure (Annie Yarberr)* *Can unit process natural treatment wetlands solve harmful algal blooms (HABs) by direct filtration? (Alex J. Horne)*
 4:20 - 4:45 *Is high density development an LID practice? A modeling study (Fouad H. Jaber)* *Forage radish: a renewable source of energy production for dairy farmers (Ashley J. Belle)* ***CANCELED** Lessons learned from 20 years of applied ecological design for wastewater treatment (Max Rome)*
 4:45 - 5:00 Session Wrap-up
 5:30 - 10:00 p **EVENING SOCIAL--Lake McMurtry**

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THURSDAY, JUNE 4, 2015

7:30 a - 9:00 a **REGISTRATION & CHECK-IN**

7:30 a - 8:30 a **CONTINENTAL BREAKFAST**

FIELD TRIPS

	Trip 1 - Tallgrass Prairie Preserve Leader: Bob Hamilton, The Nature Conservancy	Trip 2 - Tri-State Mining Area Leader: Bob Nairn, Univ. of Oklahoma	Trip 3 - Oklahoma City Ecological Design Leader: Brent Wall, City of Oklahoma City
8:15 AM	Board buses	Board buses	Board buses
8:30 - 6:00	Buses leave at 8:30 am Lunch & snacks provided	Buses leave at 8:30 am Lunch & snacks provided	Buses leave at 8:30 am Lunch & snacks provided

FRIDAY, JUNE 5, 2015

7:30 - 10:00 a **REGISTRATION & CHECK-IN**

7:30 - 8:30 a **CONTINENTAL BREAKFAST**

MORNING SESSIONS

	Session A4 - Aquatic Habitats (Room 108) Moderator: Tess Thompson	Session B4 - Stream & Watershed Restoration (Room 109) Moderator: Anand Jayakaran	Session C4 - Plants & Watersheds (Auditorium) Moderator: Christina Toms
8:30 - 8:55	<i>Ecohydrologic indicators of low-flow habitat availability in eleven Virginia rivers (Kinsey Hoffman)</i>	<i>Stream habitat restoration design based on eco-geomorphological relationships (Greg Jennings)</i>	<i>Hydrological responses across spatial scales: the impact of woody plant encroachment in the south-central Great Plains (Lei Qiao)</i>
8:55 - 9:20	<i>Benthic macroinvertebrate response to water quality and habitat in central Appalachia (Nicholas Cook)</i>	<i>Application of SWAT to predict watershed-scale streambank erosion on composite streambanks (A.R. Mittelstet)</i>	<i>Predicted influence of eastern red cedar removal on water quantity and quality using WEPP (Whitney Lisenbee)</i>
9:20 - 9:45	<i>Rapid assessment of periphyton communities in Oklahoma streams using an in situ benthotorch fluorimeter (Brad Rogers)</i>	<i>Floodplain connectivity at the continental scale and ecological engineering application to watershed restoration (C. Nathan Jones)</i>	<i>Hydrology, sediment and nutrient yields from switchgrass land cover in east Tennessee: implications for bioenergy crop sustainability (John S. Schwartz)</i>
9:45 - 10:00	Session Wrap-up	Session Wrap-up	Session Wrap-up
10:00 - 10:30	BREAK, POSTER VIEWING, VISIT EXHIBITORS		
	Session A5 - Aquatic Habitats & Restoration (Room 108) Moderator: Brandon Winfrey	Session B5 - Nutrients, Water, & Sustainability (Room 109) Moderator: Dawn Reinhold	Session C5 - Stream Function & Water Quality (Auditorium) Moderator: Nate Jones
10:30 - 10:55	<i>Do freshwater mussels affect mercury contamination of aquatic food webs? (Brent N. Tweedy)</i>	<i>The first flush: studying soil nutrient dynamics in a restored floodplain (Dylan Cooper)</i>	<i>Relating stream function and land cover in the Middle Pee Dee River Basin, SC (Anand D. Jayakaran)</i>
10:55 - 11:20	<i>The Rio Bogata, Columbia Project: can it be the River Thames repeated? (Alex J. Horne)</i>	<i>Benchmarking the water use of US agriculture using LCA: case study with pork (Eric Boles)</i>	<i>Indirect fluxes of nitrous oxide from a lowland arable catchment (Chris Adams)</i>
11:20 - 11:45	<i>Does pruning improve stormwater biofilter performance? (B.K. Winfrey)</i>	<i>The science of sustainability: a framework for continuous improvement (Marty Matlock)</i>	<i>Impacts of climate change on the water quality of Big Cypress Creek and Lake O' the Pines (Randy Rushin)</i>
11:45 - 12:00	Session Wrap-up	Session Wrap-up	Session Wrap-up
12:00 - 1:30 p	LUNCH & ANNUAL AEES MEMBERSHIP MEETING; STUDENT DESIGN COMPETITION RESULTS		

AFTERNOON SESSIONS

	Session A6 - Habitats & Services (Room 108) Moderator: Dave Tilley	Session C6 - Nutrients, Climate & HABs (Auditorium) Moderator: Marty Matlock
1:30 - 1:55	<i>Managing grasslands for pollinators: implications of management practices for native bees and monarch butterflies (Kristen A. Baum)</i>	<i>Predicting the impact of climate change on Maumee basin hydrology and nutrient loading (Andreas Culbertson)</i>
1:55 - 2:20	<i>Ecological population models to guide the design of green infrastructure in support of songbird habitat creation (David Wituszynski)</i>	<i>Impacts of phosphorus and ecological engineering in the western Lake Erie Basin (Jay Martin)</i>
2:20 - 2:45	<i>Please attend the conference-closing panel discussion in the auditorium</i>	<i>HABs & Ecological Engineering--A Panel Discussion (J. Martin, A. Horne, A. Culbertson, D. Austin, & others)</i>
2:45 - 3:00		Session Wrap-up
3:00 PM	CONFERENCE ADJOURNS	

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POSTERS

TITLE	AUTHORS	AFFILIATIONS
<i>THE GREEN BULKHEAD: A LIVING SHORELINE DESIGN FOR URBAN HARBORS</i>	Gregory Fuentes, Tessa Hart, Bryant Martinez, Kyle Runion, Kyle Speed, Lela Stanley, Peter May and Patrick Kangas	University of Maryland
<i>HUMAN VALUES AND WATER QUALITY, STROUBLES CREEK, VA</i>	Nicole Carter, Erica M. Davis, Karla Boza, M. Steele, M. Scorce, L.A Krometis, W. Cully Hession	Oklahoma State Univ., Univ. of Tennessee, Manhattanville College, Virginia Tech
<i>A COMPARISON OF PRODUCTIVITY ON TWO VERSUS THREE DIMENSIONAL SUBSTRATES IN AN ALGAL ECOTECHNOLOGY</i>	Peter May 1,2 and Patrick Kangas 2	1 Biohabitats, 2 University of Maryland
<i>UNDERSTANDING THE RELATIONSHIP BETWEEN URBAN BEST MANAGEMENT PRACTICES AND ECOSYSTEM SERVICES</i>	*Kelsey McDonough, Trisha Moore, Stacy Hutchinson, Aleksey Sheshukov	Kansas State University
<i>FLUE-GAS DESULFURIZATION TREATMENT WETLANDS: AN EXCEPTIONAL SYSTEM FOR GREENHOUSE GAS SEQUESTRATION?</i>	Trisha L.C. Moore, Barrett Wellemeier, Jacob Zortman	Kansas State University
<i>DETERMINING THE FEASIBILITY OF UTILIZING RECYCLED HOUSEHOLD WASTEWATER FROM AEROBIC TREATMENT SYSTEMS FOR CATTLE WATERING</i>	Oden, L.	Oklahoma State University
<i>HAITI SURVEY RESULTS: SANITATION PRACTICES, LIMITATIONS AND WILLINGNESS TO PAY FOR SANITATION FACILITIES</i>	*Ayella Maile-Moskowitz ¹ , Dr. Stephanie Lansing ¹ , Alexander Eaton ² and Teddi Galligan ¹	1University of Maryland Department of Environmental Science and Technology 2IRRI-Mexico
<i>A HISTORY OF THE AEES STUDENT DESIGN COMPETITION</i>	David Blersch ¹ , Brandon Winfrey ² , Patrick Kangas ³	1Auburn University, 2University of California Los Angeles, 3University of Maryland
<i>ENHANCING BIOGAS QUALITY IN ANAEROBIC DIGESTION SYSTEMS WITH IRON (III) ADDITIVES</i>	Angela Perantoni ¹ , Annie Yarberry ¹ , Stephanie Lansing ¹ , Stephanie Yarwood ¹ , Alba Torrents ²	1: University of Maryland, College Park; Dept. of Environmental Science & Technology, 2: Dept. of Civil & Environmental Engineering
<i>BYPRODUCT VALUE OF BRICK MAKING FROM ALGAL ECOTECHNOLOGY</i>	Kevin Britt, Hugh Davis, Cody Denton, Kyle Finkbeiner, Michael Gellman and Patrick Kangas	University of Maryland
<i>EXPERIMENTAL ANAEROBIC DIGESTION OF ALGAE FOR BIOGAS PRODUCTION</i>	Tyler Bryant, Joshua Gaimaro, Christopher Shingleton, Meredith Wallach, James Zester, Stephanie Lansing and Patrick Kangas	University of Maryland
<i>ANAEROBIC DIGESTION OF POULTRY LITTER AND POST-DIGESTION NUTRIENT RECOVERY</i>	Anna Kulow ^{1*} , Stephanie Lansing ¹ , Andrew Moss ²	1Department of Environmental Science & Technology, University of Maryland, College Park, 2Planet Found Energy Development, LLC.
<i>NATURAL GAS DEVELOPMENT ALLEVIATES NUTRIENT LIMITATION OF ALGAL GROWTH IN FAYETTEVILLE SHALE STREAMS</i>	*Bradley Austin ¹ , Natalia Hardgrave ² , Brian Haggard ¹ , Sally Entekin ² , and Michelle Evans-White ¹ ,	1University of Arkansas, 2University of Central Arkansas
<i>COMPARATIVE LIFE CYCLE ASSESSMENT (LCA) OF UNHEATED CHINESE FIXED-DOME DIGESTER WITH HEATED AND INSULATED PLUG-FLOW DIGESTER IN THE US</i>	*Freddy Witarsa ¹ , Stephanie Lansing ¹ , Amro Hassanein ² , Ge Yihong ³ , Qiu Ling ²	1Environmental Science & Technology Dept., University of Maryland, College Park, MD 2Mechanical & Electrical Eng. College, Northwest Ag. & Forestry University, Shaanxi, China 3Agronomy College, Northwest Ag. & Forestry University, Shaanxi, China
<i>MEASURING THE EFFECTS OF MYCELIUM IN STORMWATER MANAGEMENT SYSTEMS</i>	Rebecca Bender, Jacob Cochrane, Alexandra Fischer, Katerina Tsou	Department of Biosystems and Agricultural Engineering

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POSTERS, CONTINUED

<i>ACCUMULATION AND METABOLISM OF TRICLOCARBAN BY HYDROPONICALLY GROWN PEPPER (CAPSICUM ANNUUM)</i>	*Khang Huynh, Emily Banach, Dawn Reinhold	Department of Biosystems and Agricultural Engineering, Michigan State University	
<i>HOW CAN SWMM MODELING IMPACT URBAN PLANNING POLICY</i>	*Grant Brady, Stacy Hutchinson, Trisha Moore, Brent Chamberlain	Kansas State University	
<i>GRADE SCHOOL STUDENT CHANGES IN STEM SELF-EFFICACY FOLLOWING PARTICIPATION IN UNDERGRADUATE-DESIGNED LABORATORY ACTIVITIES</i>	L.-A. Krometis, T.M. Thompson, T. Blair, E. Kaufman, W.C. Hession	Virginia Tech and Concord College (Blair)	
<i>USING MICROBIAL SOURCE TRACKING TO IDENTIFY SOURCES OF HUMAN FECAL CONTAMINATION IN A SMALL URBAN WATERSHED</i>	Christine Hart, Sarah Medley, Andrea Stewart, B. Badgley, L.A. Krometis, R. Stewart, W.C. Hession	Smith College, UVA-Wise, UNC, Virginia Tech (x4)	
<i>SELF-OPTIMIZATION OF MIXED ALGAL COMMUNITIES VIA AUTOMATED FEEDBACK CONTROL OF LIGHT INPUT</i>	Jesse Blanton, David Blersch	Auburn University Biosystems Engineering Department	
<i>THE DISTRIBUTION OF NUTRIENTS IN URBAN AND AGRICULTURAL PONDS USED IN DETERMINING THE COST EFFECTIVENESS OF A BIOCHAR FILTER BMP</i>	JaymeLee Ewing ¹ , Cort Hammond ² , Caleb Higginbotham ³ , Stephanie Houston ⁴	1Virginia Tech, 2Washington and Lee, 3Virginia Tech, 4Virginia Tech	
<i>EFFECTS OF INTERSECTING LIMITING FACTORS ON THE COLONIZATION AND GROWTH OF ALGAL BIOFILMS IN CULTIVATION SYSTEMS</i>	Olivia Elliott, David Blersch	Biosystems Engineering Department, Auburn University	
CANCELED	<i>COMPARISON OF TWO METHODS TO QUANTIFY HYDROCARBON REDUCTION BY BIORETENTION</i>	*Abigail Tamkin, Jay Martin, James Bauer, Yu-Ping Chin	Ohio State University (all)
	<i>ASSESSMENT OF LIVESTOCK EXCLUSION BEST MANAGEMENT PRACTICE ON A SMALL TRIBUTARY IN SOUTHWEST VIRGINIA</i>	*Teneil Sivells, W. Cully Hession, and Durelle Scott	Biological Systems Engineering, Virginia Tech
	<i>NANO ZERO VALENT IRON PARTICLES (NZVI) AS A SOIL REMEDIATION TECHNIQUE TO REMOVE AS, CD, CU AND PB</i>	Chelsea Westra	Dulasiri Amarasiriwardena, Christina Cianfrani
	<i>GREENHOUSE GAS EMISSIONS FROM SOIL CORES FROM A RIPARIAN-UPLAND TRANSECT: HOW DO PRECIPITATION REGIME AND LANDSCAPE POSITION AFFECT SOIL CO₂, CH₄, AND N₂O FLUXES?</i>	*Tyler Weiglein, Durelle Scott, and Brian Strahm	Virginia Tech

ABSTRACTS

Abstracts can be viewed online or downloaded at:
<http://ecoeng.org/AEES2015/AEES2015.htm>