

THE FINE PRINT

Concurrent Presentations – November 19, 2011

11:00 am 45 Minute Concurrent Sessions

Brian Barnes, University of Louisville - *Thinking Critically about Sustainable Systems*

Bringing about a paradigm shift in environmental education from the status quo to the truly sustainable requires epistemic methodologies and replicable examples. This presentation supplies both. It begins with an introduction to the Foundation for Critical Thinking's framework for critical thinking, which emphasizes self-reflective, evidence-based problem solving and seeks to identify and eliminate bias. The framework is then used to trace the problem-solving process associated with the creation of a sustainable system that captures rainwater, purifies it for drinking, and then carries it to an aquaponic garden. The garden is fed by composting and vermiculture systems, and the entire plan can be incorporated into virtually any backyard, community, or commercial approach. Finally, I suggest methods for incorporating the framework into various curricular programs, and I offer some criticisms of the framework's ability to be adapted for sustainability-focused environmental education.

Sarah Lynn Cunningham, PE - *Greener Campus Landscape Design and Maintenance*

What's a campus manager to do? Maintenance budgets are often the first to be cut when school funding shrinks. Municipal stormwater programs are calling for, if not requiring, big reductions in campus run-off into overloaded combined sewers. School recruiters seek to distinguish campus appearances from the competition. Greener landscape design and maintenance practices can address all of these pressures, by cutting costs, reducing polluted run-off and adding an attractive, unique "sense of place" to campuses. The benefits can go further with composting projects, student gardens and strategic tree-planting to lower buildings' heating and cooling demands. This presentation will illustrate real-world tips for realizing the many benefits of greener landscape design and maintenance, including the use of native species and composting wet garbage from the cafeteria.

Brent Fryrear, Partnership for a Green City - *Partnership for a Green City*

The Partnership for a Green City is an innovative sustainability collaboration of a research university, community college, large school district and local government; four large public employers in Louisville. The Partnership process convenes peers from each entity to address problems, share sustainability solutions and improve stewardship of tax dollars. Peer pressure, rather than top-down decision-making, has produced significant changes in behavior and operating procedures within each partner. The Partnership is working with the community and other organizations to educate businesses and residents on ways to be more sustainable. We present an annual Environmental Leadership Award to a public servant who exemplifies leadership in sustainability. Employees/students are learning about sustainability. Energy efficiency has increased at all three organizations. We are focused on climate action report recommendations across our committee structure and have a strategic plan. This model is easily reproduced and can be a driver to achieve sustainability success.

Andrew Gott, WKUAID - *Fair Trade U - WKU*

Last year WKU became the latest Fair Trade University. We will give an overview of what Fair Trade is, what it means to our campus and what it means to be a Fair Trade campus. We will also look at what the future holds. This year we are exploring the Real Food Challenge and the amount of "real food" on our campus. We are finding that real food, Fair Trade, and sustainability efforts are greatly tied together by a concern for our planet and its people through being concerned how products reach us and what happens after we consume them.

Rob Haney, Kenton County School District - *Design Strategies – NET Zero Annual Energy Usage*

This session will describe the design goals and objectives for the new Turkey Foot Middle School. Turkey Foot is the third high performance designed school in the Kenton County School District. The goal to achieve NET Zero annual energy usage on a 134,000 square foot middle school is very aggressive but also very possible. All design criteria utilized in the new school will be presented and discussed in a comprehensive manner. It takes a combination of innovative building equipment and building systems to achieve NET Zero annual energy usage. This session will provide actual energy performance data collected thus far on the largest solar photovoltaic installation in the State of Kentucky. The most significant aspect of this entire construction project is the fact that construction cost was less than the average construction cost for schools built in greater Cincinnati for the same period.

Keith Reller, Johnson Controls – *Efficiency Works*

Gretchen Vaughn, NKU - *Greensleeves—a Small Family Farm*

Join Gretchen Vaughn to discuss what sustainability means to the small scale farmer or producer of family food. Now 12 acres, Greensleeves Farm is what is left of a 300 acre farm in southern Campbell County. Suburbia is encroaching on all sides. Learn what is being done on this property to protect, conserve, and increase natural resources. Discover how you can apply these same principles to enhance your own home. We will discuss our resources of soil, the basis of all life; harvesting water; microclimates for passive solar gain; natural building design; and wise energy use through community.

2:00 pm **45 Minute Concurrent Sessions**

Russell Barnett, KIESD, University of Louisville – *Green Infrastructure*

The University of Louisville is located on a combined sewer system. On August 4, 2009, the University received 7 inches of precipitation in 75 minutes resulting in \$25 million in flood damage. The University has incorporated Green Infrastructure into its 25-Year Master Plan and is currently building over \$2 million in green infrastructure including bio-retention ponds, pervious concrete, green roofs, and rain gardens. Support funding for these projects comes from the Louisville Metropolitan Sewer District as part of a \$870 million settlement agreement with the US Department of Justice, US EPA and the Commonwealth of Kentucky. The presentation will provide information on how the University turned to green infrastructure as a needed element in its Master Plan, its approach to planning for storm events, and an overview of the projects completed and under development.

Sophia Cifuentes, Sustainability Coordinator, Cincinnati Zoo and Botanical Garden - *The Greenest Zoo in America*

In 2006, the Cincinnati Zoo & Botanical Garden's leadership team made a formal commitment to aggressively and passionately pursue environmental stewardship and to develop a strong sustainability program that includes energy efficiency, water usage, storm water management, waste management, sustainable design and construction, and education outreach. This strong commitment towards being green led to the 2010 proclamation by Governor Strickland that stated the Cincinnati Zoo & Botanical Garden as being the greenest zoo in America. Some of the Zoo's green initiatives include the largest, urban, publicly accessible solar array in the nation; reducing water consumption from 220 million gallons per year to just 98; reducing energy use by 11% despite adding 25% more building square footage to Zoo grounds; composting 8 tons of organic waste a week; and reaching out to the community to create safe, green spaces, energy efficient homes and community garden plots.

Steve Kerlin, NKU; Billy Bennett, EKU; April Haight, Morehead State; Terry Wilson, WKU - *Sustainability Initiatives of the Kentucky University Partnership for Environmental Education*

A Center for Environmental Education at each state university in Kentucky functions to increase the environmental literacy of the citizens of the commonwealth. The centers collaborate as the Kentucky University Partnership for Environmental Education (KUPEE). A panel of directors of the centers will present projects and initiatives across the state that focus on education for sustainability at universities, K-12 schools, and in community outreach. Each center will give a short description of projects in their region followed by questions and discussion with the audience.

Joe Kohrs, PE & Bob Heil, PE, LEED AP, LC, KLH Engineers - *The Road to NET Zero*

This program provides attendees an advanced understanding of important strategies for achieving a net zero building. The large volume of factors to be considered for obtaining this goal may surprise you. A demonstration of the reiterative process will show the importance of a strategic implementation order of many sustainable factors - taking into consideration initial cost, energy savings, and payback for the owner. Attendees will gain a thorough understanding of complex sustainable design tactics, as well as how these systems interdependently work together to create a multiplier effect related to energy and cost savings. Can renewable energy systems survive and operate longer than the payback period? Come and explore the true viability of today's technology. This exercise and interactive discussion will encourage you to consider if a sustainable payback is truly possible.

Richard Olson, Berea College - *Building Resilient Households through Ecological Design*

The Sustainability and Environmental Studies (SENS) House is an ecologically-designed residence, the goal of which is to demonstrate and teach approaches to increasing household resilience in the face of increasing environmental and economic challenges. Permaculture principles are used to guide the development of a house and grounds that maximize the capture and use of solar energy and rain water, and minimize the use of fossil energy and imported materials. The SENS House produces more electricity than it consumes, and uses no municipal water. The SENS House grounds cover 1.5 acres and include an aquaponics facility, the Natural Building Shelter, gardens, edible landscapes, a dwarf fruit tree orchard, and the permaculture food forest. Eight SENS labor students manage the daily operations of the SENS House, and facilitate its use as a teaching facility for SENS classes, and as an educational facility for the wider community.

Herb Petitjean, Kentucky Brownfield Redevelopment Program - *Safe Urban Gardening*

Urban areas in Kentucky, like cities throughout the nation, often have "food deserts"- areas where mainstream grocery stores are absent and the chief food suppliers are convenient stores and fast food restaurants. These deserts are frequently in low-income and minority communities. The residents often have limited transportation access. This makes it hard for families and individuals to include much fresh produce in their diets. This contributes to the higher levels of obesity, high blood pressure, diabetes, strokes and heart disease often found in these communities. A potential solution would be to convert vacant properties into community gardens. But care needs to be taken to avoid exchanging one set of health problem for another. These properties may have contamination from past uses. Fortunately, the risks can be significantly reduced or eliminated by employing some simple best management practices, which will be discussed in this presentation.

Randy Wilson, EKU; Matt Callo, Berea College; Sara Ferguson, WKU; Charles Pettit, NKU - *Recycling at Kentucky Universities*

Representatives from 4 Kentucky colleges and universities will each take 10 minutes to describe their schools recycling initiatives and successes. At the end of these lightning rounds, all will take questions from the audience.

Melissa Clarke, Cody Cook, Preston Miles, Centre College - *'Movie Theater Previews' Approach to Passive Training for Sustainability*

Communicating information about sustainability and the institutions' efforts is both important and difficult. Conveying information to new first-year students is even more critical. Unfortunately, the new student orientation process is brief and filled with other important issues. We have developed a slide show that loops continuously and runs before each of the all-student orientation meetings. This 'movie theater preview' approach is simultaneously entertaining, informative, and effective. We will present the slide show itself and discuss the development process and the reactions of students.

Josh Eastlake, Registered Landscape Architect, Vivian Llambi & Associates Inc. - *Rainwater Harvesting: The Basics*

A general overview of rainwater harvesting system design, including calculating supply and demand, storage container types, system components, system maintenance, and non-potable uses of collected rainwater.

Jim Embry, Sustainable Communities Network - *Art Gardening as the Foundation of Education for Sustainability*

Let's explore art gardens as the foundation of education for sustainability, opportunities for curriculum integration and community connections. This is an interactive and participatory workshop that describes the opportunities to engage children and youth in the delicious and delight-fun creation of art gardens that utilizes recycled materials, sacred geometry symbols, creative art forms, edible plants and flowers and much more. Art gardens are natural expressions of the Earth that can serve as the foundation for teaching about sustainability at the earliest age. Gardening is a way for our children to understand at a very early age our sacred Earth connections, systems thinking and engaged citizenship. Engaging youth in art gardens can provide them with a grander sense of themselves and the capacity to respond creatively to the environmental challenges in their daily lives.

Peter H. Hackbert, Berea College, Entrepreneurship for the Public Good Program - *Sustainable Berea – Neighborhood Food Feast*

Alexandra (Sasha) Solomatova and Dr. Peter H. Hackbert (Berea College faculty mentor and Director of the Entrepreneurship for the Public Good Program) won first place for the best social entrepreneurship innovation to impact the Appalachian Region at the 6th Appalachian IDEAS Network Showcase. The proposal, in partnership with Sustainable Berea - Neighborhood Food Feast (NFF) is a local food outreach project directed at consumers to advance the understanding of sustainable foods and translate this understanding to healthy food purchasing choices. Sustainable Berea has developed a community-based NFF tool kit to promote behavior change. The model uses the structure of an informal dinner meal and existing friendships to educate consumers and motivate their choices with respect to sustainable food. This presentation will reveal and demonstrate the steps, methods, and materials to replicate the Neighborhood Food Feast (NFF) in other communities. Johauna Gosney and Ariel Owens will share the presentation and discuss the expansion of the NFF to 10 community dinners and 250 persons in the fall of 2011.

John Metz, Sarah Scherer, Tobias Deaton, NKU - *Geographical Patterns of Farmers Markets in Greater Cincinnati*

Farmer's markets in Greater Cincinnati are part of a nation-wide trend linking farmers, consumers, and community activists seeking to improve the US food system. In 2011 37 farmers markets were located within greater Cincinnati region. We visited markets, recorded products on sale, vendors names and enterprise locations, and interviewed managers. We identified three main market types. The first type was established to provide farmers with an outlet for their produce and give consumers fresh, local food. The second group was established primarily to give local consumers healthy and locally produced food as well as other non-food artisanal consumer products, and secondarily to provide local farmers with an outlet for their produce and support local businesses. The third group is using farmers markets to develop their community more generally. We have mapped these market types and will interpret the geographical and socio-economic patterns.

Devin Schenk, Center for Applied Ecology, NKU - *Stream and Wetland Restoration in Northern Kentucky*

The Center for Applied Ecology manages the Northern Kentucky Stream and Wetland Restoration Program, which serves nine counties. The program works to restore streams and wetlands on public and private land. The presentation will show some of our important accomplishments, discuss how we employ and educate NKU students, and reveal some of the techniques we use to improve the region's water quality. -

Kenya Stump, Kentucky Division of Compliance Assistance – *Biofuels for Schools*

In 2010, the Biofuels for Schools program (www.bio-schools.org) was launched to encourage Kentucky schools to teach, produce, and use biofuels within their campuses and classrooms. The first program year focused on the introduction of biodiesel in the classroom. This presentation will review the concept of biodiesel, environmental benefits, and how campuses can benefit from converting to biodiesel. Additionally, biodiesel teaching concepts will be introduced for use within chemistry, diesel, automotive, and environmental science courses. The Biofuels for Schools program is made possible by the TogetherGreen fellowship program and the Kentucky Division of Compliance Assistance. TogetherGreen is an alliance between Toyota and Audubon.

4:00 pm 45 Minute Concurrent Sessions

Russell Barnett, KIESD, University of Louisville – *Energy Conservation and Renewable Energy*

The University of Louisville is completing a \$47 million energy performance contract guaranteed to reduce the energy demand by 33%. While an excellent technical solution, equally important is the community-based social marketing needed to change energy use behavior on campus. Energy costs are hidden from users. The costs are incorporated in indirect charges to the University's budget. With students, staff and faculty not cognizant of energy costs, energy is used excessively. The University has implemented energy assessments of individual faculty and staff offices and is developing programs to increase awareness of energy use.

Dr. Sandra B. Conners, EKU - *Air Pollution Can Kill? Placing Environmental Education in a Historical Context*

From the classical period of Rome, to the Middle Ages in Europe, the Victorian era in England, the Depression era Dust Bowl and mass industrialization in America and now in China, air pollution has sickened and killed millions. Major air pollution historical events will be presented in an audio-visual presentation and estimates of morbidity and mortality will be provided. Placing air pollution in an historical context is important for many reasons. Environmental education generally neglects to provide a foundation and understanding of the historical context. In doing so, environmental educators miss an opportunity to develop their students' ability to think critically and reflectively about the past and its implications for the present. A historical approach to environmental education has the potential for students to better recognize patterns and trends that may re-occur in some form, to better understanding human nature and to improve future environmental decision-making.

D. Robert Deal, AIA, LEED AP BD+C, JRA Architects – *Case Study: UK Davis Marksbury Building*

The Davis Marksbury Building is UK's first LEED project. The 45,000 SF building houses UK's Center for Visualization and Virtual Environments as well as select research activities of the Department of Computer Science and the Department of Electrical and Computer Engineering. The building is Phase 2 of the College of Engineering's Digital Village Complex. Earlier this year, it was awarded LEED Gold, the second highest rating established by the US Green Building Council or USGBC. Designed by JRA Architects and Ratio Architects, it achieved 67 out of a possible 106 points. Some of the features of the building that earned those points are a variable air volume HVAC system, an airside economizer, a heat recovery chiller, a direct digital control system that monitors all building power usage and a roof of photovoltaic panels. Robert Deal, the project administrator of JRA, will review the building process from initial goals to final outcome.

Mark Jacobs, Watershed Project Manager, Boone County Conservation District - *Gunpowder and Woolper Creek Watershed Initiatives*

Gunpowder Creek and Woolper Creek are two of the most important watersheds in Boone County, Kentucky. Together, they encompass one third of the land area and provide home to two-thirds of the population of the county. Rapid growth in Boone County over the last twenty years has created challenges to protecting vital water resources in these two important watersheds. This presentation describes the efforts of the community, led by the Boone County Conservation District, to develop watershed plans to improve and/or maintain the water quality of Gunpowder and Woolper Creek.

Timothy Mayer, Community Farm Alliance - *Making the Case for a Local Food Economy*

Following the demise of Kentucky's tobacco economy, Community Farm Alliance (CFA) sought to support Kentucky's transition towards an agricultural economy rooted in food production for local consumption. Since then, CFA has pursued policies on the state level and instigated projects that both keep family scale farmers on the land and further develop Kentucky's local food economy. CFA has worked with local school districts, churches, businesses, government agencies and community members to develop creative marketing opportunities for farmers that make local food more widely accessible. Over the last decade, CFA has helped pass legislation and continues to lobby for policies that promote the development of a local food economy for Kentucky. The presentation will give participants background into CFA's project and policy work while providing participants with ideas and strategies they can apply in their communities that make local food more widely accessible and available to all members of the community.

Concurrent Field Trips – Sunday, November 20, 2011 – 9 am to 12 noon

FOOD AGRICULTURE – Community Gardens

At 9:00 am, participants will board a bus and head out for a series of community garden visits. The tour will be led by Maggie Gough, NKU's Senior Wellness Specialist. Maggie has arranged for people to greet the tour group and provide information at each of the following gardens sites:

- NKU's Callahan Hall
- Highland Heights City Building
- Asbury United Methodist Church
- Former Highland Heights Elementary School
- Highland Heights Giving Fields

Riding back to NKU on the bus, participants can compare and contrast the five different sites.

NOTE: The gardens can be muddy so participants may wish to choose their footwear accordingly. Also, not all garden sites are accessible for those with mobility challenges.

ENERGY CONSERVATION – Duke Energy Envision Center

At 9:00 am, participants will board a bus and set off for Duke Energy's Envision Center in Erlanger Kentucky. The center provides visitors a dynamic experience that demonstrates the possibilities of modernizing to smart grid and energy efficient technology. It features a movie-style studio with sets consisting of a substation with two-way digital technology, a smart home – complete with solar panels and a plug-in hybrid vehicle, an apartment complex with smart meters and a power delivery work center – monitoring conditions with real-time data. Electric poles equipped with intelligent power equipment are also staged throughout. Center visitors can watch video presentations that showcase a day in the life of a variety of energy customers in the year 2015. The center also promotes the importance of renewable power to meet the energy needs of tomorrow and how customers can play an important role in helping us reduce our carbon footprint.

NOTE: The Envision Center uses flashing lights as part of its demonstration and is not appropriate for people with health issues that are exacerbated by this type of lighting.

GREEN BUILDING – Griffin Hall and Turkey Foot Middle School

Participants will tour Griffin Hall, NKU's newest building project and home to the College of Informatics, with Rob Knarr, the university's project manager. The building was designed to LEED Silver standards by Goody Clancy, a Boston architectural firm. Knarr will point out those design components that rated LEED points as participants tour the many unique spaces in this unusual building.

Following the tour of Griffin Hall, participants will board a bus to go to Kenton County's Turkey Foot Middle School, a project designed to be net zero. Rob Haney, Kenton County's Director of Support Services who will tour participants through the building and discuss the design intentions of both the middle school and their other "green" projects.

Riding back to NKU on the bus, participants can compare and contrast both "green" building projects.

RECYCLING & REUSE – NKU & Construction Recycling

At 9:00 am, participants will walk through the NKU campus to the NKU Central Receiving /Loading Dock where they will be met by Roger Reed, NKU's lead recycler. Roger will guide the group to the NKU Recycling Center where he will explain and discuss all the materials that NKU recycles on an on-going basis as well as special materials that it recycles on a one time basis. In addition, he will demonstrate the large scale shredder and material baler.

After Roger's presentation, tour participants will return to Student Union 108 via the NKU tunnels where they will meet with Scott Walton of LaFarge North America who will talk about recycling both traditional and synthetic gypsum wallboard products. Wallboard makes up a large portion of construction demolition waste. Carpet is another large component of construction demolition waste. Interface Flor is an industry leader and innovator in carpet recycling and carpet production. Tour participants will have an opportunity to see a film which tells the Interface story.

NOTE: This tour is accessible but does require moving across campus twice.

SOCIAL & ENVIRONMENTAL JUSTICE – Fernald Preserve

At 9:00 am, participants will board a bus and set off for Fernald Preserve in Harrison, Ohio. The Fernald Preserve is located on the site of the former Feed Materials Production Center, a uranium processing facility that produced high-purity uranium metal products as the first step in America's nuclear weapons production cycle. The site's production mission began in 1951 and continued until 1989, when production operations ceased and Fernald's mission changed to environmental remediation. The comprehensive environmental remediation and ecological restoration of the site was completed in 2006 at a cost of \$4.4 billion. This cleanup was one of the largest environmental cleanup operations ever undertaken in our nation's history. The 1,050 acre Fernald site has now come full circle. The property's natural features have been restored to pre-settlement conditions using native plants and grasses that were identified in an 1819 land survey of the area.

The on-site tour host will be David Hinsman, who is in charge of Visitor Operations at the Preserve. Tour participants will meet him at the LEED Platinum Fernald Preserve Visitors Center, a 10,000-square-foot green building that celebrates the rich and varied history of the Fernald site.

NOTE: It will take at least an hour to reach the Fernald Preserve. Tour participants should plan to be back to NKU later than 12:00 noon.

WATER CONSERVATION – Sanitation District 1's Public Service Park

At 9:00 am, participants will board a bus and set off for SD1 (Sanitation District 1) and its Public Service Park in Fort Wright, Kentucky. The park features cutting edge public educational programming and is considered a national model for environmental outreach. This one-of-a-kind, innovative facility features the following educational tools and Best Management Practices (BMP's):

- Vegetated roof
- Wetland classroom
- Storm water garden
- Retention and detention basins
- Vegetated bioswales
- Native meadow
- Watershed plaza
- Oil/water separator
- Porous pavements
- Cistern
- Urban forest
- Environmental art sculptures
- Native American creek walk and more!