



PENNSYLVANIA ASSOCIATION *of* ENVIRONMENTAL EDUCATORS

Welcome to the PAEE conference! We're glad you are here! This document is intended to help you make the most of your time at the conference.

1. Map out your conference

Get to know the conference layout. Make note of where sessions are held, where field trips meet to venture off site, where meals will be held and where the nearest restrooms are located. Be sure to check out the exhibitors as well!

Review the conference brochure for a list of sessions and descriptions. Decide your goals as a learner; do you want to go to sessions that broach totally new topics for you or do you want to dive deeper into one topic? Choose your own adventure! Always have a backup session in mind in case your first choice is cancelled or full. If you are in a session and it is not what you expected, it is okay to leave the session and choose one better suited to your needs.

2. Avoid conference fatigue by taking breaks

Learning can be exhausting! It's okay to skip a session to take a nap or get some fresh air if you need it. It's much harder to absorb information and make meaningful connections when you're burnt out or overwhelmed.

3. Be ready to make connections with strangers!

Practice your elevator pitch and know your skill set. Don't be afraid to approach organizations or individuals about opportunities or collaborations. We're all in this together and everyone attending wants to make environmental education the best it can be!

Dare yourself to sit at a table with all new people. Share business cards (if you have them) to solidify new connections.

4. How to prepare yourself:

Bring something to take note of all your new ideas. Whether that's pen and paper or a tablet/laptop is up to you. Bring a reusable water bottle and some snacks in case meals are outside of your usual eating times. Dress in layers since temperatures can vary from room to room. Also bring appropriate outdoor gear if you're going on a field trip (boots, water shoes, hat, sunglasses, etc.). Don't be afraid to ask the field trip leader ahead of time what would be best to bring for the excursion.

MONDAY EVENING MEETUPS (optional)

Hike the City - Art Museum, Schuylkill Banks & City Hall, 7:30 PM (transportation is on your own)

Join us on a guided "hike" of Downtown Philadelphia. We'll begin by walking along the Schuylkill Banks Boardwalk (meet up point TBD), walk past the Philadelphia Museum of Art, and end at City Hall. The hike will last approximately 1 hour and we'll walk about 2.5-3 miles.

Dock Street Brewery & Restaurant, 7:30 PM (transportation is on your own)

We'll have a casual meet up where people can check out Philadelphia's oldest microbrewery for some beer and some snacks. Dock Street Brewery & Restaurant is located in West Philadelphia at the corners of 50th and Baltimore. The cost of food/drink is not included.

TUESDAY FIELD TRIPS *(Limit of 25 participants, sign-up at registration table, transportation provided)*

Bartram's Garden and John Heinz National Wildlife Refuge, 8:30 AM - 12:00 PM

Start your morning off exploring Bartram's Garden, a 45-acre National Historic Landmark, operated by the John Bartram Association in cooperation with Philadelphia Parks and Recreation. It is a destination and an outdoor classroom, and living laboratory. Afterwards, we'll head to John Heinz National Wildlife Refuge, America's First Urban Refuge. There we'll learn about Environmental Education programs at the refuge, explore the Visitor Center exhibits, and try our hand at archery!

Fairmount Waterworks & Discovery Center, 8:30 AM - 12:00 PM

Attendees from the conference will experience the urban environmental side of Philadelphia. First we will head to Fairmount Waterworks, where you'll learn about the history of our pumping station, as well as the future from our freshwater demo mussel hatchery. From there we will go to the new Discovery Center, which is partnered by Audubon Society and Outward Bound, and you'll be able to tour the property and check out the four-story high observation tower which is perfect for birding!

Wissahickon Valley Park, 2:00 PM - 5:00 PM

Stretch your legs and take a hike in the beautiful Wissahickon Valley Park. Located in northwest Philadelphia and carved through the distinctive Wissahickon schist bedrock, the gorge features steep wooded hillsides where the region's rich history is represented in the park's many historic structures. Learn how this special park was created to protect the water supply for Philadelphians over 150 years ago.

2019 PAEE CONFERENCE: SESSION 1

Monday, 9:45 AM – 11:00 AM

A Land Trust's Multi-faceted Approach to Conservation Education Across Landscapes | *Blake Goll, Nature Education Coordinator (WCT), Lauren McGrath, Director of Watershed Protection Program (WCT), Regan Dohm, Conservation Associate (WCT), and Caitlin Welsh, Motus Curriculum Pilot Program Coordinator (WCT)* | Liberty 1 (Space is limited - Sign up at the Conference Registration Table)

Our environmental education initiatives span many landscapes. The Trust's open space protection naturally spans landscapes including watersheds, agricultural lands, woodlands, grasslands, and even suburban backyards. Our Community Farm Program supplies the community with sustainably grown produce and connects people to the land. People coming to the 6-acre farm (and nature preserve) can see how 30,000 lbs of food is grown annually in harmony with the surrounding natural habitat. For example, native wildflower meadows planted next to the farm fields help promote beneficial pollinators as well as a healthy population of predatory insects that prey on agricultural pests, thus eliminating the need for chemicals. Visitors learn about these practices when participating in our bird and farm programs. For example, Rushton Nature Keepers help plant and harvest potatoes across the seasons and then visit the local Food Bank (to which we donate) to see the far-reaching benefits of sustainable local food systems.

Environmental education is all about such connections. Our Motus curriculum (the aforementioned Bird Migration Education Program) is another way in which we are building connections. The focus is to connect children in classrooms to real-world conservation work by getting them involved with cutting-edge technology that teachers can incorporate into their STEM education as well.

In this way we are "leading the next phase of environmental literacy", exposing students to careers in conservation, field science, and ornithology and connecting young students to nature whether it's outside of school (e.g., Rushton Nature Keepers) or inside school (using the Bird Migration Education curriculum).

Foundations of Environmental Education | *Fran Bires, Former Director of McKeever Environmental Education Center* | Salon 1

This workshop will cover the foundation of environmental education, as well as the knowledge and skills necessary to incorporate quality environmental education in your instruction. We will cover the history, definition, and goals of environmental education.

This workshop is required for those who have applied for Non-formal Certification.

2019 PAEE CONFERENCE: SESSION 1 (con't)

Monday, 9:45 AM – 11:00 AM

Conducting Carbon Dioxide Emissions Reduction Workshops | *David Fallick, Professor Montgomery College* | Salon 2

Workshop participants will learn content and methods for conducting their own workshops in carbon dioxide emissions reduction. This workshop will be based on the one I did for my NOAA Climate Steward project at the school where I work. Specifically, participants will learn the basics of climate change; the sources of carbon dioxide emissions in the following areas of daily life: transportation, lighting, heating, cooling, water use, and appliance use; ways to lower their carbon dioxide emissions in these areas of daily life; and the formulas necessary for calculating the pounds of carbon dioxide emissions avoided and to keep a record of their reductions. I will also give participants a rundown of my NOAA workshop to help them get additional ideas for running their own workshops.

Why do we LOVE to hate Bugs? | *Ryan Bridge, The BugMan* | Salon 3

Detailed discussion focused on ways to successfully connect and engage the public (usually kids, but all ages and all venues) to environmental issues, using both LIVE and preserved bugs and insects.

Empowering Youth in Conservation Through Service Learning and Media | *Todd Bauman, Hawk Mountain Sanctuary* | Salon 4

Hawk Mountain Sanctuary has effectively utilized local youth in conservation since its founding in 1934. For example, in its early years, teens helped to investigate other hawk shooting sites along the ridge, which helped gain full legal protection for raptors as they soared along the Kittatinny Ridge. Over the past several years the Sanctuary has once again effectively utilized young people to meet its mission. Through an intensive service-learning program, Hawk Mountain extended its efforts in land management while empowering service-learning participants, all while using a strong and ongoing focus on utilizing media to engage students more fully in their work. Use of various forms of media also allowed involvement of the entire community. In this workshop, several examples will be shared followed by a brainstorming discussion on how service-learning and media can help to empower and engage youth in conservation.

2019 PAEE CONFERENCE: SESSION 2

Monday, 11:15 AM – 12:30 PM

Safety Issues in Environmental Education | *Fran Bires, Former Director of McKeever Environmental Education Center* | Liberty

1

Teaching and learning in an outdoor natural setting is an invaluable experience for leaders and learners alike. At the same time, leaders need to take into consideration safety factors that can help define a positive experience, or create a negative experience that can have lasting effects on a learner. This session will cover safety issues ranging from interactions with wildlife, bites and stings, needs of participants, dressing appropriately and methods and approaches for leaders.

This workshop is required for those who have applied for Non-Formal EE Certification.

2019 PAEE CONFERENCE: SESSION 2 (con't)

Monday, 11:15 AM – 12:30 PM

Coaching Students to Create Multimedia Narratives: Story Circles, Maps & Virtual Reality | *Kimberly Del Bright, Writer-In-Residence for the College of Earth and Mineral Sciences, Dr. Michael Nassry, The Pennsylvania State University, Assistant Research Professor of Geography | Salon 1*

Environmental storytelling began with Rachel Carson who used narratives to help people understand the potential effects of pesticides. It continues today with more opportunities to combine textual, aural, and visual elements to reach larger and more diverse audiences for greater impact. Stories are well suited to science. The scientific method is at its core describing what happened and what it meant, and this is exactly what is done when a story is told. Even though students consume large quantities of digital formatted information, how do we guide them to become producers of multimedia narratives that incorporate emerging technologies, such as Virtual Reality? This workshop provides methods to teach students how to harness the power of a good environmental story in the 21st century. Story Circles, Story Maps, and Virtual Reality examples and guidelines will leave you with strategies to inspire your students to tell their stories in less traditional ways.

Using EE and EFS to Catalyze STEM Teacher Leadership Development | *Paul Morgan, Professor at West Chester University, Education for Sustainability, Victor Donnay, Professor at Bryn Mawr College; Margaret Stephens, Professor at Community College of Philadelphia | Salon 2*

Can environmental and sustainability education inspire STEM learning and STEM teacher leadership development? Learn about EFS-Philly, an NSF-funded project that harnesses the region's STEM and sustainability assets to support GreenFutures, the School District of Philadelphia's sustainability plan. The core initiative is a model for place-based STEM teacher leadership development in environmental and sustainability education.

Bringing Free Web Tools Into Your Watershed Education Plan | *Kerrie Snavely, TES MMW Master Teacher, and James Hovan, TES MMW Master Teacher | Salon 3*

Teaching Environmental Sustainability—Model My Watershed (TES-MMW) is a free, robust, educational program and web-based GIS tool that helps students investigate watersheds on a scale that they can determine to see how land-use, topography, and soil type influences storm water runoff, infiltration, and evapotranspiration. Using powerful, real-world data sets, and mathematical models, students can also simulate the effect that different land uses and conservation practices will have on storm water in their study area. Participants will receive an overview of TES-MMW and be given plenty of guided time with the app to investigate it on their own.

2019 PAEE CONFERENCE: SESSION 2 (con't)

Monday, 11:15 AM - 12:30 PM

Bridging Environmental Education of K-12 , Higher Ed and Beyond | Jennifer Demchak, Professor Mansfield University and Thomas Perry, teacher at Northern Tioga School District | Salon 4

The notion of “lifelong” learning is inherently experiential. It is time to develop partnerships, foundational research and experiments, and cultural shifts that will be required to understand how it works, how to do it best and how to scale it. Our goal is to encourage a “holistic” approach to experiential learning. We want to immerse students in a professional culture, providing opportunities to solve real-world problems and explore professional interests in partnerships with actual employers. Students learn they can influence the world not just excel in a subject. Mansfield University is building these partnerships with school districts in the northern tier and collaborating with consulting firms, conservation districts and non-profits. We want to share “our story”.

2019 PAEE CONFERENCE: SESSION 3

Monday, 2:00 PM – 3:15 PM

Pittsburgh vs. Philadelphia vs. the WORLD!: The City Nature Challenge and the Use of Bioblitzes to Engage with the Urban Landscape | Bernard Brown, Jessica Kester, Allegheny Land Trust & Robin Irizarry, Tookany/Tacony-Frankford Watershed Partnership & Philadelphia Watershed Coordinator | Liberty 1

Pittsburgh vs. Philadelphia vs. the WORLD! From April 26 to May 6th cities around the globe will be competing to see who can make the most observations of nature, find the most species, and engage the most people in the 2019 City Nature Challenge (CNC). Learn how Pennsylvania’s two largest cities will take part and how other PA cities can do so in the future. Bioblitzes and nature engagement apps like iNaturalist are increasingly popular tools to gamify environmental education, and we’ll also hear about the experience of the Tookany/Tacony-Frankford Watershed Partnership using them outside of the CNC. We have a lot to learn about best practices, particularly in urban settings, and we look forward to a discussion with session participants. Weather permitting, we’ll hold a mini bioblitz* on the hotel grounds. ****Participants should dress for outside activity. We encourage participants to check out iNaturalist before the session and be prepared to use it on their own devices.***

Incorporating Green Careers Into Your Programs | Heather Drzal, Director of School and Youth Programs, Michelle Cugini, School and Youth Program Manager and Julie Raiguel, Intern (all at Longwood Gardens) | Salon 1 (Space is limited - Sign up at the Conference Registration Table)

Did you know that 39% of green collar jobs will go unfilled this year? Learn why there is a need to get students excited about careers working with the environment, how to tie careers into your existing programs, and how Longwood Gardens has started this process. Create a tool to take with you and receive handouts to help you begin preparing the next generation for the green industry.

2019 PAEE CONFERENCE: SESSION 3 (con't)

Monday, 2:00 PM – 3:15 PM

Climate Change in Our Watershed | *Diane Motel, Director of Education Programs Wildlands Conservancy, Alexandra Gordon, Environmental Educator Wildlands Conservancy* | Salon 2

By focusing on climate change literacy with an emphasis on local impacts, this place-based program offers students an opportunity to tackle this serious 21st Century problem in a thoughtful, multi-disciplinary way using a STEM-centered project to create collective action. Middle school students utilize technology and social media to focus on personal efficacy. Lessons learned are shared from both Eyer Middle School's teacher and Wildlands Conservancy.

Kinderforest! ... and other outcomes of local partnership | *Tom Hartzell, Environmental Educator Merry Lea Environmental Learning Center of Goshen College* | Salon 3

Whether your context is formal or non-formal, educator or administrator, public or private, we are all trying to do a lot...which can often feel like too much. This presentation will dig into the power of partnership to level the load and increase capacity. We'll look at the relationship between a nature center and its neighboring public school: the best practices in place as well as the innovative programs that have grown out of that collaboration.

Acquiring and Managing Outreach Animal Collections | *Katie Fisk, Educator and Animal Curator Briar Bush Nature Center* | Salon 4

"Soo...you're now in charge of all of our animals. Good luck!" Sound familiar? Or perhaps you want to start an animal collection at your center. Animals are a powerful way to connect with audiences of all ages and backgrounds, especially those who have little exposure to natural areas. Navigate the dizzying task of managing an education animal collection with the help of this session. We'll cover permitting, where to get animals, housing, diets, with lots of cost-saving tips along the way to maximize your budget.

2019 PAEE CONFERENCE: SESSION 4

Monday, 3:30 PM – 4:45 PM

Macroinvertebrates.org: An open educational tool and training resource for aquatic macroinvertebrate identification | *Tara Muenz, Assistant Director of Education Stroud Water Research Center* | Liberty 1 (*Space is limited - Sign up at the Conference Registration Table*)

Through enhanced digital images explore the incredible world of freshwater macroinvertebrates at macroinvertebrates.org! The site has recently evolved into a more robust resource for education and training, now including over 150 taxa. Dive deep into this site experiencing hands-on time with the tools and supplemental activities.

2019 PAEE CONFERENCE: SESSION 4 (con't)

Monday, 3:30 PM – 4:45 PM

Inquiring Minds: Understanding Pennsylvania’s “State of Environmental Education” | *Tamara Peffer, Environment Education Advisor, Carissa Longo, EE Program Coordinator PA DCNR; Gilbert Meyers, Department of Environmental Protection, Environmental Education Coordinator; Scott Sheely, Special Assistant for Workforce Development PA Department of Agriculture* | Salon 1

Join the PA Department of Education’s new Environmental Education Advisor and representatives from the PA Departments of Agriculture, Environmental Protection, and Conservation and Natural Resources for updates and to share your perspective.

In the Name of Environmental Literacy, Let’s Make Science Sexy | *Andrea Ambrose, Educator & Zoey Greenberg, Science Outreach Coordinator both from Hawk Mountain Sanctuary* | Salon 2

Ever fallen asleep during a scientific lecture? Ever wished you could? With our rapidly changing environment, we cannot afford to be boring. Join Hawk Mountain Science Outreach Coordinator Zoey Greenberg and Educator Andrea Ambrose for an interactive experience in which you will receive thought-provoking prompts, engagement strategies and useful resources intended to help you effectively communicate science to a wide range of audiences. This workshop will focus on why outreach matters and how Hawk Mountain’s Distance Learning Program has increased access to environmental education for schools with varying resources. Free materials will be provided for attendees, as well as in depth looks at raptor curricula and hands-on “raptor trunks” that have been sent to 37 different locations worldwide. Formal educators, informal educators, science geeks, students, nature enthusiasts, and literally anyone interested in creating a more science literate and scientifically-engaged society are not only welcome, but needed. For the workshop, and for the environment.

Maple Syrup: Logistics, Curricular Connections, and Climate Change | *Anya Rose, Lower School Science Teacher SCH Academy* | Salon 3

There are sugar maple trees among us, right under--or over?--our noses! When we learn to recognize them, they are like new friends, popping up across the landscape. This workshop suggests ways to build connections between your students and the landscape by introducing them to one specific “nature friend” that can provide us with food. The hidden purpose of teaching people about maple tapping is to provide concrete reasons to protect the landscapes and climates the sugar maples require. Who doesn’t love maple syrup?! We will touch on curricular connections in math, science, and social studies (including climate change), as well as logistics on how to identify the trees, and the supplies you need to tap them. Participants will leave with their very own, “maple syrup” necklace.

2019 PAEE CONFERENCE: SESSION 4 (con't)

Monday, 3:30 PM – 4:45 PM

Pennsylvania Land Choices Educator Mini-Workshop | *Ian Kindle, Environmental Education Regional Program Coordinator PA DCNR, Bonnie Tobin, Environmental Education Specialist Tyler State Park* | Salon 4 (Space is limited - Sign up at the Conference Registration Table)

Across Pennsylvania, citizens are realizing that the greatest opportunities to protect our communities and our environment exist at the local level. An understanding of local planning and land use is crucial to making a difference in our communities. Pennsylvania Land Choices is an educational guide featuring hands-on, multi-modal activities that help students in grades 6-12 (and adults!) understand how local, regional, and statewide land use decisions impact the places we live, work, learn, and play. If we want to be effective advocates to protect and preserve our landscapes, we must first understand the planning process, then help teach the next generation of leaders how we can all make a difference. Participants will receive the 250-page Pennsylvania Land Choices educational guide and resources, try out a few of the lessons and activities, and learn how to shape the future of our communities! Signups are required as space and materials are limited.

2019 PAEE CONFERENCE: LIGHTNING TALKS SET 1

Tuesday, 9:45 – 10:45 AM

Going Green While Teaching Green in Sustainable Outdoor Learning Stations | *Mandy Nix Watershed Education Specialist Stroud Water Research Center, Mike Garvin, Assistant Principal, Avon Grove Intermediate School* | Salon 1 & 2

In this collaborative presentation on the power of partnerships and creative teaching outdoors, discover how Stroud Water Research Center and Avon Grove Intermediate School (AGI) enhanced field- and place-based environmental education (EE) through innovative outdoor learning stations. Learn about two real-world success stories that responsibly utilized their watersheds through living laboratories, experimental forests, streamside education kiosks, and more EE strategies you can apply as a non-formal EE provider or a K-12 school. Over 2500 K-12 students visited the Stroud Center's streamside learning stations in 2018, while AGI continues to collaborate with local scouts and communities to maintain EE areas for roughly 1600 3rd – 6th graders. Presenters will also share tips on going green in outdoor spaces, where human footprints pose real risks to the resources we inspire students to protect. Join us in exploring how Leave No Trace teaching practices and outdoor learning stations can minimize impacts and maximize engagement!

Schuylkill Environmental Career Opportunities (ECO): Introducing Urban High School Students To Local Environmental Careers | *Sarah Crothers, Education and Volunteer Coordinator Schuylkill River Greenways National Heritage Area, Le'Santha Naicker, Schuylkill River Greenways NHA, Sustainability Coordinator* | Salon 1 & 2

This career development program orients students to not only the Schuylkill River Watershed, but also the different environmental partners working together within it. Students visit a variety of locations close to their school including State, Federal, Local, and Non-profit organizations as well as privately owned sustainable businesses to learn about different careers and career paths available to them in their area. This is a career-oriented program that fosters interest in environmental and sustainability fields, and helps students network with field professionals.

2019 PAEE CONFERENCE: LIGHTNING TALKS

Tuesday, 9:45 – 10:45 AM

SET 1 (con't)

Urban to rural and back again: Strengthening our EE community by leveraging resources for informal science education | *Becky Thomas, Assistant Professor of Park Resource Management Slippery Rock University, Jennifer Torrance, Research and Science Education Facilitator Phipps Conservatory; Emily Johns, High School Programs Coordinator Phipps Conservatory; Heather Shannon, Camp and Program Manager Phipps Conservatory; Emily Horner, Slippery Rock University student and Phipps Conservatory Intern* | Salon 1 & 2

This session will showcase best practices and lessons learned in facilitating the growth and professional development of future environmental educators that span urban and rural contexts. Phipps Conservatory is located in urban Pittsburgh, and Slippery Rock University is located in a rural setting. Partnering and identifying shared goals has allowed us to collectively create more positive and meaningful experiences for students. This session will include a variety of perspectives from practitioners, university faculty, and students who have benefitted from this partnership.

2019 PAEE CONFERENCE: LIGHTNING TALKS

Tuesday, 9:45 – 10:45 AM

SET 2

Systemic Programming: Stream studies for entire 4th grade, 1,000 students | *Steve Kerlin, Director of Education Stroud Water Research Center, Rene Rodriguez, 4th Grade Teacher, Westtown-Thornbury Elementary, West Chester Area School District* | Salon 3 & 4

This lightning talk will show how an example of a systemic environmental education program (stream study) for all 4th grade students across an entire school district was developed and implemented through a partnership between Stroud Water Research Center and West Chester Area School District. ~1,000 students across all 10 elementary schools in the district participate in this program each year. Co-presenters representing both organizations will describe how the partnership and program developed, the stream study program (including the 4th Grade Stream Study Field Notebook) and how the activities are designed to meet state standards, and tips for other EE providers and schools interested in programming partnerships and large-scale impacts.

2019 PAEE CONFERENCE: LIGHTNING TALKS

Tuesday, 9:45 – 10:45 AM

SET 2 (con't)

"Understanding the Urban Watershed" A Middle School Curriculum in Philadelphia Schools | *Ellen Schultz, Associate Director for Education Fairmount Water Works Interpretive Center* | Salon 3 & 4

Experience a quick overview of the middle years watershed curriculum, developed, piloted and implemented in Philadelphia schools.

PA DEP Environmental Education Grant Program | *Bert Myers, Director of Environmental Education DEP* | Salon 3 & 4

Join DEP Director of Environmental Education Bert Myers for this session on the DEP Environmental Education Grant Program.

Through funding and supporting identified needs and enhancing current EE in the state, it is DEP's hope that the public will carry these guiding principles into their everyday lives. The application process including priority topics will be included during this session.

2019 PAEE CONFERENCE: LIGHTNING TALKS

Tuesday, 9:45 – 10:45 AM

SET 3

Visiting a Dairy Farm without Leaving the Classroom | *Emma Andrew- Swarthout, Industry Relations Specialist American Dairy Association North East, Ron Ohrel, Director of Environmental Outreach American Dairy Association North East* | Liberty 1 & 2

In Pennsylvania, agriculture and environmental conservation are inextricably linked; few environmental topics can be discussed without including agriculture. Yet, only 2% of the U.S. population has a farming background and many don't have a good understanding of how modern farms operate. Teachers who want to expose their students to agriculture may not have the time or resources to take students to a farm. In 2018, American Dairy Association North East piloted two virtual tours of dairy farms—one for elementary and one for high school students. Overall, more than 3,000 students representing more than 100 schools participated. This lightning talk will introduce the tours, summarize student and teacher feedback received thus far and solicit audience thoughts on what future tours should feature to best serve environmental educators and others in the environmental community.

SET 3 (con't)

Rain Garden Curriculum through Work based Learning in School Based Agricultural Education | *Kevin Curry, Assistant Professor Penn State University, Rose Cowan, Pennsylvania State University, Graduate Student* | Liberty 1 & 2

The present research measured the outcomes of a unique vehicle to teach the importance of managing stormwater in urban/suburban environments. Utilizing project based learning students had the opportunity to install a rain garden through a summer work experience with the [county] soil and water conservation district installing rain gardens all across the city. Traditional (n = 11) as well as occupational course of study (n = 10) students took part in the study. A paired samples t-test revealed a statistically significant difference between pre and post-test with regard to content knowledge for both traditional students (t = -3.13, p = 0.01) and occupational students (t = -2.87, p = 0.02). No other significant increases were found for the additional constructs of EL (affect, cognitive skills, or behavior).

Conservation 101 Field Experiences - An Urban Agriculture Curriculum | *Jolie Chylack, Environmental Education and Outreach Coordinator Lehigh County Conservation District* | Liberty 1 & 2

In 2017, Lehigh County Conservation District embarked on an explorative journey with Building 21 High School in Allentown, PA to offer student programming in urban agriculture. Through the collaborative experience a curriculum has been designed to teach students to:

- LEARN how to grow their own food no matter where they live!
- EXPLORE traditional and innovative careers in the agriculture industry!
- DISCOVER how growing sustainably can enhance our environment and our life!

The curriculum which includes unique lessons comprised of growing, composting, hydrology, and sustainability activities engages students to think about how they can use place-based growing to enhance their diet, curiosity, environment and their enjoyment! During this lightning session, traditional and non-traditional educators will gain a sneak peek into the curriculum to be released in 2020. They will also leave with simple and engaging ideas they can use to introduce audiences to the fun and fascinating world of urban agriculture.

2019 PAEE CONFERENCE: SESSION 5

Tuesday, 11:00 AM – 12:15 PM

**After School Nature Explorers - Teaching Nature Awareness in Urban Settings | Dawn White, Education Programs Coordinator
Green Valleys Watershed Association | Liberty 1 (Space is limited - Sign up at the Conference Registration Table)**

Discover how to connect urban youth to nature through various activities and discovery tools demonstrated during this interactive session. Focus will be on our organization's successful After School Nature Explorers Club program implemented for 2nd graders in Pottstown elementary schools.

**Epic Fails and When to Bail | Carissa Longo, Environmental Education Program Coordinator DCNR- Bureau of State Parks,
Barbara Wallace, DCNR-PA State Parks-Ohiopyle State Park, Environmental Education Specialist | Salon 1**

Epic fails...we have all had them. They are the worst things that have happened at our EE programs. Our expansive jobs require us to lead other (often unprepared) humans (from tiny ones to adults) into the "wilderness" (often as the only leader). Most adults don't talk about their worst days on the job, but two seasoned (35+ years combined experience) PA State Park Environmental Educators will share their epic fails (from lost participants, heat stroke, blood, bruises, poor preparation, equipment failure, crying, unprofessionalism, & more) in a humorous way so that they don't happen to you. This session is for all of us- the beginner Educator to the Supervisor. Even the most experienced Naturalist can have a bad day. Learn how to prevent or at least mitigate the bad days and protect your health and safety. When the odds are not in your favor, it is okay to bail. Session includes tips, brainstorming, epic fail prevention discussion, and participant epic fail sharing (optional).

OPEN | Salon 2

**Farm Animals in the City, Suburbs, and Countryside All Make Manure! | Jennifer Fetter, Water Resources Extension Educator
Penn State Extension | Salon 3**

Raising farm animals isn't just a rural thing, especially in this age of homesteading and DIY. Lots of small and hobby farms are popping up in the suburbs and cities of Pennsylvania. No matter where they roam, farm animals generate manure that impacts the environment. In this workshop, get up to speed on Pennsylvania's manure management laws and regulations. Then try out some fun, hands-on activities to help teach about the impacts of manure and proper manure management planning. No matter where you teach environmental education this is a valuable program topic for your community and your local water quality. Access to Penn State Extension's new youth manure management curriculum will be made available to all attendees.

2019 PAEE CONFERENCE: SESSION 5 (con't)

Tuesday, 11:00 AM – 12:15 PM

Diverse Learners in Environmental Education Settings | *Camila Rivera-Tinsley - Director of Education, Pittsburgh Parks Conservancy and Taiji Nelson - Naturalist Educator, Pittsburgh Parks Conservancy* | Salon 4

The best environmental educators combine a passion for learning about nature, learning about teaching, and learning about learning. They continually push themselves to improve their programs and practices by reflecting their own needs as well as the needs of their students. This workshop will provide participants with the opportunity to reflect on their own identities and perspectives, and then engage in group conversations about how these relate to issues of equity and diverse representation. Participants will leave the workshop with tools to develop reflective practices for themselves and for their staff.

This workshop is required for those who have applied for Non-formal Certification.

2019 PAEE CONFERENCE: SESSION 6

Tuesday, 2:00 PM – 3:15 PM

Exploring a Hotter, Wetter City: Engaging, Relevant Climate Education | *Rachel Castro-Diephouse, Lead Curriculum Developer The Franklin Institute, Rachel Valletta, Environmental Scientist, The Franklin Institute* | Liberty 1 (*Space is limited - Sign up at the Conference Registration Table*)

Social science research shows that approaching climate change education through a global lens which emphasizes “doom and gloom” information does not motivate people to engage in the issue. Instead, this style of communication leads to feelings of helplessness, fear, and/or guilt. The Climate and Urban Systems Partnership (CUSP), based at The Franklin Institute, addresses this challenge by making climate change education engaging, enjoyable, and relevant.

This hands-on workshop will explore CUSP’s Ready Row Homes, tabletop kits developed to investigate the impacts of hotter temperatures and wetter conditions in cities. These learning activities are adaptable to diverse settings, including the classroom. Evaluation shows that Ready Row Homes result in stronger climate resiliency behaviors and greater understanding of climate science than traditional lecture format. Workshop attendees will gain access to loan the Ready Row Homes, and learn about additional climate change education offerings from CUSP and The Franklin Institute.

Beyond the Inner Circle: Expand your Impact with Ally Acquisition | *Meg Sansivero, Planner Marketing for Change, Karen Ong, Marketing for Change, Creative Director* | Salon 1

Echo chambers, bubbles, choirs. Whatever you call your inner circle, it's comfortable territory -- but speaking only to true believers limits your universe of support. How can you bring new people to the cause? Join Marketing for Change to learn the basics of Ally Acquisition. Marketing for Change, which specializes in environmental and health causes, will teach you to uncover the social narrative around your issue and identify new ways to frame key messages to expand your circles of influence.

2019 PAEE CONFERENCE: SESSION 6 (con't)

Tuesday, 2:00 PM – 3:15 PM

EE as a catalyst for change in schools | *Erin McCool, Director of Education and Strategic Initiatives Riverbend Environmental Education Center, Katherine Miller* | Salon 2

There is a renewed sense of urgency regarding environmental issues that goes beyond wildlife and nature. We face threats to public health, infrastructure and economy. Experts predict we will soon need to double global food production to support 9 billion people on earth. Systems like food, water and energy are inextricably linked this balance is threatened by climate change.

Schools are facing mounting pressures, especially in urban, underserved schools. Experts predict a significant gap in skilled STEM workers, prepared to deal with complex environmental issues. It's critical that informal learning centers increase our capacity to work with school systems on a broad scale.

Riverbend's Philadelphia Children Access Nature (PCAN) program is a catalyst for change in elementary school classrooms. We address these issues together through a comprehensive program that includes a week-long summer institute, classroom aquaponics systems, teacher fellowship and direct student experiences like field trips and classroom visits.

Let's Explore the Human Landscape | *Kevin Kopp, Director Environmental Youth Education Services (EYES)* | Salon 3

Though Earth and its ecosystems have evolved over 4 billion years, a dramatic transformation has occurred in just the past 200 years from the dominant species – us. In this cross-disciplinary, hands-on session, explore the major trends that have shaped the global landscape in such a short span of time – human population growth, agricultural expansion, industrialization and urbanization. Engage in small-group simulations on forest use and resource extraction, a graphing and data analysis activity on the environmental impacts of livestock, and a demonstration of interactive, online visualizations of urbanization and changing land use. Discuss ways to implement these activities in the classroom or environmental education center. Receive lesson plans and background materials in an electronic format.

Community Engagement through LARP | *Ellen Schultz, Associate Director for Education Fairmount Water Works Interpretive Center* | Salon 4

Engaging Young people in watershed issues through a new live action role playing game.

2019 PAEE CONFERENCE: SESSION 7

Tuesday, 3:30 PM – 4:45 PM

Stormwater Solutions: Connecting Students and Communities With Run-off Reducing Strategies | *Elizabeth Glaston, Environmental Educator Chesapeake Bay Foundation, Tarrea Potter; CBF; PA Education Outreach Coordinator* | Liberty 1

In this workshop, participants will engage in discussion and hands-on investigations to identify where stormwater run-off comes from, where it ends up, and strategies providers, students and families can implement to reduce stormwater impact within their communities.

Mentors in Agricultural Conservation: Engaging the next generation of stewards | *Emily Thorpe, Pennsylvania Student Leadership Coordinator Chesapeake Bay Foundation, Norah Carlos, Education Outreach & Communications Coordinator Chesapeake Bay Foundation* | Salon 1

Agriculture remains a major industry in Pennsylvania; however, there is no denying the impacts of agriculture on our land and on our waterways. But how can we engage rural and agricultural students without alienating them? How can we communicate the importance of stewardship without preaching the problems of pollution? How can we help students find value in rural environments while simultaneously preparing for careers in conservation? Join us in exploring answers to these questions and other lessons-learned through the Chesapeake Bay Foundation's Mentors in Agricultural Conservation Program. This program helps to find common ground between students, restoration professionals, and farmers in rural and agricultural communities by providing in-the-field job-shadow experiences and supporting supervised agricultural experiences or student independent projects. Learn new techniques of inserting agricultural education into your field curriculum, practice effective messaging and communication, and consider how you can engage the next generation of stewards!

Teaching Relevant Curriculum for a New Generation of Naturalists | *Brianna Patrick, Environmental Education Supervisor US Fish and Wildlife Service-John Heinz National Wildlife Refuge, Kelly Kemmerle - Environmental Educator, John Heinz NWR* | Salon 2

As America's First Urban Refuge, located in one of the country's most metropolitan cities, John Heinz National Wildlife Refuge at Tinicum serves a unique audience with varied backgrounds and lived experiences. Additionally, today's complex climate presents an outstanding opportunity to create tailored programming and employ creative teaching styles to connect youth who may initially be unfamiliar with outdoor exploration. Refuge staff will share their best practices for: recognizing and busting cultural & emotional barriers, designing lessons that resonate, effectively connecting with local communities, and utilizing positive discipline techniques to help students find their inner naturalist. Join us as we explore ways to thoughtfully engage students from varied backgrounds in meaningful outdoor experiences!

2019 PAEE CONFERENCE: SESSION 7 (con't)

Tuesday, 3:30 PM – 4:45 PM

Eat Garbage: Dumpster Diving and Dates Labels | *Kathy Fadigan, Assistant Professor of Science Penn State Abington, Jackie Bolton, Amira Spikes, Zelnnetta Clark, Visalakshi Vaithianathan* | Salon 3

Learn about misconceptions surrounding food date labels, the impact of food waste on the planet, and dumpster diving as an educational platform.

NaturePHL: increasing health and access to urban green space | *Elisa N Sarantschin, NaturePHL Program Coordinator Schuylkill Center for Environmental Education* | Salon 4

NaturePHL is a cross sector collaborative program helping Philadelphia children and families achieve better health through activity in local parks, trails, and green spaces. NaturePHL program brings together physicians, environmental educators, public health advocates, park and recreation agencies, and other organizations to offer outdoor activity prescriptions for Philadelphia families. NaturePHL connects families with healthy outdoor play in their neighborhoods through education about health benefits, incentives, and resources.