Delaware Association for Environmental Education 9th Annual Conference

Powered By Nature

Postlethwait Middle School Camden, DE Saturday, February 24, 2018



The 2018 DAEE Board

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Austin Conely Delaware Museum of Natural History

Dean Goodwin Tatnall School

Todd Klawinski *Caesar Rodney School District*

Claire Mickletz DNREC, Division of Parks and Recreation

Chris Petrone Delaware Sea Grant

David Pragoff Delaware Nature Society



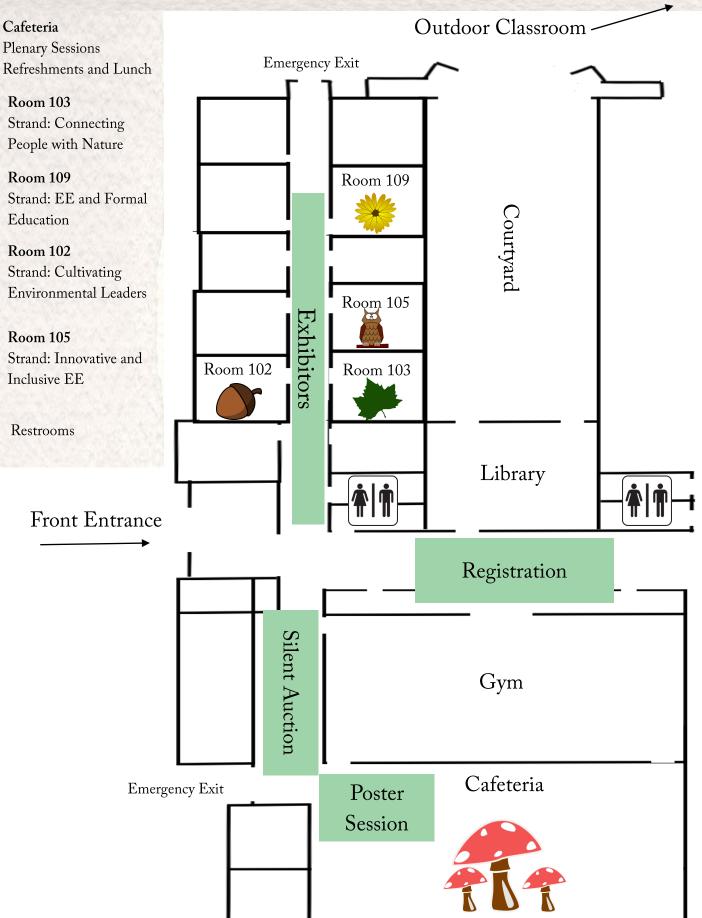
We are so happy that you have taken the time today to join us to celebrate and share all the exciting work in environmental education taking place in Delaware this past year. We are even more excited to share with you today the amazing work happening in our local schools to help students understand the important role they play in the continual protection our precious natural resources.

DAA Committees

Social Media Stuff

Map and Session Room Key







Aminitia

Keynote Speaker

Constance R. Hendricks Head of School, Jefferson School

A.S. Legal Studies - Widner University B.S. - Wilmington University M.Ed.– Wilmington University

c.hendricks@jeffersonschool.com 302-856-330, ext. 114

Work Experience

Worked at The Centreville School (now Centreville Layton School) as a teacher, Middle School Head and Director of Admission and Financial Aid. In July 2009 Connie took the Head of School position at The Jefferson School where she continues to enjoy her role.

In Her Own Words

When I was growing up I loved learning, but I hated school. Each subject was presented in its own silo, isolated from the other subjects. Since no one explained how class lessons and homework applied to the real world, it just felt like a boring, tedious cycle of memorization and regurgitation. My most cherished memories of learning are from trips to museums and days spent outside being able to explore. One question always led to another!

People, especially children, are naturally curious. If you expose them to information and experiences that spark their interest, they will naturally begin to ask questions. The natural environment offers unlimited opportunities for exploration and lets you look at the big picture. Teaching students how to think, not what to think about the environment is so important. Studies show that curricula with an outdoor learning component drastically improve student achievement.

DAEE Annual Business Meeting

Delaware Association for Environmental Education Annual Business Meeting Agenda Postlethwait Middle School, Camden, DE February 24, 2018

Welcome to new DAEE Members - Lisa Watt, DAEE Chair
You're a DAEE Member, now what?
Join a DAEE Committee: Marketing & Media, Grants, Event & Program Planning, Membership, Conference Planning, Budget, Audit

🖉 Acceptance of Minutes - Rick Mickowski, DAEE Secretary

Treasurer's Report - Ashley Melvin, DAEE Treasurer

Review of 2017 DAEE Activities Workshops, Strategic Planning Meeting, Events

New and *Renewing Board Member Nominations
 Nominees: *Angel Burns, DNREC, Division of Parks and Recreation
 *Austin Conely, Delaware Museum of Natural History
 *Lindsay Lancaster, Healthy Foods for Healthy Kids
 Todd Klawinski, Caesar Rodney School District (NEW)
 *Ashley Melvin, Delaware Department of Agriculture
 *Chris Petrone, Delaware Sea Grant
 *Davis Pragoff, Delaware Nature Society
 *Lisa Watt, DNREC Division of Parks and Recreation



Thank You for your joining DAEE and participating in the annual business meeting and attending the of the 9th Annual Statewide Environmental Education Conference! Please remember to join us at the Cool Springs Fish Bar and Restaurant for a post-conference social and cash bar to get to know your fellow DAEE members. We hope we see you there!

DAEE and Children in Nature

The 2017Award Nominees

Exemplary Partnerships

Delaware Envirothon Sponsored by Delaware Association of Conservation Districts Delaware Nature Society Helen Fischel and David Pragoff Marvelous Monarch Educators Workshop Sponsored by DNREC Delaware Stat Parks Wilmington Green Jobs Program City of Wilmington, Dept. Parks and Recreation University od Delaware Water Resource Center

Impact Award DE State Parks Youth Conservation Corps Glen Stubbolo, Coordinator Mark Sparanga, Superintendent of Maintenance City of Wilmington Parks and Recreation

Healthy Innovation Award

Hike it Baby Delaware Julie Russ and Corey Heacock City of Wilmington Youth and Family Division Wilmington Green Job Program Nicole Adams, Youth & Family Division Head Nicole Torrance, Youth & Families Program Coordinator Michelle Wales Farm Manager, Delaware Nature Society

Outstanding Field Educators

Gary Kreamer DNREC, Division of Fish and Wildlife Laura Hill and Cheryl Buckingham Keene Elementary School Serah Pesce Las Americas ASPIRA's Academy Nicole Sturgill Las Americas ASPRIRA's Academy

Message from Angel Burns

Delaware Children in Nature Coordinator

This year marked a milestone in the children in nature movement.....

Award Category Descriptions

Exemplary Partnership

Connecting families with meaningful experiences, the outdoors, and healthy lifestyles is best accomplished by Delaware CIN Partners, DAEE members and other community groups working together. This award is presented to a group working in DE that demonstrates an outstanding partnership in the environmental field that serves as a model and inspiration to others.

Impact Award

This award recognizes accomplishments toward facilitating positive community impacts on conservation, sustainability, and / or career advancement in the environmental field in DE.

Healthy Innovation Award

This award recognizes new approaches to connecting children, individuals, and/or families with the outdoors and healthy lifestyles in DE.

Outstanding Field Educator

This award is presented to an individual and/or organization working in Delaware who demonstrates outstanding environmental education efforts at the local, regional level and/or global level.

Excellence Awards 2017

Awards Winners in 2017



Exemplary Partnership: Delaware Envirothon

Delaware Envirothon is a program and competition for high school students that increases and tests their knowledge and application of aquatic ecology, forestry, soils and land-use, wildlife, air quality, special environmental topics, and public speaking.

Impact Award:

Delaware State Parks Youth Conservation Corps

The YCC program provides summer jobs and environmental opportunities for young people aged 16-21. The program provides regular education and awareness activities with a focus on conservation, sustainability, and appreciation of the environment all while providing more of an opportunity to be outdoors in natural areas in Delaware.





Healthy Innovation Award:

City of Wilmington Green Jobs Award

The Green Jobs Program is a 6-week employment program for young city residents that provides participants with hands-on outdoor environmental work, career exploration, exposure to environmental issues, and a mentoring component.

<u>Outstanding Field Educator:</u> Gary Kreamer, DNREC Division of Fish & Wildlife

Gary Kreamer won this award because of his extensive career sharing his love and passion for aquatic education and encouraging people to participate in boating, fishing, canoeing and salt marsh ecology. Gary led Delaware's Aquatic Resources Education Program from 1992-2017, providing aquatic education opportunities to students, teachers, administrators, civic and service organizations and other related government officials.





Outstanding Field Educator Team:

Laura Hill & Cheryl Buckingham, Keene Elementary School

Over the past few years both of these educators have done amazing things at the school that has enhanced learning for students by utilizing the outdoor classroom. They work in conjunction with University of Delaware for their vegetable garden. By bringing environmental education to the schools, they are assuring that the future generations will grow to become successful and caring stewards of our natural resources

Strand: Connecting People to Nature

Merging Students, Science, and Streamside Forest Monitoring¹

Jennifer Totora, Education Specialist Stroud Water Resource Center

Vince O'Donnell, Environmental Educator Stroud Water Resource Center

Concurrent Session I 10:35 a.m. - 11:20 a.m.

Project Learning Tree: To Be a Tree⁵

Ashley Melvin, Education Coordinator Delaware Forest Service

Concurrent Session II 11:30 a.m. - 12:15 p.m.

Coding Through Nature: An Unplugged Coding Activity⁹

Justin Malin, Instructional Technology Coach Smyrna School District

Concurrent Session III 1:35 - 2:20 p.m.



Discover the ways Stroud Water Research Center is improving fresh water streams by replanting riparian buffer zones, and how these methods are being used as a teaching tool for students in grades 4-12. Specific planting practices will be covered, as well as methods for monitoring forests with students. The work for this presentation is funded through grants from the National Science Foundation and the William Penn Foundation.

Target Audience: Non-formal Educators, School Teachers and Administrators

Trees, like any other living organism, have structures which preform specific functions. Many of these functions also provide crucial benefits to nature and our communities. In this hands-on session, participants will gain awareness of tree structures and functions by making their very own "tree vest" and acting out the different functions of a tree in a group setting. This session will highlight two of Project Learning Tree's popular activities: To Be A Tree and Tree Factory which combine science with visual arts, performing arts, and language arts. This is a "make and take" activity and all participants will receive a copy of the book, Delaware Trees and several Project Learning Tree resources.

Target Audience: Non-formal Educators, School Teachers and Administrators, Communities

In this session, participants will be introduced to a classroom lesson they can take back. The lesson will introduce binary coding and how computers communicate through 0s and 1s. Participants will practice using binary coding for letters. We will then introduce the different shapes of leaves and types of trees. From this, participants will pick two shapes of leaves and use the shapes to create a binary code from the initials in their names. If time allows, participants will create secret messages using their leaf shapes.

Target Audience: School Teachers and Administrators

Room 103

What's in this water? Making Microscopic Plankton More Accessible with Low-cost Sampling and 3D Printed Models ¹³

Christopher Petrone , Marine Education Specialist Delaware Sea Grant/University of DE

Concurrent Session IV 2:25 p.m.- 3:10 p.m.

Blogging and Social Media as forms of Nature Education ¹⁷

Ian Stewart , Ornithologist Delaware Nature Society

Concurrent Session V 3:30 p.m. - 3:50 p.m.



Plankton can be engaging ambassadors for many science topics, at all levels, in all educational settings. UD researchers and educators are developing web-based resources for investigating locally caught zooplankton in classrooms and non-formal learning environments. But what if you don't have enough microscopes to go around? There's a 3D printer for that! No matter your setting or the water you have access to—ocean, bay, stream, pond or puddle—you too can harness the power of plankton for education. *Warning: Real zooplankton will be used during this session.

Target Audience: Non-formal Educators, School Teachers and Administrators, Community

A blog is a short but informative article published on a personal or company website that is freely available to be read by anyone with access to the Internet. The Delaware Nature Society website hosts a popular series of nature-based blogs contributed by staff members. Here we discuss the benefits of blogging to your organization and how to create and publish blogs in a way that maximizes their effectiveness and reach. I will also discuss the broader importance of social media together with some specific examples of methods we have found to be successful.

Target Audience: Non-formal Educators



This idea would make me a fun-gi with my students for sure!

Strand: EE and Formal Education

Starting a School Vegetable Garden²

Lindsay Lancaster, Program Manager Healthy Foods for Healthy Kids

Concurrent Session I 10:35 a.m. - 11:20 a.m.

Delaware Children in Nature (CIN) Outdoor Classroom Network⁶

Angel Burns, DE CIN Coordinator DNREC, DE State Parks

Bill Nelson, Enviro. Ed. Coordinator The Jefferson School

Todd Klawinski, Enviro. Ed Specialist Caesar Rodney School District

Concurrent Session II 11:30 a.m. - 12:15 p.m.



Are you interested in starting a school vegetable garden using a garden-based curriculum that aligns with state content standards? Looking for a great hands-on experiential outdoor learning opportunity that can take place right outside of your classroom each year? Excited about healthy produce for your school cafeteria or a possible classroom cooking demonstration? Then this informational workshop is for you! Come learn how Healthy Foods for Healthy Kids partners with schools to setup kindergarten-8th grade vegetable garden programs that enable each grade level to participate in seed to table growing each spring and fall. In this workshop, we will discuss the academic and health benefits of our school vegetable garden program, program structure and format, opportunities for project-based learning, as well as the time commitment and resources necessary for the implementation of a successful program.

Target Audience: School Teachers and Administrators

Do you have a great idea for an outdoor classroom but don't know where to get started? Or maybe you have an awesome outdoor classroom and you want to share what you know with others or learn about additional ideas and resources? Join us for a quick round-table session where we will exchange a few ideas but more importantly our contacts! This session will be the start of a new Outdoor Classroom Network to help keep our outdoor classrooms thriving and help those wanting to start a new one!

Target Audience: All audiences



Room 109

Turning Over a New Leaf: University of Delaware Laboratory Preschool's Transformation to a Nature-Focused Program ¹⁰

Katie Pollock, Master Teacher University of Delaware Lab School

Debbie Tobert, Master Teacher University of Delaware Lab School

Concurrent Session III 1:35 - 2:20 p.m.

Postlethwait Middle School Outdoor Classroom Exploration¹⁴

Todd Klawinski . Enviro. Ed. Specialist Caesar Rodney School District

Concurrent Session IV 2:25 p.m.- 3:10 p.m.

Milkweed and Monarchs: An Overview of an Educators Workshop ¹⁸

Liz Androskaut, Interpretive Program Manager Alapocas Run & Wilmington State Parks

Concurrent Session V 3:30 p.m. - 3:50 p.m.



Participants will observe the changes one University-based preschool made to become more nature focused, discover the benefits of sharing their passion for nature with all involved in a preschool program, and obtain guidelines for marketing their preschool programs and sharing the benefits of outdoor education with their surrounding communities. The 83-year- old University of Delaware Laboratory Preschool has been through many changes over its long history. For the past seven years, we have been taking our children and undergraduate, pre-service teachers into local natural spaces. In the summer of 2016, we piloted a Nature Summer camp that was welcomed by all. The passion that fills the teaching team has led us to expand our current programming to include a Nature Preschool for the 2017-2018 school year.

Target Audience: Non-formal Educators, School Teachers and Administrators, Community

Outdoor field experiences are essential K-12 education elements for developing 21st century skills. Field study sites can be located on school grounds, at locations in close proximity to schools, or at offsite locations in partnership with non-formal education facilities. In this session we will explore The Outdoor Classroom at Postlethwait Middle School and create place-based conversation focused on geoliteracy and enviroliteracy standards.

Target Audience: Non-formal Educators, School Teachers and Administrators

The Monarch Educator's Workshop is a well-established partnership between local teachers, Delaware State Parks, Delaware Nature Society, New Castle County Master Gardeners, Friends of Wilmington Parks, Delaware Forest Service, and US Fish and Wildlife Service. This professional development workshop introduces educators to an inquiry based science curriculum that incorporates environmental education, language arts enrichment and cultural awareness using the monarch butterfly as a common thread. This presentation give a background of the workshop, its challenges and successes and plans for the future.

Target Audience: Non-formal Educators, School Teachers and Administrators

Conference Agenda		
8:30 - 9:00 a.m.		Registra
9:00 a.m.		Ope
		Welcome:
PLENARY SESSION		
9:15 - 9:45 a.m.		Constance
PLENARY SESSION 9:45 - 10:00 a.m.		DAEE Annual Business
PLENARY SESSION		Delaware Childro
10:00 - 10:20 a.m.		An
10:20 - 10:35 a.m.		
STRAND	Connecting People with Nature	EE and Formal E
MODERATOR AND ROOM #	Ashley Melvin Room 103	David Pragoff Ro
CONCURRENT SESSION I	Merging Students, Science and Streamside	Starting a Sahaal Vagata
10:35 - 11:20 a.m. (45 minute session)	Forest Monitoring (1)	Starting a School Vegeta
CONCURRENT SESSION II 11:30 - 12:15 p.m. (45 minute session)	Project Learning Tree: To Be A Tree (5)	Delaware Children in Na Outdoor Classroom Net
12:15 - 1:00 p.m.		
12:40 - 1:25 p.m.		
CONCURRENT SESSION III	Coding Through Nature: An Unplugged	Turning Over a New Lea
1:30- 2:15 p.m. (45 minute session)	Coding Activity (9)	Delaware Laboratory Pre
CONCURRENT SESSION IV 2:25 - 3:10 p.m.(45 minute session)	What's in this water? Making microscopic plankton more accessible with low-cost sampling and 3D printed models (13)	Postlethwait Middle Sch Classroom (14)
3:10 - 3:30 p.m.	Break (Silent Auction closes at 3:30 p.m.)	
CONCURRENT SESSION V	Blogging and Social Media as Forms of	Milkweed and Monarchs
3:30 - 3:50 p.m.(20 minute session)	Nature Education (17)	of an Educator Worksho
PLENARY SESSION 3:50 - 4:00 p.m.		
4:30 - 6:30 p.m.	Optional H	Happy Hour and Network

ion and Coffee,	Networking, Silent Auction	
ning Remarks:]	Lisa Watt, DAEE Chair	
Todd Klawinsk	i, Postlethwait Middle School	
Keyno	te Speaker:	
Hendricks, He	ad of School, Jefferson School	
Meeting - All	Conference Attendees are Invited to Attend	
	IN) Update and Next Steps Together ware CIN Coordinator	
, 	ting, Silent Auction	
lucation	Cultivating Environmental Leaders	Innovative and Inclusive EE
om 109	Dean Goodwin Room 102	Claire Mickletz Room105
ole Garden (2)	Creating Environmental Leaders through Climate Change Education (3)	Successes, Challenges, and Experiences working with Urban Audiences (4)
ture (CIN) vork (6)	The Green Amendment - Securing Our Rights to a Healthy Environment (7)	Building Global Communities through STEAM (8)
Lunch, Networl	king, Silent Auction	
Poste	er Session	
f: University of school (10)	Eco-Schools and Pathways to Green Schools (11)	Connecting Students to Water through Art & Design (12)
ool Outdoor	Why Don't We Recycle? Engaging Students to Reinvigorate a School Recycling Program (15)	Creating Workforce Ready Students Though Computer Game Design (16)
An Overview (18)	Next Generation Science Standards: What's Different, and Do They Matter? (19)	How to Support All Students in Understanding Local and Global Carbon Issues (20)
Clasing Damag	ks and Evaluations	

Strand: Cultivating Environmental Leaders

Creating Environmental Leaders through Climate Change Education³

Dr. Dean Goodwin, Upper Science School Teacher The Tatnall School

Students from The Tatnall School Sara Al Hassan, Junior Annika Delport, Sophmore Julia Godwin, Junior Zac Narimanian, Sophmore Ansel Tessier, Senior Adam Zhang, Junior

Concurrent Session I 10:35 a.m. - 11:20 a.m.

The Green Amendment: Securing Our Rights to a Healthy Environment⁷

Maya van Rossum , The Delaware Riverkeeper Delaware Riverkeeper Network

David Wood, High School Teacher Radnor Township School District

Concurrent Session II 11:30 a.m. - 12:15 p.m.



This first part of this session will describe two climate change courses that have been developed for high school students. Participants will be given the opportunity to take part in one of the activities that is used in the class. The second part of the session will be a round-table discussion with students who have recently established the first affiliated group of 350.org in Delaware (350DE), organized a Rally for Science on Earth Day in 2017, and are currently involved in a new initiative that promotes climate change education and awareness among the youth of Delaware. Participants who are interested in becoming part of these exciting new programs and introducing them into their own schools and organizations to create more environmental leaders in the state are encouraged to attend.

Target Audience: Non-formal Educators, School Teachers and Administrators, Community

In the fight for a clean and healthy environment, communities have been fighting a losing battle. The sad truth is, our laws are designed to accommodate pollution rather than prevent it, and they fail to support and ensure reliance on accurate science in the decision-making, regulatory and legislative process. As environmental degradation grows, it is the young people and future generations who are increasingly being harmed. The solution this session will advance is to bypass the laws and turn to the ultimate authority: our state and federal constitutions. This session, led by a pair of panelists that include an experienced environmental advocate/attorney and high school teacher, will discuss the new Green Amendment movement that is dedicated to empowering every American community to mobilize for constitutional change to secure real protection for our environment

Target Audience: Non-formal Educators, School Teachers and Administrators, Communities

Room 102

Eco-Schools and Pathways to Green Schools¹¹

Holly Shields, Regional Education Manger, Mid-Atlantic, National Wildlife Federation

Leona Williams, Delaware Department of Education

Wendy Turner, Delaware Department of Education

Concurrent Session III 1:35 - 2:20 p.m.

Why Don't We Recycle? Engaging Students to Reinvigorate a School Recycling Program¹⁵

Penny Rodrick-Williams, Science Teacher and Director of Environmental Stewardship Tower Hill School

Concurrent Session IV 2:25 p.m.- 3:10 p.m.

Next Generation Science Standards: What's Different, and Do They Matter? ¹⁹

Tonyea Mead, Science Education Associate Delaware Department of Education

Concurrent Session V 3:30 p.m. - 3:50 p.m. Join us for an afternoon panel to discuss resources, grants, programs and successes relating to Green Schools. The panel will include the National Wildlife Federation' (NWF) Eco-Schools USA, an internationally recognized program that provides a framework to help educators integrate sustainability principles throughout their schools and curriculum. Also participating is the Delaware Pathways to Green Schools program which provides grants, one-on-one support, and expert resources to K-12 schools in Delaware that are committed to becoming healthier, more sustainable, and more energy efficient. This panel will also include discussion about the U.S. Department of Education's Green Ribbon Schools award with recent applicants and award winners.

Target Audience: School Teachers and Administrators

We all know the benefits of recycling: it reduces solid waste and pollution, it saves energy, it can be economical, and knowing that we are helping to save the environment can make us feel good! So, why don't we do it all the time and everywhere? This presentation will discuss some of the obstacles to maintaining a successful recycling school program. By prioritizing recycling, or any environmental program, all populations of the entire school community can form new habits and change the culture into one of environmental stewardship. By having the students engaging others and being engaged themselves in the process, it increases the potential for success and a shift to a greener mindset. This presentation will share ideas for making that shift, as well as facilitate a discussion of experiences and best practices among attendees.

Target Audience: Non-formal Educators, School Teachers and Administrators, Community

All learners benefit from outdoor science investigations. Research shows how outdoor play is crucial to their socio-emotional learning, cognitive development, physical health, and well-being. Despite strong evidence of the benefits of child directed exploratory play and teacher scaffolded learning outdoors, increasing emphasis on math and reading achievement have dramatically reduced the amount of outdoor time available to youth. But many outdoor teaching practices promote meaningful science learning. Hear about ways to promote your program to support NGSS and equity for all learners.

Target Audience: Non-formal Educators, School Teachers and Administrators



Successes, Challenges, and Experiences Working with Urban Audiences⁴

Lesley Bensinger, Education Coordinator Delaware Nature Society

Dakin Hewlett, Watershed Ed. Coordinator Delaware Nature Society

Isaac Jensen, Community Educator Delaware Nature Society

Concurrent Session I 10:35 a.m. - 11:20 a.m.

Building Global Communities through STEAM, One Student at a Time ⁸

Shauneen Giudice, Grade 7 Science Teacher Middle School Science Chair Delmar Middle and Senior High School

Concurrent Session II 11:30 a.m. - 12:15 p.m.



Delaware Nature Society (DNS) has operated the DuPont Environmental Education Center (DEEC) since 2009 with the goal of better serving our mission by engaging Wilmington communities. In 2017, RENEW: Reaching and Engaging through Nature to Empower Wilmington began. Several programs have been created as part of the initiative including programming that connects food systems and climate change using a community garden, an environmental teen club with members from three community centers, and a nature trike that provides pop-up nature education to folks enjoying Wilmington's Riverwalk. Successes, challenges, and DNS's experiences working with urban audiences will be shared highlighting these three RENEW programs. DNS staff will highlight tools needed to create and strengthen relationships with this challenging demographic and demonstrate activities used in our most successful programs.

Target Audience: Non-formal Educators

How can we build student stewardship of the environment, both here at home and around the planet? How do we fire our students' imaginations, fuel their hopes and foster their empathy for students from very different cultures and experiences than their own? Join me to explore activities that integrate environmental STEAM challenges, cultural connections and aspects of social justice. Make and take your own pine-needle basket and discuss how to turn nature crafts into engineering and design challenges. Finally, building on my experiences from the American west and southwest, Japan, India, Mexico and Latin America, leave with ideas to inspire your own international connections and to design your own STEAM ambassador programs!

Target Audience: Non-formal Educators, School Teachers and Administrators

Don't forget the silent auction closes at 3:30 pm, you don't want to miss out on the great items donated by our DAEE partners! And every dollar raised goes back to YOU our members, so dig deep!

Room 105

Connecting Students to Water Through Art and Design ¹²

Brittany Musolino, Outreach Program Specialist Partnership for the Delaware Estuary

Virginia Vassalotti, Schuylkill Action Network (SAN) Coordinator Partnership for the Delaware Estuary

Concurrent Session III 1:35 - 2:20 p.m.

Creating Workforce Ready Students through Computer Game Design ¹⁶

Maggie Pletta , Education Coordinator DNREC, DE National Estuarine Research Reserve

Concurrent Session IV 2:25 p.m.- 3:10 p.m.

How to Support All Students in Understanding Local and Global Carbon Cycle Issues Using LFS (Learning Focused Strategy) and Differential Assessment ²⁰

Meaghan Tyndall , Biology Teacher Laurel High School

Concurrent Session V 3:30 p.m. - 3:50 p.m. The Partnership for the Delaware Estuary (PDE) has been working closely with the Philadelphia Water Department for over fifteen years to hold an art contest for students K-12 in the city of Philadelphia. This contest, now called the "Green City, Clean Waters" art contest, prompts students to draw a representation of what it means to keep our waterways clean to be installed around storm drains on city streets. This outreach project is one of PDE's most successful, and they are now replicating it in the City of Wilmington in 2018! Environmental education in disadvantaged areas can provide unique hurdles but, when approached through non-traditional methods, can be incredibly rewarding and effective. This session will include a hands-on activity connecting art and design to nature.

Target Audience: Non-formal Educators, School Teachers and Administrators, Communities

Technology has become an integral part of environmental education, however purchasing or producing technology can be very cost prohibitive. As part of a NERR Science Collaborative Science Transfer grant the Delaware, Guana Tolomato Matanzas, and Mission-Aransas National Estuarine Research Reserves partnered with the University of Delaware Introduction to Software Engineering course. As part of their coursework, students produced gesture controlled, educational computer games that will be publicly available in each Reserve's educational centers. This project will provide communities with relevant, accessible science while offering real world work experience to local university students.

Target Audience: Non-formal Educators, Community

This year Laurel School district was asked to participate in the second year of the Meaningful Watershed Educational Experiences (MWEE). I chose to adapt the 9th grade MWEE to my current 10th grade NGSS curriculum and along with my department, created an LFS (Learning Focused Strategy) formatted unit. My students worked towards creating solutions to local carbon cycle issues. Like many others, my classrooms contain students of all ability levels (including English Language Learners) and this session will highlight the successes of developing a way for all students to participate and be assessed, regardless of background or ability level.

Target Audience: School Teachers and Administrators

Presenter Bios and Contact Information

Presenters in Strand: Connecting People with Nature

Presentation 1: Merging Students, Science and Streamside Forest Monitoring (Concurrent Session I)

Jennifer Totora, Education Specialist, Stroud Water Resource Center, jtotora@stroudcenter.org

Jen has over 15 years of combined experience working in experiential education and field research with positions located in a variety of ecosystems, from forests to rivers and streams, marshes to beaches, and bays to the ocean. Her true passion lies in creating programming designed to inspire underserved girls to become the future leaders in science and engineering through fun hands-on programming designed just for them. When not at work, she enjoys camping, kayaking, hiking, and taking road trips with her family.

Vince O'Donnell, Environmental Educator, Stroud Water Resource Center, vodonnell@stroudcenter.org

Vince O'Donnell retired after forty-five years in professional science education at the secondary and community college levels. He is interested in herpetology and paleontology and maintains a live animal collection (mostly reptiles and amphibians) and an extensive collection of fossils from many expeditions within the lower forty-eight states. O'Donnell volunteers in the summers doing hellbender salamander research at Lycoming College.

Presentation 5: Project Learning Tree: Learning To Be A Tree (Concurrent Session II)

Ashley Melvin, Education Coordinator, Delaware Forest Service, Ashley.Melvin@state.de.us

Ashley joined the Delaware Forest Service as a casual seasonal in 2001 after receiving her bachelor's degree in Plant Science from Delaware State University. She worked as the botanist for the Forest Inventory Analysis (FIA) Program for three summers before moving into a permanent position as the Education Coordinator in 2004. Ashley, a native Delawarean, developed a deep connection with nature at a young age and understands the importance of fostering that connection in today's youth. Currently, Ashley serves as Delaware's Project Learning Tree (PLT) Coordinator and manages two education centers at Blackbird and Redden State Forest. Ashley is a founding member of DAEE and currently serves as Treasurer. Ashley coordinates the Smokey Bear Wildfire Prevention Program for Delaware and in 2009, was awarded the Bronze Smokey, a national award for outstanding public service in wildfire prevention.

Presentation 9: Coding Through Nature: An Unplugged Coding Activity (Concurrent Session III)

Justin Malin, Instructional Technology Coach, Smyrna School District, justin.malin@smyrna.k12.de.u

Justin has been an educator for 13 years, and an Instructional Technology Coach for the past 3. He works for the Smyrna School District in the Office of Curriculum and Instruction. He believes in changing the way we educate our students by using technology to give personalized instruction tailored to the needs of students allowing them choice and voice in their learning.

<u>Presentation 13: What's in this water? Making Microscopic Plankton More Accessible with Low-cost Sampling and 3D</u> <u>Printed Models (Concurrent Session IV)</u>

Christopher Petrone, Marine Education Specialist, Delaware Sea Grant/University of DE, petrone@udel.edu

Christopher Petrone is the Marine Education Specialist with Delaware Sea Grant, which is housed within UD's College of Earth, Ocean, and Environment. Based at the UD Hugh R. Sharp Campus in Lewes, Chris conducts professional development opportunities for classroom teachers and nonformal educators in the ocean sciences and climate change. He also works with classrooms and informal students groups, such as the Boy/Girl Scouts, to increase environmental and ocean literacy and access to ocean science research. Chris has a B.S. in Biology from Washington College and an M.S. in Marine Biosciences from the University of Delaware. Prior to his current position, he has been a classroom teacher, commercial oyster farmer, and a Marine Education Specialist with Virginia Sea Grant and the Virginia Institute of Marine Science.

Presentation 17: Blogging and Social Media as forms of Nature Education (Concurrent Session V)

Ian Stewart, Ornithologist, Delaware Nature Society, ian@delnature.org

Ian grew up in England where he had a strong childhood interest in all forms of nature and being outdoors in general. After several bird research positions in the UK and the US he now works at the Delaware Nature Society as an ornithologist where he conducts public bird banding sessions and a research project on the effect of invasive plant species on bird communities.

Presenters in Strand: EE and Formal Education

Presentation 2: Starting a School Vegetable Garden (Concurrent Session 1)

Lindsay Lancaster, Program Manager, Healthy Foods for Healthy Kids, llancaster@healthyfoodsforhealthykids.org

Lindsay Lancaster is passionate about bringing school vegetable gardens to urban areas as well as outdoor experiential education. Since 2012, She has been working with Healthy Foods for Healthy Kids where she models garden lessons, trains teachers in garden-based curriculum, coordinates the volunteer program, and assists with PR, fundraising, and strategic planning initiatives. Prior to her position at Healthy Foods for Healthy Kids, Lindsay was a third grade teacher for three years at Green Woods Charter School, a school with an environmentally integrated curriculum. She has an M.S. Ed in elementary education from the University of Pennsylvania, a B.A. in psychology from Haverford College and a certificate in Nonprofit Management from the University of Delaware. Lindsay recently joined the DAEE board and serves as the North American Association for Environmental Education affiliate. She is a member of the Children in Nature Coalition and the Delaware Urban Farm and Food Coalition. In 2017, she was the recipient of the National Association of Geoscience Teachers Outstanding Earth Science Teacher award for the State of Delaware and was recognized as a Delaware Business Times 40 under 40 honoree.

Presentation 6: Delaware Children in Nature (CIN) Outdoor Classroom Network (Concurrent Session II)

Angel Burns, DE CIN Coordinator, DNREC, DE State Parks, Angel.Burns@state.de.us

In November 2016, Angel Burns was named the new Children In Nature Coordinator with Delaware State Parks. Angel has worked in the field of environmental education for the past 21 years. She has served on the Board of the Delaware Association for Environmental Education since its inception in 2008 and is currently the Board Vice Chair. She is a Certified Interpretative Guide and Trainer through the National Association for Interpretation. Angel started working with Delaware State Parks in 1996 while pursuing a degree in Wildlife Conservation and Ecology from the University of Delaware. She has worked at the Brandywine Zoo, Tri State Bird Rescue, Brandywine Creek, Lums Pond and White Clay Creek State Parks, and the Chesapeake Bay Girl Scouts. Angel has received many honors working as an environmental educator including the Charles E. Mohr Award for Interpretation and Delaware State Parks Employee of the Year in 2007. Bill Nelson, Environmental Education Coordinator, The Jefferson School, <u>b.nelson@jeffersonschool.com</u>

Bill has taught science in public and private schools and environmental education centers for almost 40 years. He started as Environmental Education Coordinator at the Jefferson School in the fall of 2009; previous to that he worked in the Environmental Studies department at Salisbury University. Before that he spent ten years teaching upper school at the Salisbury School; prior to that he was a middle school science teacher at various schools.

Todd Klawinski, Environmental Education Specialist, Caesar Rodney School District, todd.klawinski@cr.k12.de.us

Todd Klawinski has worked as a non-formal educator, and has taught formal high school environmental studies and, most recently, middle school science. Todd has been leading the Caesar Rodney School District's sustainability and outdoor education initiatives at Postlethwait Middle School, which was just recognized as a 2017 US Department of Education Green Ribbon School. Todd now serves the Caesar Rodney School District as their first Environmental Education Specialist working to establish a district EcoCampus, and promoting student led EcoTeams throughout the district.

<u>Presentation 10: Turning Over a New Leaf: University of Delaware Laboratory Preschool's Transformation to a Nature-Focused Program</u> (Concurrent Session III)

Katie Pollock, Master Teacher, University of Delaware Lab School, kpollock@udel.edu

Katie has worked as a Master Teacher at the Laboratory School for 12 years. She has taken on many different teaching roles, including full day Kindergarten, Pre-K, and Play & Grow. When the Lab School moved off campus to our new building on Wyoming Road, she was thrilled by the surrounding nature on site. Creek explorations, woods walks, and trail adventures became a bigger part of her curriculum. Katie loves watching the children soak up the peace, energy, and wonder that comes from being outside. Prior to her time at the Lab School, she taught for the Christina School District. Katie earned an MS in Literacy from Wilmington University and a BS in Early Childhood Education from the University of Delaware. She is a licensed Delaware teacher of Early Childhood & Early Childhood Special Education, an Early Childhood Administrator in Delaware, and teaches an undergraduate course for the Human Development and Family Studies Department at the University of Delaware.

Debbie Tobert, Master Teacher, University of Delaware Lab School, dtorbert@udel.edu

Debbie Torbert is the Master Teacher of the 2's class and the 3's class. She has worked with children for forty-one years. She attended the University of Delaware, and graduated with a B.S. in Early Childhood Education with certification in Preschool/Kindergarten and an M.A. in Liberal Studies. She also holds an Early Childhood Administrator Credential with Administration and School Age Specialized Training Credentials, from the Delaware Department of Education

Presentation14: Postlethwait Middles School Outdoor Classroom (Concurrent Session IV)

Todd Klawinski, Environmental Education Specialist, Caesar Rodney School District, <u>todd.klawinski@cr.k12.de.us</u> See previous page for full bio.

Presentation 18: Milkweed and Monarchs: An Overview of an Educators Workshop (Concurrent Session V)

Liz Androskaut, Interpretive Program Manager, Alapocas Run & Wilmington State Parks, <u>elizabeth.androskaut@state.de.us</u> Li z Androskaut is the Interpretive Programs Manager for Alapocas Run and Wilmington State Parks. She has over 19 years of experience in the interpretation field working for both State Parks and Botanic Gardens. A graduate of Purdue and Clemson University, Liz completed the Certified Interpretive Trainer, Manager and Guide program with the National Association for Interpretation.

Presenters in Strand: Cultivating Environmental Leaders

Presentation 3: Creating Environmental Leaders through Climate Change Education (Concurrent Session I)

Dr. Dean Goodwin, Upper Science School Teacher, The Tatnall School, deangoodwin@tatnall.org

Dr. Dean Goodwin has more than 25 years of experience in independent schools, and has taught a variety of science courses, including biology, chemistry, physics, environmental and marine sciences. Dean was involved with The College Board and Educational Testing Service in establishing the Advanced Placement Environmental Science course. He has recently designed and delivered webinars and online courses on climate change for STEM and AP teachers for The College Board in conjunction with the NY Department of Education. He also runs summer institutes for teachers on the topic of curriculum design and problem-based learning for environmental education. He has authored several books, the last one being "Climate Change for Beginners." Dean teaches science at The Tatnall School in Wilmington, and is the faculty advisor to the 350DE student group.

Sara Al Hassan, Annika Delport, Julia Godwin, Zac Narimanian, Ansel Tessier, Adam Zhang, Students, from The Tatnall School

Presenter Bios and Contact Information

Presenters in Strand: Cultivating Environmental Leaders Continued

Presentation 7: The Green Amendment-Securing Our Rights to a Healthy Environment (Concurrent Session II)

Maya van Rossum, The Delaware Riverkeeper, Delaware Riverkeeper Network, keepermaya@delawareriverkeeper.org

Maya van Rossum is the Delaware Riverkeeper and has led the Delaware Riverkeeper Network (DRN) for 23 years. DRN is a grassroots advocacy organization working throughout the 4 states of the Delaware River watershed (NY, NJ, PA & DE) and at the national level. van Rossum is advancing The Green Amendment movement, seeking to inspire and secure constitutional protection for environmental rights across the nation and is author of a book titled "The Green Amendment, Claiming Your Right to a Healthy Environment". Recent speaking engagements include: 10th Annual Dupont Summit on Science, Technology & Environmental Policy; 2017 Appalachian Public Interest Environmental Law Conference; 2015 National Environmental Justice Conference. van Rossum was appointed to NJ Governor-elect Murphy's transition committee on environment and energy, was named One Of The "10 Most Influential People of 2015" When It Comes to Energy Issues, SNL Energy, and has testified twice before U.S. Congressional committees.

David Wood, High School Teacher, Radnor Township School District, <u>davidantwood@hotmail.com</u>

David Wood is a Social Studies & Government teacher at Radnor High School. David has been teaching for over 20 years.

Presentation 11: Eco-Schools and Pathways to Green Schools (Concurrent Session III)

Holly Shields, Regional Education Manger, Mid-Atlantic, National Wildlife Federation, sheildsH@nwf.org

Holly Shields joined the National Wildlife Federation's Mid-Atlantic Regional Center in September 2016. In her role as Regional Education Manager, she is responsible for developing strategies and partnerships to advance conservation education and habitat programs, including NWF's Eco-Schools USA and Garden for Wildlife programs. In Holly's previous role at Green Building United (formerly the Delaware Valley Green Building Council), she helped to launch the Delaware Pathways to Green Schools Program and has served on multiple state-level review panels for the U.S. Department of Education's Green Ribbon Schools award. Holly also has hands-on experience with installing small- and large-scale pollinator gardens at schools and community sites and providing complementary educational programs for students, teachers, and residents.

Leona Williams, 4th Grade Teacher, Forwood Elementary School, leona.williams@bsd.k12.de.us

Leona Williams, a fourth-grade teacher at Forwood Elementary School, has always taught, even as a chemical company sales representative. She returned to elementary school as a PTA mom supporting science education and has inspired students for a decade since. A Next Generation Science Teacher Leader since 2014, she was a recognized science finalist for the Presidential Awards of Excellence in Mathematics and Science Teaching in 2016 for her Ecosystems Unit. Under her leadership as a National Wildlife Federation's Eco-Schools USA participant, Forwood Elementary School was named a 2017 Delaware and US Department of Education Green Ribbon School. In 2016, Forwood became a NWF certified habitat and was awarded the Green Flag in a 2017. She leads Forwood's Science Club and Science Fair as well as STEM programs in her school, district and community. She is Brandywine School District's Teacher of the Year for 2017-2018. A BS in Chemistry from the University of Delaware (1987) and a Master's degree in Elementary Studies from Wilmington University (2007) support her interests. She mentors university teacher candidates.. Married to husband, Joe, for 27 years, they have three children. Wendy Turner, 2nd and 3rd Grade Teacher, Mt. Pleasant Elementary School, <u>wendy.turner@bsd.k12.de.us</u>

Wendy Turner has been teaching 2nd and 3rd grade since 2010, she changed careers at 40 to become a teacher after working in accounting and finance. She is passionate about connecting learning in the classroom to the real world for her students. She works tirelessly to teach her students to embody respect, empathy, citizenship and growth mindset through her work, embracing social and emotional learning. She has a deep love for science and the environment as well and helped guide her elementary school to being named a US Department of Education Green Ribbon School. She is a state finalist for the Presidential Award for Excellence in Teaching Science and mentors teaching students. As the 2017 Delaware Teacher of the Year, she advocates tirelessly for educating the whole child and trauma invested learning practices. **Presentation 15: Why Don't We Recycle? Engaging Students to Reinvigorate a School Recycling Program (Concurrent Session IV)**

Penny Rodrick-Williams, Science Teacher & Director of Environmental Stewardship, Tower Hill School <u>pwilliams@towerhill.org</u> Penny Rodrick-Williams have a B.S. from Purdue University in Wildlife Science and an M.S. from the University of Wisconsin in Wildlife Ecology. After many years of teaching a variety of biology and ecology classes at the college level, she made a shift to teaching high school students. Bringing subjects such as wildlife conservation and marine biology to young and inquisitive students has been more rewarding than she could have imagined. She recently joined the Science department at Tower Hill School in Wilmington. Not only does she interact with high school students in her classroom, she now has the amazing opportunity to work with students of all ages, as well as faculty and staff from the entire school community as the Director of Environmental Stewardship.

Presentation 19: Next Generation Science Standards: What's Different, and Do They Matter? (Concurrent Session V)

Tonyea Mead, Science Education Associate, Delaware Department of Education, tonyea.mead@doe.k12.de.us

Tonyea Mead is the Science Education Associate for Delaware's Department of Education. As the education associate she oversees professional development, curriculum and the implementation of the Next Generation Science Standards for K-12th grade science teachers in the state. She helped write Next Generation Science Standards as a state lead. She has over 30 years' experience in formal and non-formal education at the elementary, middle, secondary and post-secondary level. She lives in Lewes with her husband, Philip and several pets. She enjoys traveling, gardening, reading historical fiction, and taking care of orphan wildlife.

Presenters in Strand: Innovative and Inclusive EE

Presentation 4: Successes, Challenges, and Experiences Working with Urban Audiences (Concurrent Session I)

Lesley Bensinger, Education Coordinator, Delaware Nature Society, Lesley@delnature.org

Lesley Bensinger is the Education Coordinator for Delaware Nature Society (DNS) at the DuPont Environmental Education Center. She earned a Masters of Science at the University of Maryland Eastern Shore in Marine, Estuarine, and Environmental Science and a Bachelors of Science degree in Ecology at Millersville University. She has been with DNS for nine years working to reach the urban population in and around Wilmington, DE.

Dakin Hewlett, Watershed Education Coordinator, Delaware Nature Society, Dakin@DelNature.org

Dakin Hewlett is the Watershed Education Coordinator for Delaware Nature Society at the DuPont Environmental Education Center (DEEC). She earned a Bachelors of Arts and Humanities degree at West Chester University in English and History. She has been with DNS since June working to connect the Wilmington community to their local waterways and trails.

Isaac Jensen, Community Educator, Delaware Nature Society, Isaac@DelNature.org

Isaac Jensen in the Community Educator for Delaware Nature Society, a position supported by the Lutheran Volunteer Corps. He graduated in 2017 from Luther College where he studied biology and environmental studies.

Presentation 8: Building Global Communities through STEAM, One Student at a Time (Concurrent Session II)

Shauneen Giudice, Grade 7 Science Teacher, M.S. Science Chair, Delmar Middle &Senior High School, <u>shauneen.giudice@delmar.k12.de.us</u> Shauneen Giudice has over twenty years experience in science education and translating information from one culture to another. Currently she is the 7th grade science teacher and Science Department Chair at Delmar Middle School, where she has worked for the last 21 years. As part of her role in the school she sponsors the Middle School Science Club, the Multicultural Club, the Science Olympiads, and the Latino Book Club. Over the years she has held positions both domestically and internationally brining STEM an science to children and adults the world over including: India, Mexico, Japan, Costa Rica, Brazil, Colorado, Washington state, and Maryland.

Presentation 12: Connecting Students to Water Through Art and Design (Concurrent Session III)

Brittany Musolino, Outreach Program Specialist, Partnership for the Delaware Estuary, <u>bmusolino@delawareestuary.org</u>

Brittany Musolino is Partnership for the Delaware Estuary's Outreach Program Specialist, coordinating several partner projects in the Delaware River Watershed. Before joining PDE, Brittany spent two years at the Stony Brook-Millstone Watershed Association in central New Jersey coordinating their River-Friendly Programs. In this role she worked with residents, businesses, golf courses, and schools to improve landscape practices and educate the public; these programs were awarded the Governor's Environmental Excellence Award for water resources in 2016. Before that, she earned a B.S. in Human Ecology from Rutgers University and went on to serve a term in the New Jersey AmeriCorps Watershed Ambassador Program.

Virginia Vassalotti, Schuylkill Action Network (SAN) Coordinator, Partnership for the Delaware Estuary, <u>vvassalotti@delawareestuary.org</u> Virginia Vassalotti works as the Schuylkill Action Network (SAN) Coordinator for the Partnership for the Delaware Estuary. In her position, Virginia manages and oversees the SAN, a collaborative network of environmental organizations, government agencies, water utilities, and more, all working towards a clean, healthy Schuylkill River Watershed. As SAN Coordinator, Virginia fosters creative partnerships, provides technical assistance, and implements projects to protect water resources in the Schuylkill River Watershed. Previously, Virginia worked for the Montgomery County Department of Environmental Protection, in Rockville, MD. She graduated from the University of Delaware with a Bachelor of Science in 2013.

Presentation 16: Creating Workforce Ready Students through Computer Game Design (Concurrent Session IV)

Maggie Pletta, Education Coordinator, DNREC, DE National Estuarine Research Reserve, <u>Margaret.Pletta@state.de.us</u> Maggie Pletta holds a B.S. in Environmental Restoration and Management, with a focus on wetland habitats from the University of Maryland College Park. She is the current Education Coordinator at the Delaware National Estuarine Research Reserve (DNERR) where she is tasked with managing and leading K-12 fieldtrips and outreach, public programs, family events, and teacher professional development workshops. Prior to her position at DNERR she held positions at the National Park Service, NASA, Educational Non-Profits, and DNREC's Wetland Monitoring and Assessment Program. Her professional areas of interest include teaching people about estuaries and climate change, as well as reconnecting children with nature, and making science fun for all ages.

Presentation 20: How to Support All Students in Understanding Local and Global Carbon Cycle Issues Using LFS (Learning Focused Strategy) and Differential Assessment (Concurrent Session V)

Meaghan Tyndall, Biology Teacher, Laurel High School, meaghan.mohr@laurel.k12.de.us

Meaghan Tyndall is a third year Biology and AP Biology teacher at Laurel High School. Her goal as an educator is to prepare all students for success and create awareness around local and global issues related to climate change.

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DAEE Mini-Grant

2018 Member Events

Mock Horseshoe Crab Spawning Survey

May 25, 2018 , 6:00 p.m. - 8:30 p.m. 818 Kitts, Hummock Rd., Dover, DE 19901 Contact: <u>Margaret.Pletta@stae.de.us</u>

Canoe Trip on Blackbird Creek

September 8, 2018, 11:00 a.m.– 1:00 p.m. 801 Blackbird Landing Rd., Townsend, DE, 19734 Contact: <u>Margaret.Pletta@state.de.us</u>

Networking Lunch and Happy Hour

September 8, 2018, 1:30 p.m.- 3:00 p.m. Brick Works Brewery and Eats 230 S. Dupont Blvd. Smyrna, DE 19977 Contact: <u>DAEEonline@gmail.com</u>