



Sheraton North Baltimore Hotel, Towson, MD

HIGHLIGHTS

Professional Development Workshop on Thursday ★ Thursday Night Dinner and Social ★ Friday Pre-Conference Workshops ★ First Timers' Welcome ★ STEAM Festival (students, families, community members, STEAM professionals, and conference attendees) ★ Friday Conference Opening and Happy Hour ★ Exhibit Hall ★ 50+ Saturday workshops ★ Lightning Rounds ★ Exhibitor Presentations ★ Movie ★ Book readings from local authors ★ Saturday Night Trivia and Social ★ Sunday Field Experiences

MAEOE Welcomes STEAM Keynote Speaker Keith Williams, Friday Conference Lunch

STEAM provides the tools, the data and the knowledge to help us accomplish enormous charge. But we still need to foster that strong emotional connection that inspires change. There are few environments that are better suited to blending STEAM and emotional connection than the underwater world, and we have amazing underwater ecosystems ripe for that blending right in our backyards.



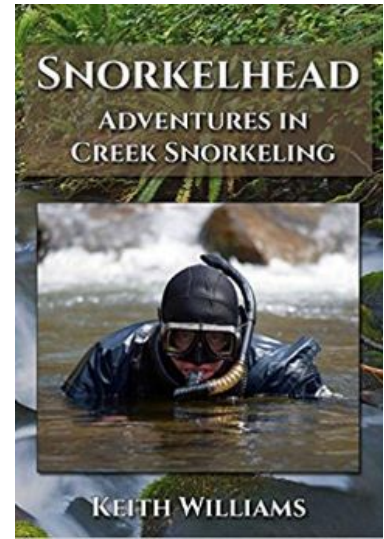
Join me as I take you on an underwater journey through streams that flow past our homes and schools and through our communities. Experience the beautifully diverse and intricate life of our Chesapeake rivers and streams. Besides being mind-blowing, the underwater worlds of our everyday freshwater ecosystems are the perfect setting for students to explore, make connections, seek answers, create solutions and STEAM forward.

Keith is the founding Director of Education, and is the current Executive Director of the NorthBay Education Foundation. He has a BS in Environmental Biology from Kutztown University and MS in Ecological Teaching and Learning from the Lesley University Audubon Expedition Institute. Keith worked as an Environmental Biologist with the U.S. Army for 10 years before starting his education career, and has conducted environmental assessments throughout North America, South West Asia and Central America. Keith was the founding Director of the U.S. Army Biological Technical Assistance Group.

Keith taught grade 3-8 science in Baltimore City, and developed an Associates degree in Outdoor Adventure Education at Cecil College where he serves as adjunct faculty. He is a national trainer in

Investigating and Evaluating Environmental Issues and Actions Curriculum, and is a participant in the U.C. Berkeley Lawrence Hall of Science Better Environmental Education Teaching, Learning and Experience Sharing (BEETLES) National Leadership Institute. He currently serves on the national Residential Environmental Education Partnership. He served as the Treasurer of the MAEOE for 9 years and has served on the Maryland Governors Working Group on Environmental Literacy. Keith regularly presents at state, national and international conferences on environmental education topics and is a repeat invited presenter at the National Conservation Training Center for the US Fish and Wildlife Service. He frequently speaks about the loss of freshwater biodiversity and how freshwater snorkeling can address this problem.

Keith has developed river snorkeling based curriculum, has established freshwater snorkeling programs for non-profits and the US Forest Service, and regularly works with Freshwaters Illustrated to develop educational materials to accompany their underwater films. Keith has led thousands of people on river snorkeling explorations. His first book *Snorkelhead, Adventures in River Snorkeling* was published in 2016, and he is currently working on his second river snorkeling book due to be published by Stackpole Books in 2020.



Thursday Night Networking Social

Join us at a local Towson restaurant (exact location TBA) on Thursday evening from 7:00 p.m. – 9:00 p.m. to meet new friends and catch up with your MAEOE connections. MAEOE will receive a portion of the total sales from our group, so come hungry!!

Friday First Timers' Welcome!!

First time attendees are encouraged to attend this meet and greet event specifically designed to make it easier navigate the conference and meet other *new* conference attendees and past attendees who serve as conference mentors on Friday from 4:30 p.m. – 5:15 p.m. at the Sheraton's Rain 903 Restaurant.

Friday HAPPY HOUR, Exhibit Hall Welcome, STEAM Festival!

Join us on Friday for Happy Hour 5:00 - 6:30 in the Exhibit Hall. Each registered attendee is asked to pick up their drink ticket upon registration. Enjoy heavy appetizers, cash bar, catching up new and old MAEOE friends while visiting with our exhibitors in the Warfield's Ballroom.



6:30 PM MAEOE STEAM Festival and Conference Opening (Open to any community members interested in STEAM!)



Sujan Shrestha is our Opening Speaker. He is assistant professor at the Division of Science, Information Arts and Technologies at the University of Baltimore. Professor Shrestha's research focuses in the broad area of teaching and learning through games and digital interactive technologies. At the University of Baltimore's Simulation and Game Design program, he teaches game development and game theory courses in developing meaningful technology to help others. In 2014, he established the UB GameLab, a

multi-purpose interdisciplinary laboratory to support students in the area Science, Technology, Engineering, Mathematics (STEM) through the arts (STEAM).

Free to attend for all registered Conference Attendees. \$5 person or \$20 for a family or group up to 6 people. Bring your friends and family for a series of drop-in events that give participants an opportunity to collaborate with one another to solve engineering and design tasks during the STEAM Festival, which will be held in the Fitzgerald Ballroom.

Saturday Conference Highlights

Community Meetings

During Saturday breakfast, look for the MAEOE Green Center/PLT meeting to get program updates and discuss needs and questions from 7:30 - 8:30 am.

Saturday before lunch, look for a “community” gathering that may benefit you or your organization. This year our “communities” will discuss STEAM and other top priorities. The format is small group, facilitated discussion. Choose from the following:

- Early & Elementary Education
- Secondary & Higher Education
- Outdoor Education Centers
- Young Professionals
- Diversity, Equity, and Inclusion
- Sustainable Schools

There is no fee, but you must sign up for a group during registration so that we know the numbers for planning purposes. A great way to start and continue discussions with your peers.



PorEco Movie Premier at MAEOE!!!

More than ever before, kids across the U.S. are learning about STEM (Science, Technology, Engineering, and Mathematics) inside the classrooms, both public and private. What has been overlooked as STEM by most educational systems is that natural resource and cultural conservation can be found right outside everyone’s doorstep. This topic will be the starting point for a 30-minute Green STEM documentary entitled, “*Conservation Kids*.” Children will experience real world scenarios using STEM principles as they enjoy Mother Nature and her agricultural lands. Interviews with environmental educators, scientists, and conservationists will be used to help explain the advantages of using Green STEM in today’s global economy. General Audience.



MAEOE Maryland Green School & Green Center Application Sessions and Review Opportunity Session 5, Fitzgerald C

Is your school or center working on an application to become a Maryland Green School or Green Center in 2019? Regardless of how far along you are in the process, check out all of the Green School sessions on Friday and Saturday. You should also consider attending the review session at the end of the day on Saturday for an informal chat with application reviewers. Learn what your school or center needs to do to receive this prestigious recognition. Bring any documentation and receive feedback from our experienced review team.

Saturday Night Trivia - end of conference celebration

Close out the 2019 MAEOE Conference with new and old friends! Form a team or join one for an entertaining evening of trivia in the Sheraton restaurant: Rain 903! Grab some food and/or drinks at the bar and join in a great evening full of fun and friends!

Special Conference Activities

The Robert Finton Outdoor Educator of the Year Award

MAEOE will present the Robert Finton Outdoor Educator of the Year Award to an individual who demonstrates leadership and innovation in environmental and outdoor education. Bob Finton personified enthusiasm, innovation and excellence in the field of environmental education and this award honors his memory by rewarding a non-formal practitioner of outdoor education who strives to match these qualities.

For more information and to submit a nomination, please visit

<https://maeoe.org/professional-development/conference/robert-finton-award>.

Nominations are due by December 7, 2018.

2019 MAEOE Challenge - PHOTO SCAVENGER HUNT

Living Classrooms Foundation welcomes you to participate in the 2019 MAEOE Challenge. This year we've created a photo scavenger hunt for you. You may participate as an individual but it's always more fun with friends (co-workers, students, friends, neighbors....)! All entries must be submitted via a Google photo album no later than 5pm Monday, January 28.

You may begin taking photos on the day the 2019 Conference Registration opens. Review the list of photographs you are trying to take – you can choose to do as many or as few as you'd like. There are points assigned to photos however these will not be revealed until the slide shows are on display at the conference. The photos will be exhibited at the MAEOE table in the exhibit hall and the winner will be announced at the conference during lunch on Saturday. MAEOE retains the right to use these photos for social media, publicity, future conferences, etc... so please secure permission from any individuals being photographed. As such, a photo release document must be submitted with each entry for any individuals who are identifiable in the photographs. For any subjects under 18, a guardian's signature must be provided.



****DETAILS ARE ON THE MAEOE WEBSITE****

Look for last year's Challenge Winner LOGO on the Conference Bags - pick up your free bag at registration!

Exhibit Hall

Connect with 30+ organizations, agencies, businesses and vendors offering a range of information and resources, as well as, products for sale. The Exhibit Hall opens Friday morning for a preview. Don't miss the Friday evening social in the Exhibit Hall. Come to explore and network, desserts and cash bar available.

Donate to Our Silent Auction!

We need your donations of books, gift certificates, arts and crafts, environmental or educational objects or just fun and zany items! Funds generated from the silent auction benefit the MAEOE conference scholarship fund. To donate items please contact Melissa Boyle at melissaboyle3@gmail.com.

Lodging Information - Sheraton North Baltimore, Towson Special Conference Rates and Green Hotel Information

For those wanting to stay at the conference site for 1 – 2 – 3 or more nights, the Sheraton has reduced their room rates to provide you with the best rates in town! Special rate for the MAEOE Conference: \$99/night.

Reservations MUST be made by **January 10** and should be made online to guarantee our special conference rates. To book your room please visit:

<https://www.marriott.com/event-reservations/reservation-link.mi?id=1809131288&key=33F0A339&app=resvlink>

Sheraton Baltimore North Green Initiatives!!

- Public space recycling
- In room recycling
- Make a Green Choice Program – SEE BELOW
- Green Linen Program
- We added the letter G to the abc's of housekeeping which stands for greening the room. This requires all lights to be turned off, curtains to drawn, a/c unit set to the appropriate temperature and reporting any running toilets or dripping faucets for repair
- Replacement of standard and LED lighting with CFL lighting
- Low flush toilets
- Our Engineering Department has implemented initiatives to meet Starwood standards
- Lineless Meeting Room Practices
- Low flow showerheads
- Low flow sink aerators
- Carbon Footprint analysis yearly through Starwood
- We participate in Annual Environmental Impact Assessment Survey through Starwood Hotels
- Recycle Fryer Oil
- We use a Utility Broker to purchase Natural Gas from NYMX Stock Exchange for reduced price per Therm

“MAKE A GREEN CHOICE” when staying at the Sheraton Baltimore North (903 Dulaney Valley Rd, Towson, MD 21204)

The Sheraton Baltimore North “Make a Green Choice” program is available for guests staying more than one night. “Make a Green Choice” and the room will be serviced every 3rd day. For each day of participating in the program the guest will receive their choice of a \$5.00 food discount at Rain 903 (the restaurant is located on the main floor of the hotel) or 500 StarPoints (Starwood reward program). Information explaining the program can be found in your room upon check in.

A Greener Conference

Conference Recycling – Let’s do our part and look for labeled recycled cans at the conference location.

Paper Source – All conference materials are printed on recycled paper stock. A limited number of Conference Programs will be printed. Download yours in January.

Book Swap – Bring a book/take a book. Any unclaimed texts will be donated to a local charity.

Carbon Offsets – A portion of the registration fee will be used to offset estimated carbon emissions associated with the conference.

Carpooling/Room Sharing - Reduce your carbon footprint and CARPOOL! Plus save more money and share a room! To find others interested in this, please check out the closed group on the [MAEOE Facebook Page](#). Request to be added to the group and then find a friend to join you in being green! Questions? Contact conference@maeoe.org.

Bring your own mug and water bottle – Reduce your footprint at the conference. Bring your own reusable mug/bottle!!

Save paper – Register Online! – Use your Visa, American Express or MasterCard to register online at www.maeoe.org through January 31, 2018.

BYOL – Bring your own Lanyard – we all have them around, so why not reduce waste and bring your own!

Bag Swap – Tired of using the same old reusable totes? Bring one of your old ones and trade it for a new one!

REGISTRATION INFORMATION

SORRY, NO ON-SITE REGISTRATION.

Save Paper. Register Online! Use your Visa, American Express or MasterCard to register online at <http://www.maeoe.org> through January 25, 2019.

To Register by Mail

Complete ALL FIVE PAGES of the registration form. Mail it with a check for payment to the address provided on the form by January 31, 2019. Please complete a separate form for each person registering. Please note that a processing fee of \$30 is required for each paper registration. To set up payment using a Purchase Order, please contact us at conference@maeoe.org.

Deadlines: Save Money!

The sooner you register, the more money you save. See details on the registration form. For the lowest conference rate, register and pre-pay by January 4, 2019.

Membership Matters!

Being a MAEOE member saves you even more money this year. As an Organizational Member up to five staff can receive discounted rates. Be sure to check out membership benefits at <http://www.maeoe.org> before registering.

Standard Registration- Includes Friday Opening & Keynote, Exhibit Hall Reception, Saturday Breakfast, All Saturday Sessions, Saturday Lunch, and Saturday Social. NOTE: Thursday/Friday Workshops and Field Experiences can be added to any Standard Registration.

Check out our CONFERENCE PACKAGE options for Members Only during “Early Bird” registration period! This promotion is only valid through the January 4, 2019.

Thursday (full or half day), Friday (full or half day) plus Sat registration and lunches: \$400 → \$80 savings!!

Thursday Environmental Ed Certification Package, Friday (full or half day) plus Sat registration and lunches:
\$ 425 → \$80 savings!!!

Thursday, Friday (full or half day) plus Sat registration and lunches Student Member: \$370 → \$80 savings!!

Friday (full or half day) and Sat registration and lunches: \$275 → \$45 savings!!!

Student Registration- \$150 (non-member)/\$120 (member), available to full-time students only
(Proof of full-time schedule is required)

Presenter Registration- Thank you for presenting at the 34th MAEOE Conference, your contribution ensures that we are offering current and relevant workshops enhancing the conference experience for all attendees. NOTE: Only two presenters per session are eligible for the Presenter Registration Rate.

Be sure to register during the early bird time frame to get your special presenter discount.

Buy Your MAEOE T-Shirt online - Pre Conference prices, Various sizes, Short Sleeve Green, Long Sleeve Blue. Order by January 4th with your conference registration:

Short Sleeve Small - XLarge: \$12.00

Short Sleeve 2XLarge - 3XL: \$15.00

Long Sleeve Small - XLarge: \$17.00

Long Sleeve 2XLarge - 3XL: \$20.00

Refunds?

Cancel by January 4, 2019 and you will receive a full refund less a \$50 processing fee. By January 18, you will receive a 50% refund. Sorry, no refunds after January 18. Unless highways are closed by local government due to inclement weather, the conference will take place and no refunds will be given.

Registration Questions?

Call the MAEOE office at 410-260-6226 ext. 7212. You may leave messages at any time and we will return your call. You can also email your questions to conference@maeoe.org. Be sure to visit the MAEOE website, www.maeoe.org, for updated and detailed information.

Promote Yourself!

Want to reach over 600 environmental educators? MAEOE will place your business or organization's promotional materials in our conference folder/bag for the modest fee of just \$85! You can also put an advertisement in our Conference Programs! Quarter, half and full size pages available. The more visibility you have the more business you get! For rates and more information on Conference Program ads or folder stuffing please contact conference@maeoe.org.

Volunteer at the Conference!

Are you a high school student who needs service hours? Or do you know one who does? Are you an educator looking to become more involved in environmental education on the state level? Do you want to support MAEOE and the success of the conference? Please visit <http://maeoe.org/conference-volunteer> for more information and to reserve your spot to help at the conference.

Sponsorship!

This is a great way to support the MAEOE Conference and to promote your organization to the Environmental Education and Environmental Literacy professional audience that will be attending. We offer sponsors at various levels starting at just \$500. For more information please contact MAEOE's Executive Director, Laura Johnson Collard, at director@maeoe.org.

Scholarships!

The Maryland Association for Environmental and Outdoor Education has established a Conference Scholarship program to assist high school and college students, classroom teachers, and beginning (1-2 years experience) outdoor center educators attend the annual conference. Annual scholarship funds are derived from the previous year's conference Silent Auction. As such, the amount of funds varies each year.

The scholarship covers the cost of standard conference registration fee only. Thursday and Friday workshops, transportation, and accommodations are not included.

To apply, follow the scholarship link in the conference part of the [MAEOE.org website](http://MAEOE.org).

Important Dates

Scholarship Opens: November 1st

Scholarship Closes: November 30th

Scholarship will be announced by December 17th.

Awardees will need to register by early bird deadline, January 4th.

2019 MAEOE Conference ~ Schedule At A Glance

Date	Time	Event	Location
Thursday Feb. 7, 2019	8:00 pm - 5:00 pm 8:00 am – 9:00 am 9:00 am – 4:00 pm 9:00 am- 12:00 pm 11:30 am– 1:30 pm 12:00 - 1:00 pm 1:00 - 4:00 pm 1:30 pm – 4:30 pm 12:00 pm – 3:30 pm 4:00 pm - 6:00 pm 6:00 pm	Wilderness 1st Aid Registration and check in Full Day Workshops School Grounds for Learning Offsite Workshop Registration Lunch Birding/Beyond Offsite Workshop Half Day Workshops Exhibitor Setup Exhibit Hall Welcome Meet up at off-site restaurant	Maryland Agricultural Resource Center Sheraton Conf. Lobby Sheraton rooms Green Street Academy Sheraton Conf. Lobby Fitzgerald C Ballroom Lake Roland Nature Center Sheraton rooms Warfield's Warfield's TBD
Friday Feb. 8, 2019	7:30 am – 5:30 pm <i>(Closed at lunch)</i> 7:30 am – 6:30 pm 7:30 am –8:30 am 8:00 am - 5:00 pm 8:30 am – 4:30 pm 8:30 am – 11:30 pm 9:00 am - 3:00 pm 12:00 pm – 1:00 pm 1:30 pm – 4:30 pm 4:30 pm – 5:15 pm 5:00 pm – 6:30 pm 6:30 pm – 9:00 pm	Registration/Information Desk Open Friday Exhibit Hall Hours: 7:30 a.m. – 9:00 a.m. 11:00 a.m. – 1:30 p.m. 4:00 p.m. – 6:30 p.m. Breakfast for Workshop Participants Wilderness 1st Aid Full day workshops Half day workshops – morning only Native American off-site Workshop Lunch Full day workshops continue Afternoon Half-day GSFC Visitor Center Tour First Timer's Social and Networking Happy Hour Hors d'oeuvres and Cash Bar Conference Opening & STEAM FESTIVAL Speaker - Sujan Shrestha	Sheraton Conf. Lobby Warfield's Exhibit Hall/Warfield's Maryland Agricultural Resource Center Sheraton rooms Sheraton rooms Irvine Nature Center Fitzgerald Ballroom Sheraton rooms Sheraton rooms Goddard Space Flight Center Rain 903 - Sheraton Warfield's Fitzgerald Ballrooms
Saturday Feb. 9, 2019	7:30 am – 2:00 pm 7:30 am – 8:30 am 7:30 am – 4:30 pm 8:00 am – 11:30 am 11:30 am - 12:15 pm 12:15 pm – 1:45 pm 2:00 pm -2:35 pm 2:35 pm – 3:45 pm 3:45 pm – 4:15 pm 4:15 pm 4:30 pm – 5:30 pm 4:15 pm - 5:45 pm 6:00 pm - 9:00 pm	Registration Breakfast Look for PLT and Green Center Tables Saturday Exhibit Hall Hours: 7:30 – 4:30 Silent Auction ends at 4:15 p.m. Pick up 4:15 p.m. Concurrent Workshops – Sessions 1 thru 3 Networking and Community Panels Lunch and Keynote Speaker: Keith Williams Lightning Rounds; Exhibitor Presentations Concurrent Workshops Sessions 4 Snack Break Silent Auction Ends Concurrent Workshops Session 5 Pick up and Pay for Auction Items TRIVIA & Social	Sheraton Conf. Lobby Exhibit Hall/Warfield's Exhibit Hall/Warfield's Sheraton rooms Warfield's/Sheraton rooms Fitzgerald Ballroom Check For Room Assignments Sheraton rooms Warfield's Fitzgerald Ballroom Sheraton rooms Registration Table Sheraton Rain 903
Sunday Feb. 10, 2019	8:00 am – 4:00 pm	Field Experiences	Check Program for times, opportunities and locations.

CONFERENCE STRANDS

For MAEOE, the acronym STEAM represents Science, Technology, Engineering, Agriculture/Art, and Math, which also contribute to environmental education and Green Schools.

S = Science (Knowledge and study of the natural world)

This strand focuses on science topics or principles to emphasize and focus on increasing participant's knowledge of the natural world and how it functions.

T = Technology (the application of science)

This strand focuses on the use of technology to apply STEAM in the field. The sessions can focus on using technology to collect, analyze and present science and use of technology to increase citizen awareness.

E = Engineering, Environmental Education and Greening the school inside and out

This strand looks at technology and the devices used to collect data or solve environmental problems. EE example lessons that support issue investigation and solutions are teacher driven or assigned and developed by students in class or in extracurricular programs.

A = Arts, Agriculture, Action

This strand focuses on topics in the arts, agriculture and action-based projects that integrate environmental education and STEM from Pre-K through higher education.

M = Models, Math, Maps, Mentoring

This strand focuses on content, how data can come alive in the classroom, use of visualization tools, data application into program solutions and mentorship towards career pathways.

THIS IS A TENTATIVE LIST OF ALL THURSDAY, FRIDAY AND SATURDAY OFFERINGS

Please note: workshops may be cancelled due to lack of enrollment. Should this occur, you will be notified the week prior to the conference for alternate choices.

Thursday Professional Development Workshops

Wilderness First Aid, Thursday & Friday 8:00 - 5:00 (PLEASE NOTE TIMES)

SOLO Instructors

****OFF SITE at Maryland Agricultural Resource Council****

Accidents happen. People get hurt, sick, or lost. The temperature drops, the wind picks up, and it starts to rain. Would you know what to do? Many backcountry emergencies are preventable, and even when bad things happen, sometimes the wrong care can make things worse. By learning a few basic skills, you can make the difference between a good outcome and a bad one-and maybe even save a life.

THURSDAY FULL DAY 9AM – 4PM

Leopold Education Project Environmental Literacy Workshop (Full Day)

Peggy Eppig, Maryland Agricultural Education Foundation

Strand: A = Arts, Agriculture, Action

Audience: Secondary, College/University

The Leopold Education Project is a hands-on environmental literacy education program grounded in the work and ideas of conservationist Aldo Leopold emphasizing hands-on participatory and reflective lessons and activities. Participants receive a copy of A Sand County Almanac and Teacher's Workbook and Curriculum to take home and use in classrooms, nature centers, and field!

Geology for Environmental Educators (Full Day)

Eliana Bookbinder & Antonia Bookbinder, MNCPPC

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Elementary, Secondary, College/University, Adult, General

Many outdoor educators are intimidated by geology, with its specialized vocabulary and immense scale, but geology is the foundation for much of environmental science. In this full day (OR half day) program, learn the basic concepts of environmental geology, review plate tectonics and erosion and soil formation, learn to read a geologic map with your students, explore why climate change involves geology, and review Maryland's geologic history.

THURSDAY MORNING HALF DAY 9AM - 12PM

School Grounds for Learning- Habitat Restoration

****OFF SITE at Green Street Academy****

Holly Gallagher, NWF; Ashley Traut, Blue Water Baltimore; Eric Oberlechner, Green Street Academy

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Elementary, Secondary, General

National Wildlife Federation with Blue Water Baltimore and Green Street staff will share tools and resources they have jointly developed with MAEOE to promote habitat restoration on school grounds in Baltimore City. The partners will highlight how schools were selected and then share the work involved at their anchor school, Green Street Academy. This workshop will familiarize formal and non-formal educators, administrators, and facilities personnel with the School Grounds for Learning platform.

THURSDAY AFTERNOON HALF DAY 1PM – 4PM

STEAM Panel & Discussion

Juliann Dupuis, Notre Dame of Maryland University (moderator)

Strand: STEAM

Audience: General

Join formal and non-formal educators for an interactive session on how to incorporate STEAM practices and activities into your teaching. Hear from experts about how they use STEAM in their classrooms and presentations to engage students in learning about environmental education concepts. Participants will leave this session with best practices for content integration as well as first-hand experience with STEAM activities designed for students in preK-12th grade.



Birding in your Backyard and Beyond **OFF SITE at Lake Roland**

Elizabeth Kadow, Ranger, Baltimore County Recreation & Parks

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Elementary, Secondary, College/University, General

Join a guide from the Baltimore Bird Club to take a hike through Lake Roland, Baltimore County's urban bird paradise. Participants will learn the basics of using binoculars, bird habitats, listening for bird calls, and how to identify birds using a field guide. Then, venture inside the nature center to see some activities you can implement in your classroom. End the day with a live raptor encounter.

Social Science to Build an Education and Outreach Campaign to Advance Behavior Change

Kelley Dennings, Social Marketing Association of North America

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Elementary, Secondary, College/University, General

The nonprofit Social Marketing Association of North America brings you a training about social science and behavior change. Imagine an education and outreach campaign that is informed with research and tracked with metrics. This interactive training will give you various tools, strategies and case studies to help advance behavior change for social good. Participants will try out some inexpensive research techniques and create an outline of a marketing plan for a topic of their choosing.

Get your Environmental Education Certification through MAEOE

Elena Takaki, Project WILD/AFWA & MAEOE Board Emeritus

Strand: E – Engineering, Environmental Education and Greening the school inside and out

Audience: General

Get your Environmental Education Certification through MAEOE. EE Certified professionals have a strong foundation in environmental education principles, pedagogy, and practice. During this ½ day workshop you will learn about all of the requirements for getting your certification in Maryland and work with peers on the EE Certification process. At the end of the workshop you will have completed a portion of the requirements and made plans for finishing the process. Bring your resume and a laptop computer. Subsequent to the in-person workshop, we will meet online to complete all requirements by the end of June 2018. Workshop includes your application fee, and online course instruction. For more information about the certification requirements, visit <https://maeoe.org/professional-development/environmental-education-certification>.

PLT Early Ed & Growing Up Wild

Beth Decker and Winny Tan, MAEOE/State Coordinator - PLT

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: : Pre-K, Elementary

National environmental education activities at your fingertips when you attend this workshop for early education Project Learning Tree and Growing Up Wild. Hands-on games and education concepts will enhance your skills as an educator. This workshop will also go over the main components of the two guides and participants will get to keep the guides for incorporation into their future programming!

Keep It Going: Hands-On Activities that Teach Sustainability Concepts

Thomas Hutson, University of Maryland Extension

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Elementary, Secondary

As the human population grows and the demand for resources continues to increase, the need to live a sustainable lifestyle is also growing. This workshop will allow participants to experience a

variety of hands-on lessons that help youth explore environmental issues and learn techniques for sustainable living. The activities work well in formal and non-formal educational settings. Although the target audience is 4th through 10th grade, the lessons can easily be adapted for use with youth of ages 5 through 18. Lesson plans for all activities will be made available to workshop participants.

Art Promoting Problem Solving and Critical Thinking Skills

Ariadne Gejevski, Stresslessart

Strand: A = Arts, Agriculture, Action

Audience: Secondary, College/University, Adult, General, Special Education

This creatively unique artistic presentation will introduce attendees to a problem solving approach to advance education to a higher level not only through art. Specific steps will be shown through sample work in how students can accomplish far better results in their assigned work and simultaneously learn more valuable use of critical thinking skills.

FRIDAY WORKSHOPS HALF AND FULL DAY

Please note: workshops may be cancelled due to lack of enrollment. Should this occur, you will be notified the week prior to the conference for alternate choices.

FRIDAY FULL DAY

Wilderness First Aid, Thursday & Friday 8am-5pm (note times)

****OFF SITE at Maryland Agricultural Resource Council****

SOLO Instructors

Accidents happen. People get hurt, sick, or lost. The temperature drops, the wind picks up, and it starts to rain. Would you know what to do? Many backcountry emergencies are preventable, and even when bad things happen, sometimes the wrong care can make things worse. By learning a few basic skills, you can make the difference between a good outcome and a bad one-and maybe even save a life. ** Please refer to pre-conference confirmation emails as to what you need to bring to class**

Native American Village, *OFF SITE at Irvine Nature Center 9am - 3pm*****

Brittney Mulka Manager of School and Urban Education Programs, Naturalist, & Diana Roman, Teacher Naturalist Irvine Nature Center

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: General Audience

Have you ever been to Irvine Nature Center before? Seen our over 210 acres of forests, meadows, and wetlands right in Owings Mills, MD? If you're new to Irvine or an old friend, join us for our Native American Village at Irvine! Take a step back in time by exploring Irvine's new Native American Site. Learn about our own human history and how pre-colonial Native Americans used local natural resources to thrive as a community. Participants will learn about tools, clothing, foods including Irvine's own maple trees, living structures, fire-making methods as well as Native American games and communication. ** Please be ready to be outdoors for at least half the program. Dress warmly and comfortable walking shoes.**

Project Learning Tree (PLT) 8:30am - 4:30pm

Rhonda Scott & Lisa B. Lee Sang, William S. Schmidt Outdoor Education Center, Prince George's County Public Schools

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Elementary, Middle

Project Learning Tree is an award-winning environmental education program designed for teachers and non-formal educators, parents, and community leaders working with youth from preschool through grade 12. We offer lesson plans and activities for all ages that can easily be incorporated into existing curriculum or used in non-formal learning objectives. Each activity is filled with opportunities to build critical thinking skills, incorporate technology, and use differentiated instruction. Participants of the professional development workshop will learn how to use the activities with varied audiences and will receive the PreK – 8 Guide.

FRIDAY HALF DAY 8:30AM –11:30AM

Rain, Rain Go Away! - Teaching Flood Risk and Solutions to Secondary Students

Bess Caplan & Tanaira Cullens , Baltimore Ecosystem Study

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Secondary, General

Did the summer 2018 rains have you wondering where all that water came from and where it went? Delve deep into issues of flooding in populated areas with the Baltimore Ecosystem Study Education Team. Learn teaching activities and techniques for engaging students in hands-on learning about the causes and consequences of flooding. Participants will explore historic flooding events in Maryland (including the recent Ellicott City floods) and learn proven classroom techniques that engage students in learning about local flooding issues. Experience hands on learning through a 3-tiered modeling approach and design your own flood mitigation strategies for your community. **Participants should bring a laptop or other device.**

The Breakfast Club Goes Hiking: Connecting Kids with Kids through Nature

Ted Hall & Eoin O'Neill, Arlington Echo

Strand: M = Models, Math, Maps, Mentoring

Audience: Secondary

Do you want to learn how to get the athlete, the brain, the basket case, the princess, and the misfit to forget about stereotypes and connect with each other? Come learn about Arlington Echo's High Adventure camp, a week-long backpacking camp where kids form lasting relationships with nature and each other. Even if the backcountry isn't your happy place, learn how our techniques and approach to camper bonding bring kids from different cliques and backgrounds together. Participants will enjoy team building activities, set up camp here at MAEOE, hang a bear bag, eat gourmet backpacking cuisine, and find their voice through journaling.

Maryland Green Schools, Eco Schools, and Maryland Green Ribbon

Winnie Tan - MAEOE, Donna Balado – MSDE, and Holly Gallagher - NWF

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Elementary, Secondary, College/University, General

This workshop takes a detailed look at the Maryland Green School program covering benefits, objectives and the application process. The workshop will also cover the Green Ribbon School process and how to step into the Maryland Green Schools application with the Eco Schools USA tiers to success. Pick up tips and resources to take back to your school for your Green Team.

NASA's Advancing Earth Research Observations with Kites and Atmospheric/Terrestrial Sensors (AEROKATS) Program - an Introduction for Citizen Scientists

Geoff Bland, Douglas Levin, Andy Henry and Brian Campbell

Strand: Science

Audience: General

Join scientists from NASA Goddard and Washington College to learn about how some exciting new technologies, in the hands of students, can help to shape our understanding of the world around us. In this workshop we will get hands on with these novel education resources know as AEROKATS (Advancing Earth Research Observations with Kites and Atmospheric/Terrestrial Sensors) and ROVERs (Remotely Operated Vehicles for Education and Research)

Greenfire

Peggy Eppig, Middle School Ag and Natural Resources Education, Maryland Agricultural Education Foundation & JoAnn Coates Hunter, Director, Fox Haven Farm and Learning Center

Strand: A = Arts, Agriculture, Action

Audience: General Audience

A screening of the biographical film "Greenfire" includes a discussion session on how to provide/offer film screenings (of any kind) that include community discussion panel discussions, environmental issues conversations, and book club enrichment. Copies of A Sand County Almanac will be available for discount purchase and information on how to order the film CD through the Aldo Leopold Foundation will be provided.

Restorative Practices: Nurturing the Whole Child

David Dahl & Rik Egan, NorthBay Education

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Elementary, Secondary, Adult, General

Is a healthy self-concept required for a healthy environment? If a student doesn't feel safe, included, and have a sense of self-worth, they will be too concerned with safety to positively affect their community. The education system is beginning to see the value of Social Emotional Learning and restorative practices. By incorporating proactive and responsive restorative practices, educators enable their students to learn how to make good choices intrinsically. During this session, participants will learn practical team building challenges, debrief strategies, restorative circles and dialogue, discipline strategies, and how to improve school culture by nurturing the whole child.

Food Fight: GMOs and the Future of the American Diet

Mckay Jenkins, University of Delaware

Strand: A = Arts, Agriculture, Action

Audience: Secondary, College/University, Adult, General

Food Fight: GMOs and the Future of the American Diet. An in-depth conversation with a veteran professor of Environmental Journalism about how to teach and talk about the many complexities implicit in the global industrial food system.

Shed-Stories: Students Sharing Chesapeake Bay Watershed Stories

Brian Shilling, Montgomery County Public Schools

Tiffany Granberg & Shari Yesnick, Chesapeake Bay Foundation

Strand: A = Arts, Agriculture, Action

Audience: Elementary, Secondary, College/University, Adult, General, Special Education

Learn how MCPS teachers and CBF staff worked together to create an opportunity for teachers and students of all ages to share their Chesapeake Bay Watershed Stories. You will have a chance to watch and listen to a few Watershed Stories, and to learn about how you can use art, photography, podcasting and simple video tools to encourage your students to delve deeper into Watershed issues and investigations so that they too can both share their own watershed stories and learn from others who have unique connections to and knowledge about our Watershed.

Developing More and Better Standards-based MWEEs with Making the Link

Cassie Doty, Education Coordinator, UMCES Appalachian Laboratory

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Elementary, Secondary, Nonformal/field-based educators

The NOAA BWET-funded Making the Link project partners formal educators and EE providers in a professional learning community (PLC) to co-develop standards-based MWEEs and then implement them systematically. During this presentation, hear about the formation of the Making the Link PLC, the resources provided and outcomes achieved with the first cohort. You will also have the opportunity for some group work to practice using the MWEE Guide and other tools to help you improve your own MWEE.

Schoolyard Thermal Investigations using Surface, Water, & Air Temperatures

Susan Simonson, Outreach Coordinator, & Claire Hudson, CCWS Coordinator, Hood College - Center for Coastal and Watershed Studies

Strand: E = Engineering, Environmental Education and Greening

Audience: Secondary, College/University, Adult

Most everyone can relate to how uncomfortable extremely hot days can be, but what do warming temperatures mean for our waters? Are our schoolyards acting as “urban heat islands”? Does your school property contribute thermal impacts to our local waters? How can we reduce the temperatures of our school’s impervious surfaces?

By conducting a Schoolyard Thermal Investigation, students use online mapping tools, several temperature collection technologies, and calculate impact of their school yard’s surface, water and air temperatures to determine if their campus meets the definition of an Urban Heat Island.

FRIDAY HALF DAY 1:30PM –4:30PM

Goddard Space Flight Center/NASA **Off Site**

Dorian Janney, NASA Education/Outreach Specialist & Stephanie Uz, NASA Scientist/Applications Lead
Strand: Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: All

NASA/GSFC Campus Tour: Come learn from NASA scientists and engineers about how and why they use satellites to study the health of the Chesapeake Bay. You will get to visit the testing facilities in which many of NASA's satellites are tested to make sure they can withstand the various noise, motion, and temperature conditions they will face upon exiting Earth's atmosphere. You will also visit the recently updated Earth science exhibit at the GSFC Visitor's Center, and work with a Master Trainer from the GLOBE Program to learn how to use this free and incredibly rich program with students to study environmental data all over the world.

Promoting Youth Development through Environmental Engagement: The Active-Participatory Approach

Antonia Bookbinder & Brodrick Clarke, M-NCPPC Department of Parks & Recreation

Strand: A = Arts, Agriculture, Action

Audience: Elementary, Secondary,

Environmental education, service learning projects, and youth jobs programs offer powerful opportunities to promote healthy youth development. At the same time, understanding the components of high-quality youth programming enhances the impact of environmental and outdoor education. Learn about research into youth development and about how the Weikart Center for Youth Program Quality's active-participatory approach supports quality environmental education programs. Video interviews with staff and youth will demonstrate use of this approach in summer job programs, service learning projects, and out-of-school-time environmental education, and workshop participants will take part in a variety of hands-on activities to demonstrate components of the method.

Climate and Wildlife

Elena Takaki, Project WILD, AFWA

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Secondary

Having trouble getting your students to relate to climate change? Do they feel overwhelmed like there is nothing they can do? We can help! Using wildlife as an integrating context can help make teaching about climate change more concrete. This session will highlight case studies of current state management practices that address wildlife responses to changing ecosystems. You'll also learn about best practices in climate change education and gain access to valuable resources.

Green Schools 360

Laura Johnson Collard, MAEOE; Sharon Jaye MAEOE Board; Jim Stufft, MCPS SERT; Karen

Bowlding, Prince George's County Public Schools Facilities

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: General

Dr. Sharon Jaye, former Executive Director of Green Schools Alliance will facilitate a panel discussion on the importance of building sustainable schools for healthy kids. Karen Bowlding will share her insights on involving facilities staff and their professional development to assist with sustainable school practices and Jim will share ideas for energy and recycling programs. Laura will convey concepts for habitat restoration and outdoor classrooms. Join this discussion and share your experiences too!

GLOBE - Citizen Science a Tool in the Environmental Literacy Toolbox

Bart Merrick, NOAA Chesapeake Bay Office & Todd Toth, NASA

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: General, Global Learning and Observations to Benefit the Environment (GLOBE) is a scientifically robust collection of citizen science opportunities and associated learning activities. In this 3hr workshop participants will be introduced to GLOBE, learn about how it has great potential to support the Meaningful Watershed Education Experience and get training on some of the GLOBE protocols.

Nature Preschools and Forest Kindergartens: A Movement Takes Root

Monica Wiedel-Lubinski, Eastern Region Association of Forest and Nature Schools

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Early Childhood Education

Nature preschools and forest kindergartens are flourishing across the US and the world over. Research regarding the benefits of nature-based ECE is influencing the way we define high-quality early learning environments. Educators are tapping into the local community's needs to go beyond the tuition-based private preschool model. Discover innovative examples of nature-based ECE which include: daycare, in-home childcare, partnerships with state and local parks, and public schools. Highlights from Maryland programs will be included in the discussion. In addition, we will sample activities and approaches that encourage nature connection in nature-based early childhood programs. Dress for the weather as a portion of the session will be outdoors.

Digital Storytelling

Elisabeth Gambino, Bard High School Early College Baltimore

Jennifer Burgin, Arlington County Public Schools

Strand: A = Arts, Agriculture, Action

Audience: Elementary, Secondary, College/University, Adult, General

Digital Storytelling is a wonderful tool for environmental advocacy. In this workshop, educators will practice photography, learn about online resources for digital storytelling, and receive an overview of a unit on digital storytelling which can be used in any content area classroom. Content is based on training with National Geographic as a Grosvenor Teaching Fellow in 2017; and has been with Baltimore City Students with support from Voya Financial, the Chesapeake Bay Trust, Arts Every Day, and Bard Early Colleges. **Participants should bring smart phones or cameras.**

A Planet of Plastic

Cindy Etgen, Education Section Chief, Maryland Dept. of Natural Resources

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Elementary, General Audience, Middle School

While the production of plastic only really ramped up around 1950, we have buried our planet in more than 6.9 billion tons of plastic products since. What are the implications for our environment, wildlife, and humans? Can the wave be stopped or even slowed? This session will address the types of plastics that end up in our waterways, how they get there, the impacts, and some positive actions we can take. Participate in hands-on activities to engage students in understanding the enormity of the problem and how they can be part of the solution!

Expanding MWEEs

Aurelio Giannitti, Education Director Ward Museum, Salisbury University

Nicole Veltre-Luton, ESL Biology Teacher, Baltimore City Public Schools

Erik Vreeland, Teacher-Media Specialist K-5, Fountaindale Elementary School for the Arts and Academic Excellence

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Early Childhood, Elementary, Secondary, General Audience

Experience the wonders of participating in and creating a Meaningful Watershed Experience (MWEE) through the lenses of three different schools from across Maryland. Each school will captivate you during an hour long presentation that will outline their journey through the development and implementation of a MWEE and how this experience helped students gain a deeper understanding of the Chesapeake Bay watershed and the NGSS. Learn how this meaningful experience can propel students into taking informed civic action within their own community!

Combined: Earthling Power: How Nature Study Shape Our Understanding of Community & Forest Mindfulness: Bringing Forest Bathing to School

Michel Anderson, Blue Water Baltimore & Priscilla Taylor, MNCPPC-Montgomery Parks Strand: E = Engineering, Environmental Education and Greening the school inside and out Audience: Early Childhood, Elementary, Secondary, General Audience

Pt. 1: When children fall in love with nature the world changes -- a bewildering dimension opens and we're no longer the center of the universe. In the forest, the presence of the other Earthlings rouses our curiosity and teaches us about our primary power -- our imaginations. Enmeshed in the more-than-human world, we realize that community isn't solely a human affair -- it's the domain of Earthlings. We will explore how nature-based education and play fosters a more complex and joyful understanding of ourselves and community, and how this orientation is necessary in building our sustainable future.

Pt. 2: The business of everyday life - no matter what your age - can be emotionally and mentally depleting. But nature has a great way of addressing this! Come learn about how you can incorporate Forest Bathing (Shinrin Yoku) techniques into your classroom to reset, restore, and revitalize attention and/or anxiety issues and prepare students for learning. Perhaps your school practices mindfulness. If so, this session is for you!

THIS IS A TENTATIVE LIST OF ALL SATURDAY OFFERINGS

Saturday Workshops

Holy Scat! Creating Trails between Science and Art (Double Session)

Tania Gale, Calvert County Natural Resources

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Early Childhood Education, Elementary, General

Animal tracking is a great hook to draw students into creative investigations of topics like adaptation, classification, and food webs using both art and science. Come with an open mind, your sense of humor, and be ready to play.

How'd they do that? Water Filtration Edition (Double Session)

Nicole Horvath, WSSC- Washington Suburban Sanitary Commission

Jenine Cotton-Proby, Prince George's County Public Schools

Strand: T = Technology (the application of science)

Audience: Elementary, Secondary, General

We all know that waterways get polluted from human actions on the land, but have you ever thought about how science and technology are used to get those pollutants out of the water so it is safe for you to drink? Come ready to be an active participant and leave not only with fun, hands-on activities to help you teach about water filtration in your programs, but also with information on the science of water and water filtration and the role a water utility plays in protecting environmental and public health.

Engaging Students in Environmental Stewardship through Issue Investigation (Double Session)

Timothy Emhoff, Charles County Public Schools & Heather Zdobysz, Alice Ferguson Foundation
Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Secondary, Special Education

Learn how to implement a systemic MWEE that integrates NGSS, STEAM, and E-Lit standards into middle and high school curriculum. Everyone will be participating in two hands-on Bridging the Watershed (BTW) modules that can be done in schools. These modules give students an opportunity to experience the natural world while increasing their understanding of applied science. BTW modules can replace current science labs and lead to action projects that are great for student service learning or schools interested in becoming MAEOE Green School certified.

Stream Restoration T Mountainside (Double Session)

Joseph Richardson, Bar-T Mountainside/ MEE Green & Scott McGill, President, Ecotone
Strand: T = Technology (the application of science)

Audience: Elementary, Secondary

Join Joe Richardson and Scott McGill and Carrie Decker from MD- DNR to hear about an amazing stream restoration design, how the project applies to the rest of our Watershed, and ways to engage students and citizens in the process.

With storms intensifying and erosion rapidly increasing in our Chesapeake Watershed, it is time to start rethinking the stormwater management systems that have failed to handle large flood events in the region. Bar-T Mountainside is a host site for a large 1.3 million dollar, Maryland DNR grant-funded stream restoration currently under construction at the North Branch of Bennett Creek in Urbana, MD. Eco Tone, in conjunction with The Center for Watershed Protection, have created a new and unique stream restoration design, made possible by Bar-T Mountainside being located on private property.

Through the restoration process, students and citizen scientists have opportunities to engage in the study of erosion mitigation, stream restoration techniques, and data collection processes.

The Role of Nature in Mental Health (Double Session)

Heidi Schreiber-Pan, Chesapeake Mental Health & Phil Hosmer, Nature Worx
Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: General

Most of us feel better after a walk outdoors or at the sight of something beautiful in nature. Science is proving what we've always known intuitively: Nature does good things to the human brain. Dr. Heidi Schreiber-Pan has studied extensively the connection between our well-being and nature and will discuss how nature impacts human resilience and overall mental health. Furthermore, Dr. Heidi Schreiber-Pan and Phil Hosmer have designed mental health programs that offer practical application for mental health issues such as anxiety, grief and loss, and substance abuse. This workshop will provide a summary of current research on nature and mental health, familiarize participants with two successful mental health programs that integrate nature into treatment and provide participants with a few nature-based experiential practices.

Beyond the Honey Bee: Meet our Native Bees (Double Session)

Clare Walker, Department of Natural Resources, Wildlife and Heritage Service

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Elementary, Secondary, General

If the word 'bee' makes you think honey, join us for a hands-on exploration of native bees and their interrelationship with native plants. Marvel at the diversity of size, social behavior and pollination methods that make many native bees better than the European honey bee. Try fun activities to introduce local bees to your students like a mason bee relay. Take home a bee house, list of plants to help specialist local bees, and a new Wildlife and Heritage Service guide to schoolyard gardens.

When Wonder Wins -- Cultivating Creativity and a Sense of Wonder to Make Magic of the Mundane (Double Session)

Coreen Weilmister, Chesapeake Bay National Estuarine Research Reserve -- MD DNR

Kerry Palumbo, Palmerton High School, Pennsylvania

Strand: T = Technology (the application of science)

Audience: Early Childhood Education, Elementary, Secondary

Sick of standards? Participants in this session will work on shifting the focus of their teaching (without losing sight of standards). Through guided activities that cultivate creativity, participants will test out methods for taking ordinary subject matter from Science, Technology, Engineering, and Math -- and re-imagining it through a lens of wonder, mythology and magic. Consider reinventing the world as myth to bring enchantment to the familiar and make the mundane memorable.

Earth as Art: Art and the Cosmic Connection (Double Session)

Shira Moskowitz, Maryland Science Center

Strand: A = Arts, Agriculture, Action

Audience: Early Childhood Education, Elementary, Secondary, College/University, General

Cool new images arrive from NASA missions: planets, asteroids, comets, moons and our beautiful Earth. What do they tell us? Using elements of art – shape, line, color, texture, value – make sense of what you see, honing observation skills and inspiring questions. Learners of all ages, K-12, create a beautiful piece of art while learning to recognize the geology on planetary surfaces. Art & the Cosmic Connection is an interdisciplinary program developed by scientists, artists & educators to encourage learners to explore the mysterious worlds in our solar system and their geologic stories.

Getting Lured into the Classroom (Double Session)

Tiffany Granberg & Richard Youngk, Chesapeake Bay Foundation

Strand: M = Models, Math, Maps, Mentoring

Audience: Secondary, General, Special Education

We want to Lure you into Next generation Science Standards using a Brackish Water, Bay Tank in the classroom. This workshop will give you information, inspirations, tips and tricks for setting up an Estuarine aquarium in your classroom and using a Fish Mapping Activity, provide models on how to incorporate the tank into your lessons. You will be challenged to observe Bay Critters and think like a fish to create your own Fishing lure, incorporating different camouflage & survival strategies.

It's in Her Eyes; Deep Sea Crabs, Hormones and Storytelling

Shadesha Green

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: General

In the ocean depths, just off the coast of MD lives a little known and not well understood deep-sea crab, *Chaceon quinqueedens*. This commercially valuable crab is the focus biological focus of my PHD work but telling this crab's story in a way that resonates with students, my neighbors and colleagues is challenge. We will explore the extent of our scientific understanding of the red crab and the science of storytelling.

Learning and Growing Year-Round: High Tunnel and Greenhouse Ops and Opportunities

Jerry Kelley, Parkside High School

Strand: A = Arts, Agriculture, Action

Audience: Secondary, College/University, Adult, General, Special Education

Looking to renovate an old greenhouse at school? Want to grow year-round while introducing new learning space to your environmental or ag program? Overwhelmed by all there is to learn about greenhouse management? Join us for this how-to session on proper training, where to source materials, talk to industry experts, and how to get started! Learn, laugh, dream, and do!

Farming Practices for Water Quality

Leroy Bupp, Pennsylvania No Till Alliance & Ron Ohrel, American Dairy Association North East

Strand: A = Arts, Agriculture, Action

Audience: Secondary, College/University, Adult, General

Learn what farmers in the region are doing to improve soil health—and by extension, protect local waterways and the Chesapeake Bay. This session will demonstrate emerging and increasingly popular practices that improve crop production, reduce surface runoff of stormwater, encourage the development of a diverse biological system, and in some cases, reduce the need for pesticides. Many aspects of the demonstration can be replicated in the classroom.

Bringing the Excitement of Discovery and the Pride of Stewardship to Maryland's Coastal Watershed

Amanda Poskaitis

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: General

description – Maryland's Coastal Bays are a very dynamic environment, one often overlooked by the occasional visitor to Ocean City. Maryland Coastal Bays Program works to better understand this environment and apply science to decisions that will impact the coastal bays now and into the future. During this session we will focus on the insights our scientific work has generated and how this science is being used to inform decision making in the coastal bays.

A Systemic Environmental Education Program evolves to a MWEE: Past Meets Present - A What and How Presentation

Laurie Jenkins & Stephanie Lee, MCPS Outdoor Environmental Education Programs

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Secondary, General

Getting teachers of all different disciplines invested in the implementation of a MWEE for over 12,000 students can be challenging. In our MCPS Outdoor Environmental Education Program (OEEP) it is a challenge for the OEEP staff to proficiently train rotating teaching staffs the outdoor lessons we offer and understand how they support the experience as a MWEE. Join the OEEP staff in sharing our adventure in designing and implementing training for 100+ teachers to help them understand how our current lessons connect to each other in addressing an essential MWEE question and how to share this big picture with students.

Energy Explorium

Jim Stufft & Larissa Johnson, Montgomery County Public Schools

Strand: T = Technology (the application of science)

Audience: Elementary, Secondary

In this hands on workshop, participants will learn how to use Science, Technology, Engineering, Action, and Math (STEAM) when teaching about energy education, participants will have the use of energy monitoring tools including watt meters, infrared thermometers/cameras, and light meters and will learn how to apply NGSS Core Ideas with K-12 students and Green Teams. Come learn the importance of empowering the next generation on how to reduce energy waste. When we teach students to reduce energy waste, we teach them to make sound decisions moving forward, we keep money in our (and our school district's pockets), and we reduce our carbon footprint – all good reasons to attend this session!

Using Elephant Population Modeling to make Data Come Alive

Laura Dinerman, MCPS

Strand: M = Models, Math, Maps, Mentoring

Audience: Secondary

How do you count elephants in a classroom? Use the Great Elephant Census Modeling Activity of course! In this classroom activity, students will model two types of counting methods to determine population size. Plus, Scientists at Work will demonstrate how Wildlife Conservation Careers can help preserve biodiversity. Need some more math in your class? Let's take a look at some Data Point Activities that explore Predator/Prey Dynamics and Wildebeest Population Regulation, too!

Using the Outdoors to Build Scientific Literacy

Christie Davis and Tom Melito - Science Resource Teachers, BCPS

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Early Childhood Education, Elementary, Secondary

Taking students outside to experience the environment has been an essential tool of instruction since the beginning of time. In this session, participants will learn how to conduct outdoor learning safely and meaningfully on school grounds. Gather the information and experience needed to support your use of the outdoors as a classroom with your students. We will be taking a walk to the Goucher campus. Come prepared for a short hike! **School Grounds for Learning-**

Habitats Restoration

Holly Gallagher, NWF; Michel Anderson, Blue Water Baltimore; Eric Oberlechner, Green Street Academy; Winny Tan, MAEOE

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Elementary, Secondary, General

NWF with Blue Water Baltimore and Green Street staff will share tools and resources they have jointly developed with MAEOE to promote habitat restoration on school grounds in Baltimore City. The partners will highlight how schools were selected and then share the work involved at their anchor school, Green Street Academy. This workshop will familiarize participants with the School Grounds for Learning platform.

Assessing and communicating a city's urban heat island effect using collective leadership

Presenter - Jeremy S. Hoffman, PhD, Climate and Earth Scientist, Science Museum of Virginia

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: general audience

Cities are disproportionately impacted by increasing air temperatures due to the well-established urban heat island effect, whereby built structures exacerbate extreme heat in urban areas by as much as 20°F or more. Assessing and communicating the magnitude of an urban heat island effect in a given city, however, is usually left to the academic group or consulting firm hired to perform the heat island analysis, effectively diminishing those stakeholders who might have additional shared or individual goals that may benefit from co-production of the methods and/or results. Furthermore, trusted public institutions, such as science centers, that might serve as local champions of the information through informal educational experiences are generally also only included after the research has been completed. Here, I'll describe the collective leadership model developed from the City of Richmond Urban Heat Island Collective, a collaborative group of community non-profit, university, and local government organizations led by an informal science learning center, The Science Museum of Virginia, and the Portland State University Sustaining Urban Places Research Lab. In the year since the formation of the collective, we have successfully assessed the urban heat island effect in our city and others using citizen scientist volunteers, co-developed maps, visualizations, and messaging that share the information in public- and stakeholder-centric formats, and implemented an informal education program for teens from local public schools meant to involve youth in building resilience to extreme heat using the study's results. Furthermore, we have now developed shared goals for the second year of using this information, including leveraging the maps within two new city planning documents, initiating the second iteration of the teen education program, and helping other cities to design similar campaigns.

Green School App Review

MAEOE staff and volunteers

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: General

Is your school or center working on an application to become a Maryland Green School or Green Center in 2019? Regardless of how far along you are in the process, consider attending the review session for an informal chat with application reviewers. Then learn what your school or center needs to do to receive this prestigious recognition. Bring any documentation that you would like us to review and then provide you with feedback to take you to the next step.

Building Global Citizens, One STEAM Project at a Time

Shauneen Giudice, Delmar Middle and Senior High School

Susan Douglass, Center for Contemporary Arab Studies, Georgetown University, DC

Strand: A = Arts, Agriculture, Action

Audience: Elementary, Secondary, General

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 us to explore activities that integrate environmental STEAM challenges, cultural connections and aspects of social justice. Using fibers and fabric, seeds, spices and water, participants will investigate phenomena based on traditional practices and world cultures that inspire conceptual storylines and STEAM challenges, spark student curiosity and foster connections with human cultures, past and present. Information about curriculum, cultural resources and local professional development opportunities available through the Center for Contemporary Arab Studies at Georgetown University will be provided.

What Lives in the Harbor? Can Exposure to Non-formal EE Enhance Teacher Confidence & Skills?

Sarah Haines & Chelsea McClure, Towson University

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Secondary, College/University

Come learn about a partnership between a university teacher preparation program and the National Aquarium that allowed preservice teachers and middle level students to experience watershed science in a non-formal setting.

Turtle Troubles

Clare Walker, Department of Natural Resources

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Elementary, Secondary, General

Did you know you can see both North America's largest and smallest turtle in Maryland? Do you know which sea turtle nests on a local beach? Test out your turtle trivia and learn all about native turtles and the links between our actions and the threats they face. Try some fun Project WILD activities that will engage students and inspire them to help local turtles. This session will include suggestions for STEM design challenges and outdoor and school wide actions to help turtles.

Growing Art through Farming

Jessie Lehson, Friends of Great Kids Farm & Laura Guelcher, Watershed Public Charter School

Strand: A = Arts, Agriculture, Action

Audience: General

We will discuss the unexpected, but frequent, intersection of the arts and agriculture. Art that examine growing, composting, soil, pollination and animals will be discussed. We will connect this information back to school lessons and projects talk standards and ways to integrate technology with instruction. We also look at school gardens and ways to incorporate the arts into these spaces, not just by adding painted signs, but with plant choices. Last, a sampling of hands-on projects that look at various materials and methods to make art while learning about ag in the classroom.

Environmental Education Career Panel & Networking

Trystan Sill, MD DNR

Strand: M = Models, Math, Maps, Mentoring

Audience: College/University, Adult, General

New to environmental education in MD? Looking to start on the right path to have a successful EE career? Join us for a LIVE panel discussion with professionals from across the state where you will have an opportunity to get advice and ask questions of the phenomenal MAEOE members. Come enjoy their personal stories of how they climbed the career ladder and how you can succeed in doing the same. Newbie friendly networking time to follow the panel. DON'T MISS IT!

Waters on the Rise - Climate Change and the Risk of Flooding

Bess Caplan, Baltimore Ecosystem Study

Ed Doheny, US Geological Survey

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Elementary, Secondary, College/University, Adult, General

Interested in connecting students to international issues and communities? Join an experienced nature educator who has worked in Cameroon, Indiana, and Maryland to learn how the emerging issue of plastic pollution can be used to challenge youth to view themselves and their behavior as part of global ecological and economic systems that affect people and ecosystems on other continents.

Plastic Pollution: Acting Locally and Connecting Globally

Jerry Arrey Etta, M-NCPPC Department of Park and Recreation

Strand: A = Arts, Agriculture, Action

Audience: Elementary, Secondary, College/University, Adult, General

Interested in connecting students to international issues and communities? Join an experienced nature educator who has worked in Cameroon, Indiana, and Maryland to learn how the emerging issue of plastic pollution can be used to challenge youth to view themselves and their behavior as part of global ecological and economic systems that affect people and ecosystems on other continents.

The History of Outdoor Education

John Butler, Poolesville High School

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Early Childhood Education, Elementary, Secondary, College/University, Adult, General, Special Education

Do you know where Outdoor Education began? Who really founded the Boy Scouts? You can get answers to these and so much more! The History of Outdoor Education program explores the beginnings of Outdoor Education through the various strands of the Camp Movement, organized hiking clubs, the Boy Scouts of America and Camp Fire, college organizations, day camps, organized schools such as Outward Bound and the National Outdoor Leadership School, the state of Michigan's early Outdoor Education programs, and a local Maryland county's initial experiences. There is currently no consolidated Outdoor Education history that has been published

Colonial S.T.E.A.M.

Sharon Schueler & Karen Koenig, Benjamin Banneker Historical Park & Museum, Balt. County Dept. of Recreation & Parks

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Elementary, Secondary, General

People have been using devices since the beginning of time. For Benjamin Banneker, a renowned African- American astronomer and surveyor, tools such as sextants were essential. Even during the 1700 and 1800's technology was necessary to survey land, study the night sky and navigate. Honoring Banneker's legacy, BBHPM staff walks you through 2 challenges involving Colonial S.T.E.A.M. These 2 challenges are: designing a sustainable colonial farmstead and calculating time and location. Participants design a farmstead using data on crops, soil, climate and topography. Participants construct sextants and practice determining star location used for calculating latitude and longitude during the 1790's

Teaching Language Arts and Social Studies with Ladybugs

Maureen Larkin, Monarch Sister Schools Program

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Elementary

Make learning language arts and social studies fun for your 1st-2nd grade students by featuring ladybugs in your lessons. How many species of ladybugs are in the U.S? In the world? What are the different stages of the ladybug's life-cycle? How do ladybugs defend against predators? Why are ladybugs known as the "farmer's best friend?" Learn how understanding the ladybug's anatomy, life-cycle, and behavior can illuminate language arts and social studies skills and topics like reading, writing, speaking, listening, geography, and culture. You will learn at least two "ladybug" activities for teaching language arts and social studies to young children.

CSI Fish Kill – Lake Waterford Edition

Susan Sanger, Maryland Department of Natural Resources

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Elementary, Secondary

Imagine planning a relaxing day at your favorite fishing hole, but before you get to the shoreline, you see hundreds of dead fish - a fish kill! Join Susan Sanger, Maryland Department of Natural Resource's Educator, to discover what happened in this common occurrence, including what (and who!) has caused this gruesome scenario. Session will include lesson activities relating to land use and water quality, data interpretation, and personal action connecting student lives to events like fish kills. An introduction to MD DNR's Eyes on the Bay water quality monitoring website is also provided.

Adapting Virtual Reality to Environmental Education

Sujan Shrestha & Stanley and Jill Kemp, University of Baltimore

Strand: T = Technology (the application of science)

Audience: Early Childhood Education, Elementary, Secondary, College/University, Adult, General

This workshop will focus on how science and new advances in emerging technology can help people gain a deeper appreciation of environmental challenges and related studies in the environmental education. Participants must bring their own laptop.

Engineer a Bug Hotel

Ashley Demski, Baltimore City Schools

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Early Childhood Education

Learn how to implement the Engineering Design Process with outdoor educational experiences in the early childhood setting. Discuss strategies for helping young students conduct age-appropriate research that can be used to construct an appealing "hotel room" for favorite bugs and insects. Participants will have opportunities to incorporate technology, such as LEDs and videography apps from iPads/ tablets. Take this challenge back to your program to inspire children to come up with solutions that can be used to provide vital protection for insects and other animals who experience habitat loss.

Green Map Your Community Geo-Exchange

Janet Felsten, Baltimore Green Map

Strand: T = Technology (the application of science)

Audience: Elementary, Secondary, General

What do your students have in common with students elsewhere? What's different? Green Map Your Community (GMYC) Geo-Exchange grows civic awareness through mapmaking activities. It amplifies student voice using design process and diverse media tools to communicate their perspective on local assets, issues, and opportunities. Hear how ten 4th grade classes from two MD counties are partnering to share their discoveries, map products, and action plans. Learn about the methodology and benefits.

Sustainable Oysters: Getting the next generation of Marylanders into the growing field aquaculture

Marisa Moon & T.J. Himmelman, Phillips Wharf Environmental Center

Strand: T = Technology (the application of science)

Audience: Secondary, General

The mission of Phillips Wharf Environmental Center is to teach how shellfish aquaculture can launch an economically viable and environmentally appropriate seafood industry in the Chesapeake Bay. Our students run the gamut from watermen to school children. In our session we would like to share hands-on activities from our new oyster aquaculture program for 7th-12th graders. The goal is to promote oyster aquaculture as a green career, encouraging the next generation to take an interest in making a living out of growing more of our precious oysters. For those with allergies, this session will involve handling oyster shell and seafood packaging.

Farm-Based Education: Taking EE to the Fields

Peggy Eppig, Maryland Agricultural Education Foundation

Strand: A = Arts, Agriculture, Action

Audience: General

Farm-based education has taken firm root in the Mid-Atlantic and chances are there's a farm-based education site near you and your school. Meet educational site managers and FBEs to learn what happens on teaching and learning farms to connect students, teachers, and interns to local food systems and conservation issues. A fast-paced session that will leave you amazed at all that is happening in FBE - plus a big announcement for 2019!

Putting the “WE” in MWEE

Noah Carlos & Amy Green, Chesapeake Bay Foundation

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Elementary, Secondary, Adult, General

What is the role of an environmental educator in a MWEE? How can we work in concert with classroom teachers to strengthen and implement MWEEs? In this interactive session, we will explore understandings around the MWEE, gain perspectives from formal classroom teachers, field-based environmental educators, non-profit organizations, and others to advance Meaningful Watershed Educational Experiences in Maryland! By using the Environmental Literacy Model, educators of all kinds will learn to use MWEEs to meet formal academic goals, collaborate on outdoor field experiences, and develop stewardship ethics through civic action. Join us as we dive into the Educator’s Guide to the MWEE and share tips & tricks for designing and implementing your own.

It Takes a Community to Raise a Monarch!

Amy Reese, Howard County Public School System & Tabby Fique, Howard County Conservancy

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Early Childhood Education, Elementary

HCPSS is raising Monarchs at all 42 elementary schools! Participants will learn how the Elem Science Office enlisted county environmental partners to support the project – developing Milkweed Stewards, Monarch Buddies, and Training. Engage with the HCPSS Elem Science staff, as well as partners in the project, to hear from all perspectives, learn about the process and timeline for success, and discover resources and new ideas that can help your school/ district support your own local Monarchs.

Creating Happy & Healthy Educators Through Nature Anchors

Trystan Sill, MD DNR

Strand: M = Models, Math, Maps, Mentoring

Audience: Adult, General

To become a greater educator, one must focus inward as well as outward. The health of our "mental environments" are just as important as the health of our "natural environments". Learn the strategies and tools: to understand your personal needs; deepen self awareness; self care through nature connections; and proven strategies for emotional management. Take the time to reconnect with your driving force, reflect on your actions, get motivated, and empower your influence!

Watershed Assessment: The Outdoor School Way

Carroll County Outdoor School Instructional Team

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Elementary, Secondary

The Carroll County Outdoor School team will present a variety of methods of data collection based upon the Watershed class that they teach each week to sixth grade students. The Environmental Issue Investigation process will be introduced and then biological, chemical and physical methods of data collection will be explored. This hands-on workshop will include water chemistry testing and biological sampling of our local watershed. Salamanders, water samples and other instructional tools will be used to share teaching techniques designed to engage students in not only learning about their watershed, but to inspire them to take action to positively impact their environment. This session will also include information about connecting students to the larger Chesapeake Bay Watershed.

Natural Resources Careers Camp

Gabrielle Oldham, Maryland Association of Forest Conservancy District Boards

Marie Perrin Miller, Allegany College of Maryland

Strand: M = Models, Math, Maps, Mentoring

Audience: Secondary

Environmental and Outdoor Educators have been doing such a great job getting their students inspired about the environment that they are looking at careers in this area. So what's next? Natural Resources Careers Week (NRCC) is a program for high school students interested in a career in natural resources. NRCC will help them make decisions about their career and college choice. You will be introduced to the weeklong curriculum and shown how the program progresses. Come find out why you should be recommending NRCC to your students who are interested in natural resources as a career.

The Nitty-gritty Side of Summer Camp

Sarah Krizek & Kirsten Barbera, Annapolis Maritime Museum & Park

Strand: A = Arts, Agriculture, Action

Audience: Early Childhood Education, Elementary, Secondary, General

Ever wanted to start a summer camp but not sure how? Then this is the session for you! Join the staff at the Annapolis Maritime Museum & Park, and learn how they successfully launched a new summer camp program three years ago. We will provide a crash course in planning, marketing, and most importantly navigating the Maryland State License requirements. Participants will walk away with a step by step guide to developing a successful summer camp program at their location!

Tiny Travelers- Saw-whet Owls in Maryland

Melissa Acuti, Maryland Park Service

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: General

Did you know that Maryland's smallest owl- the Northern Saw-whet Owl- weighs less than a bar of soap, yet travels thousands of miles over their lifetime? Each fall, these tiny travelers pass through Maryland during their annual migration and scientists are now learning much more about the Northern Saw-whet Owl as part of Project OwlNet. Once thought to be a rare species in Maryland, we now know more about these tiny owls and their population through years of bird banding data. Learn about the important work being done in Maryland to study Saw-whet Owls during the fall migration season and the data being collected.

Environment Underfoot: Teaching Maryland Geology with GIS

Martin Schmidt, McDonogh School

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Secondary, College/University

Science, technology, & maps all in one session: Maryland has a varied and interesting geology created by a billion years of history - we'll talk about what's under your feet anywhere in the state. To see it, we'll use a free browser-based (no downloads) web map that teachers & students can use to explore the state, and we'll discuss how you can expand the use of this GIS tool for a variety of environmental studies from local to global. You'll receive investigatory exercises in geology and instructions for GIS use.

Teaching Students with Disabilities Outdoors: a Guide for Inclusivity in Environmental Education

Kathryn Chib & Manju Holmes, Beacon Education Solutions

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Early Childhood Education, Elementary, Special Education

How do you prepare for a diverse range of student needs when you don't know what specific needs your students will have until they walk through your door? In this workshop we will teach you how to develop an inclusive program that accommodates all students, including those with cognitive, physical, and/or social-emotional disabilities. You will learn how to develop an inclusion position statement that reflects your program's values, gain an understanding of how to position staff to maximize student outcomes, and leave with a toolbox of strategies for engaging and supporting students with disabilities in the outdoor classroom.

Birding Tips, Tricks, and Resources for Educators

George Radcliffe, Maryland Ornithological Society

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: General

Need help with using birds as a part of classroom and center activities? This session will offer help with selecting the right optics and field guide, identifying birds by sight and sound, finding useful birding apps, using eBird to help identify local birds and record data, incorporating birds into your program, developing schoolyard habitat projects, and finding funding sources for birding programs. All participants will receive a thumb drive complete with PowerPoints, birding tools and checklists, bird images, identification tools, habitat assessment checklists, and resources.

Oysters: Then and Now

Mindy Quinn & Kevin Allor, Calvert Marine Museum

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Elementary

In this workshop session, we will recreate the stations the students experience on the skipjack as well as the shore and showcase a program that is able to marry science and mapping skills with great success. Using primary sources, water quality testing, discussions of natural resources and looking at the health of the local oyster reef to compare to historic accounts of Chesapeake Bay health. Bring your best skills to see if you can earn a place on a colonial farm as an indentured servant!

For Goodness' Snakes!

Kerry, Wixted, Maryland Department of Natural Resources, Wildlife and Heritage Service

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Elementary, Secondary, College/University, Adult, General

Snakes are fascinating yet highly misunderstood creatures. Learn the basics about snake biology, why we should care about snakes, and information on several of the species that call Maryland home. From the secretive and colorful rainbow snake to the social timber rattlesnake, Maryland's snake species are highly diverse.

Make It a MWEE

Shannon Sprague, Environmental Literacy & Partnerships Manager, NOAA & Elise Trelegan, Environmental Education Outreach Specialist

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Elementary, Secondary, College/University

The Meaningful Watershed Educational Experience (MWEE) is the bedrock upon which the region's environmental literacy efforts have been built. School divisions, non-profit organizations, state natural resource agencies, universities, and others, have answered the call to implement MWEEs, although gaps still exist across the region. Partners from the Bay Program have come together to create an innovative solution to reach more of these key groups and to provide continued support to those already engaged. This session will showcase the Bay Programs brand new online course for educators, teachers, and their leadership to support the widespread implementation of MWEEs. This session will showcase the resources available through the course, provide examples of how organizations might embrace the tools for supporting their existing teacher professional development programs, and connect to other resources that reinforce integration of NGSS and using data in the classroom.

Art in the Science Room

Deanna Wheeler, JC Parks Elementary

Strand: A = Arts, Agriculture, Action

Audience: Elementary

How does one school use the A in STEAM to supplement learning? Murals, hands on, immersion, AR sandbox, plays, and more. Enhance your teaching through the arts with and without technology.

Putting the “WE” in MWEE: Bringing together classroom teachers and field-based educators to provide Meaningful Watershed Educational Experiences

Norah Carlos, Education Outreach and Communications Coordinator, Chesapeake Bay Foundation

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Elementary, Secondary, Adult, General Audience

What is the role of an environmental educator in a MWEE? How can we work in concert with classroom teachers to strengthen and implement MWEEs? In this interactive session, we will explore understandings around the MWEE, gain perspectives from formal classroom teachers, field-based environmental educators, non-profit organizations, and others to advance Meaningful Watershed Educational Experiences in Maryland! By using the Environmental Literacy Model, educators of all kinds will learn to use MWEEs to meet formal academic goals, collaborate on outdoor field experiences, and develop stewardship ethics through civic action. Join us as we dive into the Educator's Guide to the MWEE and share tips & tricks for designing and implementing your own.

Using NASA Earth observing satellite data to Predict and Respond to Disease

Dorian Janney, NASA Education and Outreach Specialist, GSFC/NASA

Strand: T Technology (the application of science)

Audience: Early Childhood Education, Elementary, Secondary, College/University, Adult, General Audience, Special Education, Citizen Science outreach

Ever wonder the impact of climate change and globalization on the disease? During this presentation, you will learn how and why NASA Earth observation data are being used to predict, monitor, and respond to vector-borne and water-related disease. You will also learn how to use a new citizen science app that is being used by students around the world to help reduce the potential mosquito breeding habitats, and see some of the research questions they are using for science projects with this and other environmental data that they collect through The GLOBE Program. Finally, you will learn about a new Museum of Natural History Museum exhibit called "Outbreak" which focuses on the concerns about epidemics in a global society.

Stormwater Science STEaMing from the Classroom - Restore, Revitalize, Replant! (Lightning Round)

Anna Haley, Fairfax County VA Stormwater Planning Division

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Elementary, Secondary, General

Are you a teacher or science professional looking to engage and educate students outside of the classroom? Restore, Revitalize, Replant! (R3) is a multi-award winning program you want to hear about. Created by Fairfax County Stormwater Planning Division in partnership with Fairfax County Public Schools, R3 involves students in stormwater science in the backyard of their classroom providing them with a curriculum-based green space to be used for years to come.

The Influence of Nature Preschool on Ecological Identity Development in Young Children (Lightning Round)

Victoria Brusafarro, Prescott College & Sarah Haines, Towson University

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: Early Childhood Education

Do you work or have an interest in nature preschools and forest kindergartens? A 2017 study by the Natural Start Alliance and partners reports more than 10,000 children enrolled in nature-based education programs each year! Learn about how these programs present a unique space in which to observe ecological identity formation in early childhood. The presenter will walk you through a photo essay describing the ways in which children at a nature preschool in Baltimore County display an ecological identity, and how this relates to E. O. Wilson's nine biophilic values.

Connecting Environmental Education to Positive Youth Development (Lightning Round)

Rachel Bayer, Extension Agent, University of Maryland Extension

Strand: M = Models, Math, Maps, Mentoring

Audience: Elementary, Secondary, General Audience

4-H is one of the nation's leading youth development programs, and a natural partner for EE providers, as both provide experiential learning with positive outcomes for youth. Come learn how to connect your Environmental Education program to 4-H, using Project Learning Tree as a case study.

Actionable Science - How Scientific Models Create Action Oriented Students (Lightning Round)

Bess Caplan & Tanaira Cullens, Baltimore Ecosystem Study

Strand: M = Models, Math, Maps, Mentoring

Audience: Secondary, General

Join the Baltimore Ecosystem Study Education Team, in this lightening round presentation, as they explore how modeling environmental patterns and processes can lead to actionable science. Presenters will share simple models adaptable to any secondary classroom or informal setting and describe ways each model motivates students to engage in environmentally oriented action projects.

Healthy Parks Healthy People (Lightning Round)

Melissa Acuti, Maryland Park Service

Strand: S = Science (Knowledge of any kind. Study of the natural world)

Audience: General

Do parks make us healthier, happier and help us to live longer? Learn all about the Maryland Park Service's new "Healthy Parks Healthy People" Program, which encourages visits to our parks for health and wellness benefits. Did you know spending time in nature is linked with decreased anxiety? Did you know green spaces are restorative and can boost attention? Did you know that viewing and spending time in green spaces lowers cortisol levels and blood pressure? During this session we will explore why parks are important places for people to derive physical, mental, and spiritual health, and social well-being.

Year 1: Young Environmental Scientists (YES!) Program (Lightning Round)

William Lyoo, Center for Educational Outreach & Ciaran Harman, Johns Hopkins University

Strand: E = Engineering, Environmental Education and Greening the school inside and out

Audience: Elementary

We have developed the Young Environmental Scientists (YES!) Program to provide meaningful environmental experiences for a small cohort of upper elementary students. Additionally, we seek to promote curiosity and scientific thinking within our students, and encourage them to be fearless in approaching nature. We do not look to create new programs, but instead to provide our students with access to many great programs that already exist around Baltimore City. With just one year under our belt, we will share our experiences and what we have learned, including our successes and challenges we have faced.

Murals as Models: Integrating art into climate education while supporting three-dimensional learning (Lightning Round)

Bart Merrick, Education Coordinator, NOAA Chesapeake Bay Office

Strand: M = Models, Math, Maps, Mentoring

Audience: Secondary, College/University, Adult

Do you want to integrate more art into your curricula, or align to Next Generation Science Standards? Murals are an engaging addition to any science unit. Developing models in small groups, students practice critical thinking, collaboration, communication, and creativity. This session will explore Earth's climate system, how it is changing, impacts and solutions. CAUTION: Creative juices may flow.

Incorporate Data and Model for Successful Teaching of Climate Change (lightning Round)

Lolita Kiorpes, North Point High School/Charles County Public Schools

Strand: M = Models, Math, Maps, Mentoring

Audience: Secondary

Looking for ways to bring climate change lessons into your course curriculum following NGSS but not sure how? Want to incorporate activities using models, maps, and graphs? Learn to combine activities which blend models, graphs, and data showing trends in climate change your students will understand. Find out what tree rings, fossil pollen, ice and sediment cores, all have in common. Use videos to support student learning and help them interpret current and proxy data on climate change

“Conservations Kids” Green STEM Documentary (Lightning Round)

Cheryle Franceschi, Por Eco Productions/One Idea, Dos Languages

Strand: A = Arts, Agriculture, Action

Audience: General

More than ever before, kids across the U.S. are learning about STEM (Science, Technology, Engineering, and Mathematics) inside classrooms, both public and private. What has been overlooked as STEM by most educational systems is that natural resource and cultural conservation can be found right outside everyone’s doorstep. This topic will be the starting point for a 30-minute Green STEM documentary entitled, “Conservation Kids.” Children will experience real world scenarios using STEM principles as they enjoy nature. Interviews with environmental educators, scientists, and conservationists will be used to help explain the advantages of using Green STEM in today’s global economy.

Meet the Authors (Lightning Round)

Martin Schmidt, author of [Maryland’s Geology](#). Maryland has been called America in Miniature, because the state embodies a wide range of our nation's landscape features as a result of eons of geological activity. Written for the interested layman or student with no specialized training, this book explains the basics of geological processes, and then shows how they worked to create Maryland's beautiful and fascinating landforms.

Bronwyn Mitchell-Strong, author of [Roost: Confessions of a First-Time Chicken Chicken Farmer](#). Find out what happens when two chicks in the suburbs open their home and hearts to four chicks from the hatchery? First-time chicken farmers, Bronwyn and Christina take you on a journey through the fear, fun and foibles of one of humanity’s most important companions - the chicken. Chicken history, science, politics, pop culture, religion, social justice, and even psychosis is woven throughout in an informative and eccentric voice. We dare you not to cry at the surprise ending!

Ned Tillman, author of [The Big Melt](#). Ned is an earth and environmental scientist, who has tried to expand the reach of environmental education by writing books, that engage, inform, and inspire the reader. His first two non-fiction books are widely used throughout Maryland as a primary source for teachers and students. His third book, [The Big Melt](#), was published in the Fall of 2018, and follows the growth of two high school seniors as they confront the challenges of a changing climate. It’s based on science but explores the surreal nature of a changing climate, communicating the fear and the frustrations on a visceral level. It encourages the readers to take better care of our natural world and the climate we all depend upon.

Sunday Field Experiences

All field experiences will have an outdoor component, so please dress for weather and appropriate footwear.

Dairy Farm tour in Union Bridge, MD (8am - 12pm)

Transportation to/from hotel & farm provided by the American Dairy Association North East

Take a free tour of a fully operating dairy farm in Carroll County! You'll meet local dairy farmers and learn first-hand about their farming operations, including animal care, milk production, and environmental conservation practices. Ask any questions you've ever had about dairy farming during your 90-minute, ¼-mile walking tour. Oh, and we'll end the tour with a free surprise dairy treat!

The tour is rain or shine, so bring your inclement weather gear. Close-toed shoes are required. People may drive their own vehicles if they prefer; driving directions will be provided. Tour is sponsored by the American Dairy Association North East - Exhibitor & Silver Level Sponsor.

Student Led Birding Trip to Cromwell Valley Park (8am-12pm)

Participants will be birding with youth members of the Maryland Ornithological Society. The trip will provide not only an opportunity to see some nice winter birds but to meet the World Series of Birding Champion youth birders from Maryland. The youth birders will help all participants find local wintering birds including raptors and songbirds. No birding experience is required, and binoculars can be loaned to any participants. We will meet at Cromwell Valley Park (2175 Cromwell Bridge Rd) at 8 AM and bird until Noon.

Maple Sugarin' at Oregon Ridge (9am - 12 pm)

During this workshop, participants will take an in-depth look at the maple sugar process will learn about the history of maple sugaring, take a hike in the park to learn to identify the perfect tree and tap a tree the old fashion way! We will have demonstrations of maple sugaring across time and visit the Oregon Ridge's Sugar Shack to see the evaporator in action and taste sweet samples of maple syrup and sugar to complete the day! Meet at Oregon Ridge Nature Center.

Serpentine Barren Hike at Lake Roland (1pm to 4pm)

Located near Lake Roland in the Jones Falls valley, the most significant habitat is the environmentally sensitive serpentine barrens in the Bare Hills area, home to many rare and endangered species of flora and fauna. The park is historically significant, with not one, but two National Register Historic Districts! Walk the trails and find winter botany clues to unique geological examples. Location for meeting site will be emailed to registrants.

Ladew Gardens Nature Walk Tour (1pm to 4pm)

Join Ladew staff as we share an overview of our environmental education and art-based programs, as well as our sustainability practices. We'll explore the 250 acre property, focusing on our Nature Walk trail, which encompasses woodland, meadow and wetland habitats. Observe our "dormant", seasonal, native butterfly house, maple sugaring area and new floating wetlands. Easy to moderate hike with some uneven footing and stepping stones to cross. Please dress warmly and wear good walking shoes.