

MINUTES
2019 Chesapeake Bay Environmental Literacy Leadership Summit
Ensuring Equity in Environmental Education

June 27, 2019

George Mason University, Potomac Science Center
650 Mason Ferry Avenue, Woodbridge, Virginia

Summit Goal Statement

The Summit goals included reaffirming commitments to the 2014 Chesapeake Bay Watershed Agreement's Environmental Literacy Goal. Most importantly, the Summit highlighted the challenges and explored possible solutions to the equitable distribution of environmental education resources and opportunities. The Summit explored systemic environmental education and how it can drive diversity, equity and inclusion. Summit participants shared successful models and had the opportunity to share both challenges and successes encountered when implementing these models on a large scale. Formal and informal discussions identified strategies that may work within a jurisdiction to provide equitable environmental instruction for all students.

Welcome

Ms. Shannon Sprague, Manager, Environmental Literacy and Partnerships
National Oceanic and Atmospheric Administration Chesapeake Bay Office

Ms. Sprague delivered the welcome all to the 2019 Chesapeake Bay Environmental Literacy Leadership Summit and thanked the organizers including the Commonwealth of Virginia, serving as host, the Chesapeake Bay Program, and the Chesapeake Bay Program Education Workgroup, along with all participating states and their delegation.

Dr. Chris Jones, Director, Potomac Environmental Research and Education Center (PEREC)

Dr. Jones expressed that one of the goals of the PEREC is K-12 environmental education, with a dedicated lab. PEREC hosts a very active MWEE program with tens of thousands of students, thanks to Professor Cindy Smith, the K-12 director. Additionally, he noted that PEREC overlooks a freshwater tidal stretch of the Potomac River that includes 8 principal investigator programs with graduate and undergraduate researchers.

Dr. James Lane, Superintendent of Public Instruction for the Commonwealth of Virginia

Dr. Lane welcomed all the participants to the PEREC and Virginia, and opened by stating that now is the time to keep the Bay clean and healthy. That work will take the cooperation of students and teachers and is important as communities thrive and live from the water. Dr. Lane shared his own memories of great MWEE experiences with students who had grown up near the Bay but had never been on the water. He noted that it is important to build equity and engage everyone in the work being done.

The Department of Education has a science education leadership team which works with educators and Virginia has created a diploma seal for environmental education which requires labs, classes, and 50 hours of environmental service.

All five of Virginia's critical skills apply to environmental education. The updated science standards and curriculum reflect that Virginia is committed to environmental education.

Importance of Environmental Literacy – Where were we? Where are we? Where are we going?

Key Points:

It is important to get children outside. It helps students of different learning styles learn, build respect for themselves and their communities, and make a meaningful impact on the environment. There needs to be more sharing of resources and a better link between environmental education and standards of learning.

Ms. Pamela Northam, *First Lady of the Commonwealth of Virginia*

Ms. Northam welcomed the group and thanked them for taking the time to attend and be present, noting that the PEREC is a great example of education in the built environment. The First Lady read an excerpt from Captain John Smith about the historic abundance of the Bay to illustrate the impact that humans have had on the Bay over the centuries. She noted that the Governor grew up on the Eastern Shore on a farm on the water, and part of the reason he ran for political office was because he saw the declining condition of the Bay. The Northam family has always loved the Bay and raised their children there after returning from overseas with the military.

Ms. Northam posed several questions to attendees: Do you remember being outside? The joy of discovery? An adult who introduced you to the outside? Playing outside?

She remembered that her parents had her outside all the time – and observed that this is not always the case for children today.

The First Lady observed that nature is our wisest teacher and is a gateway to science -- environmental education can build a bridge for alternative learners and help students build respect for themselves and all other living things.

Drawing on her time as a teacher, Ms. Northam referenced the “feet wet hands muddy curriculum” and noted that she and her students’ favorite lessons were drawn from MWEE trainings. Environmental literacy is imperative for creating stewards and leaders of tomorrow; as an example, she shared that the Lynnhaven River was severely polluted but with education and restoration it is increasingly healthy enough for oyster harvests, fishing, and swimming.

The First Lady noted that while it is not an easy task, it is important to make sure that we reach every student. Mrs. Northam offered that today is an important opportunity to see where we can be bold, ask hard questions, and make changes. She added that in 2017, Virginia conducted a cabinet level study to identify challenges and recommendations for environmental literacy implementation. She noted that there is a need for a statewide repository of information for formal and non-formal educators, which should include a platform with resources and direct links to the corresponding SOLs – this would benefit from EPA funding.

Mrs. Northam closed by stating that we have made significant strides but we can and must do more; we need to be thoughtful and strategic; she looks forward to what is accomplished the rest of the day and beyond.

Diversity, Equity, Inclusion, and Justice Guide for the Chesapeake Bay Watershed

Key Points: The Green Ceiling is real and there is an underrepresentation of people of color in environmental groups. Organizations—especially high level staff, who are more likely to report strong DEIJ practices—need to reflect on how DEIJ connects to their mission and how to implement it. The *DEIJ in Action* guide provides a good starting point for a continuing and individualized process.

Ms. Bre'Anna Brooks
Program Coordinator
Chesapeake Bay Trust

Ms. Mariah Davis
Field Manager
Choose Clean Water Coalition

The presenters explained that the Chesapeake Bay Trust (CBT) is a grant maker with programs for environmental literacy and the Choose Clean Water Coalition (CCWC) is a coalition working with partners throughout the watershed to restore rivers and streams. It is important to use a shared language and an expansive vision of diversity.

The presenters made the points listed below:

- Green 2.0 assessed the state of diversity in the environmental field and produced a report identifying the “Green Ceiling” – there is generally a cap of about 16% people of color in organizations in the environmental community, with that number falling the higher up the position is in the organization.
- Government performs best at diversifying, with business next, and nonprofit worst.
- By 2030 the majority of the population will be people of color, so it is important to engage with those communities and involve them in the process.
- There are still major racial gaps in K-12 education, particularly in performance, outcomes, and student discipline.
- The DEIJ Assessment is a two-year ongoing project of the CBT, CCWC, and the Chesapeake Bay Funders Network, which includes listening sessions and surveys across constituencies including funders and grantees, and individuals at all levels of seniority, which produced the *DEIJ in Action* guide.

Overall, the presenters noted that nonprofits and foundations believe in the value of DEIJ but some struggle to connect it to their mission – responses to the survey indicated that respondents would prioritize DEI funding to support their organizational needs to increase skill building, awareness, and relationship building over direct investments in the communities. That is indicative of a predilection toward a trickle down approach. There is also a disconnect between high and low level employees, across socioeconomic status, age, and gender for how well the organization is reported to be doing at DEIJ.

The DEIJ assessment document is not a final answer or a one-size-fits-all program, but it provides something tangible for organizations to start implementing DEIJ. There needs to be continued feedback and progress tracking throughout the implementation of DEIJ. When using the DEIJ in Action Guide, organizations should be realistic and look at the high level recommendations first, before getting into specific details.

Systemic Solutions – Providing Equity in Environmental Education

Key Points: It is vitally important that you meet people where they are, in their communities. Involving local school district administrators is very important to ensure support at the school building level for programs and policies. Beyond the school, it is important to think collaboratively and “outside the box” to involve non-formal educators and other partners. Doing environmental education is good for students and good for their academic performance.

Ms. Meryem Karad (Moderator)
*Policy and Communications Advisor to the
Secretary of Natural Resources
Commonwealth of Virginia*

Ms. Venicia Ferrell
*Science Supervisor, Environmental Literacy
Program
Hampton City Schools*

Ms. Shannon Sprague
*Manager, Environmental Literacy and
Partnerships
National Oceanic and Atmospheric
Administration Chesapeake Bay Office*

Dr. Carol Williamson
*Deputy State Superintendent
State of Maryland*

Mr. Curtis Bennett
*Director of Equity and Community Engagement
National Aquarium*

Ms. Tamara Peffer
*Environmental and Ecology Curriculum Advisor
Commonwealth of Pennsylvania*

Ms. Karad: Access to environmental education looks different in every location, it is important to look at systematic solutions to reach every student. This has to begin at the local level with partnerships; we need to find out why we are unable to reach every student.

Question: What does equity look like in your world? What are inequities you face?

Ms. Ferrell: Across the school division there are 19,000 students, of which 59.8% are black, 6.6% are Hispanic, 13.5% are disabled, 43% are economically disadvantaged, and there are 13 Title I schools. There is a need to make science relevant in every school across the division--have received a grant to get students in the water between grades 4-12, still need to provide opportunities for students, teachers, and administrators to engage, grow, and gain environmental literacy.

Ms. Sprague. Sprague: The \$2.5 million Bay Watershed Education and Training (B-WET) grant program focuses on systemic environmental literacy (EL) at the district level. The goal of the Chesapeake Bay Office is to support the Chesapeake Bay Program, support EL, and catalyze large scale change. The Office does this through funding and through their leadership of the Education Workgroup. They view systemic change as a path to equity, and there is a need to reach every district. Programs need to be relevant, accessible, and specific, all schools need to be implementing the programming, and there needs to be high quality training.

Ms. Williamson: Maryland just recently introduced a new equity standard. All students should have access to opportunities across every district. We need to make sure that there is time for teaching EL for all children, regardless of district, and that there are high quality and trained teachers in every school.

Mr. Bennett: The mission of the National Aquarium is to inspire conservation of the world’s aquatic treasures—they achieve this not only through the normal operation of the aquarium but also by doing outreach to schools and meeting people in their communities. The Aquarium wants to be very intentional

about DEIJ and about establishing a continuing partnership with the community—equity is a process that involves listening to understanding, knowing needs, and partnering with communities to meet those needs. There also needs to be a discussion about what needs to be done internally at an organization so that it can achieve these external results.

Ms. Peffer: The position of environmental policy advisor at the Pennsylvania Department of Education had been vacant for 7 years; upon arrival, she immediately jumped into environmental justice (EJ). It is imperative that you work with a community to make change, and do not try to force it on them. EJ is a priority for Pennsylvania's advisory council on environmental education, which is a partnership of Agriculture, Natural Resources and Conservation, Environmental Quality, and Education.

Question: What strategies have you used to address inequities at the district level?

Ms. Ferrell: When we wanted to make changes, we had to write a B-WET grant in order to fund it. The district used the grant to train teachers and be able to start with everyone at once instead of with one grade. Then they presented their work at state and national conferences and reviewed their curriculum, including doing additional trainings. Involving the administrators was hugely important, helping to unite teachers and connect with standards and policies. For the children science was becoming real and they are going home and sharing their knowledge with their communities.

Ms. Williamson: Really, the only way to get people to understand is to put them on a boat. At the state level, it is important to have a designated state employee for providing technical assistance to districts. Maryland has also implemented a graduation requirement and revised their standards to ensure that environmental education is integrated with teaching at all levels, especially in elementary school where it is important to integrate it with reading and math. Additionally, Project Green Classrooms was established by executive order—it is a coalition that evaluates barriers to universal environmental literacy and develops solutions.

Ms. Sprague: NOAA supports districts through the B-WET grant and capacity building programs. We are working with the Stroud Water Research Center to reinvigorate environmental education in Pennsylvania, and are also using the outdoor learning network initiative to reach into untapped school districts and anchor environmental literacy into curriculum. Implementation of the initiative at the first six schools will begin this summer.

Question: How do you address lack of funding/support/resources/interest?

Ms. Sprague: 3.5 million students and not enough money is the standard condition. CBT is the big funder. It is important to focus narrowly on MWEs and search for outside funding. Most districts already have funding available; the challenge is to work EE into the budget or to incorporate it into something that is already funded.

Question: Discuss how you encourage partnerships in underserved communities.

Ms. Bennett: We cannot address inequity alone, so we need to be collaborative and think outside of "our space" to work with non-traditional partners. It is important to understand what each brings to the table: social capital, capacity building, etc. Make sure to give students agency by empowering them to make change in their community with action projects.

Ms. Peffer: In Pennsylvania, outreach through non-formal educators—especially Department of Conservation and Natural Resources park staff—is key for providing a strong foundation for outreach and capacity. There are 300 resource people for EE across Pennsylvania, and growing partnerships through the Department of Environmental Protection for outreach through counties and conservation districts. Local housing authorities and water authorities (For example, Harrisonburg and Philadelphia) have become involved, as have authorities from other watersheds (Ohio River and Delaware Bay).

Question: How can EE be a tool to close the achievement gap?

Ms. Ferrell: We are seeing that it is, that it adds hands-on relevancy and improves test scores. It gives opportunity to those who would not otherwise have it, and even changes students' behavior for the better because they care about what they are doing.

Ms. Sprague: By incorporating different types of education you include different types of learners.

Ms. Williamson: Student engagement helps students remember what they learned.

Mr. Bennett: It is about empowerment and giving students a voice and a seat at the table—they become invested because of the power to give back to their community. MS. Peffer: Developing an integrated and transdisciplinary curriculum for issues students deal with so that they have tools to make a positive change in the community.

Ms. Karad thanked all of the panelist and reiterated that that this issue is a priority for Governor Northam, and expressed that the Administration looks forward to continuing to work with our partner states and partners to continue this work.

Testimonials on Meaningful Watershed Educational Experiences

Key Points:

MWEEs inspire a love of learning in students and a place to direct their enthusiasm towards making a positive difference in their communities. They help students take what they learn in school and make it a meaningful part of their lives.

Ms. Tamara Peffer (Moderator)
Environmental and Ecology Curriculum Advisor
Commonwealth of Pennsylvania

Ms. Hanna Ryon
Biglerville High School
Adams County, Pennsylvania

Mr. Lincoln Heffron
Daniels Run Elementary
Fairfax County, Virginia

Ms. Kristina Chu
Poolesville High School
Montgomery County, Maryland

Mr. Ryon: She is a rising senior who is a Chesapeake Bay Student Leader through the Chesapeake Bay Foundation (CBF). MWEEs have contributed to her success in and out of school: she has taken a class on field ecology, written research for a journal, learned about the ecosystems she experiences every day, and has planned and carried out student led action projects. It takes many small actions to make a big change, and clubs at school are a good way to involve students and let projects that start at school become something bigger. MWEEs helped her find her passion and her voice and her experiences have led her to pursue a degree in sustainability.

Ms. Chu: She is a recent graduate who is thankful for having had these experiences to shape her worldview. At her magnet school, she went on trips with the school and with the CBF—going to Smith Island was foundational and inspired her to take action. Ever since, she has gone back and been able to see trends. She is hopeful because she has seen constant improvement. She also found that spending a day with a fisher or farmer helps her understand where her food is coming from and what it takes to put it on the table. Because of her experiences with MWEEs, she has gotten involved with nutrient management plans at farms and has done river cleanups. MWEEs have changed her outlook for the better and she wants to keep advocating.

Mr. Heffron: He is a seventh grader, and he remembers doing a simulation called “Who Polluted the Potomac” which shows how the Potomac River has changed from its natural state to today. He has also raised monarchs, grown a vegetable garden, and done guided research to determine the health of the

schoolyard stream. During that research, he collected chemical measurements and identified benthic macroinvertebrates, studied maps, and learned about different types of landscape features like fountains and impervious surfaces. He thought it was cool to be part of the learning experience rather than staying in the classroom, and he wants to be more involved with EE.

Question: Have you ever excited someone else about the environment and how did that make you feel?

Mr. Heffron: He likes to tell people about fountains and how the environmental conditions in the neighborhood can affect the resale value of homes.

Ms. Chu: She would tell her whole family about what she had learned, and now her younger brother is on the CBF Student Advisory Council.

Ms. Ryon: She taught club members about why to not litter and it was exciting to see them be excited about the environment.

Luncheon

Ms. Britt Slattery (Moderator), *Director, Center for Conservation Education and Stewardship Maryland Department of Natural Resources*

Lunch was provided and delegations held discussions on the topic of challenges and opportunities facing their state for equity in environmental education

- Flip chart notes were taken at each table. See APPENDIX A for transcription.

Concurrent Breakout Sessions: Sustainable Schools

Key Points: There are many benefits to student-centered sustainable schools. State agencies can help by encouraging coordination, providing technical assistance, and administering open-ended funding. Currently, teachers are spending huge amounts of time applying for grants because sustainable school programs are not funded in district budgets—there need to be creative ways to include funding for sustainable schools in budget planning.

Ms. Holly Gallagher (Moderator)
*Senior Manager of Education and Community
Conservation
National Wildlife Federation*

Ms. MaryAnn Settlemyre
*STEAM/Outdoor Education Specialist
Centreville Elementary School*

Ms. Andrea Van Wyk
*Conservation Technician
National Aquarium*

Ms. Gallagher: This is an opportunity to change our whole school culture—we have 4,000 school buildings in the watershed; this is a great chance to implement best management practices (BMPs). Sustainable schools have a measurable positive impact on student achievement, reduce environmental impact and facility costs, and boost health and wellness. About 14% of public and charter schools in the watershed meet the criteria to be sustainable schools, but it is an outcome from the Chesapeake Bay Agreement and it should become the norm.

Ms. Settlemyre: She did not like science until her principal made her go outside; you need to find yourself and your “word” that defines who you are. There is a big possibility for “Green STEAM,” but we need to figure out what it looks like and how to implement it. In 2004, her school was a “dust bowl,” but now it has gardens, outdoor classrooms, and even its own student run farmers market. None of this would be possible without support from the community, sponsors, and administration—she is constantly battling for funding. Going outside helps the neediest kids behave better, and 30 minutes of outdoor time boosts retention by 30%. By involving the kids, they are empowered and they have to buy in to the ideas and actions, which helps them take it home and live it. Having kids do project based learning (PBL) helps them to come up with ideas we had not even thought of, helping us to create leaders. She is happy to speak to or go to any school to help them establish a program, and advises that schools think big but start small.

Ms. Van Wyk: There has been important cooperation between the Baltimore City Office of Sustainability and the National Aquarium, as well as the impact of casino revenue on the local communities (state law requires that a portion of the revenue be spent on supporting local community goals). The National Aquarium has been contracted by Baltimore to be a Green School coordinator, which provides technical assistance to schools seeking citywide grants for the Green, Healthy, and Smart Challenge Program or looking to meet Maryland Association for Environmental and Outdoor Education standards. This technical assistance has led to eligible schools applying that had never applied for funding before (now 75% of schools in the eligible area are applying). Schools were interested in field trips and professional development for teachers, so they sent students on a field trip to engage in nature play and sent teachers to a conference to learn about environmental education. Key points that help schools: technical assistance, a strong school network, having a coordinator responsible (and giving them financial incentives), open ended funding, a requirement to create a green team, leveraging funding, and a tiered grant system based on school status.

Question: What do you do when you do not have administrator support?

Ms. Settlemyre: Do something small to get started (but also make a ten-year plan).

Ms. Van Wyk: Find examples of successes in other schools to present to your administrators.

Question: What can the people in this room do to help?

Ms. Van Wyk: Provide staff who can deliver technical assistance to schools.

Ms. Settlemyre: Reach out to principals and teachers if you have programs that you would like to see.

Question: What is the landscape of sustainable schools? Are they primarily in affluent areas, certain states, etc.?

Ms. Settlemyre: There is not a direct connection with affluence; there are lots of educators in affluent schools who want to do this but cannot, and vice versa.

Question: What is your relationship with the central office of your school district?

Ms. Settlemyre: We have a great relationship; they provide us data for the different schools with a “green dashboard” so we can monitor energy usage and other factors. But we get no money from the county—everything is grant funded.

Question: Lots of funders want to see concrete outcomes, but is open ended a better model?

Ms. Van Wyk: Yes, it is, and also it is important to fund current projects, so that they can be sustained, rather than only funding new projects.

Ms. Settlemyre: It is easier to receive and use the funding when it is open ended. It needs to be a process that schools can accomplish without dedicated staff (she has students help) and not so specific so as to exclude interested schools.

Question: The bottom line is that schools should not have to be holding bake sales and applying for grants to fund this. If it was mandatory, would districts be able to find money in their budgets?

Audience Member: It is mandatory in the District of Columbia, but there is still no teeth.

Ms. Settlemyre: You can mandate anything you want, but that does not mean it will be done. We need to retrain our own minds and approach this differently.

Audience Member: Teachers are putting in an unsustainable number of hours for free to write these grants. It is important to emphasize the added value that having this as a budget item would be.

Audience Member: Teachers should talk to the CFO or business manager about the triple bottom line.

Ms. Settlemyre: It is almost impossible to get in contact with those people at the district level.

Audience Member: Identify and lean on “lever points” that can accomplish a lot (i.e. specific people or processes). Think about the timing of the project with the budget cycle. Try to work sustainable schools into the school construction budget.

Concurrent Breakout Sessions: Equitably Providing MWEEs Across the Watershed

Key Points:

It is important to involve administrators and frame MWEEs and field trips as ways to support learning and enhance academic performance. Seek out partnerships to be able to provide MWEEs to students. MWEEs do not have to be off-site—find creative ways to do them at school.

Ms. Venicia Ferrell (Moderator)
*Science Supervisor, Environmental Literacy
Program
Hampton City Schools*

*Associate Professor and K-12 Education
Director
Potomac Environmental Research and
Education Center*

Mr. Josh Bearman
*Science Specialist
Virginia Department of Education*
Dr. Cindy Smith

Ms. Kristin Alexander
*Executive Director
Potomac Valley Audubon Society*

Dr. Anne Petersen
*Science Coordinator
Virginia Department of Education*

Ms. Ferrell: Get administration involved because support from the administration is vital. Class does not stop on these trips (concerns were raised about equity with distribution of grants). Curriculum strategies are key to MWEE educational success. Hampton held an Environmental Literacy Fair which was a great way to get businesses and partners to come in. Sustainable projects such as garden walls were built at schools for an “at-home” MWEE experience.

Dr. Smith: Do not call them field trips call them field innovation because that is what they are. Partner with local government. Fairfax County Public Schools has money allocated in the budget for MWEE education for 7th graders. Partner with universities (student interns and volunteers can help run MWEE programs for students).

A MWEE was then demonstrated for attendees.

Fostering Partnerships – Providing Equity in Environmental Education

Key Points: Partnerships are vital to providing equitable environmental education. There are lots of pots of money, but they are spread out—it is important to know which is the best fit for which program or school, and funders can help by making access easier for schools. We need to continue expanding the concept of environmental education out of the sciences and across subject areas, as well as continue to include new partners.

Mr. Ben Grumbles (Moderator)
*Secretary of the Environment
State of Maryland*

Ms. Karen Mullin
*Director of Professional Learning
Chesapeake Bay Foundation*

Ms. Candace Lutzow-Felling
*Vice-Chair
Virginia Resource Use Education Council*

Ms. Samantha Beers
*Director of the Office of Communities, Tribes,
and Environmental Assessment
United States Environmental Protection Agency
Region 3*

Mr. Judd Pittman
*Special Consultant to the Secretary of Education
for STEM
Commonwealth of Pennsylvania*

Ms. Grumbles: We will never be able to have successful implementation of EL without outreach and creative thinking—we need to establish meaningful partnerships.

Ms. Beers: US EPA Region 3 is looking at increasing outreach to stakeholders and collecting data, but needs help from local partners. She also wants to draw attention to “ee360” through the North American Association for Environmental Education.

Ms. Mullin: CBF “runs” many programs and MWEEs, but they need partnerships to actually be able to put them on. The focus is now on building sustainable and long-lasting partnerships, focusing on doing things “with” the community instead of “for” the community.

Mr. Pittman: Pennsylvania’s focus is on schools that teach, government that works, and jobs that pay. There is a need to emphasize EE and STEM as jobs drivers and to ensure that opportunity is bottom-up not top-down.

Ms. Lutzow-Felling: PK-12 programs happen at the Blandy Experimental Farm (a University of Virginia property in Clarke County, Virginia). It is important to create a consortium of learners among all students, teachers, and researchers, to find out what their needs are and how to help them meet them.

Question: What existing state and federal programs exist for equitable EE?

Mr. Pittman: Title I dollars, especially if EE can be firmly placed under “STEM.” Title II is available for professional development. Title IV if EE can be described as encouraging a 21st century learning community. It is important to tie EE into skills and workforce development, and to remember that all of this US Department of Education funding is meant to go to equity. Ms. Beers: Need to find out who you need to talk to and who is a better fit for your school (i.e. US EPA or US Department of Education). EPA provides EE, EJ small grants, and children’s health funding. There is also the regulatory/enforcement option available from US EPA for things like asbestos. It is about knowing how to harness the right federal dollars.

Ms. Lutzow-Felling: Some districts are small and lack the resources necessary to formulate grant applications or plans. It could be helpful to use organizations like the Virginia Resource Use Education Council in order to get access to services or assistance with applications.

Ms. Mullin: Lots of groups cannot write all of these grants; we need to work on building local capacity. CBF is very excited about the outdoor learning network.

Mr. Pittman: In Pennsylvania we did targeted outreach with Survey Monkey and distributed \$8.3 million. The bar was much lower for engagement, and while it created more work at the state level, it helped districts access funds they would not have otherwise applied for.

Mr. Grumbles: In Maryland, Project Green Classrooms has lots of agencies collaborating which creates new access and connections.

Question: Identify some major challenges with implementing partnerships.

Ms. Lutzow-Felling: Challenges handout was distributed. People need to understand that watersheds cross subject areas. It is key to identify different portals and guide teachers to value all of the different ways to teach about the watershed. It is important to stay true to mission and be flexible.

Ms. Mullin: Think about the language you use and the programs you provide, and what barriers to entry there are. Make sure that people are given the opportunity to express pride in their community.

Mr. Grumbles: Teach students to know their “Drip Code” with the same energy we teach them their ZIP Code.

Question: Who is missing from this discussion? Who is not here who should be? Ms. Ms. Beers: Foundations, including local/regional foundations.

Audience Members: Faith organizations, medical organizations, local government, school administrators and board members, US Department of Education, community based organizations, out-of-school-time educators, Scouts, higher education, US Army Corps of Engineers and DoD generally, USDA, business community, libraries.

Closing Remarks

Key Points:

Keep the focus on the students—not only is this for them, but they can be some of our biggest advocates. Also, be sure to think broadly and across disciplines. Think about innovative ways to get funding and to frame the conversation about funding environmental education.

Mr. Dana Aunkst (Moderator)
*Director of the Chesapeake Bay Program
United States Environmental Protection Agency*

Mr. Atif Qarni
*Secretary of Education
Commonwealth of Virginia*

Dr. Karen Salmon
*State Superintendent of Schools
State of Maryland*

Ms. Tia Brumsted
*Deputy Assistant Superintendent for Health and
Wellness
District of Columbia Office of the State
Superintendent of Education*

Mr. Judd Pittman
*Special Consultant to the Secretary of Education
for STEM
Commonwealth of Pennsylvania*

Mr. Aunkst: The passion here is obvious and it is clear that we have made great strides. It is also clear that we need to involve more people and build more momentum. This is a bigger issue than just the

Chesapeake Bay watershed: we are a model for the world, and this information is getting shared among many agencies, states, and countries.

Dr. Salmon: Her husband is a commercial fisherman, so the Bay has always been important. Environmental literacy is and has been key, and now equity needs to be the overarching goal. It is important that all students have these opportunities and we need to be proactive about preserving the world around us. Governor Hogan is very committed to environmental literacy, and nearly 90% of Maryland schools offer MWEs at all levels. We need to find a meaningful way to integrate it into curriculum and into student life. In Maryland, education is working with the Department of Transportation to identify accessible green spaces. The goal is to empower students to be stewards of the future.

Secretary Qarni: He experienced an International Baccalaureate school connect all of the content areas related to the Chesapeake Bay, but this was only done after SOLs. High stakes testing threatens this kind of deeper learning and forces us to have conversations about learning in silos. We should be in harmony, incorporating local officials, involving the PTA, and making sure the actual decision makers on the ground have buy in.

Ms. Brumsted: The District of Columbia has 67 independent school districts with over 200 schools, so it is hard to adopt a uniform policy. A focus has been to think about health and school climate in addition to pure academics, and push that they are the foundation of educational success. Use the whole school, whole community, whole child model, which includes leveraging partnerships—the schools cannot do it themselves. There are waitlists of people who are interested but there is not enough funding. Technical assistance should be targeted where it is needed most by looking at school metrics like successful implementation or grant applications. At the end of the day, this will never work under a compliance model—we need to involve stakeholders and do this together.

Mr. Pittman: It took Pennsylvania years to get a point person to represent several different agencies on EE issues, but it has been valuable. Do not underestimate the power of the student voice—involve them and they will become our best advocates. Focus on early education and out-of-school-time education—the risks and accountability are lower. Tailor conversations around issues that matter to the community you are addressing and remember to incorporate workforce and skills development into the rationale for EE adoption.

Question: What are you inspired to do differently, or what is your big takeaway?

Secretary Qarni: Virginia has a problem with aging school buildings—use upgrades as an opportunity not only to upgrade sustainably but to involve students with that process.

Dr. Salmon: There is a big focus on school safety with school construction, but sustainability should be in that conversation as well.

Ms. Brumsted: This is a great opportunity to leverage communication channels developed during behavioral health expansion

Mr. Pittman: Control the narrative and call out successful schools, call out EE as part of STEM, and make sure that all students means all students.

Conclusion:

The meeting concluded with Mr. Aunkst offering a few final remarks, thanking the audience, including all represented states, for a productive and thoughtful day of discussion and solution seeking conversations.

APPENDIX A

Luncheon Discussion — Chesapeake Bay Program Partners Strategies and Goals

Participants representing a state or region were broken up into round tables to respond to two guiding questions: 1. What are the significant challenges that your state faces in equitably engaging all students in environmental literacy instruction? 2. What are the key opportunities to expand environmental literacy for all students in your state? And any associated needs to be addressed, stakeholders to engage, partnerships to leverage, or strategies to initiate?

1. What are the significant challenges that your state faces in equitably engaging all students in environmental literacy instruction?

National/Regional

- Connecting Chesapeake Bay Program and associated workgroups (e.g. Diversity Workgroup) with academic institutions and historically black colleges
- Funding for transportation and other associated costs
- Problem with sustainability of initiated programs
- Need long-term level of engagement
- Cross sections exist at state, federal, community levels so know where process and approval are needed to get projects done
- Maintenance for programs and engagement of parents
- Students sharing experiences with other students is valuable
- Who is getting MWEEs and who is not? Is this getting reported? How do we ensure counts are accurate? Knowing where MWEEs are happening and not happening and measuring that
- Knowing how money is distributed to teachers to fund environmental education programs and ensure equal distribution
- If you are not doing a MWEE, what other environmental education are you doing?
- Identifying what the practice is and how you measure environmental education. Is the term “MWEE” a barrier?
- CBF receives a list of people who provide information on MWEEs to carry out programs
- Writing grants is an effort – big agency could fund an intern to serve as outreach to teachers relaying grant programs
- Hone in on different aspects of diversity like represented in the Chesapeake Bay Trust’s model
- Training MWEE Ambassadors
- Scale: very large amount of students, small scale of money. Hard to know how to apply that efficiently and effectively
- How to look at things region-wide in a way that will impact students
- Analysis of areas that are lacking: Survey: great data in DC, MD, VA. Less so in the other jurisdictions. Hard to get data from those who did not respond

D.C.

- Clearly defining equity vs. quality in terms of equal access to all 8 wards (242 schools) in the District
- Addressing program development; needs of each individual schools, meaningful outreach to our Wards 7 & 8 schools
- Equal access is NOT equal to equal engagement. An observation of the Overnight MWEE program found some schools have different access to varying quality of providers
- Changing school culture strategies

- Showing student testimonies (via video, written responses, podcast, etc.) and youth voice for effective change, starting from the bottom up
- In regards to student behavioral issues while conducting EL programs (i.e. Overnight MWEE, Middle School Watershed Education, School Garden Grant, etc.), consider social worker on-site.
- OMWEE survey found higher attrition rate in the spring programming. By providing equal access, we need to recognize the physical & cognitive needs of each school/class, so that all students can have the experience
- Skipping OMWEE sometimes used as punishment for poor behavior
- Buy-in from the schools so that commitment from the administration is there
- Addressing alternative funding model for schools that can afford the MWEE and those schools that can't
- Certain schools (with OSSE star rating of 3 or 4) can make contribution to the experience while other schools (Title 1) need more meaningful outreach in terms of resources
- Certain school PTOs have the funding capacities. Should they be contributing more to support free or reduced prices to participate in programs?
- Program gaps in Middle School and High Schools
- Need quality MWEE provider, outreach, and Professional Development to teachers

Maryland

- Time and money to provide resources. Great partnerships exist in Maryland, but students do not have equitable access to these programs. Students have to also be able to afford the programming
- Asset distribution is one of the few things people need to engage in. Solution doesn't have to be the same for all students all over. For example, some students can walk to areas for an experience (not the case everywhere). Kids don't have to necessarily get on a bus to get experience but asset mapping has to be done in a better way
- Teacher training also takes time and money but training is needed for teachers to use resources
- Environmental Literacy plans are great, but having systemic ideas on paper is different than determining if every student is actually receiving the education
- These things have to be embedded into curriculum and programs.
- Environmental Ed/Literacy has to be prioritized for everyone. Clash between environmental areas and other science careers, even though EE has relevancy to all. That relevancy needs clarification
- Teacher workload, administrator buy-in, and community support all are major factors in success of school based programs
- Turnover at all levels impacts forward progress

Pennsylvania

- 500 separate school districts with different needs within those school districts
- Schools are funded by local property taxes – rich communities have more money for schools and opposite effect
- Schools and teachers with capacity continue to excel. Schools without resources and capacity have trouble getting started
- Hesitancy to ask for state level support because schools don't want to be told what to do
- Not recognizing local community resources that are related to and can help environmental education capacity
- Not recognizing community resources because of lack of measures, data, and accountability.
- PA can NOT recommend any curricula to the schools, only create academic standards and give examples of things

Virginia

- Will always have pushback if standards of learning are that important (teachers see environmental literacy instruction as extra rather than integrated)
- Training is key – teachers need to understand how to build it in
- Teachers were not caught the content or how to teach it
- Becoming a priority but moving slow
- Content not taught in college to new teachers
- 10-20 years out
- Administrators need to be willing to take risks, try something new, and not fear failure
- Test scores should not be the focus – do a PBL and scores increase
- Getting buy-in from administration is crucial
- Dependent on individual principal
- Principals talk to principals or foundations talk to principals
- Environmental literacy is not seen as a priority because of other school needs, e.g. getting schools funding for transportation

2. What are the key opportunities to expand environmental literacy for all students in your state? And any associated needs to be addressed, stakeholders to engage, partnerships to leverage, or strategies to initiate?

National/Regional

- Support state efforts where they are:
 - VA is moving quickly to support their districts, largely with professional development.
 - Most MD districts have environmental literacy programming occurring, but need to formalize it through environmental literacy plans. Maryland State Department of Education is working on a template for what these could look like.
 - PA is earlier in their journey and have 500 districts. They need high level leadership to be engaged and put policies in place to create space for this work to happen. Example: VA diploma seal, graduation requirements, etc.
- Money won't help much until this space is created.
- Create models, show state what is possible, create policy, then fund.
- Opportunity for big change: connect STEM to environment, including workforce development. Can then codify that and share it with others.
- MWEE's: more about how you teach than what you teach. Creating the connection to the environment is what is impactful.

D.C.

- NGO partners could advocate to Council for greater resources for environmental education
- Awareness to the Citizen Advisory Committee of equity and engagement challenges for environmental education
- Propose the Sister School model (similar to Sister City model) to help address equity between 4-star rating schools and match with 1-star rating schools. Some PTOs may already do this
- Seek out data for the needs and barriers of each school

Maryland

- Opportunity for alignment in Environmental Literacy Plans across school districts. Possibly to include a rubric to assess the ELP

- Ensuring that existing partnerships are getting into all the schools. Making sure that what's being done in systems is being done across the whole system
- Teacher turnover is a problem. Champions at schools move on. This type of education needs to be embedded
- Translate these ideas into opportunities, whether economic, academic, or other. Show people.
- Engage with superintendents of school systems to create buy-in from the top and expose them to the resources/assets available
- Convening with nonprofit partners and state school reps to talk about how we can tackle these things together. We need to have a plan

Pennsylvania

- Opportunities to reach out to, target resources, programs, and partnerships to schools in need
- Outside of school opportunities such as a food focus to connect people to the environment
- Opportunities to include environmental education in other education spaces, topics, STEM to E-STEAM, programs – across other subjects, in and out of school organizations and programs
- Leveraging of local stakeholders, constituency, and other organizations in communities
- Communicate messages that are important to local communities

Virginia

- Can hit many objectives across every subject area in a few days
- Going outside everyday has a huge impact on performance and academics
- Teachers outside the watershed have no resources
- We need a state leader for environmental education
- Closed the office and it has been pushed onto VAEE
- Could encourage disciplines other than science to go outside
- Be a repository, know the state, know professionals
- Superintendents say MWEEs are being done when in reality, they are not
- Make mandatory, systemic K-12 initiatives
- Will not happen as long as reading and math are over emphasized in elementary schools
- Smaller districts pool resources – possibly superintendents' regions
- Use sustainability lens to involve everyone and keep budget hits small (helpful when stakeholders are reluctant about environmental education)
- Teachers do not know about environmental education goals
- MWEEs are not written in any Department of Education documents
- Is there interest in having an advising council in government?
- Need to train through professional development and pre-service training and require it of NR professionals
- Blue Sky Fund - non-profit experiential learning
- Fundraising model grants: James/York/provide transportation
- Government needs to partner with such state/district
- informed, non-traditional learning to help fill gaps
- Recognizing transportation issue closer to where you are
- 38 state parks - “District Resource Specialists” (environmental)
- \$\$ - videos
- Diverse funding streams - ask!

West Virginia

- Governor's STEM Initiative being led by Erika Close (hasn't been publicly announced yet)
- ESS Passport program at Fairmont State College led by Deb Hemler - not sure there is future funding but could be a place to incorporate teacher training for MWEEs
- What programs can be developed to focus on MWEEs and environmental literacy that are not seen as divisive or "too environmental"
 - Trout in the Classroom
 - Flooding
 - Extreme weather events (CoCoRaHS)