2016 Chesapeake Watershed Forum
Poster Session

Poster Abstracts

Welcome to the Sixth Annual Chesapeake Watershed Forum's Poster Session! We invite you to peruse the posters throughout the conference, and to attend the poster session Saturday evening to mingle with poster presenters. At Saturday's poster session, you are invited to vote for the People's Choice Poster Award (please use form below), and through your vote, enter to win a raffle prize. Posters will be judged both by you (the People's Choice Award) and by a panel of professional evaluators (Best Poster Award.) Poster prize winners will receive free registration to the 2017 Chesapeake Watershed Forum.

Poster topics:

Poster Contest – People's Choice Poster Award Form

By submitting this form, you are submitting ONE vote for the People's Choice Poster Award and entering to win the voter's raffle. Poster awards and voter raffle award will be announced at the conclusion of the poster session. You do not need to be present to win the voter raffle.

YOUR VOTE:

Poster # _____ Author/Presenter Name:_____

Voter Name:

_____

Voter Email:

_____

Poster #	Presenters	Affiliation	Title and Abstract
Restoration – Forestry, Oysters, Wetlands, and More			
1	Bezerra, Natalia	Neighborhood Design Center	**Eleanor Roosevelt Eco Murals** The purpose of the Eco Murals project at Eleanor Roosevelt High School was to improve neighborhood livability and bridge the gaps between students and the environment by allowing students to express their views and visions of their community through public art. The main goals to achieving this purpose were to 1) raise student awareness of the challenges and solutions to restoring the health of the Chesapeake Bay watershed; 2) promote environmental sustainability and stewardship; 3) increase quality of life; 4) promote social and environmental justice. The school currently has twenty-one unimaginative and aged temporary classrooms that are in need of revitalization. The original project scope of work included designing and implementing murals that connect to the Chesapeake Bay watershed onto 8 walls of the temporary classrooms. So far, murals have been implemented onto 3 walls, with the rest being subject to Phase II work during the upcoming school year. This effort allowed students to gain social and environmental awareness and take collective action in beautifying their own school. Through improving their school's aesthetic, the majority of students felt a greater responsibility toward taking care and improving the health of their environment.
2	Denby, Rachel	MD DNR MBSS	**Protecting Aquatic Biodiversity and the Endangered Blackbanded Sunfish** Over the past few decades, many species, especially aquatic species, native to Maryland and the Chesapeake Bay have declined. They have decreased by 10 percent or higher, labelling most organisms as "at risk of becoming imperiled or vulnerable." Of the 15,000 plant and animal species native to Maryland, about 1,200 of them are labeled as rare, uncommon, or declining, due to competition with non-native predators, habitat degradation, and global climate change. The blackbanded sunfish, an inhabitant of acidic streams and swamps on Maryland's eastern shore is one of the rarest fish species in the state. Conservation efforts to protect this species have occurred within the past 10 years, but much remains to be done to protect the remaining populations and their critical habitats. This upcoming year, the Maryland Department of Natural Resources aims to partner with organizations to raise public awareness of the importance of aquatic biodiversity within the Chesapeake Bay and to ultimately conserve blackbanded sunfish and other rare aquatic species.
3	Donachie, Olivia	USFWS	**Wetland Reserve Program Restoration in Caroline County** There is a great opportunity to better document and promote wetland restoration efforts in the Chesapeake Bay watershed. I aim to shed light on efforts that the USFWS and several partners are undertaking to restore wetlands by creating a series of informational videos, photo essays and maps to highlight restoration efforts. I will interview wetland managers and landowners to provide an understanding of what is and is not working, and how to improve – all to be shared for public access on USFWS's website. I will track and document a specific wetland restoration site on Wetland Reserve Program land from start to finish in Caroline County, MD. I will create the planting plan on a nine-acre emergent/shrub wetland and install wood duck boxes to improve habitat. The plan will include plants that provide important seeds for ducks, other wildlife, and nectar for native pollinators. A community planting event will be held to educate volunteers on the importance of wetland restoration for their watershed. In a landowner outreach component, I will target agricultural landowners by informing them on programs and restoration types they can involve themselves in to transform their properties to benefit the health of wildlife and the Chesapeake Bay.
4	Fisher, Jaclyn	South River Federation	**Church Creek: A Controversial, yet Promising Restoration** Church Creek is one of the 6 major tributaries that feeds into the South River. The most urbanized of the tributaries, with approximately 55% impervious surface cover; it is also one of the most highly degraded. The Church Creek Headwaters Restoration Project

Poster #	Presenters	Affiliation	Title and Abstract
			aimed to restore several acres of wetland habitat by re-saturating the floodplain. Throughout the project, difficulties were faced regarding public perception of the restoration. South River Federation faced criticism from the environmental community regarding the placement of the restoration site, as it was located at the convergence of two major tributaries, rather than the headwaters of Church Creek, where research indicates is the most effective for stream restoration. More controversy was created when sixty maple trees were flooded out in order to reach the restoration site. The dead trees were left standing as habitat for bats, insects and birds; however the public found them unsightly and upsetting. Despite the controversy regarding site choice and implementation of aspects of the restoration plan, the restoration has seen promising indicators of success. Biological indicators, such as fish and amphibian population abundance, have increased significantly compared to pre-restoration surveys in 2011/2013.
5	Fortson, Elizabeth	Blue Water Baltimore	**Developing an Urban land-Reclaim Program in Baltimore City** Over the next year, I will be working to start a land-reclaim program at Blue Water Baltimore for invasive removal and native habitat restoration. From 2016-2017, our pilot land-reclaim program will target forest patches directly adjacent to existing planting sites, though in coming years we would like to develop the capacity and technique to identify new sites for restoration. The land-reclaim begins with the systematic removal of invasive plants, including vines such as porcelain berry, English ivy, Oriental bittersweet, mile-a-minute, and many others. In their place, we will install native savannas, beginning with native grasses and herbaceous perennials grown from seed. The most important feature of the land-reclaim program will be the integration of trees, shrubs, and flowering herbaceous layers in our restoration projects, which work together to provide an aesthetically fascinating and easily-maintained groundcover that will beautify a community space in Baltimore and reduce the need to mow. After each project is completed, I will hold a neighborhood outreach/education event to interact with the community and teach people how to create urban meadows in their own lawns or favorite lots. My hope is that our land-reclaim program will become an institutionalized component of our normal restoration activities.
6	Harris, Emily	Chester River Association	**Chester River Association's Watershed Assessment and Priority Restoration Plan** In March of 2016 the Chester River Association completed a Watershed Assessment and Priority Restoration Plan for the Chester River through CBT's Watershed Assistance Grant Program. The document divides 27 stream basins into a 5-tier system, with the idea that Tier 1 subwatersheds are the most impaired and highest priority for restoration. In addition to water quality CRA staff also took potential for community outreach and prior citizen complaints into account when placing subwatersheds into each tier. Using this resource as a guide, CRA will install restoration projects and implement outreach campaigns in the top two tiers of stream basins in order to target areas where the most significant improvements in water quality can be made.
7	Parr, Kyle	Arlington Echo Environmental Education Center	**Erosion Control at Arlington Echo** Arlington Echo is an outdoor education facility used by the Anne Arundel county public school system for their 4th grade environmental literacy program. Erosion in the area downhill from the parking lot has been getting increasingly worse and is an area of concern. In Order to combat the erosion several steps must be implemented in order to slow down the runoff, one of which is the construction of a bioretention area. The project can be implemented into Arlington Echo's "take action" activity in where individuals from fourth graders in the fourth grade environmental literacy program to the campers at Arlington Echo's various summer camps can participate in its construction. The project is a great opportunity to get individuals, especially children, engaged and involved in environmental restoration and watershed stewardship.

Poster #	Presenters	Affiliation	Title and Abstract
8	Thornton, Kathy	Adkins Arboretum	**Reviving the Wetland at Adkins Arboretum** Each year, roughly 18,000 visitors are welcomed at Adkins Arboretum with a walk across a picturesque bridge, overlooking a braided wetland with birds, muskrats, frogs, and turtles. Roughly two acres in size, the wetland provides habitat to diverse wildlife communities and helps to restore the health of Blockston Branch and the Tuckahoe Creek watershed. The Arboretum's unique freshwater non-tidal wetland is a highlight for many school trips, adult programs, and nature groups. Since its creation in 2000, the wetland has become overgrown with woody and invasive plants and the water holding capacity has decreased due to sedimentation and runoff from nearby impervious surfaces. Threats such as these are prevalent throughout the watershed and the Chesapeake Bay Watershed Agreement seeks to create and enhance over 200,000 acres of wetlands by 2025. To revive the wetland, Adkins Arboretum plans to control the invasive plant species, replant these areas with native species, engage students and visitors in restoration activities, and create more open water areas within the marsh to diversify habitat. By rehabilitating this native landscape and teaching the community about the importance of wetlands, this initiative supports the Arboretum's mission of serving as a model of land management and ecological restoration.
9	Youngk, Anna	Camp Woodlands	**Camp Woodlands Bioretention** Camp Woodlands in Annapolis, MD is owned by the Girl Scouts of Central Maryland and used by Anne Arundel County Public Schools to run the kindergarten environmental literacy program. It is located on Broad Creek, one of the South River's highly impaired creeks. Camp Woodlands is largely affected by erosion during rain events and has been an area of concern over the past decade. A bioretention area was constructed to address the stormwater issues and was integrated into the Kindergarten Environmental Literacy Lesson "Action Project." Students, parents and teachers of Anne Arundel County Public Schools were able to participate in the planting and the construction of the project. This project exemplifies the benefits of involving students in meaningful watershed experiences.
Outreach, Community Engagement, Stewardship and Volunteerism			
10	Angleton, Patrick	Elms Environmental Education Center (SMCPS)	**Raising Awareness on the Importance of Diverse Ecosystems through Interpretive Materials** Land use within the Chesapeake Bay Watershed plays a vital role in the health of the Bay and its rivers. Although many people in Southern Maryland live within ten miles of the Bay itself, there is a lack of understanding about the effects of change in land use, personal stewardship, and the importance of natural landscapes on Bay health. The Elms Environmental Education Center is located on a portion of a 1,000 acre property along the shores of the Chesapeake Bay. About 300 of these acres are between 0 and 2 feet above sea level. This land is home to a natural spring, a network of streams, several vernal pools, a large fresh water pond, and a tidal marsh. Multiple trails provide the means for students and the visiting public to experience this diverse coastal ecosystem first hand. Using interpretive materials, including trail head kiosks, the Elms hopes to raise awareness of the many ecosystem services provided by natural landscapes that mitigate the negative effects of anthropogenesis on the Chesapeake Bay Watershed.
11	Beebe, Rachel	Howard County Government, Office of Community Sustainability	**CleanScapes Communities: Engaging Howard County Residents in Small-Scale BMP Installation** The Howard County Office of Community Sustainability (OCS) has begun to implement a pilot program, CleanScapes Communities, with new features to encourage Best Management Practice (BMP) implementation across a broader segment of its residential population. OCS has received high levels of interest from County residents in the geographic pilot area and began a waiting list only two months into the pilot. This program minimizes barriers to entry, especially financial and technical, to residents who

Poster #	Presenters	Affiliation	Title and Abstract
			might have been deterred from participating in the County's existing residential program, CleanScapes. Thanks to a grant from the National Fish and Wildlife Foundation (NFWF), the County is able this program to low-income residents free of charge; according to market research, low-income populations are very unlikely to install stormwater BMPs. The geographic pilot area was carefully selected to provide the highest chance of success to the pilot, so that the methodology of the program could be more accurately tested without interference from other factors. I would like to share a summary of the program, along with application procedures and criteria—this may interest conference attendees who are residents of Howard County as well as representatives of organizations looking to encourage small-scale BMP installation.
12	Black, Carolyn	National Park Service Chesapeake Bay Office	**Indigenous Cultural Landscapes: Rappahannock River Study** The Indigenous Cultural Landscape (ICL) concept recounts how indigenous peoples of North America have regarded and used this abundant land for countless generations. Use of the ICL centers present-day American Indians in the interpretation of their ancestral lands and identifying portions of landscapes that demonstrate to visitors the natural or cultural resources supportive of Native lifeways and settlement patterns in the early 17th-century. ICL identification and the accompanying interpretive process began along the Captain John Smith Chesapeake National Historic Trail as a trail-related resource in 2010. Descendant communities are in partnership with conservation organizations and researchers to assure stakeholder respect in Chesapeake watershed tourism, interpretation, and resource protection. This poster will highlight a 2016 ICL study on the Rappahannock River in eastern Virginia. Using examples of GIS mapping, documentation from primary resource material, and American Indian collaboration with National Park Service entities, this presentation locates the possibility and urgency of deepening contemporary perceptions of land using community oriented approaches in the field of conservation.
13	Brown, Elizabeth	Midshore Riverkeeper Conservancy	**Faith-Based Environmental Stewardship on Maryland's Midshore** The Midshore Riverkeeper Conservancy (MRC) has begun an outreach and stewardship initiative called *Stewards for Streams* to partner with centers of faith in Talbot and Dorchester Counties. Two projects have been installed for the program thus far, both in the City of Cambridge: a rain garden at Waugh Chapel United Methodist Church and a bioswale at St. Luke United Methodist Church. Funding for these projects came from the Chesapeake Bay Trust, the Royal Bank of Canada Blue Water Project, and the Maryland Environmental Trust. MRC is growing this *Stewards for Streams* initiative into a broader program that provides all centers of faith in these two counties with the opportunity to participate. The connection between faith and environmental stewardship is a natural one: most religious texts, including the Bible, Qur'an, and Pope Francis's recent Encyclical, include compelling language for environmental stewardship and the protection of Gods' creation. MRC has also used this program to reach out to sectors of the population that are often not incorporated into our programming—minorities and low-income communities. By building a more racially and socioeconomically diverse base, MRC will create a more powerful and resilient local environmental movement.
14	Chiles, Renesha	Department of Conservation and Recreation: State Parks	**Youth Nurturing Their Future** Each year, Virginia State Parks looks to grow participation in the Virginia State Parks Youth Corps (VSPYC); by engaging the community and providing programs that enhance education, training and employment opportunities for youth; increase stewardship of public lands, improve work skills, foster teamwork, self-esteem, social responsibility and respect for the environment. Projects and programs center on these famous words "I hear and I forget, I see and I remember, I do and I understand." Projects peak children's curiosity with the natural world through hands-on cultivation of urban garden spaces, cultivation of sustainable produce, and participating in restoration projects that enhance public accessibility to public lands. By participating in a wide range of opportunities provided through classroom projects and park experiences youth grow an affinity to

Poster #	Presenters	Affiliation	Title and Abstract
			nature, and learn positive environmental ethics.
15	Dirmeyer, Brandt	Patapsco Heritage Greenway	**In the Wake of a Flood** My poster for the watershed forum will focus on the blog that I'm in charge of on my host organization's website, patapsco.org. Thus far, I only have one post introducing myself, but I've been working on an interview about stormwater runoff and its impact on the flood that surged through the historic district of Ellicott City, and have plans for a few more interviews. By leading interviews with knowledgeable professionals, I will also be able to locate a niche in the world of work that I am interested in pursuing further, either as a job or as a graduate program. Water quality has begun to grab my attention, as well as political water conflicts. Led Zeppelin's *Kashmir* has a whole new layer to it now after learning about India and Pakistan's "battle in heaven." Since my blog posts will be about the restoration efforts of the community after the storm, I will be bridging the divide between humans and our environment to show that we are far from a separate entity, in an ecological sense. What we do impacts our climate, the landscape, and the flora and fauna that depend on undisturbed ecosystems for survival.
16	Griesemer, Bonnie	Frederick County Office of Sustainability and Environmental Resources	**Expansion of Solar Co-ops into Frederick County, Maryland** Frederick County Office of Sustainability and Environmental Resources (OSER) and Maryland Solar United Neighbors (MD-SUN; a state project of the Community Power Network) are teaming up to expand a new solar initiative into Frederick County. A solar co-op is an organized group of residents and/or small businesses that save on the cost of solar installations through their collective buying power. By forming a group of interested buyers, co-op members can receive lower prices as a result of economies of scale and reduced labor costs for business development and marketing. Similar co-ops in other Maryland counties have shown that residents saved up to 20% on solar installation through the program. The Frederick County Solar Co-Op will build a community of citizens interested in solar power and will reduce residential greenhouse gas emissions. Frederick County has seen success in similar programs such as the Solarize Frederick Initiative, where 66 homeowners installed solar electric systems. The process of organizing this co-op will include promotion via outreach and information sessions, bidding and selection of a local solar installation company, installation of the panels, and ongoing support. Frederick County government will work with MD-SUN to ensure growth and success of the program.
17	Leizear, Jake	Chesapeake Conservancy	**The Captain John Smith Chesapeake Trail: An Untapped Blue Opportunity for Baltimore** This work focuses on expanding the public knowledge of, respect for, and overall usage of the Captain John Smith Chesapeake Trail. The trail, sailed by John Smith from 1607-1609, covers approximately 3,000 miles across the Bay and was designated America's first water-based national historic trail in 2006. The scope of this work will specifically be the 14 miles of the trail in Baltimore. The steps to expand the use of the trail will start with developing approximately 250 paper maps of the trail, its amenities, and existing access points using GIS technology and research done by the Baltimore National Heritage Area. Next, work will begin on an online map providing more dynamic interaction with the trail, in the forms of Terrain 360's virtual tour and a Story Map created using ArcGIS Online. Concurrent to this, possible future access points and amenity opportunities will be identified to add to the map. Finally, a community launch event will be planned and executed to help engage the public in this underused urban portion of the trail. By the end of this work, the goal is to have more Marylanders and visitors using the trail and accessing the Bay in new, more hands on ways.
18	Love, Jessica	City of Mount Rainier	**Thomas Stone Elementary School Planting Project** The City of Mount Rainier's Green Team is partnering with Thomas Stone Elementary School to support their environmental education goals and to work towards Maryland

Poster #	Presenters	Affiliation	Title and Abstract
			Green School Certification. For my Chesapeake Conservation Corps capstone project I worked with Thomas Stone Elementary School teachers and staff to develop a series of environmental education activities culminating in planting a native plant garden in an outdoor classroom. The project provides a tool for education and engagement for the community to learn about the natural environment and their impact on the watershed. Third grade science classes at Thomas Stone participated in a series of environmental education lessons culminating in a planting day to learn about native plants and animals, the Chesapeake Bay watershed, and the role they can play in the health of the watershed. The activities focused on student's role in their environment and included an interactive watershed model, a mapping exercise, a native species identification game, and a native planting activity. This environmental education series offered students the opportunity for in hand-on learning about the natural environment and the garden has a lasting impact to engage students and promote stewardship for the Anacostia River and the Chesapeake Bay Watershed.
19	O'Hara, Katie	Annapolis Maritime Museum	**Saving Our Seafood Annapolis: There are Plenty of Fish in the Sea…Until There Aren't** Saving Our Seafood (SOS) Annapolis is a grassroots program of the Annapolis Maritime Museum to promote sustainable seafood. Sustainable seafood comes from local and sustainable sources that are not over-fished or harvested in destructive ways. The Museum currently educates the public on maritime culture and ecology of the Chesapeake Bay. The Museum building, a historic oyster packing plant, highlights the interaction between the bay's commerce and ecology. SOS Annapolis is a natural extension of the Museum's current programs aimed to inspire our community and visitors to make responsible choices that protect the Chesapeake Bay and beyond. Ultimately, SOS Annapolis could lead to one of the nation's first sustainable seafood cities. To launch SOS Annapolis, the Museum will: 1) establish SOS Annapolis Partners among local restaurants and businesses that promote sustainable seafood based on criteria available from the Monterey Bay Aquarium Seafood Watch Program and other sources; 2) design an SOS Annapolis logo and window sticker for our Partners; 3) develop an SOS Annapolis exhibit at the Museum explaining the importance of sustainable seafood with a map of SOS Annapolis Partner restaurants and businesses; and 4) investigate organizing future community events (e.g. SOS Annapolis Restaurant Week) to promote sustainable seafood choices.
20	Parrish, Reggie	EPA Chesapeake Bay	**Diversity in the Bay: Profile Highlights** The Alliance for the Chesapeake Bay on behalf of the Chesapeake Bay Program conducted a watershed-wide profile to determine diversity amongst partners. This included management committees, goal teams, workgroups, advisory committees, jurisdictions, federal agencies, NGOs, and many others. This profile is critical to determining the baseline for measuring the outcome of increasing diversity in leadership, management and implementation of restoration activities for the bay. The poster will highlight the detailed findings of the profile which concluded on August 31, 2016.
21	Pownall, Malia	Waterfront Partnership of Baltimore, Healthy Harbor Initiative	**How Do You Connect People to Water When They can't Experience It** Although it is no longer visible above ground, Harris Creek connects much of East Baltimore. Serving as a municipal sewer, it is the conduit through which litter travels from neighborhood alleys to the Inner Harbor, contributing to the unhealthy state of the water. The persisting issue is determining means to connect Harris Creek Watershed (HWC) residents to water when they do not experience it daily, in order to reduce street litter. I propose to address this problem, while simultaneously addressing the Healthy Harbor mission of achieving a cleaner city, in three related endeavors. First, I will develop a newsletter for monthly distribution to HCW residents. This newsletter will

Poster #	Presenters	Affiliation	Title and Abstract
			unify HCW neighborhoods, assuring them that they are all working towards their goal of beautifying neighborhoods by outlining upcoming events and opportunities. My second idea is to host large-scale cleanup events in several locations, and utilize the collected trash in creating community art projects to place in HCW green spaces to evoke new perspectives on consequences of littering. My third proposition is the installation of interpretive signs along the bikeable route that runs through HCW green spaces. Varying in topics, they will spread knowledge regarding the effects of trash in the Harbor.
22	Roessler, Connor	City of Greenbelt	**Urban Watershed Restoration Integration through Rain Garden Inventory in a Planned Community** Land development and urbanization put intensifying pressure on the natural environment leading to soil erosion. The resulting sediment damages surface water and degrades wildlife habitat leading to a loss of biodiversity. Consequently, rain gardens have grown in popularity throughout public lands and private or residential gardens. Rain gardens are best management practices (BMPs) that capture stormwater and protect watersheds by reducing erosion and sedimentation. Rain gardens also provide wildlife habitat and refuge. There is a need to install more rain gardens, especially in areas with identified erosion and sedimentation. Additional sites for rain gardens must be identified and installed in Greenbelt's public and private lands to protect the Chesapeake Bay watershed and to promote biodiversity of wildlife. The City of Greenbelt has facilitated rain garden installations through community outreach, public education, inventory collection and mapping of existing rain gardens. This project aims to grow the public and private rain garden inventory, to use maps to analyze gaps and to identify potential sites, and to secure funding to install additional rain gardens where appropriate.
23	Schanne, Haley	Irvine Nature Center	**Engaging Communities in the Fight against Invasives through Education and Awareness** With an increased global economy and climate change, the negative impacts of invasive species have been exacerbated in recent years. Despite this, many communities are unaware of the invasive species issue. At Irvine Nature Center in Owings Mills, MD, a particularly harmful and apparent invader species lines the forest trails: Japanese Stiltgrass (*Microstegium vimineum*). The seed viability of Japanese Stiltgrass combined with lack of natural predators in its non-native range causes this species to be difficult to control and eradicate. This program is designed to engage the diverse communities of Owings Mills, Baltimore County, and Baltimore City in meaningful education and awareness of the difference between native, non-native, and invasive species with a specific focus on Japanese Stiltgrass identification and control. Additionally, this educational program will be tied to a removal project that will expose community members to nature and have them actively involved in the protection of the native ecosystems of the Chesapeake Bay Watershed at a personal, individual level.
24	Smith, Douglas	City of Lancaster, PA	**Growing Urban Tree Canopy with the Community** According to the U.S. Forest Service, an urban forest can reduce annual stormwater runoff by 2–7 percent, and a mature tree can store 50 to 100 gallons of water during large storms. The City of Lancaster, PA, is a certified Tree City USA with 28% tree canopy and over 10,000 inventoried trees in 7.4 square miles. The City is committed to expanding this canopy as part of its nationally recognized stormwater program, and also for the many co-benefits that trees provide. In 2015 the City partnered with the Lancaster County Conservancy and the Lancaster City Alliance. Together they formed the Lancaster Tree Tenders. The group has developed a data-driven, streamlined outreach method for street tree plantings, which can be summarized as: identification, outreach, fundraising, and volunteer planting parties. Each part of this process offers well-defined volunteer roles, allowing it to be an easily replicated model for other communities.

Poster #	Presenters	Affiliation	Title and Abstract
25	Southerland, Mark	AKRF	**Howard County Commercial Stormwater Solutions Work Group** In April 2016, Howard County, Maryland, convened an 11-member Commercial Stormwater Solutions Work Group to provide recommendations on effective strategies to incentivize commercial property owners to better manage stormwater run-off and assist the County in complying with its MS4 permit, including financial and technical incentives, maintenance support, and acceptable owner agreements. This permit requires that the County treat 20% of its total impervious acreage not currently treated to the maximum extent practicable, an action that cannot be accomplished by only treating impervious areas on government property, as approximately 70% of opportunities occur on private land. The work group consisted of 11 commercial business owners, developers, and associated experts. In September, the work group provided recommendations that included (1) focusing outreach on owner-occupied, commercial and industrial properties with significant areas of land not in use, (2) developing standard access and maintenance agreements separately for construction and maintenance phases, (3) streamlining the permitting process by hiring dedicated stormwater permit reviewers, (4) creating a commercial stormwater program that leverages private innovation through turnkey contracts or credit purchases, (5) financing the program through fee waivers and rebates, and (6) recognizing commercial participants with varying levels of certification.
26	Trenkle, Angela	West/Rhode Riverkeeper, Inc	**Franklin Point State Park: A Hidden Treasure in Southern Anne Arundel County** Twenty one years ago, Franklin Point State Park was saved by a group of concerned citizens from development and was behind a locked gate until this past March when it was finally opened to the public. Once it was opened, an interpretive hiking trail was created that encompassed the rich natural and cultural history within southern Anne Arundel County and the park itself. The trail opened at an event within the park that allowed the public to engage their five senses within the natural and cultural history of the area, including food from the Galesville Community Center, archaeological artifacts from the Lost Towns Project, seining demonstrations from the Smithsonian Environmental Research Center, and bird walks led by birding experts.
27	van Wyk, Andrea	National Aquarium	**The Dream Center Garden and Mural: Community Based Stewardship in South Baltimore City** The Dream Center, located in South Baltimore City's Brooklyn and owned by the Pathway Church of God, serves as a space for community leaders to address the social needs of their neighborhood. Through a nontraditional partnership with two English and Spanish faith based congregations, a local high school, and local community residents, the National Aquarium established a native plant garden and pollinator mural at the Dream Center. The project now serves as a prayer and meditative green space for all to enjoy. Stop by to find out how the Aquarium worked to educate the congregations, students, and community about the importance of native plants and pollinators, as well as recruit volunteers for the painting of the mural and planting of the 604 square foot garden. This project served as a continuously effort to engage communities within the Masonville Cove watershed in environmental education, and stewardship linked to the Masonville Cove Urban Wildlife Refuge.
28	Jeter, Mary	USFWS	**Green Spaces: A Healing Tool for Humans and Pollinators** A lack of natural areas within cities has negative implications for residents, wildlife, and ecology. Development and decrease in green spaces often distance city dwellers physically, mentally, and emotionally from nature. This distancing can be harmful to human health, and native species. People who do not interact with or experience nature on a regular basis can develop nature deficit disorder (NDD). NDD can increase a person's risk for developing ADHD, depression, and obesity. A lack of natural spaces in cities detrimentally limits the amount of suitable wildlife habitat, contributing to declines in their populations. This is especially true for pollinators such as native bees, migratory birds, butterflies and bats. This same lack of space, suitable for growing food, contributes

Poster #	Presenters	Affiliation	Title and Abstract
			to the existence of food deserts I intend to address all of these issues by working with community(s) within Baltimore to install nature playscapes with pollinator gardens incorporating wild edible plants. The nature playscape will be designed to engage children in nature. The garden will provide habitat for native pollinators such as Monarch butterflies while encouraging users to interact and understand the relationship of pollinators to the food they consume.
Science, Methods, Monitoring, and Evaluation			
29	Carpenter, Kevin	Jug Bay Wetlands Sanctuary	**Developing Management Strategies for the Control of Invasive Plant Species at Jug Bay Wetlands Sanctuary** The spread of invasive vegetation is among the major threats to the Chesapeake Bay and its watershed as it may lead to the loss of biodiversity. The grounds of Jug Bay Wetlands Sanctuary (JBWS) is no different, but the need to consistently manage encroachment presents tough challenges including lack of resources and public awareness. The invasive plant species of greatest concern on JBWS properties are the Tree of Heaven (*Ailanthus altissima*), Japanese Stilt Grass (*Microstegium vinieum*), Japanese Honeysuckle *(Lonicera japonica*), and Oriental Bittersweet (*Celastrus orbiculatus*). Each of these species requires different plans, methodologies, and timelines for removal in order to prevent further establishment. A first step for a coordinated and effective removal management plan for invasive species at JBWS is to establish a baseline of their location and abundance. Therefore, the first objective of this project is to map the "hot spots" of each of these species on the Sanctuary properties. The second objective is to involve and educate volunteers in the identification and control of invasive species through ongoing "Adopt A Plot" and prescribed grazing programs. The final objective is to create public awareness by organizing species removal events as service opportunities.
30	Choi, Kimberly	University of Maryland Environmental Finance Center	**Whence is the Drive for Municipal Sustainability?: A qualitative study of why Maryland towns seek certification and environmental identity** This study attempts to understand the various reasons municipal officials and sustainability committees chose to pursue Sustainable Maryland certification, and whether or not they feel the designation and the projects they take on in order to qualify are fulfilling these expectations. A theme of this research will be the development of a town's identity as an environmentally-conscious community. I will ascertain the perspectives of several individuals in these roles using semi-structured, qualitative interviews. These interviews will constitute an in-depth case study of two representative Sustainable Maryland -certified municipalities, with the goal of investigating how responses may differ according to a town's economic condition or size. The findings will help Sustainable Maryland support potential new municipalities in surmounting an initial scarcity of interested individuals and obstacles to participation. The study will result in a brief academic paper offering practical suggestions to the responsible UMD Environmental Finance Center, as well as a creative nonfiction piece targeted to municipalities, grantmakers, and the general public.
31	Hart Handwerger, Leah	Maryland DNR, State Parks	**Monitoring SAV Throughout Western Maryland Lakes** My poster will be a representation of one of my largest projects that I will complete while working with MDNR and Maryland Park Service as a Chesapeake Conservation Corps Member. The project will entail mapping submerged aquatic vegetation (SAV) throughout several lakes in western Maryland. Particularly, we are looking for populations of aquatic invasive species, and tracking the species distribution and composition. The project is focused at Rocky Gap State Park, but may also be extended to Deep Creek Lake, New Germany, and other lakes in the region. Methods used will be collecting groundtruth data throughout these lakes during the summer and early fall months this year, converting and mapping the data to represent our observations visually. The purpose of this project is to track and predict changes in SAV throughout the lakes in

Poster #	Presenters	Affiliation	Title and Abstract
			western Maryland, and provide management solutions and educational material to the public.
32	Hughes, Lindsey	Chester River Association	**SAV Increase and Monitoring on the Chester River** The Chester River and associated tidal streams have seen a quantitative increase of submerged aquatic vegetation (SAV), noted through yearly aerial photography and ground reporting. Because of its importance as a biological indicator of water quality and estuarine ecosystem health, Chester River Association (CRA) is developing an SAV monitoring and reporting program in the Chester River watershed. We have begun a preliminary study of SAV distribution using Virginia Institute of Marine Science aerial photography and have found that SAV total area coverage in the Chester River has decreased from 1978 to 2015, but recent years have seen an increase. In addition, the increased frequency of resident reporting and improved performance in SAV habitat criteria as identified by the Chesapeake Bay Program suggest increasing SAV abundance. Using resident reports, VIMS monitoring data, and our own ground-truthing efforts, CRA will begin to maintain documentation of SAV distribution and diversity for reporting and future outreach purposes. Through continued outreach and implementation of better land and water practices, CRA will work to improve water quality and therefore SAV abundance.
33	Jackson, Nora	Chesapeake Bay Foundation	**Clagett Farm: Eating our Way to a Healthier Bay** Although agriculture is one of the most significant contributors of pollutants to the Chesapeake Bay, certain farming methods have the potential to enhance soil health and water quality. The Chesapeake Bay Foundation's Clagett Farm is both a working farm and educational model for Bay-friendly agriculture that actively improves water quality in local tributaries. Historically it produced tobacco, but after more than 30 years of work it transformed into an environmentally and economically sustainable farm. It's mission to demonstrate and share sustainable farming practices is fulfilled through programs and events such as the Maryland Grazers Network, Buy Fresh Buy Local, Watershed Restoration, and Burgers and Brews for the Bay. These programs educate the community on the benefits of sustainable practices, engage them in restoration projects, and help them make food choices that save the Bay.
34	Lee, Samuel	Maryland Environmental Service	**Analysis of submerged gravel wetlands as a method to reduce thermal pollution** The installation of stormwater management structures is an important method to reduce the impacts of increasing impervious cover and to prevent untreated discharge of pollutants into streams. Commonly used wet stormwater detention ponds (WP) can be problematic in use III streams (Maryland cold water streams) due to increases in temperature associated with their effluent. This especially can be disruptive to temperature sensitive species including Brook Trout (*Salvelinus fontinalis*). A proposed method to mitigate these stresses is through the installation of submerged gravel wetlands (SGW) for stormwater detention and treatment. Initial data suggests that SGW will reduce the temperature, especially during the summer (Ballestero 2012). Water temperature monitoring will be conducted at two SGW and two WP sites operated by the Maryland State Highway Administration. Data loggers will be placed at each outflow location and upstream of the testing sites. Monitoring will be conducted from March 31, 2017 to August 4, 2017 with temperature being logged every twenty minutes as per Maryland Department of Natural Resources protocol. Precipitation data will be monitored to control for periods of low discharge from the sites. Statistical analysis will compare the sites to determine if there is a difference in effluent temperature between sites.
35	Mattheiss, Jeffrey	Center for Coastal and Watershed Studies at Hood	**Microcystin Contamination in the Upper Potomac River** As a response to accelerated eutrophication and increasing summer temperatures, many algal communities are becoming dominated by toxin-producing cyanobacteria. Microcystins are the most common type of biologically produced, freshwater

Poster #	Presenters	Affiliation	Title and Abstract
		College	cyanobacterial toxins. Microcystins are hepatotoxic and target the liver structure and function. These natural toxins may pose a threat to humans due to biomagnification, consumption of untreated drinking water, or through irrigation water and can be dangerous to freshwater fish species. Carp and other herbivorous fish species are the most susceptible to adverse health effects due to a direct consumption of microcystins. This study will look at the liver and muscle components of several fish species found in the Upper Potomac River for signs of microcystin persistence from algal blooms of *Planktothrix isothrix* and *Lyngbya spp*. during summer months. The fish species examined will consist of all trophic levels to see if bioaccumulation may be occurring throughout the food web. This study will also indicate whether harmful microcystin contamination persists in fish species which are consumed by humans. Conducted in the Upper Potomac River, this study will provide a local example for a global issue.
36	Molina, Michael	American Chestnut Land Trust	**Surveying Fish Diversity in Parkers Creek: An Estuary's Efficacy** This study presents an investigation into the fish communities inhabiting Parkers Creek. Parkers Creek is a tidal stream located on the Parkers Creek Preserve that is fed from an 11.4 square mile watershed and flows directly into the Chesapeake Bay. Less than 4 percent of the watershed is impervious surface, indicating a potential for a model estuary. To date, no sufficient data has been assembled from fish surveys within the creek. Examining the fauna and ecosystem that inhabit these waters is vital for two reasons: (1) assessing this potential as a model ecosystem and (2) developing a species baseline for the American Chestnut Land Trust to further utilize. A stream survey will be conducted seasonally throughout Parkers Creek to gather data on the fish assemblages that occupy this habitat. Seine netting techniques, paired with fish trap placement, will be conducted to sample 30 sites spread at 100 meters along the length of the creek. At each site, fish identification will be supplemented by habitat characterization and water sampling to aid with describing any variation in populations that may occur. The study presented will provide the ACLT with fish species diversity data for monitoring community change in the future.
37	Royal, Keitasha	Midshore Riverkeeper Conservancy	**Wye River Complex Subwatershed Assessment Study** Located in Talbot and Queen Anne's counties, the Wye River Complex is comprised of three mesohaline tidal waterways: the Wye River, the Wye East River, and the Wye Narrows. Since 2010, the Midshore Riverkeeper Conservancy (MRC) has monitored the tidal portions of the Wye River Complex. Throughout this monitoring, the Wye River Complex has had consistently poor water quality: the concentrations of total phosphorus and nitrogen are higher than expected in natural mesohaline tidal estuaries in the Chesapeake Bay. To understand the causes of such poor water quality, MRC began a Wye River Complex Subwatershed Assessment Study in the fall of 2015. Throughout this 5 year study, six non-tidal streams of the Wye River Complex will be monitored. At these sites, water discharge, water depth, and nutrients are being collected bi-monthly. Once a sufficient amount of data is collected, a rating curve will be developed for each stream that allows for the estimation of water discharge by only using water depth. These rating curves will be imperative for calculating annual water discharge and nutrient loads. This study will aid in the creation of action plans for each subwatershed in order to resolve pollution issues in the Wye River Complex.
38	Veselka, Andrew	The Nature Conservancy	**Assessing the Fire History of Pine-Oak Forests of Western Maryland through Fire Scar Analysis** Fire history is an important aspect of natural disturbance patterns in ecosystems throughout North America. However, the U.S. Forestry Service's policy of fire suppression severely limited the presence of fire in American landscapes for most of the 20th century. Now that the benefits of controlled natural burns are being rediscovered, information on the size, intensity, and frequency of past fires is needed in order to design controlled burn strategies in areas that have not experienced the occurrence in nearly a

Poster #	Presenters	Affiliation	Title and Abstract
			century. Though this information can be determined through the analysis of fire scars, which occur when excessive heat damages a tree's vascular cambium, such opportunities are limited in the Appalachian Mountains due to extensive forest clearance and rapid wood decay. Through collecting fire scars from oak and pine species in three areas of western Maryland this study seeks to fill gaps in the knowledge of fire's historic role in the central Appalachians and provide much needed information on how fire can be used as a tool in ecological restoration.
39	Williams, Michelle	Anne Arundel County Public Works, Watershed Protection and Restoration Program	**Taking out the Trash: Litter Traps in Anne Arundel County** Anne Arundel County is currently addressing trash and debris in its waterways through a combination of curbside litter removals, recycling programs and annual Project Clean Stream cleanups. However, the county is looking to do more to address trash and debris in its waterways. One way is through trash trap installation, an emerging practice that is having success in the Anacostia River watershed. Removing litter from waterways can directly improve ecological and aesthetic conditions in waterways, and data can be collected from traps on the amounts and types of trash generated in the watershed. Such data have been used to defend a city-wide plastic bag tax and a Styrofoam ban in Washington, DC. My capstone will explore ways to implement trash traps in Anne Arundel County. I will identify site evaluation criteria, design a protocol for long term maintenance and data collection, and assist in obtaining funding for long-term projects with timelines of several years. I will also pursue the CBT mini-grant to install a small proof-of-concept pilot trap in a selected site during my time in the Corps program.
40	Woytowitz, Ellen	US Geological Survey, MD-DE-DC Water Science Center	**Factors influencing long-term trends of bacteria and total suspended sediment in the Gwynns Falls and Middle Branch of the Patapsco River, Baltimore, MD** Stakeholders participating in the Baltimore Urban Waters Partnership (BUWP), a federal initiative that aims to reconnect urban communities to their waterways, identified that factors influencing water quality trends in urban streams are not well understood at the watershed scale. To address this knowledge gap, select members of the BUWP are examining long-term water quality trends (1999 to present) and factors that may influence them in the Gwynns Falls watershed. The goal of the analysis is to determine if a relationship exists between water quality constituents, specifically bacteria and total suspended solids, and proposed factors of influence including climate, land use, sewer overflows, infrastructure repairs, Best Management Practices, and socio-economics & demographics. Data will be acquired from multiple sources and trends analysis will be conducted using statistical tools and models in R, ArcGIS, and Excel. The results will be shared through an interactive website, a USGS Fact Sheet, and public presentations. These products will help Baltimore environmental managers determine if investments in restoration and compliance for stormwater permits, sewer overflow consent decrees, and Total Maximum Daily Loads (TMDLs) have produced desired improvements in water quality. Findings could be extrapolated to future holistic assessments and adaptive management planning of similar urban watersheds.
Environmental Education			
41	Alexander, Maya	Arlington Echo Environmental Education Center	**Expanding the Green School Initiative in Anne Arundel County** I plan to expand the Maryland Association for Environmental & Outdoor Education (MAEOE) Green School initiative by encouraging more schools in Anne Arundel County to become a part of the program. This program allows schools throughout Maryland to apply to become more sustainable by providing teachers, students, and the surrounding community with the necessary resources to learn the importance of maintaining a sustainable environment. I would like to focus on public elementary schools in Anne Arundel County where the student population is predominantly from lower socioeconomic status. My goal is to ensure that we do not forget to recognize underprivileged children in the efforts towards becoming more environmentally-friendly.

Poster #	Presenters	Affiliation	Title and Abstract
42	Chang, James	National Park Service, Kids in Kayaks	**Kids in Kayaks: Paddling for the Past and Future** This program has a focus on Historic and Environmental Education for Baltimore City students. Students such as these have lived their whole lives by the Baltimore Harbor, but have never actually been out on the water. With the use of interactive activities we opened the eyes of many students to the effects of land based activities on the aquatic ecosystem. However, it's not all business with the Kids in Kayaks program; the students are given the opportunity to learn about their local history and ecology while enjoying outdoor activities with kayaking on the water as well as engaging activities on land that connect these students with the local natural and recreational resources. These students are very intuitive and passionate, they will be the successors of our planet and the Chesapeake Bay some day and I believe students need the opportunity to connect with nature. The Kids in Kayaks program provides that opportunity and may even spark an interest in the bay for students.
43	Cope, Emily	William S. Schmidt Outdoor Education Center	**Heritage Trail** Tobacco farming was a prominent part of Southern Maryland agriculture for generations. Though tobacco farming has significantly decreased in the region, the large, airy barns that remain provide insight into the lives of the people that once farmed this land. As a Chesapeake Conservation Corps volunteer at the William S. Schmidt Outdoor Education Center, I created a heritage trail that takes students to the abandoned barn structures that reside on the Schmidt Center's campus. The goal of the project is to give the students who visit the center insight into the history of their county and to prompt discussion of how agriculture impacts the environment, both historically and in modern day.
44	Devlin, Bernard	Town of Edmonston	**Crittenden Street A Design for a Sustainable Future** I will be presenting on the addition of a second "green street" to the Town of Edmonston. Decatur Street, the main street in the town, is already a green street, and Edmonston is developing plans currently for Crittenden Street to become its next green street. I will be giving an introduction to the Town of Edmonston and its current green street, as well as some of the components that constitute a green street. I will also speak about the installation of low impact design measures. I hope that by bringing my poster and additional resources that describe the town, I will be able to successfully demonstrate the practicality and environmental benefits of having green streets in communities, and perhaps even convince other towns to start developing plans of their own.
45	Dodson, Alyson	William S. Schmidt Outdoor Education Center	**The Birds and the Bees** Please stop by for a pre-dinner snack and an engaging discussion of the birds and the bees! This poster presents the problem of declining wild pollinator populations, explores its causes, and relates the topics of pollinators and biodiversity to the efforts being made to educate students at the William S. Schmidt Environmental Education Center. Topics covered in the presentation include: • Native pollinators • Background information on the declining trend in bee populations • The 1st grade pollination garden and pollinators program • The fifth grade stream program (which discusses agricultural runoff) • Monarch conservation efforts • Maintenance of "bug hotels" • Potential to use beekeeping to supplement upper grade curricula • Potential to incorporate sunflowers into the 1st grade program as a cash crop, native plant, and example of pollination.
46	Griffith, Corinne	William S. Schmidt Outdoor Education Center	**Do You Have a Healthy Lifestyle?** The objective of this poster is to provide the audience with a chance to self-reflect on how their personal eating habits could affect the environment in subtle ways. This can also

Poster #	Presenters	Affiliation	Title and Abstract
			provide positive alternatives for some of the daily life food choices that individuals make that could affect the health of our planet. My poster is designed to draw the observer's eye around the board with various questions on food choices, gauging their personal habits and understanding of the effect they are having on the environment, while simultaneously educating on the results of their choices and how it can ultimately affect the bay. By the conclusion of the observation of the poster, the audience should have a good idea of their food choices effect on one's health while we follow the process of their food choices right from the source, all the way down to waste and how that can ultimately affect our surroundings.
47	Guy, Jason	Brookeside Gardens	**Nature Ambassadors** The Nature Ambassador program is designed to give High School students the opportunity to learn important skills in leadership, customer service, and environmental science, while volunteering at nature centers in Montgomery County. In addition to volunteer experience, the Nature Ambassadors have the opportunity to attend optional trainings that will focus on specific areas or subjects in environmental science. To complete the program, Nature Ambassadors are required to volunteer at a total of nine special events (festivals) throughout Montgomery Parks over the course of the school year. These events will be located at Brookside Gardens, Brookside Nature Center, Meadowside Nature Center, Locust Grove Nature Center, and Black Hill Nature Programs. The Ambassadors will receive Student Service Learning (SSL) hours for each festival they volunteer at, and each training they attend. In addition to completing the program with nine events, the Ambassador who earns the most hours will receive an additional prize. My host organization, Brookside Gardens, is hoping to improve this program, and use it to improve volunteer awareness and knowledge of the programs at Montgomery Parks, in order to create a pool of students that can be hired for future Parks positions.
48	Hixenbaugh, Patrick	City of Rockville	**Piloting Environmental Education Lessons in Non-Formal Settings** I developed and piloted a curriculum for non-experts to teach environmental lessons and outdoor appreciation in non-formal settings such as after-school programs and summer playground camps. Kids deserve to get more time playing in and connecting to the outdoors, developing curiosity and respect for nature, to grow into the next generation of outdoor stewards. I developed a "train the trainer" guide, equipment list, curriculum of 8 topic sheets with at least 4 activity guides each; trained staff at one after school program, and piloted 3 activities The project has been a great success. I've proved that my environmental lessons excite and inspire the kids I teach, and proven that activities can be adapted to work if they first have problems. I've created a curriculum and used it with Khali, the program manager, to train staff and run afterschool lessons. He and his supervisors are excited about continuing it next year, and making it a part of their program offering. They will also be able to spread it throughout the City of Rockville's youth programs, pending the success of the first year.
49	Houser, Ellie	Howard County Conservancy	**Howard County Report Card Program: Student Scientists in Action** The Watershed Report Card Program gives high school biology students the unique opportunity to conduct watershed analysis activities, examine and critique local policies, engage with policy makers, and enact positive environmental change. Students from each high school in Howard County conduct an assessment of their schoolyard, examining how effectively they manage storm water. In addition, the students assess the health of a local stream through an analysis of chemical concentrations and macroinvertebrate presence. After analyzing the data, students create recommendations for improving water management in their schools and communities. The goal is for students to independently develop and implement their projects. At the culmination of the program, the students present their work at a Watershed Summit, where they have the opportunity to interact with local policymakers. This year, the program is vastly expanding, and improvements

Poster #	Presenters	Affiliation	Title and Abstract
			are being made to existing programming. We are extending the program beyond Howard County, creating resources and professional development opportunities for teachers statewide. Students across Maryland will be involved in the program and they all will present their findings and recommendations at a new Statewide Summit in May of 2017.
50	Morrow, Emily	Arlington Echo Environmental Education Center	**Water Quality Monitoring with Arlington Echo** Arlington Echo's outdoor education programs engage Anne Arundel County public school students in hands-on outdoor experiences to promote environmental stewardship. Many of these programs include water quality testing to determine indicators of a healthy ecosystem and identify how humans can negatively or positively impact water quality. This water quality monitoring project takes water testing one step further by giving students the opportunity to use online GIS-based applications to record water quality data, track changes over time, consider the impacts of these changes, and identify connections between their data and monitoring and stewardship throughout the Chesapeake Bay watershed. Data is graphed and available on our website, arlingtonecho.org, for students and the public to access.
51	Pouland, Carley	Montgomery County Parks-Meadowside Nature Center	**Improving the Environmental Education Experience** Meadowside Nature Center, as part of the Montgomery County Parks system, aims to connect the public with nature. The resources and activities at Meadowside are designed to serve the county residents who make the existence of such centers possible. Just as businesses rely on customer satisfaction for survival, so too should government services. Soliciting feedback makes it possible to gauge performance and learn how best to serve the thousands of people that come through the doors each year. For this reason, Meadowside will pilot a feedback system that gathers comments from educators, volunteers and visitors. Any respondents that wish to further discuss their experience will be contacted directly by a staff member. This will serve to build stronger, more communicative relationships between people and the organization. With the assistance of feedback, Meadowside will be able to improve upon existing services and develop new programs that better meet visitors' needs.
52	Scott, Michael	Fair Hill Nature Center	**The Wet Truth** The Fair Hill Nature Center sees every public school child K-5th grade in Cecil County. We are currently working primarily with our 5th grade students to test the water quality of the water, primarily the Big Elk Creek. Our work is important because the entire town of Elkton receives its drinking water from this source. The objective of this program is to educate our youth on the importance of clean, healthy water for the organisms that call the water home. Our secondary objective is to introduce these students to using a microscope. We use physical, chemical, and biological methods to test how the creek is doing. The students are heavily engaged with the testing and do it all themselves so they get a feel on how the scientists do their research. We have found that the Big Elk Creek is very healthy and in just about every test, it proves to pass with flying colors. The only exception being the temperature, which is about borderline of passing.
53	Watson, Kylie	Audobon Naturalist Society	**Teaching Next Generation Naturalists** Environmental educators are challenged with the task of teaching others, specifically children, about the surrounding natural world. This revision of the current manual for naturalists at Audubon Naturalist Society (ANS) was conducted to create a more cohesive educational style that all Naturalists could follow. The introduction of Flow Learning, positive discipline, and the continued instillation of a sense of wonder were added into the manual to help improve the students' experiences in nature. Joseph Cornell says that engaging children in nature begins with awakening enthusiasm, followed by focusing attention, offering direct experience, and sharing inspiration. All education staff will receive an updated teaching manual in order to ensure that the same educational procedures are being followed.

Poster #	Presenters	Affiliation	Title and Abstract
			Reinventing the process through which the naturalists teach will prove beneficial in allowing students to become better connected with the environment. Encouragement will be a focal point throughout lessons, creating a positive atmosphere where all may feel comfortable learning. Reinventing and reviewing the manner in which ANS trains their educators will build relationships, with students and their families, to ensure that a large and diverse community of people will treasure the natural world and work to preserve it.
54	Wilkerson, Therese	Annapolis Maritime Museum	**Evaluating the Gaps in Maryland's Shoreline Development and Agricultural Waste Management Policies** Improper agricultural waste management and shoreline development are two, among many, culprits that threaten the sanctity of the Chesapeake Bay. Excessive nitrogen, phosphorus, and nutrient run-off from the agricultural industry, as well as tidal erosion exacerbated by anthropogenic causes diminish the health and sustainability of the Bay's ecosystem. To alleviate the ecological burden of industrial and commercial development, advocates for the Chesapeake Bay and its watershed need to start at the source: the law. Understanding how the lack of consistent, comprehensive, and enforceable regulation gives rise to harmful pollution and development is the necessary first step towards creating a more educated public and, by extension, a more protected Bay. By evaluating Maryland's current policies and regulations regarding: 1) shoreline development and; 2) agricultural waste management, my research will culminate in an exhaustive list of pre-existing gaps in such legislation and provide additional support for subsequent policy recommendations. My review of current legal deficiencies will be translated into an easily digestible summary so that the everyday citizen may access the knowledge and language required to make informed decisions concerning the fluid intersection between the democratic process, civic engagement, and the issues facing the Chesapeake Bay.