



**Chesapeake Bay Program's (CBP)
Scientific and Technical Advisory Committee (STAC)
September 15-16 Quarterly Meeting Minutes
Webinar Meeting**

Tuesday, September 15th

Attendance:

Members: Adel Shirmohammadi, Alix Fink, Andy Miller, Brian Benham, Bill Dennison, Chanceé Lundy, Chris Brosch, Deidre Gibson, Ellen Gilinsky, Eric Smith, Greg Noe, Hamid Karimi, Jason Hubbart, Jeremy Testa, JK Bohlke, Kathy Boomer, Kirk Havens, Kenny Rose, Kurt Stephenson, Lara Fowler, Larry Sanford, Leah Palm-Forster, Lee Blaney, Len Shabman, Mark Monaco, Martin Lowenfisch, Mike Runge, Tess Thompson, Tom Ihde, Tom Johnson, Tony Buda, Weixing Zhu, Zach Easton

Guests: Dr. Brandon Jones (NSF), Caitlyn Johnstone (Alliance, CBP Communications), Emily Trentacoste (EPA), Gabrielle Roffe (Chesapeake Conservancy), Gary Shenk (USGS), Governor Ralph Northam (VA), Jennifer Starr (Alliance, LGAC), Jessica Blackburn (Alliance, CAC), Kristen Saunders (UMCES), Lewis Linker (EPA), Matt Robinson (DOEE), Dr. Sacoby Wilson (UMD)

Administration: Annabelle Harvey, Denice Wardrop, Meg Cole

Call to Order, Announcements—Andy Miller (STAC Chair – UMBC)

Andy Miller (UMBC) called the meeting to order at 8:30 am. Miller requested a motion to approve the June 2020 Quarterly Meeting Minutes and the August 2020 Executive Board Meeting Minutes. Both documents were approved. Additionally, the proposed 2021 STAC meeting dates were approved.

DECISION: The June 2020 Quarterly Meeting Minutes and August 2020 Executive Board Minutes were approved.

DECISION: The STAC 2021 Quarterly Meeting dates were approved: 3/23-3/24; 6/15-6/16; 9/13-9/14; 12/7-12-8.

Recap of STAC June 2020 Quarterly Meeting—Andy Miller (UMBC)

Miller recalled highlights from the one-day June 2020 STAC Quarterly Meeting including an overview on the STAC March 2020 Quarterly Meeting, a PSC Update and Letter to the Executive Council (EC) recap. Steering Committee members, Joe Wood (CBF) and Tom Ihde (Morgan State), reported out on the STAC FY19 Freshwater Mussels workshop. An additional FY20 STAC Workshop Proposal titled *Assessing the Water Quality, Habitat, and Social Benefits of Green Riprap* was approved, adding a fourth funded FY20 workshop. Emily Trentacoste (EPA) updated Membership on the Next Generation Stewards Cohort and Regina Poeske (EPA, ORD) discussed

the connection between the Office of Research and Development (EPA, ORD) and Chesapeake Bay Program (CBP) science needs.

STAC members engaged with a panel on the impacts of COVID-19 on Bay Restoration Goals. Norm Goulet (NOVA), Mark Trice (DNR), and Gary Felton (UMD), spoke to the effects on local government, atmospheric deposition, and agriculture, respectively. Lastly, STAC members reconvened to continue progression on the Comprehensive Evaluation of System Response (CESR) effort, including Workgroup updates and designing an overall plan to integrate individual workgroup sections into one cohesive report.

STAC Newsletter—STAC Staff (CRC)

STAC Staff is working to resurrect ‘The Abstract’, a STAC quarterly newsletter that ran from 2013-2017. From 2017 until 2020, STAC Staff had provided an update on activities in the CRC newsletter for communications and outreach purposes. With Partnership business happening remotely and most STAC members working from home, the revival of a quarterly STAC-specific newsletter is aimed to keep STAC up-to-date in an engaging, interactive, and timely way.

Newsletter content will keep STAC connected to CBP meetings and Partner meetings, workshop and report updates, reminders for STAC business, and news from around the watershed. More in-depth content focused on featured efforts, STAC member research and interviews, updates on previous STAC workshops, and Quarterly Meeting follow-ups, aim to highlight the importance of STAC work. To gauge the success of the newsletter, STAC Staff will review data based on open rate and links clicked, STAC member attendance at CBP and partner meetings, and STAC member knowledge of ongoing efforts.

STAC members answered an interactive Mentimeter poll, providing their thoughts on helpful and interesting newsletter creation. Overall, most STAC members prefer to read about STAC member research and news from CBP Partners, but are less interested in Workshop Report updates. Mentimeter suggestions for newsletter content were STAC spotlights, summaries of previous and upcoming workshops, and interviews with new researchers.

ACTION: **STAC members** with personal research, student research, published articles, and/or current projects to share in the STAC monthly newsletter, please email them to [STAC Staff](#).

Recap of 2020 Executive Council Meeting—Andy Miller (UMBC)

The disruption of COVID-19 caused the Executive Council to change their focus from forest restoration to ‘Healthy Bay, Healthy People, and Healthy Economy’. The pandemic was the primary issue at the meeting and Governor Larry Hogan (MD) encouraged members to speak frankly about COVID-19 impacts and Diversity, Equity, inclusion, and Justice (DEIJ) within the CBP. Participants raised the possibility of cascading impacts and unforeseen budget shortfalls on the local and state levels as well as the unforeseen burden on underserved and underrepresented communities. Governor Ralph Northam (VA) requested more information on the STAC Microplastics effort and following the meeting, Miller provided Matt Strickler (DNR), the current Virginia Secretary of Natural Resources, with the STAC Microplastics report and the corresponding CBP article written by Caitlyn Johnstone (Alliance for the Chesapeake Bay).

Conversation with the Chair of the CBP Executive Council, Governor Northam (VA)

As the newly appointed Chair of the CBP EC, Governor Ralph Northam (VA) requested to be introduced and speak with the various CBP Advisory Committees. A native of the Eastern Shore, Governor Northam spoke of his cultural attachment to the Chesapeake while witnessing the “demise of the Bay” over his lifetime. Doubling down on the Chesapeake Bay Agreement, Northam stated that they “were all in” to meet 2025 Goals and that the issues afflicting the Bay can be measured and managed (i.e. agricultural runoff, stormwater, climate change). Following a discussion on his ongoing commitment to the Bay, Governor Northam requested STAC members continue to work on issues related to climate change such as sea level rise as this issue impacts the Bay intensely. In addition to Bay health, Governor Northam reinforced the importance in pursuing equity within the watershed so that all residents can take part in the Bay both recreationally and economically.

After Governor Northam spoke, STAC members were given ten minutes to ask questions and provide input on Bay priorities. Miller discussed the role of STAC in increasing focus on climate change impacts on Bay restoration efforts, including the funding and management of two Climate Change Science Synthesis projects. In addition, Miller detailed the CESR effort as a policy-relevant project aiming to assess where our gaps in understanding are and how we may exploit them by directing revenue and research to those areas. Governor Northam agreed with STAC members that the impacts of COVID-19 have been vast, mentioning the obvious impression it has had on state and local budgets, as well as bringing into focus the inequities in our society. Governor Northam underscored his commitment to work with STAC moving forward and requested continued feedback on how he may perform his duties as EC Chair most effectively.

Lessons from the Baltic—Lara Fowler (PSU)

Lara Fowler (PSU) reported-out on her last year spent in Sweden, exploring dynamics with the Baltic Sea and how they compare with the Chesapeake. At the Baltic Sea Science Congress (August 2019) Fowler recognized science and management takeaways comparable to the Chesapeake Bay, such as a need for more nutrient reductions, a significant science and policy gap, new emerging challenges (CECs, climate change), and “no easy answers”. Similar difficulties and stressors affect both, with large deoxygenated areas and decreasing nutrient discharge, continued nutrient pollution, and their impacts to biodiversity to name a few. Both regions are making progress, but neither are yet achieving planned ecological objectives.

The next [Baltic Sea Science Congress](#) is being hosted in Demark in June 2021. Fowler is a member of Planning Committee and cites a number of overarching themes as well as specific Chesapeake Bay related opportunities such as a special session on Chesapeake/Baltic comparisons and a keynote speech by Ann Swanson (Chesapeake Bay Commission). Opportunities for future research are examining the loss of snow cover and potential for cover crops due to changes in precipitation, nonpoint runoff, socio-behavioral changes, CECs, and more. Bill Dennison (UMCES) discussed interest in collaborating with the equivalent of STAC in the Baltic to help understand ways to make science relevant for environmental management. Jeremy Testa (UMCES) noted both regions have attempted in-water interventions to artificially increase oxygenation concentrations.

Diversity, Equity, Inclusion, and Justice (DEIJ): Discussions with STAC

Speakers Gabrielle Roffe (Chesapeake Conservancy), Dr. Sacoby Wilson (UMD), and Dr. Brandon Jones (NSF), were invited to speak with STAC on their experiences in the Diversity, Equity, Inclusion and Justice (DEIJ) space and address the connection between Bay environmental health and equity. At the Chesapeake Conservancy, Roffe leads DEIJ initiatives and works in partnership with the National Park Service, Chesapeake Bay Gateways Network to promote inclusive stewardship in the Chesapeake Bay watershed. Roffe began the conversation with her experience in the Environmental Justice (EJ) space and observed disconnect between the environmental organizations and the communities those groups operate in. She cited a survey she and her team completed a few years ago in which 80% of the of Sandy Point Park users identified as Latino but only 3% of that group knew there was a nature center on site. In her role as the Manager of Equity and Community Engagement, Roffe seeks to engage with young people in this field through intentional mentoring, recruitment, and hiring practices. In order to better reach the public, Roffe is hiring young Latinos to develop environmental programs to speak to their communities. These culturally-relevant programs rely on developing a genuine cultural relationship with those individuals through art, bilingual storytelling, and in-person experiences. Yet during social-distancing times, it is often more difficult for individuals to access green spaces due to social and environmental injustices such as racist park policing, inadequate public transport, park capacity limits, and more. The Chesapeake Conservancy is currently building a park mapping tool to better understand COVID-19 hotspots and the pandemic's impact on park access.

Dr. Sacoby Wilson, Associate Professor and Director of Community Engagement, Environmental Justice, and Health (CEEJH) at the University of Maryland, began his talk on the early history of the EJ Movement and the Civil Rights Movement. Often EJ issues justice overlap with additional problems including racist environmental policies, food injustice, housing injustice, and inadequate public transit, among others. Communities overburdened by hazards are impacted by psychosocial stressors but lack access to built and/or natural amenities (i.e. rivers, streams, natural canopy) due to historical redlining. Once these neighborhoods are designated as "hazardous", they are often divested from and lose municipal services, while experiencing increased traffic related air pollution and a large amount of asphalt and concrete in their neighborhood. Heavily cemented areas experience an Urban Heat Island (UHI) effect which increases heat related injuries while recent studies have shown COVID-19 adheres to particulate matter more readily causing residents in such neighborhoods to have a higher mortality associated with simply breathing air. EJ issues are not just the overburdened exposure to chemical structures but the interaction of non-biological stressors as well. In order to combat this, Dr. Wilson argues science should be utilized as a means, not an end and the focus on should be on taking action to rectify environmental injustice.

The CEEJH lab has developed the Maryland EJSCREEN and the Park Equity Mapper c2.0 mapping tool that are both available on the [CEEJH Lab website](#). These mapping tools can help user target neighborhoods where they want to prevent further environmental harm by increasing capacity for green infrastructure, stormwater management, BMP targeting, NPS targeting, while aiding in democratizing science.

Lastly, Dr. Brandon Jones, Program Director for the education and diversity programs in the National Science Foundation's (NSF) Geosciences Directorate, presented 'Uncomfortable

Realities in STEM' on underrepresentation in geosciences. In the past 40 years, there has been no progress on diversity in the number of PhDs earned aside from White, non-Hispanic individuals. In recent years, a massive emphasis on diversity recruitment has been waged within the geosciences, yet retention continues to be an issue. Jones argues the program environment (organization of activities, support, mentorship opportunities) should be the focus of improvement to increase effective education. Additionally, Jones recommends inviting social scientists to help figure out sociological problems, where applicable. To better address the "human value gap" an examination of program intersectionality, mentoring, and recognition of isolated students is needed. Dr. Jones further encouraged allowing underrepresented scholars to tell their own stories. Take homes from Dr. Jones' talk were the value in developing cross racial relationships and racial stamina, the ability to be human, and that it's okay to be quiet and listen.

ACTION: STAC Staff and leadership will distribute the provided resources from the DEIJ conversations and continue to incorporate these values across STAC efforts.

Update from the Plastic Pollution Action Team (PPAT)—Matt Robinson (DOEE)

Matt Robinson (DOEE), Chair of the CBP Plastic Pollution Action Team (PPAT), provided a status update on the Team's progress. The FY19 STAC Microplastics Workshop was requested by the CBP Submerged Aquatic Vegetation (SAV) Workgroup and the format was based on an Ecological Risk Assessment (ERA) in order to hypothesize how much plastic is "too much" for the Bay.

Key recommendations from the FY19 Microplastics Workshop were the following: the CBP should create a cross-GIT Plastic Pollution Action Team, the Science and Technical Advisory Committee (STAR) should incorporate the development of ERAs of microplastics into the CBP Strategic Science and Research Framework (SSRF), STAC should undertake a technical review of microplastic terminology and recommend uniform terminology to the Program, the CBP should develop a source reduction strategy to assess and address plastic pollution from point sources (PS), non-point sources (NPS), and human behavior, lastly, the CBP should direct the PPAT and STAR to collaborate on utilizing existing bay and watershed monitoring networks. As of September 2020, the Management Board (MB) has authorized the creation of a PPAT team and EPA Region III awarded a contract to Tetra Tech to develop three products: a preliminary ERA of the Potomac River, a Standardization of Terminology document, and a Science Strategy to address information gaps identified in the ERA. Into the future, Tetra Tech will consult with STAC on Phases II and III of the ERA, the Standardization of Terminology document, and the Science Strategy. MB request STAC review all produced document and in the next few months, the STAC Executive Secretary, Denice Wardrop (CRC), will organize a technical review or merit review of all documents.

ACTION: STAC Staff and STAC Executive Secretary, Denice Wardrop, will coordinate STAC reviews for the PPAT ERA and Terminology Document.

Facilitated Discussion on COVID impacts to the Chesapeake Bay—Lara Fowler (PSU)

At the STAC June 2020 Quarterly Meeting, STAC members invited managers to speak on the perceived effects of COVID-19 on Bay restoration goals. From this panel, STAC members expressed interest in pursuing a COVID-19 Workshop focused on the impacts of the pandemic on CBP goals. Fowler, a leader of this effort, facilitated a quick discussion with STAC utilizing the Zoom Chat function to answer three proposed questions:

1. How has COVID affected implementation of the Chesapeake Bay Watershed Agreement's goals and outcomes?
2. Are there data that has been collected or can be collected now to capture changes in the system?
3. Are there key topics that we should do a deeper dive as part of the workshop?

Participants identified a number of changes in the patterns of resource use, such as increased utilization of parks and natural areas, increased recreation and boating, changes in wastewater and traffic patterns, etc. Identified CBP Goals and Outcomes impacted by COVID-19 were stewardship numbers, changes in the level of available volunteers, virtual learning challenges, decreasing pollution, and changes to project funding. Regarding data that may be collected now to evaluate effects of COVID, members underscored the need to maintain monitoring networks and field work, invest in new remote methods of data collection, and invest in opportunities to redefine stewardship.

Kenny Rose (UMCES) highlighted the importance of thinking from a living resources and community perspective, and to question how the system might adapt to this new normal. Lew Linker (EPA) suggested the group look into a time-series of NOx emission from point and mobile sources and examine the influence. Fowler agreed with Linker and stated the SC has been thinking about the kind of data that could be collected during this time. Wardrop proposed a series of micro-workshops or intense discussions linked to CBP needs. Larry Sandford (UMCES) advised reaching out to a social scientist such as Lisa Wainger (UMCES) to access social impacts. Speaking to decision-making under uncertainty, Mike Runge (USGS) questioned if COVID-19 decoupled any factors in the system that may allow us to see part of the system relationship we were not aware of previously and Jason Hubbart (WVU) considered the possibility that managers might be better able to identify causative explanations of shifts in loading, although, Gary Shenk (CBP) thought it too difficult to pry apart the watershed due to complexity and lag-times.

STAC Staff will generate a Partner Survey to distribute to LGAC, CAC, CBP workgroups, and GITs, to illicit feedback on the impacts of COVID-19 on the Bay. Additionally, this workshop is in need of a Co-Chair to assist Fowler in leading the planning of this effort.

ACTION: All, if interested in joining the STAC COVID Impacts Steering Committee, reach out to [STAC Staff](#).

Comprehensive Evaluation of System Response (STAC CESR)— *Kurt Stephenson (VT), Kenny Rose (UMCES)*

Kurt Stephenson (VT) provided a quick update from the CESR SC. The report has two objectives: policy/outcomes focused on Water Quality Standards (WQS) and the TMDL, and predicting/expecting/responding to system response. The CESR Systems Diagram details a

generation of stressors, transported through the system and delivered to the estuary, processed through the estuary and the response of living resources. Intended products of this effort include a STAC report, outreach summaries/briefs, syntheses-type journal articles, and complementary papers. The STAC Report's Introduction, Policy Background and Approach sections are drafted. The Watershed Response, Estuary Response, and Living Resource Response sections are currently underway. Each STAC Member should be a member of a workgroup and have access to the Google drive folder—if not, please contact STAC Staff to get access.

Kenny Rose (UMCES) presented the Living Resources Workgroup's current progress. Unlike the Water Quality section, Living Resources (LR) does not have an established set of data or models to use and has increased uncertainty. Rose explained this is not a gap analysis nor an assessment but instead it is a plan for implementation of a set of analyses in order to do the assessment – not the actual analyses. The report framework uses the results of the watershed and estuarine sections, describes how to translate these changes into responses of living resources (habitat suitability, recruitment and population, stages in subregions, and the food web) and is written for 2025 and beyond. Foundational concepts such as complex life cycles and life history strategies will be explained with real-world Chesapeake Bay LR examples. The text will provide guidance to help identify missing analyses by showing clear linkages from LR to water quality and habitat. Although this section is different from the other workgroup sections, Rose believes the linkage between WQ and LR is well established, this is an opportunity to deal with LR in a more comprehensive manner, and that this project could provide a strong foundation for further analysis.

Larry Sanford (UMCES) questioned what we are defining as a LR within the report as there are a number of things that might be part of multiple groups (e.g. oysters are LRs but also habitat, non-fished clams). Miller suggested they should be included in both sections. Testa wondered if there was an opportunity for this process to be species-specific or if this procedure is inclusive of different species. Stephenson suggested to build off the policy questions that make the argument why this model is necessary.

ACTION: All, continue working on the CESR Workgroup documents.

Wednesday, September 16th

Outreach and Communications Update—Caitlyn Johnstone (*Alliance for the Chesapeake Bay, CBP Communications*)

Representing the Chesapeake Bay Program Communication Office, Johnstone discussed in detail the tools available on the CBP Communications Team webpage for STAC members and others to utilize for communicating science with the public. Users can '[Discover the Chesapeake](#)' via 5-minute videos and field guides, evaluate the '[State of the Chesapeake](#)' using health status from Chesapeake Progress, and explore pollution factors topic by topic on the '[Learn the Issues](#)' page. Articles and press releases based on STAC reports will be found in '[In the News](#)'. Aside from published website content, the CBP Communications Team builds Media Toolkits for Program products in the form of sample social media posts, fact sheets, in-person

events, and video content. Previous outreach materials include bilingual flyers detailing how to safely fish while avoiding harm caused by polychlorinated biphenyls (PCBs). A companion public in-person event was held demonstrating how to filet a blue catfish and cook it without the use of toxic contaminants.

Relating to STAC, Johnstone discussed recent public-facing articles written in response to STAC workshop reports. [‘Small Plastics are a big problem’](#), an article derived from the FY19 STAC [Microplastics in the Chesapeake Bay and its Watershed: State of the Knowledge, Data Gaps, and Relationship to Management Goals](#) workshop, had over 8400 online ‘hits’ and about 100 shares on social media. In all, nearly twenty thousand individuals have seen the five articles discussing published STAC reports. Each article links to the full STAC report for more information. Additionally, Johnstone shared her presentation from the 2020 Restore America’s Estuaries Conference entitled ‘Learning to confront fear and bias in communicating controversial topics.’ This presentation can be [found here](#).

New CRC Projects: Chesapeake U, C-StREAM, Webinar, Newsletter—*Denice Wardrop (CRC)*
Wardrop updated STAC membership on current CRC projects aiming to “fully enable CRC institutions and the broader scientific community in the Bay region to contribute effectively toward better understanding and management of the Bay” by way of convening (i.e. coordination of STAC), filling the pipeline (i.e. CBP Staffers Program), building the stage (e.g. outreach), and providing member support (i.e. Expertise Database). With most people working from home due to social distancing measures, Wardrop spoke about a consistent but increased need to gather and connect with partners across the watershed. To do this, the CRC will publish a themed monthly newsletter, the CRC Streamline. The CRC Streamline will function as an initial gathering and communication space, which will be followed by a similarly themed monthly CRC Roundtable. The purpose of this webinar series is to host targeted, inclusive, and informed conversations matching scientific advances with management needs. These one-hour conversations will include a diverse range of researchers, managers, and other professionals. The first webinar will look into the environmental monitoring impact from COVID-19 on both the state and federal level. In the future, newsletter and webinar topics may be chosen with consideration and synchronization with CBP GITs and workgroups.

Following the CRC’s new communication strategy, Wardrop reported-out on the Chesapeake-Student Recruitment, Early Advisement, and Mentoring (C-StREAM) program designed to provide experiences and mentoring to undeserved students. In its third year, there are currently twelve interns from a variety of host sites such as PSU, IMET, NOAA, EPA, among others. Lastly, Wardrop explained Chesapeake U, an endeavor that seeks to link identified science needs with engaged educational experiences. Chesapeake U connects CRC member institution faculty, students, and staff with STAR/GITs to address science and communication needs through facilitated effort. This program is planned after an existing model, the Sustainable Communities Collaborative at Penn State, which matches community sustainability challenges with college courses. Similar to this Penn State model, Chesapeake U will be run by two “matchmakers” – one on the science needs side and one on the educational side – allowing for plug-in capability and a diverse set of solutions. Prior to the September 2020 STAC Quarterly Meeting, Chesapeake U had been introduced to the STAR and the CRC has plans to work with STAR on 1-3 course projects in the fall/spring and host one Hack-a-Thon.

STAC Workshop Update: Soil Health and Hydrology (FY19)—*Kathy Boomer (FFAR)*

Workshop Chair, Kathy Boomer (FFAR), shared the outcomes of the STAC Linking Soil and Watershed Health to In-Field and Edge of Field Water Management Workshop that convened in late January 2020 at West Virginia University (WVU). Boomer argued the impacts of artificial drainage are often ignored, yet these artificial ditches may be undercutting our efforts for Bay restoration across the landscape as water management likely imposes a strong influence on soil processes. This workshop explored a new model for soil health, considering the combination of water management and landscape-setting together with landscape practices on soil. The intension of this workshop was to provide a space for researchers to think about the relevance of their work to others, and to build bridges for information sharing and identification of information gaps.

Three sets of recommendations were proposed at the close of this workshop, the first being those to the agricultural community and stakeholders. The group suggested advanced water management be recognized as critical to regenerative agriculture and watershed restoration, that additional technical assistance is needed to better understand field management, and a more robust sharing of precision agriculture. To the CBP Advisory Committees, the group raised the need to pursue interdisciplinary collaboration, advance practice designs to minimize and maximize benefits, and leverage landscape modeling tools. Finally, to the CBP, the workshop emphasized the importance of recognizing soil and regenerative agriculture in meeting Bay Program goals and pursuing a soil health and regenerative agriculture goal as an essential element to Bay restoration. Adel Shirmohammadi (UMD) underscored the importance in area-specific workshops and suggested a future STAC workshop on controlled drainage in the Chesapeake Bay.

Wrap Up

The next quarterly meeting will be remote and take place on December 15th and 16th. At this meeting, Miller will provide a recap of the 2020 October Principle Staff Committee Meeting and both the Local Government and Citizen's Advisory Committees are invited to speak. There will be report-outs on the Chesapeake Bay Monitoring Program, the Integrated Trends Analysis Team (ITAT), and an Outreach and Communications Update. A panel discussion on Identifying Decision-Relevant Uncertainty is planned with Carl Hershner (VIMS) and Kirk Havens (VIMS) while the remainder of the second day will be reserved for STAC CESR Workgroup planning.