



**Chesapeake Bay Program's (CBP)  
Scientific and Technical Advisory Committee (STAC)  
March 26-27, 2019 Quarterly Meeting Minutes  
The DoubleTree by Hilton Hotel – Annapolis, MD**

**Tuesday, March 26 Minutes**

**Attendance (W: Webinar):**

**Members:** Brian Benham, Lee Blaney, JK Bohlke, Kathy Boomer, Christopher Brosch, Anthony Buda, Amy Collick, Bill Dennison, Zach Easton, Alix Fink (W), Lara Fowler, Ellen Gilinsky, Kirk Havens, Carl Hershner, Jason Hubbart, Hamid Karimi (W), Elliot Kellner, Andy Miller, Mark Monaco, Greg Noe (W), Kenny Rose, Michael Runge, Adel Shirmohammadi, Eric Smith, Kurt Stephenson, Tess Thompson, Lisa Wainger (W), Denice Wardrop, Gene Yagow, Weixing Zhu (W)

**Guests:** Dana Aunkst, Greg Barranco, Karl Blankenship, Morgan Corey, Caitlyn Johnstone, Jeni Keisman, Brooke Landry, Lew Linker, Andrew Pizzala, Kristin Saunders, Gary Shenk, Emily Trentacoste

**Administration:** Bill Ball, Rachel Dixon, Melissa Fagan, Annabelle Harvey

**Call to Order – Brian Benham (VT)**

Benham called the meeting to order at 9:00 am. Benham introduced new STAC members, Ellen Gilinsky (Ellen Gilinsky, LLC) and Elliot Kellner (WVU; WV alternate) and announced Zach Easton's (VT) reappointment to serve a second term as an at-large member. Benham requested a motion to approve the January 2019 Executive Board meeting minutes and the December 2018 STAC Quarterly Meeting minutes; both were approved contingent on minor edits.

Rachel Dixon (CRC) presented the proposed revisions to Section B of the STAC Bylaws, which outline a process to appoint STAC Vice Chair. STAC members requested more time to review the revised Bylaws and then electronically vote to approve the updates. The Executive Board will review the revisions prior to a membership-wide electronic ballot.

Benham provided STAC with an update on the STAC Science Synthesis effort. A Request for Proposals (RFP) has been released and proposals will be reviewed by the subcommittee to award the \$125,000 allocated for this project. The subcommittee has worked to establish guidelines and processes to help initiate this first effort and to support future synthesis RFPs. Lew Linker (EPA) informed STAC that some additional funding has been earmarked for future science synthesis projects, creating the opportunity for a second project under the current cooperative agreement with the Chesapeake Research Consortium (CRC) and STAC. There was discussion on expected outcomes and how the Chesapeake Bay Program (CBP) should respond to outcomes of a synthesis effort. Kirk Havens (VIMS) advocated that synthesis should serve as a baseline for future work on the selected topic. Gary Shenk (USGS) explained that all STAC efforts put important issues on record and that in order to do this for synthesis outcomes, presentations should be given to CBP partners following the project's completion.

<p><b>DECISION:</b> Benham requested a motion to approve the January 2019 EB meeting minutes and the December 2018 Quarterly Meeting minutes. Result: Motion carried.</p>
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**ACTION: The Executive Board** will review and approve the revised STAC Bylaws. STAC Members will then submit electronic ballots to approve the changes.

**Recap of STAC December Quarterly Meeting – Lara Fowler (PSU)**

Fowler recapped the important takeaways from the December meeting. STAC was updated on the science needs coming out of the CBP’s Goal Implementation Teams (GITs) and STAR. STAC also heard from the Climate Resiliency Workgroup on their own efforts to prioritize climate science needs and solicit feedback on their top identified priorities. STAC members were asked to provide input on the science and the process behind this effort.

**Bay Journal Science Advisory Board – Karl Blankenship (Bay Journal)**

The Bay Journal has a readership of 100,000 people, in print and online. With plans to increase engagement, Karl Blankenship (Bay Journal) is looking to improve engagement with the scientific community through the formation of a Science Advisory Board. Blankenship is looking to recruit 7-10 scientists with varying expertise who would be on-call for Bay Journal reporters to consult for fact-checking, updates in the latest science and topics of increasing importance. He plans to have the board available via phone or email, with 4 planned conference calls a year to address and identify issues of emerging concern. Blankenship requested STAC members with applied research on Bay topics who could provide their expertise and their network to contact him about joining the Science Advisory Board for the Bay Journal.

**ACTION: STAC Members** should contact Karl Blankenship directly if they are interested in joining the Bay Journal Science Advisory Board.

**Chesapeake Bay Program and STAC 101—Gary Shenk (USGS), Rachel Dixon and Annabelle Harvey (CRC)**

For the benefit of the newest additions to the STAC membership and as a refresher for all, Shenk provided an overview of the Chesapeake Bay Watershed and the history and goals of the Chesapeake Bay Program. In 2010, the Total Maximum Daily Load (TMDL) was established to improve water quality of the Bay. The 2014 Chesapeake Bay Agreement allowed headwater states to sign-on to the partnership as signatories and work towards meeting the current 10 goals and 31 outcomes that span interrelated Bay-health improvements such as water quality, living resources and stewardship. There are now 420 organizations that participate in the Chesapeake Bay Program Partnership, including federal agencies, academic institutions, state government and nonprofit organizations. STAC, currently and historically, has been involved in developing the organization and function of the CBP. STAC efforts have been heavily centered on TMDL analysis tools and data collection, as well as supporting adaptive management strategies.

The Strategy Review System (SRS) is a 2-year repeatable process to assess progress toward the 10 goals and 31 outcomes, identify challenges and gaps, and support adaptive management of the Chesapeake Bay. Kristin Saunders (UMCES) explained that the SRS process is now on a set schedule, making it easier to know when each GIT will be discussing certain issues for STAC members to plug into. She encouraged STAC attendance at the SRS quarterly progress meetings with the CBP Management Board to provide input and understand the progress of goals and outcomes in the program.

Dixon provided a deeper look into STAC and its role in the wider CBP. As one of three CBP advisory committees, STAC is tasked with providing scientific and technical advice and guidance to the

Chesapeake Bay Program and its partners. STAC specifically is engaged with the Management Board (MB), who receive and respond to STAC workshop and review reports. STAC members are volunteers from various institutions across the watershed. Federal and Gubernatorial appointees act as conduits between their jurisdiction and STAC to keep both parties informed. Through proactive and reactive workshops and reviews, STAC assesses the state of the science in topics important to Bay restoration.

On the topic of STAC activity reports, Lara Fowler (PSU) expressed concern that STAC members do not have the bandwidth to review and edit every report and that directing reports to specific STAC members may yield more constructive responses.

**ACTION:** **The Executive Board** will discuss the process that STAC workshop and review reports are sent to the membership for comments.

**Meet and Greet with the New Chesapeake Bay Program Director—Dana Aunkst (EPA)**

Dana Aunkst (EPA-CBPO) was appointed as Chesapeake Bay Program Director in December of 2018, but has been involved with Bay restoration and the Program since 1992. As director, he wears two hats; Chesapeake Bay Program and the EPA. The director acts as the chair of the Management Board (MB), making partnership decisions. As an employee of the EPA, Aunkst is also looking from a regulatory perspective. Aunkst shared his gratitude for STAC members and the volunteer time they dedicate to the program. He encouraged STAC to take extra steps in furthering communication of Bay issues to the public, as they are the investors of the partnership. Aunkst explained he is focused on short-term deadlines, such as Phase III Water Implementation Plans (WIPs) and the TMDL. He also wants to focus on the other 28 outcomes that are not directly related to the TMDL, but provide co-benefits that will assist in reaching the program’s goals. Aunkst intends to set clear expectations for how Management Board meetings are run and how the agendas are set. Creating actionable items for specific MB members and clearing up logistics are the first steps to getting the MB empowered and working for the Chesapeake Bay Program. Aunkst emphasized the importance of the CBP as a national example of a successful partnership working towards restoration of a watershed. While the future of the program is important, Aunkst wants to focus on getting to 2025 goals and move on from there.

**Chesapeake Research Consortium (CRC) Staffer Presentation—Drew Pizzala (CRC)**

Drew Pizzala is the Staffer for the Foster Chesapeake Stewardship Goal Implementation Team that works to engage the public in Bay restoration efforts. Pizzala attended Washington College as an Environmental Studies major and participated on the crew team. Following graduation, he worked as a Chesapeake Conservation Corps volunteer contributing to stewardship and education projects such as fish surveys and bio blitz. During his time as a CRC Staffer, Pizzala has focused on restoration, education and environmental behavior change. He is currently developing an online tool to collect data from surveys on behavior changes and find gaps in social science implementation in the CBP’s science needs. This tool will allow practitioners to develop better training resources for the CBP on creating behavior change to benefit Bay restoration. Pizzala is also in the process of developing a catalog of land conservation funding with the Chesapeake Conservation Partnership. Pizzala is finishing up his 3-year CRC Staffer term and is open to new opportunities moving forward.

**FY19 Workshop RFP Results – Annabelle Harvey (CRC)**

Annabelle Harvey (CRC) provided an overview of the four proposals received for the FY19 STAC workshop RFP. The total funds requested from all four proposals totals to \$38,500. With \$50,000 available for FY19,

STAC could fund all four workshops. Harvey presented the mean scores from STAC members' initial score sheets, as well as comments on each proposal.

Denice Wardrop made a motion to approve funding for Proposal #1, *Incorporating Freshwater Mussels in the Chesapeake Bay Partnership*. The motion carried.

Proposal #2, *Linking In-Field and Edge-of-Field Water Management to Soil and Watershed Health*, had the lowest mean score and several comments suggesting a rework of the proposal. Kathy Boomer (TNC) emphasized the importance of this topic and that it is not yet being addressed in the CBP or in STAC. As a lead for this proposal, Boomer explained that this workshop would advance the conversation in defining soil health, understanding best management practice (BMP) management in terms of soil health and creating connections between soil health with watershed modeling. It was suggested that steering committee participation be broadened, in particular to USDA-NRCS and on-the-ground workers. Benham recommended that, based on this conversation, it seems the workshop could be successful and within scope but the proposal doesn't accurately capture that. Lara Fowler made a motion to approve Proposal #2 contingent upon a retool and clarification of the proposal. The Executive Board will review the updated proposal and make a final funding decision during their next meeting.

Proposal #3, *Exploring Satellite Image Integration for the Chesapeake Bay SAV Monitoring Program*, is aimed to redesign the submerged aquatic vegetation (SAV) monitoring program using satellite imagery. The proposal outlines a non-traditional workshop schedule, with 2-3 smaller meetings followed by 2-day synthesis workshop. Several STAC members raised a concern that this non-traditional schedule would require someone to be doing work between planned meeting times. Brooke Landry (MD DNR), a steering committee member, assured that her and other steering committee members would be coordinating work between meetings, as well as the SAV monitoring and planned meeting schedule. Carl Hershner (VIMS) motioned to approve funding for Proposal #3 and the motion carried.

Proposal #4, *Increasing Effectiveness and Reducing the Cost of Non-Point Source Best Management Practice Implementation: Is Targeting the Answer?*, received the highest mean score of the four proposals. STAC members suggested incorporating facilitated discussions, inviting some local managers to weigh in on feasibility of certain BMP implementation issues and including policy challenges in the discussion. Tom Ihde (Morgan State) motioned to approve funding for Proposal #4 and the motion passed.

**DECISION:** The STAC Membership approved all four FY19 workshop proposals, with Proposal #2 approval contingent upon clarification in the proposal.

**ACTION:** **The Executive Board** will review the updated Proposal #2 (Soil Health) and make the final funding decision during their next meeting.

#### **CBP Strategic Science and Research Framework Update—Kristin Saunders (UMCES) and Emily Trentacoste (EPA)**

Kristin Saunders (UMCES) and Emily Trentacoste (EPA) updated STAC on STAR's efforts to collect science and program needs for the Chesapeake Bay Program. In response to a Management Board request, Saunders and Trentacoste are developing a framework for identifying and prioritizing science needs from each GIT. This Strategic Science and Research Framework (SSRF) will follow the same 2-year cycle as SRS, to be updated as needs change. STAC has provided input through the development of the

framework, as well as providing feedback on the current GIT needs. Through previous discussions since December, STAC suggested incorporating long-term, fundamental science needs, not just the short-term, operational needs that GITs tend to focus on.

Since gaining Partnership support at the Biennial SRS Meeting in Richmond in March 2019, Saunders and Trentacoste presented their ideas on how to use the SSRF throughout the CBP. They identified multiple groups who could utilize the science needs; Management Board and their agencies can suggest how resources are used based on priorities, GITs can identify projects, common needs and connect with agencies to fill needs, the CBP can evolve grants, monitoring, modeling and research to fit needs, and STAC can use this science needs list to inform research priorities and workshop topics. At the Biennial SRS Meeting, Management Board members expressed the need for more actionable tasks moving forward and the SSRF process will provide a clear way for GITs to address the MB with clear action items and needs. The next step is an initial resource assessment to help GITs and the MB to move forward. STAC members expressed some concerns that this process is time intensive and not sustainable as a long-term system. Trentacoste explained that this was an initial 'heavy lift' of developing the framework and getting a first look into GIT science needs. Following this first process, the SSRF will be continually updated and integrated into the existing SRS process.

**ACTION:** **STAC Members** should let Emily Trentacoste or Kristin Saunders know if they are interested in participating in the Strategic Science and Research Framework process. An existing subcommittee of STAC members will continue to provide input as this project develops.

**Proactive Activity- “Achieving Water Quality Goals in the Chesapeake Bay: State of the Science 2025”**—*Brian Benham (VT), Zach Easton (VT) and Kurt Stephenson (VT)*

Stephenson, Benham and Easton introduced a potential new proactive STAC assessment effort currently named “State of the Science 2025”. This State of the Science will seek to identify science gaps, develop solutions to fill those gaps and incorporate social science to help move the CBP forward into their 2025 water quality goals. Out of this effort, a STAC authored consensus report would provide an in-depth assessment of the divergences between expected and measured outcomes in the Bay’s response to management actions and system stressors. This report would assess and summarize the level of confidence in existing and future management efforts to achieve TMDL water quality standards. STAC is well equipped for this type of assessment with varied expertise, institutional support, and networks to gain insights outside the membership. A State of the Science 2025 white paper was previously shared with a small group of seasoned STAC members and shared prior to the March meeting with the whole membership. This discussion was focused on getting STAC buy-in and input, then move onto operational logistics.

On the whole, the current membership was supportive of taking on this initiative. STAC members expressed that, although this effort would be a heavy lift, it is an important one. Benham expects to dedicate a significant portion of STAC time to this over the next two years, while still maintaining workshops and other important efforts.

Several STAC members raised a discussion on how the findings of this assessment would be communicated in a way that was not discouraging to management efforts and does not make restoration seem like an impossible goal. Andy Miller (UMBC) expressed that this is the single most important thing STAC can do to look at the future of the system and provide feedback. There was support for including standards outside of just water quality, with emphasis on living resources. Kristin

Saunders emphasized the importance of looking around all goals, outcomes and disciplines to factor in the big picture. With strong support throughout the membership, Benham, Stephenson and Easton plan to move forward with this proactive activity, taking member comments into account for revisions. This effort will need support through a steering committee that members can join by contacting Kurt Stephenson.

**ACTION:** **STAC Members** should contact Kurt Stephenson if they are interested in serving on the State of the Science Steering Committee.

### **Wednesday, March 27 Minutes**

#### **Attendance (W: Webinar):**

**Members:** Brian Benham, JK Bohlke, Kathy Boomer, Christopher Brosch, Anthony Buda, Amy Collick, Bill Dennison, Zach Easton, Alix Fink (W), Lara Fowler, Ellen Gilinsky, Kirk Havens, Carl Hershner, Jason Hubbart, Hamid Karimi (W), Elliot Kellner, Andy Miller, Mark Monaco, Greg Noe (W), Kenny Rose, Michael Runge, Eric Smith, Kurt Stephenson, Tess Thompson, Lisa Wainger, Denice Wardrop, Gene Yagow, Weixing Zhu (W)

**Guests:** Jeni Keisman, Rebecca Murphy, Gary Shenk, Joan Smedinghoff, Qian Zhang (W)

**Administration:** Bill Ball, Rachel Dixon, Melissa Fagan, Annabelle Harvey

#### **Workshop Report-Out: AEIOU—*Gary Shenk (USGS), Lisa Wainger (UMCES)***

This workshop was led by Lisa Wainger (UMCES) and Gary Shenk (USGS) with the goal to address crediting BMPs based on phosphorous species in terms of the Chesapeake Bay TMDL. Shenk used conceptual diagrams to organize the system by controllable actions that effect total nitrogen (TN), total phosphorous (TP) and speciation within a system and during transport. The workshop brought together participants from across the watershed and from watersheds across the world to examine speciation, timing and how these processes impact BMP performance. Participants joined one of three breakout groups to have in-depth discussions; estuarine, riverine or land management. Recommendations include the need to focus on BMP placement and effectiveness, and to examine adverse effects of promoted practices based on speciation and timing. Recommendations will be accessible in the report for this workshop, which is currently being drafted.

#### **Application of GAMs to Explain Trends in Tidal Water Quality—*Rebecca Murphy (UMCES), Jennifer Keisman (USGS)***

Keisman updated STAC on using the General Additive Model (GAMs) to explain tidal water quality trends in the Chesapeake Bay, a project STAC helped initiate through a workshop in 2014 and expert panel review in 2016-2017. GAMs are a mathematical tool for detecting and describing trends in estuarine water quality parameters. From the 2014 STAC Workshop, it was recommended that the Chesapeake Bay Program continue to develop and apply GAMs to response variables in tidal waters and develop automated analysis to standardize the methods. After further research collaborations from 2015 onward, Maryland Department of Natural Resources and Virginia Department of Environmental Quality have adopted the GAMs approach for annual tidal trends. The GAMs package has undergone updates including incorporating flow and salinity-adjustment and method-change approach for annual trends,

and there is a manuscript in review. Murphy has worked on these updates to GAMs and provided an in-depth look at how these adjustments improve the accuracy of trend prediction. The results from GAMs are used to inform the public, stakeholders and management community through multiple online sources including the CBP website and MD and VA state websites, as well as research collaborations, and on-going improvements to the model.

**Revisit State of the Science 2025—*Brian Benham (VT), Zach Easton (VT), Kurt Stephenson (VT)***

Following the initial conversation from the first day of the quarterly meeting, Stephenson tasked STAC members to begin the process of identifying focal areas for the State of the Science 2025 effort in assessing long-term system response and achieving the water quality standards for the Chesapeake Bay. The water quality standards have specific endpoints defined by the TMDL and this effort is focused on understanding where we are in relation to meeting those endpoints. STAC members were split into 4 groups to identify inputs, outputs, certainty. The full-membership then compared linkages between breakouts and discussed steps forward.

The Estuarine breakout group discussed the importance of a ‘state change’ that would flip production from surface waters to benthic. Improved water clarity has been shown to cause this state change, as observed in the Susquehanna Flats’ SAV recovery, and once production is focused in the benthic system water quality would continue to improve. There is uncertainty around how to improve water clarity and the negative and positive feedbacks that exist. There is a lot of knowledge around oxygen patterns, but a focus on water clarity could help reach the tipping point leading to a state change.

The Living Resources breakout group discussed the uncertainty surrounding what factors affect the state of living resources and how much each factor impacts living resources. The TMDL was driven on land usage and improved dissolved oxygen (DO) levels, but not on living resource response to levels of DO improvement. There are other factors that should be examined to understand living resource response and reaching targets for 2025.

The Riverine and Watershed groups collaborated to examine certainties population change, nutrient inputs and increased import of fertilizer and feed from agricultural land. They identified uncertainty in the impact of legacy sediments, lag times, mass balances and the response of the watershed to climate change. Land usage was discussed in terms of sediment reductions and stream processing.

Stephenson wrapped up this exercise and called for any STAC members interested in taking a larger role in this effort to contact him to join the Steering Committee. STAC meetings in the future will continue to delve into topics identified during the discussion at this meeting.

**STAC Membership Updates—*Rachel Dixon (CRC)***

Dixon presented the current status of the STAC membership and upcoming vacancies. As of March 2019, there are 2 at-large vacancies and in September 2019 an additional 4 at-large positions will become vacant. With a total of 6 vacancies to fill in the coming months, Dixon outlined the process for identifying expertise and nominees moving forward. Before the June meeting, an online survey will be distributed to the full-membership to prioritize expertise and submit nominations. At the June meeting, the membership will review the results and approve nominees. After approval, the Executive Board will rank and recruit new members within the prioritized expertise identified in the survey. STAC members supported increasing diversity in gender, race, geography and institution, but no formal process for increasing diversity has been established.

**ACTION:** *STAC Staff* will distribute an electronic survey for STAC Members to rank expertise and provide nominees for the upcoming 6 membership vacancies prior to the June meeting.