Battelle Response to NEON STEAC Spring Meeting 2026 Report

According to its Bylaws, the STEAC is "primarily an advisory body to the NEON Project and will provide strategic advice to Battelle, the NEON Principal Investigator (PI), and NEON Project staff on the planning, construction, and operation of the NEON Project and other relevant programs." This response to the STEAC report from March 19 and 20, 2026 includes these personnel. Battelle is grateful for the time and expertise that the STEAC members of the community have provided and appreciates their input.

The 2026 Spring STEAC Advisory Board meeting focused on 1) the NEON Biorepository vision, sample use, and research derived-data considerations; 2) community-driven research related to NEON's operational needs; 3) review of the draft Strategic Interaction Plan (SIP); and 4) review of the proposal to change the Technical Working Group (TWG) model. The open discussion between the STEAC and Battelle NEON staff led to increasing clarity in the areas to prioritize. We appreciate the considered recommendations of the STEAC and provide our responses below.

STEAC Recommendations

1. **NEON Biorepository I, Vision*: Recommendation: The STEAC applauds the Biorepository's vision to transition from a passive operator to a community driven research accelerator. The STEAC recommends that the Biorepository work on a strategic plan to help realize this vision that considers short, medium, and long-term goals and ways to achieve and assess them*.**

NEON Response: We appreciate the STEAC's excitement about the higher-level vision for the NEON Biorepository that we presented. To become a research accelerator, the NEON Biorepository's role must expand beyond its mandates laid out in the Statement of Work, so that it can actively enable science through partnerships and community engagements. As recommended, we will develop a strategic plan to realize our vision, noting that an expanded role will require additional funding and personnel, as well as updated assessment metrics. By necessity, the Biorepository may need to seek external resources (private foundations or other funding agencies) to realize its vision.

2. **NEON Biorepository I, Vision: *Recommendation: NEON should communicate with NSF regarding consideration of sustainability of the NEON Biorepository beyond the 30-year horizon of NSF funding*.**

NEON Response: We thank the STEAC for the long-term thinking regarding the plan for this archive at the end of the 30-year planned timeline for NEON (2019 - 2049). Battelle will transmit this question to the NSF for their consideration.

3. **NEON Biorepository II, Sample Use:** ***Recommendation: STEAC recommends that an outside advisory committee be formed to interact with potential sample users and develop case specific strategies much as IACUC committees do when making decisions on invasive animal use in proposed research. This advisory committee could be the Biorepository Technical Working Group, but if so the STEAC recommends that the membership of this group be refreshed to include more external members and a mix of expertise beyond collections researchers. The current Biorepository TWG is 50% NEON and Biorepository staff and external members are all curators of collections.***

NEON Response: We appreciate the STEAC's considerations regarding the complexity of sample use requests to the NEON Biorepository from the community. As custodian of the diverse samples collected by Battelle NEON, and as outward facing curators and decision-makers for these materials, the NEON Biorepository team is planning to move ahead with refreshing our process for obtaining external review of sample requests. Namely, we are in the process of seeking NEON Biorepository Technical Working Group (TWG) members that have a breadth of expertise as suggested. We, along with Battelle NEON science lead and staff, plan to convene this TWG in AY 2026.

4. **NEON Biorepository II: Sample Use:** ***Recommendation: STEAC also strongly supports the notion that once samples are used, the information gathered should be made available for future users since derived data increases sample value. Since NEON follows FAIR criteria--Findable, Accessible, Interoperable, and Reusable--for data sharing, STEAC recommends that sample users should be required to follow these principles and sign a contract indicating their responsibilities to the license, prior to receiving samples. Given that the NEON Biorepository is unique, in that it is a hyper-accessible 'big data' system, links to where the sample users publish or store derived data should be added to the NEON sample's data page. In this way, data providers having used samples can be credited for their contributions. Overall, the STEAC recommends that the Sample Use Policy require that derived research products be archived according to FAIR data principles somewhere (not necessarily on the NEON Sample Portal), and that a link to the derived research product and any associated publications be shared with NEON. However, the STEAC does not currently recommend that all derived products be published on the NEON Sample Portal given existing issues around the types of data that can be hosted, metadata requirements, potential flow-down citation issues, and potential for duplicate publication of derived products. The STEAC recommends that the Sample Use Policy "encourage" the sharing of some derived products for possible publication on the Sample Portal. In some cases, it may be appropriate for the NEON Sample Portal to host derived products that can be appropriately archived and clearly attributed to the external researcher (e.g., species determinations). In other cases, it may be appropriate for the NEON Sample Portal to link to the externally archived derived research product and associated publications.***

NEON Response: The NEON Biorepository strongly endorses the principles of FAIR data, including data sharing. We currently require that sample users sign a Sample Use Agreement following sample receipt, and we will work with NEON science staff to refine the language as it pertains to data sharing in a revised agreement to be signed prior to sample receipt. These agreements may become part of the data/sample management plans submitted to their funders and must account for holds regarding publication of results. In general, we will develop a policy that requires sending all sample-derived data linked to NEON sample identifiers (e.g., images, trait data, species determinations, links to genetic/genomic resources archived in FAIR, community-standard repositories) back to the NEON Biorepository. Ownership of images will be retained by the NEON Biorepository with a CC-BY or CC-BY-SA license, enabling sharing in other repositories in accordance with the license. The NEON Biorepository will link sample-derived data back to the sample as possible given available resources and is currently working on enhancing portal features for linking references to external research products to samples, collections, datasets, and more.

5. **Integrating AI workflows into NEON operations, community proposals and beetle pilot:** ***Recommendation: While STEAC sees the value in these types of research partnerships, we acknowledge that it could be difficult to find the perfect nexus of researcher interest and familiarity with NEON, funding, and NEON operational need for this type of research. STEAC sees great potential, though, in using NEON as a platform to develop new technologies (e.g., using cameras to track the progression of plant disease). STEAC encourages NEON to use its newsletter, workshops, and other communications with researchers to plant seeds of interest highlighting particular data products or collections for this type of research.***

NEON Response: Battelle NEON Marketing and Communication appreciates the STEAC's suggestion and will endeavor to communicate specific examples of how researchers might become involved in, or drive synergistically through their own research, NEON's operational efficiencies and data quality. Additionally, NEON will use existing communication channels to highlight success stories where this type of research has been achieved by the community.

6. **NEON Strategic Interaction Plan:** ***Recommendations: The STEAC supports the shift in emphasis towards deeper engagement, and recommends performing an analysis of the return on investment of different types of engagement. The STEAC also recommends separating large, multifaceted activities into different types of engagement, dividing the effort into multiple categories.***

NEON Response: We appreciate the attention of the STEAC to the intensive work of the NEON team this past year to develop a draft foundation to define and assess the types of NEON interactions for effective planning and communication with the NSF and stakeholders. As we proceed with a finalized plan and continue to collect and assess baseline metrics, we will consider how we might parse and record the specific components of complex activities.

7. **NEON Strategic Interaction Plan:** ***Recommendations: Develop ways to broaden resources around community engagement and sharing of community derived data products and approaches to working with NEON data.***

NEON Response: We are eager to explore mechanisms to broaden resources around community engagement and sharing of community derived data products. NEON will take this into consideration as we implement the finalized SIP and assess metrics to prioritize community engagement investments moving forward. We will work with the NEON Data Infrastructure and Biorepository teams and our external evaluators, the Catalyst Consulting Group, to seek additional input from the NEON user community on ways to encourage and develop approaches to sharing community-derived data.

8. **TWG evolution proposal:** ***Recommendations: The STEAC supports dissolution of the 13 current TWGs that have completed their scope of work or are infrequently consulted, as well as maintenance of the 9 remaining TWGs for a limited time frame. The STEAC recognizes that technical issues will likely arise several times for all data products over the lifespan of the project, but that NEON staff members have a broad network of experts in the field to whom they can reach out to for advice as needed. For the new model envisioned for TWG 3.0, the STEAC recommends renaming the working groups DaWGs (Data Working Groups), piloting 2-3 teams with a community member as the lead and a focus on moving scientific research forward.***

NEON Response: We appreciate the STEAC's concurrence on the dissolution of TWGs that are no longer actively productive in favor of reprioritizing those resources in new ways to actively engage with the community and inform NEON operations and scientific impact. The suggested Data Working Groups model is a forward-looking way to involve the community as we transition away from Technical Working Groups in some parts of the Observatory (e.g., Data Standards TWG, whose input has resulted in a robust infrastructure that now provides standardized data and documentation to thousands of users per month). We appreciate the recommendation to begin with a pilot, and we will work with NEON staff to identify timely subject matter areas to consider for the pilot effort. We anticipate initiating a process to recruit pilot Data Working Groups in the upcoming award year (October, AY2027) while we complete the dissolution of existing TWGs and transition planning in the remainder of AY26.

9. **TWG evolution proposal:** ***Recommendations: The STEAC felt incentivizing researchers by supporting efforts to secure funding of workshops would be a viable manner to support initial work by DaWGs, and that these community led approaches are ultimately a component of the newly designed SIP that was presented earlier in the agenda, and therefore careful planning for synergy between the two efforts (DaWGs and SIP) will allow for more efficient and impactful use of NEON data in driving the science forward. Finally, the STEAC recommends that NEON leadership continue to explore how best to navigate the transition from NEON-led to community-led working groups, potentially by examining successful models used by other NSF funded centers that made a similar switch.***

NEON Response: We plan to follow the STEAC suggestion of encouraging community members to lead workshop proposals or seek other opportunities for funding to support initial work envisioned by the group to drive science forward. Potential Data Working Groups ideas and relevant community champions will initially be identified through the strategic interactions in which NEON invests our engagement resources. In the short-term (e.g., remainder of AY26), NEON leadership will seek to discover other NSF infrastructures / centers that have moved from operations-related working groups to community-led and research-oriented working groups to assess any best practices and lessons learned available to inform the pilot Data Working Groups effort.