ASTC's Cultivating Community Science Stipend Program

Community Partnerships for Community Impacts

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PREPARED BY

Angie Ong

Jessica Sickler

PREPARED FOR

Association of Science & Technology Centers

J. Sickler
CONSULTING

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BACKGROUND

Study Purpose & Methods

In 2024, the Association of Science & Technology Centers (ASTC) launched the Cultivating Community Science Stipend Program, which supported established teams of science museums and community organizations in conducting community science projects. These stipends were meant for "shovel-ready" projects that could achieve clear, shared objectives and make demonstrable progress on community priorities during the project time. Each team received between $35,000 and $70,500 of funding, courtesy of The Gordon and Betty Moore Foundation (the Moore Foundation), and had 16-18 months to complete their projects. This evaluation aims to understand the project journey, how community science attributes were incorporated into the projects, and the outcomes achieved for the participants and broader communities.

Evaluation Approach
>> Guiding Questions

This evaluation explores and documents the journey of Community Science Initiative participants – both science center and community partners. By using a case study approach, the evaluation considers the unique experience of each partnership individually, while also looking across the partners' experiences to look for common patterns and relationships across all project teams.

The evaluation centered on three areas of investigation, articulated on the right.

1 Project Journey

What does the implementation journey for science center and community partners look like – key stages, challenges, and contextual factors that propel or hinder success? What factors advance or hinder progress along the way? In retrospect, what key factors of individual/institutional readiness or capacity are critical?

2 Community Science Framework

How does community science get implemented by awardees vis-a-vis the Community Science Attributes? How deeply are these attributes exhibited when projects are enacted in the real world? What attributes, if any, prove to be challenges from promise to practice?

3 Community Outcomes

What outcomes are achieved for participants doing community science work? What types of outcomes do community science projects prioritize? In what ways are outcomes experienced or exhibited by participants? How do they align with grantees' expectations? What unanticipated outcomes may occur?

Study Participants

Six organizations, within three project teams, participated in the program evaluation of their community science projects.

Over the 18-months grants, the evaluation team engaged with three project teams to track progress of their partnership and help them plan and implement evaluation of their project's public audience outcomes.

Partnership Teams*:

➢ **Cable, WI:** Cable Community Farm (CCF) & Cable Natural History Museum (CNHM)

➢ **Los Angeles, CA:** Anawakalmekak International University Preparatory of North America (Anawakalmekak) & Natural History Museum of Los Angeles County (NHMLAC)

➢ **Warren County, NC:** Working Landscapes, Inc (WL) & Museum of Life & Science, Durham (MLS)

Evaluation centered on the two organizations funded as partners by ASTC. It is important to acknowledge that all three teams engaged additional community partners. The Los Angeles team, in particular, collaborated deeply with the Gabrielino-Shoshone Nation of Southern California (GSN) and acknowledges them as a core partner in their work.

Public Community Science Audiences:

➢ **Cable, WI:** Incubator Grant recipients

➢ **Los Angeles, CA:** Youth leading research projects; Youth sharing research findings at community events; Community participants

➢ **Warren County, NC:** Youth participating in Food For Thought program; Adults attending final youth event

A fourth project, between Sciencenter and Community Science Institute (Ithaca, NY) was added in 2025. They were not part of the partnership evaluation; but a summary of program outcomes with youth is available in a separate report.

Data Sources

Documentation

Evaluators used the **original proposals** submitted by project teams to ground analysis in initial project goals, activities, and general timeline.

Quarterly reports, submitted by awardees in June, September, December, and March 2024-25, were used as checkpoints to track each project's progress, accomplishments, challenges, and learning throughout the project.

Themes and patterns from these sources were summarized in a visual timeline – a journey map – to visually track each project's milestones, progress, changes, and course corrections.

Conversations

Formal conversations between evaluators and project teams occurred four times during the grant period—a project orientation kick-off meeting, two progress meetings at 6 and 12 months of the grant, and a final debrief interview at the end of the grant period.

Informal discussions were scheduled on an as-needed basis for each project. These typically focused on helping teams plan for public-focused evaluation activities to document the outcomes of their community science work. During these conversations, often other information about the project journey was also obtained.

Community Measures

Evaluators also aimed to help each project develop an evaluation plan to document their public outcomes – in a way that meshed with their audience, design, and preferences.

Ultimately, all three sites had very different needs and used unique sets of measures and tools to document impact. These were:

- Online surveys
- Pre- and post-program surveys (paper)
- Recorded (audio) reflections
- Peer-to-peer interviews (recorded and transcribed)
- Embedded talkback posters / activities at community events

Study Methods

Mapping the Project Journey

Using the data that was gathered over time through the **document analysis and periodic check-in meetings** (see prior page), the evaluation team developed a holistic view of the entire journey and process of the projects, as they implemented their plans for community science.

Analysis of documents focused primarily on recording initial project goals, key activities, accomplishments, challenges, and pivot points along the way. Virtual check-in meetings helped the evaluation team understand the nuances of the partnership and the project as it was being implemented, which was recorded in the emerging analytical journey maps.

At the end of the cycles, detailed journey maps were reviewed, synthesizing the major stages of each project's progress through implementation. In particular, **analysis identified when substantial "pivot points" occurred**, including what led to the need to pivot and specific adjustments (and rationale) made.

Analyzing Depth of Community Science

A rubric-based tool, initially developed for the Partnership Planning Seed Grant Program, was revised in collaboration with the ASTC team to be used as a tool to assess how deeply each Community Science Attribute was evidenced in the actual implementation of each project. A more detailed description of the original grant and the Community Science Attributes Rubric can be found on the following page.

The main data source to which this rubric was applied was culminating **end-of-grant interviews** with each project partner. Teams were asked to consider how their projects reflected each attribute; during the interview, they discussed their relevant activities and rationale to enable a final scoring of their actual activities. Two evaluators reviewed interview transcripts and notes from mapping the project journey (left) for evidence of each attribute and assigned scores. This independent scoring was then discussed and reconciled to arrive at final scores that were consistently applied.

Understanding Community Impact

Ongoing conversations between evaluators and each project team led to creating **customized outcome evaluation strategies** aimed at documenting the specific community impact – with targeted public audiences – for each project.

After consultations to identify audiences, outcomes, and program limitations, evaluators presented teams with a menu of data collection options tailored for their unique project contexts. Once teams decided on an approach, evaluators developed customized instruments and data collection tools for each site's use. (See method list on prior page.)

Evaluators then conducted analysis of each of the different data sets collected by the project teams to examine for evidence of public outcomes. The results of those analyses are included in this report.

Evaluation Tool: Community Science Attributes Rubric

In order to assess the degree to which each project and project partnership embodied Community Science Attributes in their work, evaluators applied a set of rubrics previously developed.

The Community Science Attributes Rubric transformed the Community Science Framework concepts into concrete, observable indicators. It articulates observable evidence for each attribute, which align to four points on a continuum of development. Those points are labeled: Beginning, Making Progress, Succeeding, and Excelling. An example is shown on the right.

This set of rubrics was initially developed as part of the Partnership Planning Seed Grant (PPSG) program, an initiative also funded by the Moore Foundation. Initially, the rubrics were developed to apply to evidence available in project plans. In the current phase of work, evaluators and ASTC worked together to **adjust the language and specificity to be applicable to evidence from project implementation** – assessing how the process actually transpired, rather than relying only on written plans.

Centers Community Priorities
↳ *Project topic and design*

COMMUNITY SCIENCE INITIATIVE · ASTC Association of Science and Technology Centers

○ BEGINNING	○ MAKING PROGRESS	○ SUCCEEDING	○ EXCELLING
Focus on Science Museum	*Leans toward Science Museum*	*Balances Perspectives*	*Leans / Focuses on Community*
The project concept (or topic idea) is developed and driven by the goals or interests of museum/scientists and/or lacks evidence of community involvement. A need may be identified, but that need is not rooted in prior research, evaluation results, or community conversations, feedback or expertise. **AND/OR:** The project's focus primarily benefits the museum partner (or scientific partners) and focuses on 'educating' the community or raising the museum's public profile.	The community is involved in the project ideation and development process, but their contribution is limited. For example, they may be invited to give input, but do not contribute to development of the question or topic. The selected project may still benefit the museum partner (or scientific partners) more than the community. It may be a short-term collaboration.	The project concept (or topic idea) is the result of a collaboration between partners and there is **clear evidence of how this concept was derived** (which can include a partner's prior relationship or deep experience in the community). It is articulated in a way that has clear benefit/meaning to both the community and museum (and science). The project is clearly **centered on a science-based community** need that has a path (perhaps not achievable in one project) to make long-lasting difference in the community.	The project includes all the criteria for "Succeeding." **PLUS:** The community is central to project ideation. For example, the entire project concept is community-driven or initiated by the community, rather than the museum partner (e.g., community sought out the museum partner).

Equity Focus
○ The project concept, topic idea, or research question addresses an inequity, harm, or injustice in society.
○ The project uses science to benefit society – science for the people.

Results

Case Study: Cable, WI

Cable Community: Project Accomplishments

Community Need

Long-term food security in Northwest Wisconsin is threatened by conflicting agricultural/forestry industry, disconnected farmers, and climate change. There has been a lack of coordinated effort to share agricultural knowledge, farming practices, or solutions.

Community Audience & Stakeholders

1) Local growers and farmers

2) Food processors, distributors, and retailers

3) Residents of Ashland, Bayfield & Sawyer counties

Project Objectives: Snapshot

CNHM and CCF aimed to create a **Chequamegon Northwoods Food Coalition** (CNFC) which incorporated: 1) a Coalition of members; 2) an incubator service for local growers, 3) a digital resource hub, and 4) educational workshops. This used **Civic Engagement** and **Open Innovation** approaches to foster a network of people collectively addressing threats to food security and identifying local, effective solutions based on collective knowledge, goals, and values.

Key Accomplishments within Cable's Community Science Project

Technical Infrastructure: A critical early step in Coalition-building was creating systems to manage project tasks, contacts, and relationships with the variety of stakeholders – a customized CRM (customer relationship management) system. This groundwork proved vital to coordinating the multi-pronged efforts and centralizing information around a growing network.

Outreach & Network-Building: By connecting with others, the team fine-tuned messaging to deliver a cohesive, relevant project narrative as part of ongoing outreach efforts. They launched a PR campaign and engaged residents, businesses, and growers in building awareness of the project mission through workshops and programs and local events. Ultimately, **one-on-one connections to identify shared goals** often led to the biggest breakthroughs.

Food Coalition: This led to launching the Chequamegon Northwoods Food Coalition (CNFC) and actively recruiting members. Critically, **a Leadership Council of 25 members** was established, representing community members with varied interests and skills to contribute to the effort. Efforts continue to shift leadership of the CNFC to the Council (rather than CNHM or CCF).

Online Resource Hub: Initiated design and development of an online resource hub to serve as a repository of information for local growers. This required staff time and expertise beyond its existing capacity and will continue to be in development until more resources can be allocated.

Incubator Grant Program: A micro-grant initiative supported local growers and educators to access needed land, tools, education, and more to implement local food projects. **$5,000 was distributed to 13 awardees**. This was possible through the Moore Foundation funding, which was **supplemented by an anonymous local donor** who wanted to ensure more projects benefited.

Cable Community Farm: Concurrent to the project (but not funded by it), CCF secured a 6.9-acre property as a permanent location, which dovetailed with project goals for community food security.

Journey & Adjustments: Growing Sustainable Support

| Planning | Pivot #1 — Infrastructure & Messaging | Pivot #2 — Network Building | Pivot #3 — Implement Community Solutions | Sustainability Planning |
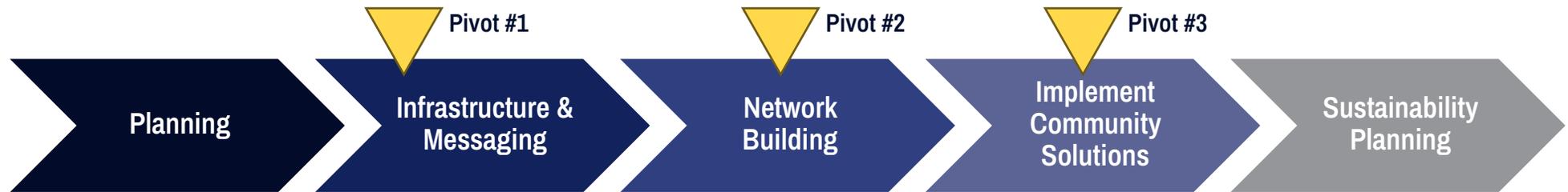
Pivot 1: Simplify the Message

In early stages, it became clear that the team needed to simplify how they described this work to the community. Specifically, it was difficult to include all four key components – coalition, hub, incubator, workshops – in an "elevator pitch." Early on, community members had trouble seeing the relationship of a natural history museum with food security. **A marketing consultant was hired to streamline their narrative.**

Pivot 2: Build a Strong Foundation around People

The team realized that success would center on their ability to meet folks where they were. **In a three-county, rural region, community was dispersed, isolated, and needed personalized relationship-building.** As such, the team prioritized outreach and were committed to doing the legwork of connecting one-on-one with people about the Coalition. This meant taking advantage of the strong relationships in a small community, talking about the Coalition formally at local events and serendipitously at the market or a pancake supper. They recognized that having more people invested in and connected to the Coalition would be the critical component to move the initiative forward. This meant they de-emphasized educational workshops and used them strategically to gauge community interest, build awareness of the Coalition, and recruit members.

Pivot 3: Adapt to Seasonal Pressures & Opportunities

These early adjustments helped the team chart a new path and re-analyze their available time and resources. They realized this project would require a multi-year effort. **Not every envisioned plan could become a full-fledged reality in the time allotted for the grant program.**

They also recognized their project schedule – and team capacity – is uniquely impacted by the growing season. The lead community partner (a farm) and project stakeholders all have exponentially higher need to focus on cultivating land at key times of the year. Moreover, during this project, CCF was opening a new facility – an even bigger lift than usual. These seasonal realities meant the team needed to strategically shift priorities to respect this seasonality of both capacity and opportunity. Two key shifts:

Development of the Digital Hub was deprioritized, given limited capacity and skill for such a complex tech deliverable within the team and local community.

Incubator Grant Program was launched in Spring 2025 for immediate impact in the growing season. This activity was leveraged to have rapid impact and spread awareness of the Coalition and how it could benefit the community.

Implementation of Community Science Attributes

Profile of Depth of Community Science Attributes within Project Implementation

Profile of rubric levels that best aligned with how the project was actually implemented, based on interviews, observation of process over time, and project documentation.

Centers Community Priorities	Succeeding
Respects Community Strengths	Succeeding
Shares Leadership	Excelling
Aims for Action	Succeeding

Centering Equity Dimensions:

- Project addresses inequity, harm, injustice
- Project acknowledges multi-dimensionality of what makes a community
- Project partners chosen intentionally to activate solutions in community
- Outcomes advance equity or social justice
- Opportunities for broad participation to achieve outcomes

"[At an incubator grant site] I saw a fenced in garden and an amazing spread of vegetables. And then people started to funnel in from food shelters around the region. ...A fence [we funded] culminated in... these people coming in and taking total advantage of this and bringing it back to their communities to be able to funnel into this community need that we identified in the first place."

The CMNH and CCF partnership resulted in a successful community science project as it was implemented. The team was an exceptional example of shared leadership. In all other attributes, the team centered a critical need, had meaningful roles for the community, and achieved real change.

Centering Community Priorities: The idea for this project was truly driven by the community – the museum partner had an important role to play but was not the driving force to create the Coalition. A slight limitation was having less emphasis on a single science-driven process; rather, the effort brought together shared needs of a coalition of different stakeholders, in which scientific knowledge informed the work and strategies.

Respecting Community Strengths: The emphasis on building up the Leadership Council was critical for this attribute's success. The team was proactively looking to shift leadership away from CCF and CMNH and give agency to the Council. This included engaging in exercises to elevate the assets brought by each member of the Council to further drive the work.

Sharing Leadership: This was a very open, interconnected, and mutually supportive team. They were clear that neither made decisions without the other and had regular systems for working together. While the Museum took on more of the administration, this was purposeful and mutually beneficial. Moreover, they are clearly committed to continuing this partnership.

Aims for Action: Particularly via the incubator grants, the project achieved tangible changes in grantees, which led to broader impacts in the community – including expanded food access – a key aim of the project.

Partners' Words: Making Community Science Happen

During their interviews, the project teams described how their work embodied the Community Science Attributes and the key lessons they learned along the way.

Quotes have been lightly edited for clarity and readability.

Centering Community Priorities: "I want to be immersed in my community, and this has given me a platform to do so... But everything that we've been working towards has certainly been a reflection of what we understand of our community and what they've expressed to us."

"We can really reflect on what's our capacity to be a community catalyst and a community builder, whether or not that's the really traditional route of our expectation with visitors and collections. I really love how this has been an expansion of what we can provide as a resource... I like the idea that the organization is part of the community, part of all of these needs, and [we] are shifting realities here. So being a natural history museum does not mean that we are separate from other experiences of our community."

Respecting Community Strengths: "I think so much of it is just sheer knowledge sharing. So much of the upfront work that our team members were engaging in was just going out and participating and meetings and learning who some of those other key voices are across the region... Just taking some of that feedback and utilizing it to guide that process. I think maybe just respect for the fact that everyone eats and that everybody brings a different background and skillset to how they're accessing food and the ways that they are interacting with our food system at different levels and taking that continuous sense of feedback and using it to guide our next steps as a collective."

Aims for Action: "...we've identified, we've engaged, keeping some of those connections active and going. But I think they could fall apart at any minute. Coalitions can die. I've been involved in other coalitions, and you can start out with great intention, but if you don't build that infrastructure, they won't be sustainable beyond the interest of the few core people."

Advice & Lessons Learned: "Definitely [the importance of] communication, and I think not making assumptions about our community... I think some of the vocabulary that we used in communicating and getting some feedback from folks is like, 'this is all so technical. I don't understand this.' That's really eye-opening. So, building a respectful and meaningful communication style is critical and trying to share that message, but also just connect with people on more of a personal level."

"Put yourself in a mindset that you're not trying to dictate something to people. You're trying to engage them in a process. I think sometimes that's hard when you have an organization that's established and looked at as [having] some power and clout within the community. That's hard for people to see. They're like, 'Oh, what are they trying to get us to do now?' Just get yourself in that mindset that you need to get across those barriers as well."

"It's funny, because we say it's messy sometimes. I think we like to tease that everybody's involved in everything [here]... I think that's a really good indication of the strength of our community. I think we have a very healthy community for being small, rural. You don't see a lot of engagement like this in equivalently sized towns in a similar geographic space. Cable is really fantastic about building community and building a sense of kinship, and we do that through a lot of great nonprofits. So having that kind of cross-pollination is essential."

Community Impact: Evaluation Results

1 **CNFC Incubators grants contributed to the agricultural resilience of awardees' communities.**

Awardees used Incubator grants to acquire new tools or equipment, purchase plants, seeds, and other farming supplies, and (in a few cases) to develop educational programming. While most awardees described ways their projects benefited their own organizations, they also explained how those internal improvements allowed them to better serve their local residents, youth, and regional farmers and growers.

"With our new watering system, we were able to streamline our watering schedule. We also increased production of fresh produce, which allowed us to sell our goods to local markets."

"We will have our biggest impact on [elementary school] students. Our intention is for them to learn the basics of growing microgreens as an organic food source, which they can then apply at home to their families and in their adult lives."

Evaluation Methods & Participants

CNFC Incubator grant awardees were invited to complete an **online survey** to examine the impact of their efforts on the community, as evidence of one major strand of impact of the Cable team's community science initiative. Of 13 awardees, 11 responded to the survey. These awardees represented farmers, educators, and food producers from eight counties in Northern Wisconsin, including Bayfield, Sawyer, and Ashland counties.

2 **Incubator grants expanded awardees' capacity to contribute to the local food system and connected them to a network of resources and markets.**

Incubator grants sparked innovation, built skills, and connected members of their agricultural network. All awardees indicated that their participation in the Incubator program led to **a shift in their ability to experiment or try a new approach to growing, often through new or improved skills.** Some awardees noted an increase in their understanding of how they fit into local food issues, while others found that the project connected them to a broader network and raised their awareness of resources and people who can support their work.

3 **Incubator projects led to tangible community outcomes including improvements in growing practices and greater awareness of sustainable food systems.**

Incubator awardees reported that their projects had a major impact on improving the **efficiency of agricultural practices** and **improved systems that ensured more locally produced food**. There were also common outcomes of expanding involvement – with awardees reporting an increase in awareness and involvement of the community in food production.

"With this grant and being able to construct a deer fence this season, we were able to grow squashes years before we would have been able to do otherwise... We are making plans to continue to expand our vegetable enterprise and hope to have a community farm day next season."

Results

Case Study: Los Angeles, CA

In collaboration with

Los Angeles Community: Project Accomplishments

Community Need

Urban Indigenous youth have experienced a disconnect from their land and traditional knowledge due to a lack of access to green spaces. This weakens the community by weakening an understanding of the environment and excluding them from environmental and scientific spaces. Urbanization of sacred lands has led to further assimilation, loss of language, and loss of ecological knowledge.

Community Audience & Stakeholders

1) Indigenous youth

2) Indigenous community members

3) Community and residents

Project Objectives: Snapshot

The core project is youth-led **Participatory Research** and **Community-Driven Citizen Science**. Indigenous youth work with mentors to explore five key research areas: 1) land accessibility, 2) water retention, 3) soil remediation, 4) wildlife conservation, and 5) terrestrial ecology. Indigenous youth naturalists adapted traditional community science techniques to new methods centering Indigenous practice. Efforts were shared with the broader community at a Youth Summit and a youth-developed field guide.

Key Accomplishments within Los Angeles' Community Science Project

Training & Using iNaturalist: The project centered Gabrielino-Shoshone ecological knowledge and Anawakalmekak's land-based pedagogies, incorporating iNaturalist as a community science tool to support documentation and knowledge sharing. The project was able to launch public events quickly: An Earth Day Ceremony for the City Nature Challenge at Ya'anna Village had 114 attendees who logged 347 observations.

Youth-Led Research: Using iNaturalist training, Indigenous youth leaders conducted research in the five key areas (see snapshot). They presented results at the Yosentlalpixkeh (Ecology Guardians) Youth Summit in June 2024 to 125 attendees, including Gabrielino-Shoshone Nation Leaders, Anawakalmekak students, staff, family, and community members. Students continued their data collection and field research which contributed to academic and community initiatives.

Cohort Transition: During Summer 2024, students transitioned into the next grade, graduated and went on to university. Two new Youth Leaders were selected to represent the Indigenous youth cohort and continue the grant's next phase of work.

Ya'anna Village Field Guide: In Fall 2024, after consultation with Youth Leaders, the project focused on developing a field guide to showcase the research and incorporate Gabrielino-Shoshone epistemology and phenology. This was selected as an enduring means for sharing knowledge with the community. Youth efforts shifted to developing this research product, working with support from a language consultant, graphic designers, and mentors. The final product was revealed to the community at the Yosentlalpixkeh Field Guide Celebration in May 2025.

Fieldwide Dissemination: The project team also invested in sharing their processes and products with the broader scientific and informal education fields. The team led a session at ASTC's 2024 conference about partnerships between a museum and Indigenous community, as well as collaborated with a UCLA professor to create a case study paper, which is aimed for publication.

Journey & Adjustments: Prioritizing High Impact Work

Rapid Start & Opportunity for Reflection

Work at Ya'anna Village began in 2022 and efforts to further community science work was supported through a 2023 Partnership Planning Seed Grant. Because of this head-start, **youth-led iNaturalist research was able to contribute quickly to a public engagement program, with youth sharing their results with the community at the June 2024 Youth Summit.** Summer was also a transition for students, as they graduated to the next grade or university. With a new cohort of youth in Fall 2024, the team had an opportunity to reflect on new strategies to maximize impact – rather than simply repeat.

Pivot 1: Acknowledging Youth Capacity

With this school-year transition, the team recognized that there was some tension between the project schedule and increasing demands on youth time and capacity – given the cadence of the academic year schedule. The team also had to learn ways to center wellbeing-aligned intergenerational leadership strategies. **To honor their approach as a fully youth-led project, not all patterns or rhythms of professional work schedules could drive the timeline.** This led leadership to consider how to best accommodate these parameters in project plans and reassess objectives.

Pivot 2: Realigning Deliverables to Maximize Impact

Collectively, the project team and Youth Leaders decided to **focus on creating a public-facing field guide that would complement and connect the public with the ongoing field research** at Ya'anna Village. Rather than a typical scientific poster or paper, the Field Guide was intended to be a different type of product. They created a guide that would incorporate Gabrielino-Shoshone epistemology and phenology and highlight Ya'anna Village's role in in the community. Youth Leaders had a strong role and responsibility for the design and development of the field guides. Ultimately, the team believed the field guide not only reflected the original goals of the project but is also a more flexible and sustainable medium that can be a lasting and impactful resource for the community.

Pivot 3: Resilience through External Forces

The final stages of the project journey had to navigate through hardship. In January of 2025, Los Angeles was ravaged by wildfires, causing varying degrees of trauma for everyone involved in the project. In Spring/Summer 2025, their city navigated pervasive immigration enforcement actions, which introduced new factors to consider when seeking to gather a broad spectrum of the community in public spaces.

Implementation of Community Science Attributes

Profile of Depth of Community Science Attributes within Project Implementation

Profile of rubric levels that best aligned with how the project was actually implemented, based on interviews, observation of process over time, and project documentation.

Centers Community Priorities	Excelling
Respects Community Strengths	Excelling
Shares Leadership	Excelling
Aims for Action	Succeeding

Centering Equity Dimensions:

• Project addresses inequity, harm, injustice
• Project uses science to benefit society
• Project draws on strengths of marginalized community members
• Project partners chosen intentionally
• Project recognizes limitations of its partners
• Outcomes advance equity or social justice

"This project was really focused on the project that the school already had in their minds. The museum was able to add in some of the community science elements of iNaturalist, camera trapping, bat detecting in there. But it was really led by the community, and they had this idea and need and desire with the rematriation of this land."

The Anawakalmekak-NHMLAC partnership embodied the attributes of community science exceptionally well – going "above and beyond" what is often practical for projects to be community-driven, community-led, and continuous. It also embodied the equity dimensions thoroughly, as it centered and elevated Indigenous communities' ways of knowing.

Centering Community Priorities: The project was entirely community-driven, and its core idea was essentially in motion before the museum came on the scene. The role of the museum was more figuring out how (or even if) they had value to add to what the community envisioned doing.

Respecting Community Strengths: As it was implemented, the project was very careful to ensure both the research work and the field guide creation were led and driven by the Indigenous youth. It also encouraged the adaptation of approaches to align with Indigenous practices, languages, and cultures throughout.

Sharing Leadership: The two core partners also excelled in their work at sharing leadership for the overall project. As was true in their planning efforts, there was some degree of intentional imbalance between partners to respect a sovereignty-aligned leadership structure. This grant effort was part of a much larger Indigenous community initiative being co-led by Anawakalmekak and the GSN; the museum respected the expertise and knowledge of their Indigenous partners by taking on a more supportive role.

Aims for Action: There was clear evidence of outcomes achieved by the youth involved and community who attended events.

Partners' Words: Making Community Science Happen

During their interviews, the project teams described how their work embodied the Community Science Attributes and the key lessons they learned along the way.

Quotes have been lightly edited for clarity and readability.

Centering Community Priorities: "The community partner describes this grant project as one initiative in their continued efforts to re-establish their relationship with the earth. What began in 2022 with the re-matriation of Ya'anna Village continues today as a place to conduct Indigenous science to better understand how to cohabitate and coexist with the land and serve as a climate resilience model for LA county. [In addition], student research allows Indigenous people to see these possibilities and their future. [Together, all of] these efforts are part of a healing journey to not only heal the land, but to heal its people through their work and achievements."

Respecting Community Strengths: "The relationship centered on respecting each other's goals and intentions from the outset. The community appreciated the museum's acknowledgement of the harm that institutions like theirs have done to Indigenous people and respected their interest in building a positive relationship through this collaboration. The museum honored the community's thousands of years of knowledge and experience, as well as their interest in building intergenerational knowledge among youth as part of instilling an understanding, appreciation, and stewardship of the land. From this mutual understanding, the partners were able to develop roles and responsibilities that best reflected their strengths and capacity."

Sharing Leadership: "The community viewed [shared leadership] as extending to the Yosentlalpixkeh youth. Youth took on an active role in the project—conducting research at Ya'anna Village and leading the development of the field guide. They observed, compared, and applied critical thinking to the information they collected and communicated, and considered Indigenous and western approaches to science. Furthermore, youth learned to be flexible in adapting their work to the circumstances around them (like the wildfires in LA). This emphasized the point that, as Indigenous people, [they see how] the work they do is deeply connected to everyday lives."

Advice & Lessons Learned: "Be flexible to change and let the project evolve without artificial restrictions from an initial vision. Our project grew in ways that we didn't anticipate – we met people that we didn't expect, and it evolved into different experiences and not just expanding in purpose, vision and scope but also re-envisioned how we teach science. It's about allowing the project space to grow, to treat it like a living thing because it is. Communities are living things so let the project live with them."

"When building partnership, sometimes, the community doesn't understand the work they do is considered to be 'community science.' Science is often a "subject", but science is everywhere – we breathe and live it. So, communities sometimes don't recognize that they have science experience. It's important to understand what knowledge exists in the community. Work with the community shouldn't be approached as a deficit. Communities' knowledge need to be acknowledged."

"...working with Indigenous partners, it's going to shift the way you see things and are you willing to be shifted? Are you willing to let go of some of the paradigms of Western science or white supremacy culture? Have you done some of that work already internally... some of that baseline personal transformation work is necessary before you go into this work."

Youth Impact: Evaluation Results

1 **Youth gained scientific, ecological, and Indigenous knowledge and practices, as well as discovered ways to engage their community and extend their research.**

Youth described research takeaways that included terrestrial ecology, water systems, and soil health. They also learned about local history and Indigenous practices and attitudes towards land stewardship. When asked about how their learning could benefit their community, youth emphasized the importance of building strong relationships within Indigenous and local communities, sharing their knowledge to help others apply their research to community initiatives, and integrating Indigenous culture and ways of knowing with Western-based scientific practice.

"I think the idea of connecting the Western science with Indigenous knowledge and teachings when we were doing the [field guide] pages. That kind of taught me a lot about both, and taught me a lot about how I could connect these two things."

2 **Youth improved their scientific skills in all stages of the research process.**

Youth reported being more confident in their ability to conduct research using multiple sources and methods; collaborate with indigenous peers, mentors, and experts; and conduct their own observations through field work. They also developed skills at analyzing and interpreting data and communicating findings, including strategies to make science more accessible to the public.

3 **Youth found their program experience meaningful to their personal and academic development.**

In characterizing their experience in this community science work, youth used positive words that embodied feelings of community, learning, and personal growth. Most often, these expressions suggested shifts in their understanding of a topic or in feelings of self-efficacy in conducting research. Specifically, youth explained that the program provided a springboard for building confidence and resilience; developing 21st Century skills like collaboration, self-direction, and communication; gaining research proficiency; and building relationships with their community. By sharing their work with the community, youth hope that they will inspire others to become advocates of Indigenous science and practices and seek a deeper connection and understanding of the natural world.

"One dream I do have for my community is just to have more participation or just more people feeling the passion of Indigenous science... I just hope more specifically youth find the courage to just put themselves out there and give it their all because the information they have is valuable to their own communities."

Evaluation Methods & Participants

Evaluation centered on outcomes experienced by Indigenous youth who participated as leaders and researchers in science and community-based activities including the iNaturalist training, research studies, and the development of the Ya'anna Village field guide. At the end of their cohort year, 12 youth participated in **one-on-one interviews** with Anawakalmekak educators, and reflected on how their experiences shaped their skills, understanding, approach to Indigenous science, and environmental stewardship.

Broader Community Impact: Evaluation Results

1 **Summit attendees were impressed and inspired by the research presented by Indigenous youth.**

At the 2024 Summit, attendees' comments showed they understood broad concepts about the importance of the research done by Indigenous youth and its potential impact on the health of the land. Some attendees became more familiar with iNaturalist and its purpose in youth-led research. Attendees also expressed an interest in learning more about the research, land accessibility, and participation in the future.

In 2025, Summit attendees described excitement about the Field Guides developed by Yosentlalpixkeh youth, noting how it expanded their understanding of topics like native plants and local ecosystems and inspired them to think about land care and stewardship behaviors in their daily lives.

> "...most of the conversations were about how they could incorporate indigenous plant life in their gardens and what they could do to better their soils and how they could contribute those types of practices within their lifestyles."

Evaluation Methods & Participants

To capture insights from the broader community, the team used **embedded evaluation activities** – talkback posters and tables, brief one-on-one interviews – at two community events. Youth presented their research findings at the 2024 Yosentlalpixkeh Youth Summit which was attended by over 125 people, including Gabrielino-Shoshone Nation Leaders, Anawakalmekak students, staff, family, and community members. At a similar event in 2025, Yosentlalpixkeh youth introduced the Ya'anna Village field guide to the community, seeking feedback on early ideas.

2 **Summit attendees became more aware of community science efforts and were interested in how this work benefited local communities.**

In addition to learning about Ya'anna Village, research methods, and research findings, Summit attendees reported gaining an appreciation for the importance of Indigenous voices in science, the connection between the community and the land, and the value of building relationships with neighbors and across generations. They were curious about future plans for Ya'anna Village, the human impact on the environment, and balancing community needs with a respect for nature. Attendees were invested in understanding the future of the research and how they could be involved, as well as ways to extend the research to other communities.

> "Everything is interconnected and our relationship with the land as Indigenous peoples is vital in maintaining the life that surrounds us."

Youth Leaders confirmed, in reflective interviews, that their conversations with community members centered on sharing knowledge and research as well as discussing the implications of the research and possible next steps. They also recalled discussing the importance of Indigenous ways of knowing within scientific practice with public participants.

> "I just hope it encourages our community to take a closer look into what research is being done at Ya'anna Village, and hopefully we could take action by actually implementing the vegetation and culture and architecture in Ya'anna Village."

> "I think some of the [conversation] topics [with community members] were how everyone really researched... how each of us put scientific knowledge and indigenous knowledge together and to really make it work out."

Results

Case Study: Warren County, NC
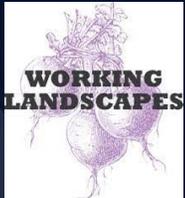
Warren County Community: Project Accomplishments

Community Need

Agriculture is the bedrock of Warren County's social, economic, environmental, and political cultures and is one of its main economic drivers. Food production is a source of immense cultural tradition, pride and social importance. Yet many individuals, including youth, do not understand where their food comes from.

Community Audience & Stakeholders

1) Youth residing in Warrenton and rural areas in and around Warren County

2) Warren County community/residents

Project Objectives: Snapshot

This project leveraged Working Landscape's (WL) unique relationship with food and Warren County, and the Museum of Life and Science's (MLS) expertise in youth programming. This project used workshops and **Participatory Research** projects to engage youth with inequitable food access, challenges posed by the climate crisis, and issues of environmental and social justice that underpin the realities of agriculture and food in Warren County. Youth-led projects aimed to help the county better understand its agricultural-based assets and opportunities for the future.

Key Accomplishments within Warren County's Community Science Project

Program Development: Building from a foundational plan completed as part of ASTC's Seed Grant program, the team spent the early stages of the project fleshing out the "Food for Thought" (FFT) program curriculum, topics, and identifying subject-matter experts. Through community outreach, they secured partners to play critical roles in the program: guest speakers, transportation, and connecting youth with community networks. Partners came from Warren County Cooperative Extension/4-H, Fairport Farms, Sound Rivers, Heritage Quilters, Warren County Memorial Library, Warren County Environmental Action Team, and the county's Director of Economic Development.

Cohort Recruitment: The team leveraged community partners to spread the word about the program to local youth, finding momentum in early Fall 2024, when educators and after-school programs were able to help connect with students. After hosting an Interest Meeting, they received 22 youth applicants and selected a final cohort of 11 students for the program's inaugural run.

Program Implementation: Food For Thought launched in October 2024, centered around 5 monthly workshops in the fall/winter, followed by independent student projects and a culminating Open House event for the public in the spring. The program covered a wide range of scientific methodologies and disciplines that contribute to agricultural health, including: (1) Soil Science at a visit to Fairport Farm; (2) Oral History Research from Jereann King Johnson of Heritage Quilters; (3) Science Communication with 4-H; (4) Water Quality Testing led by Sound Rivers; and (5) Climate Modeling at the Museum of Life & Science. In March, the FFT teens met with the Museum's Youth Climate summit Teen Advisory Board, engaging in a peer-to-peer discussion about science communication, climate issues, and lived experiences as rural and urban youth.

Public Engagement Event: In April, 6 out of 11 cohort members presented their FFT projects in an Open House (at The Hive) during the Eastern Bluebird Festival, a popular community event in Warrenton. Youth showcased their research and projects to public visitors in conversation.

Critical Adjustments: Adapting to Student Interests

Pivot #1   Pivot #2   Pivot #3

| Curriculum Development | Recruiting Youth | Monthly Curriculum Sessions | Youth-Led Projects | Public Engagement |

Pivot 1: Rapid Start & Patience for Recruitment

The project team quickly dove into curriculum development, as the overall project plan was established through their Seed Grant. But they hit a small roadblock when recruiting youth – which they had envisioned occurring over the summer, to allow a start to sessions in September. **As informal entities, they needed teachers and school administrators to fuel recruitment, and emails went unanswered throughout July and August.** The team adjusted plans to wait for face-to-face engagement with these "gatekeeper" adults, when school resumed. This relationship building with schools, 4-H, and others who already work with teens was critical to build the cohort – which was ultimately successful.

Pivot 2: Sustaining Engagement within a Monthly Cadence

The Food for Thought program was a monthly workshop that emphasized science-based lessons on climate and agriculture, hands-on learning, and local guest speakers. The sessions were strong, but because they only met with the youth monthly, the team saw evidence of losing engagement between sessions. Although email and GroupMe helped with ongoing communication, the team struggled to stay connected to teens, compete with teens' everyday priorities, and build social cohesion among youth.

Pivot 3: Participation and Format for Final Youth Projects

Another adjustment moment came in Spring 2025, when the program reintroduced the idea of creating their own final project from their research work in the program to present to a public audience. At this stage, active participants dropped by almost half – from 11 to 6 youth. While some attrition may have been due to the monthly cadence, **poor attendance beginning with the "Project Pitch" workshop underscored a lack of willingness to commit to the public-facing aspects** of this community science and extracurricular program. Ultimately, the project **shifted from holding a standalone Youth-Led Symposium to a more intimate Open House format** that could be paired with an already-planned local festival. This allowed for direct engagement of residents, but in a setting that was more personal and promoted one-on-one interaction with the public.

Opportunistic Bridging of Rural-Urban Perspectives

Although not in the initial plan, the team took advantage of an opportunity to connect their Warren County youth with peers from Durham, NC. This meeting allowed for cross-pollination of ideas and lived experiences, facilitating mutual appreciation and understanding of the importance of agriculture and the impact of climate on region-wide food systems.

Implementation of Community Science Attributes

Profile of Depth of Community Science Attributes within Project Implementation

Profile of rubric levels that best aligned with how the project was actually implemented, based on interviews, observation of process over time, and project documentation.

Centers Community Priorities	Excelling	
Respects Community Strengths	Excelling	
Shares Leadership	Excelling	
Aims for Action	Succeeding	

Centering Equity Dimensions:

- Project addresses inequity, harm, injustice
- Project draws on strengths of marginalized community members
- Project partners chosen intentionally
- Project recognizes limitations of its partners

"To get to see the wealth of knowledge that [youth] presented, especially at this particular moment of tension, with these urban kids around. [They were saying,] 'You should know the pride that we have in this thing that happened in our community.' I think was to me at least some evidence that... [this] helped people learn about the really special place that they were from. To do enough good, place-based education that it shifts the narrative, maybe even just a little bit, so that when [youth] do go away, they think about coming back."

As it was implemented, the Warren County partnership largely excelled at implementing the attributes of community science – particularly in the areas of being centered on community needs, community-led, and a mutually respectful partnership between the two lead organizations, while foregrounding important issues of social and environmental justice.

Centering Community Priorities: The project team was clear that the need for this work was rooted in the expertise of the community partner (WL). In essence, WL knew what their youth needed, and MLS added expertise working with youth in science education to support those aims.

Respecting Community Strengths: As it was implemented, community science occurred through youth's monthly sessions and projects. Community was central to both. In trainings, the Museum only led one topic, all others came from local experts. Youth selected what to feature in final projects, and they gravitated to oral history, cultural connections, arts, and social sciences – reflecting the learnings that resonated with them.

Sharing Leadership: The partners at WL and MLS had very clear shared leadership, decision-making, and processes for running the program. In addition, they are so committed to continued work that they are already planning a new FFT cohort – even without having secured more funding

Aims for Action: There were substantial outcomes on the youth from their learning experience. And due to their final public outreach, there was evidence of them extending that impact into awareness building around local food systems in the broader community.

Partners' Words: Making Community Science Happen

During their interviews, the project teams described how their work embodied the Community Science Attributes and the key lessons they learned along the way.

Quotes have been lightly edited for clarity and readability.

Sharing Leadership: "It is natural, but that naturalness comes from a lot of work. I think we have put in a lot of work in making sure that this is not purely a professional relationship or one that only exists within the confines of a grant... It is about the people and the fact that we have sorted out these shared goals demonstrated that we respect and want to learn from one another, and that we have a desire to continue to work together. And the result is this really relationship-driven, reciprocal relationship, rather than one that's purely transactional. And that greases the wheels for shared leadership... that comes from just a lot of work and making sure that the relationship itself is healthy, so that the project could be healthy. "

Aims for Action: "It very rarely works that there's a particularly clear line between a program and an outcome or an action or a policy. Rather, it fits into this really broad ecosystem of the way that outcomes, actions, and policies work... It's kind of ephemeral. It's hard to actually see until many years later... And so it started with this outcome and vision in mind, which is really ambitious... And it took us a pretty long time to go from really big picture outcome that was, 'this would be awesome,' but also, 'this is definitely not achievable with this project'... We did not want to set ourselves up for failure... So instead, a lot of the outcomes and actions that we were really interested in were around shifting the story and narrative for the youth themselves about the place that they were from."

Advice & Lessons Learned: "...remembering that community science can also be...more qualitative science or that more social science type of work is a way to do community science. In fact, it's somewhat easier, because some of the skills are a little easier for people to learn and use. It's just like how to interview a person. It's like, I can definitely teach most people how to interview someone, whereas being in a lab is a little harder to do... So, I think it's a little easier to feel like [the community] is truly a partner [to the science organization] in that way. Whereas I think sometimes the harder a science is, it can be harder to be. Like, I don't know how to do a [quantitative] model, so I can't really help you with the model."

"We talk about some of the need to execute a project like this is to enter into it with humility... And some of it is enough humility to recognize that when we [a science organization] enter into spaces like Warrenton, that it's not a neutral act. There is fear present, there is real power there. And that fear is in both ways. Some of it is reckoning with the fear that comes from the community of us. And that's a real thing that we have to make space for and grapple with and account for. But another one is our fear of what we might hear from people when we ask meaningful questions. And we have to figure out how to let go of some of that fear too, and to be ready to account for and deal with the fact that when you ask humble questions, when you ask questions that actually get to the heart of what work might be meaningful in a place like Warren County, the answers that you need to prepare for may be ones that you find very hard. And if you're not actually ready to listen to those, or to set aside some of your fear or to deal with it, then you're probably not actually ready for some of this work."

Community Impact: Evaluation Results

1 **Youth participants felt more connected to their community and saw their place in its future.**

Youth tended to agree that FFT positively impacted their perception of Warren County and their place in it. Nearly all youth who completed the program believed that, in some way, their experience impacted their view of their community. A significant portion agreed that their experience left them feeling **more connected to Warren County and the community**, that they can **contribute to the future of Warren County** and are leaving the program with a **greater appreciation for Warren County's agricultural history**.

"My experience has allowed me to see that Warren County is a lot more community-driven than I thought. That agriculture is a big part of Warren County and the community, and that's really important."

"This program has inspired me to think about ways I can contribute to my community while also preparing for my own future. I've been thinking about doing a food-based entrepreneurship venture in the community."

Evaluation Methods & Participants

Food for Thought (FFT) youth participants completed pre- and post-program surveys that gauged their familiarity and confidence in research, communication, and program topics. They also provided audio recorded responses to reflection questions that asked them about their program experience and learning. Eleven youth completed pre-surveys; six students who continued to the end of the program provided post-surveys and audio reflections.

2 **Youth built a greater understanding of the issues and history rooted in Warren County.**

Youth showed the greatest knowledge gains around **local environmental justice issues** and the **agricultural history of the region**. They also experienced growth in understanding of science-based topics including climate modeling, biodiversity, and climate-smart farming practices, but to a lesser degree.

3 **Youth became more confident in their ability to use a variety of research methods, particularly oral histories.**

Youth reported growth in skills with qualitative and quantitative research methods, including predictive data modeling and sampling of indicator species. Their greatest gains, however, were in **their ability to collect oral histories.** Their final projects showed the preference to use this naturalistic, social science method to gather and explore findings around cultural connections to the land.

4 **Youth felt more capable engaging public audiences with science from the project.**

Although youth gains in communication skills were more modest than their gains in scientific knowledge and skills, they became more confident in their ability to **explain a concept to others** and **speak in front of a group of strangers**, particularly if they had a prepared a script in advance. They were less confident explaining their ideas or opinions and speaking to others spontaneously.

RESULTS

Cross-Project Themes

Community Science Journey

1

Prior Project Planning Speeds the Start

Two of the projects participated in an earlier round of ASTC funding, spending several months planning these projects. There was some evidence that this process helped speed up initial stages of implementation. For instance, the team from Los Angeles, CA started youth research and held an event within months of starting this grant. This is not inherently better; but it speaks to the value of offering support for project planning time in advance of implementation.

2

The Impact of Project Scope

These projects used a variety of strategies – from building a community coalition to youth programs that would ultimately engage the public. Broader or more open-ended scopes (such as coalition building) can make projects more complex to get off the ground – and may need a multi-year plan. Notably, all three projects made adaptations from their initial ideas when they reached a phase of trying to broaden their community reach. This was when they needed new strategies that were practical and aligned with their visions.

3

Humility is the Key Ingredient

Despite the very different settings of our partners, all three museum partners in these projects advised that an institution that wants to do community science work must proceed with a sense of humility, an open mind, and a deference to listen to the priorities, views, and expertise of others. They described actively setting aside the "clout" that may come with their brand and proactively modeling a different way of being in relationship with community.

Public Impacts

Each project empowered their participants to connect more deeply with their community.

The three projects were substantially different from one another in how they implemented community science, their outcomes of interest, and the methods they used to evaluate them. But in their unique ways, they each empowered their public participants. The Cable, WI project empowered growers to innovate and change practices. The Los Angeles, CA project empowered youth as researchers and advocates for Indigenous science and land protection. The Warren County, NC project empowered youth to understand and feel pride around the rich scientific and environmental justice history of their rural, agricultural community.

1

Youth Outcomes

The two projects that centered youth as their primary audience (Los Angeles, CA and Warren County, NC) shared many similar types of outcomes, although each manifested in unique ways. Both saw youth grow their understanding of science concepts, build research skills, and find ways to communicate their findings to a broader public.

2

System Outcomes

By focusing on building a coalition that would work for improved food systems on many fronts, some of the Cable, WI team's outcomes are on a longer time-scale. But within the grant, they funded 13 tangible projects that demonstrably improved growing practices and, by enabling immediate innovation and change, strengthened the food system.

Layers of Learning in Community Science

Sharing Leadership in Layers

An interesting pattern that emerged across all three funded projects was the ways they expanded shared leadership beyond the two core partners – museum and community organization. In all three, they found ways to extend authority, power, and authentic ownership of the work to members of the community involved in the work. This included Cable, WI's Leadership Council, and the youth participants who had key roles in deciding project trajectories in Los Angeles, CA and Warren County, NC.

Expand the Circle of Expertise

While the museum and community partner were the core of the work, all three teams also recognized the importance of using their own community relationships to draw in more, different, and broader voices as experts in the process. In Cable, WI, an anonymous donor stepped in to ensure all incubator proposals could be funded; the Los Angeles, CA team brought in Gabrielle Crowe; and Warren County, NC had a series of experts to lead sessions for youth. This broader buy-in was important to the success of the projects.

Learning about Community

While we often frame community science as a process of *science* learning about its community, these projects revealed the impacts when *community* members become more connected with where they live. In Cable, WI, incubator projects broadened awareness of local resources; in Los Angeles, CA, youth's most meaningful takeaway was relationships forged with community; and in Warren County, NC, students and community all felt connected and proud of their community's place in history and agricultural systems.

CONCLUSIONS

Implications of Results

Conclusions
>> Cultivating Success

From an evaluation of the three core projects that were funded within the Cultivating Community Science Stipends, there was evidence that the funding led to robust community science projects that very effectively embodied ASTC's attributes, engaged members of the public in authentic issues and scientific practices, and built lasting partnerships and community-based initiative that are already continuing beyond this project's funding. This was fueled by the careful selection of project sites for the readiness of their relationships and projects. However, the level of success seen very much reflects the level of commitment to the projects' missions by all partners involved at each of the three sites.

1 Success at Attribute Implementation
All were successful at implementing the attributes of community science, in many cases reaching the top level of excellence, as defined by ASTC. In particular, these three teams were exceptional examples of Sharing Leadership, as they all found proactive ways of working together that ensured the museum and community partners had equal ownership over all direction of the projects.

2 Success at Public Outcomes
The three projects had very different strategies, audiences, and visions for their outcomes – but from the data gathered with their programs, there was clear evidence that each project achieved some of the impact they aimed for. Whether it was a first step at making more resilient food systems, empowering youth with scientific practices and Indigenous ways of knowing, or building youth skills and knowledge for agricultural science, each project saw meaningful success.

3 All Work Continues
One marker of success for a community science project – and one that can be difficult to achieve – is that projects and partnerships continue over the long-haul. All three of these partnerships were already working on next steps to continue the work in their communities, building on the foundation laid through these projects. In many cases, additional funding may not be secured. But the partners showed clear commitment that indicated this work was valued as far more than a one-off attempt.

Reflecting the ASTC Community Science Outcomes

Strong Community Partnerships:
Sustained Mutual Trust

All three projects **put members of their community / publics in positions of control, authority, and decision-making** in the projects. Cable, WI and Los Angeles, CA, both showed evidence of **transitioning more ownership of the work to members of the community**, aiming for a future in which the initiative would not solely remain under the authority of the museum and community organization.

Sustainable Solutions for Society:
Improving Community Well-Being

Cable, WI's outcomes were a particularly strong example of achievement in this area. By funding small incubator projects around the region, **they saw tangible, lasting impacts on food systems and access to healthy foods** across the community. The Los Angeles, CA project showed moves in this direction, with the creation of a Field Guide that to enhance outdoor experiences for more people.

Inspiration for New Science:
Inspire New Methods & Directions

The Los Angeles, CA project **meshed Indigenous science with Western research methods;** in this way, it showed the greatest additions to this outcome. The Field Guide was also meant to introduce a new approach to an old scientific tool, one that centered Indigenous worldviews. The Warren County, NC project used their public event to generate questions of interest from the public.

Increased Science Agency:
Competency, Confidence, & Identity

All three projects showed evidence of **increases in the abilities, efficacy, and agency of the core communities** they engaged. Los Angeles, CA and Warren County, NC projects achieved these outcomes with the youth, who were trained in scientific research methods. The Cable, WI project achieved this by funding incubator grantees, and that funding enabled them to experiment, innovate, and try new solutions.

Impactful Scientific Research:
Improving Scientific Research

This was largely an outcome that was evident in the work of the Los Angeles, CA project, in which the **Indigenous youth contributed to local scientific research** via training and use of tools, such as iNaturalist. Publications are expected to result. The other two project were broader in approach, not centering on participants conducting scientific studies; therefore, this outcome did not apply.

Capacity for Civic Engagement

No projects involved direct public sector (government) advocacy. The Cable, WI team showcased how activating the private sector could create broader community benefits.

Ethical Decision-Making

No projects measured outcomes centered on the ethics of science. But all three addressed real-world manifestations of equity, access, and justice – in food, economics, and land.

Further Considerations

Projects situated in a larger stream of work may be key to bigger impact and sustained momentum.

All three projects were part of a bigger picture – both in terms of scale and depth of the work occurring locally – that is not captured within the bounds of the community science work. Because there was a whole river of work going on, these funded community science projects were but one tributary feeding the larger river. In circumstances like this, funding (like the CCSS grant) is an opportunity to catalyze effort to magnify impact. The Cable, WI team was able to make a concrete action plan to address a known issue. In Warren County, NC, it gave a seed idea the momentum to become a (sustained) reality. In Los Angeles, CA, it deepened an existing initiative, adding new resources and capacities to benefit larger community-centered work.

There is a need to further define – and perhaps strategically expand – the "science" in community science.

These three projects were interesting illustrations of community science, as they were all highly interdisciplinary. None was a traditional "doing science" or "deliberating science" project. While scientific concepts were a foundation, each took a holistic and community-centered approach to solutions. All three addressed issues that live at the intersection of science, history, economics, and cultural factors. To have focused purely on one science investigation may not have been sufficient to tie the threads together in a way that was meaningful to the issues and the people involved. However, this expansion may mean ASTC needs to provide clarity for museums to understand what the "science" of community science really means.

J. Sickler
CONSULTING