The Access Assembly: sharing ideas and enabling informed adaptations

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Founded in 2014, the Access Network brings together nine student-centered, university-based programs that are pursuing systemic change towards a vision of a more diverse, equitable, inclusive, and accessible STEM community. Network and program leaders are primarily students (undergraduate and graduate) and early-career faculty, many of whom started out as student leaders in Access programs. Over the last nine years, Access has brought people together (virtually or in-person) for an annual event called the "Assembly." The environment and structures at the Assembly enable the sharing of ideas, excite people to translate those ideas to their local programs, and create space for informed and deliberate adaptations. Drawing on post-Assembly survey data, we describe where ideas come from, and where attendees intend to apply them. We also see that participants from various institutional positionalities report learning new ideas at the Assembly and having confidence to adapt them to their local contexts.

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I. INTRODUCTION

Addressing the critical issue of representation and equity in physics requires meaningful cultural change. Founded in 2014, the Access Network connects nine student-led and equity-oriented programs (sites) in STEM departments, which seek to improve STEM culture and individuals' experiences within STEM. Each Access site is fine-tuned to its local context, providing a range of personal support (e.g., mentoring, scholarships, social events), scientific experiences (e.g., summer programs, courses, research opportunities), and student leadership roles. All sites have their own contexts, challenges, and strengths, but are united by common values. Within Access, (1) students are experts in their own lives; (2) we are committed to advancing equity and inclusion; (3) we share power; (4) we share resources; (5) we care for each other; and (6) we individually and collectively aim for improvement [1].

Implicit in these values is an attempted flattened hierarchy of decision-making, consensus-building, and valuing of student expertise. Historically, efforts to change departments are often top-down and student expertise can be undervalued [2,3]. Access values, which center students' expertise and agency, show up explicitly in the planning of our Annual Access "Assembly," which is designed and run primarily by Access student fellows, and attended by faculty, staff, and students from each of the sites.

This paper is the second in a series, both of which draw from data from surveys at the Assembly. The first, by Turpen et al., focuses on participants' perception of the Assembly as a space of growth, enabled by an inclusive and supportive environment. This second paper focuses on idea sharing through the Assembly, as aligned with our values: (2) students are experts in their own lives (and therefore have important ideas to share), and (4) we share resources. We expect that idea transfer is directly facilitated in part by the intentional culture-building described in our first paper, and this manuscript names additional structures that support idea sharing and uptake across contexts.

II. BACKGROUND

A. The Access Network and Assembly

Although site membership within the Access Network necessitates programs' overarching alignment of values, each site's local offerings, leaders' academic positionalities, student demographics, and institutional supports and challenges vary. Some sites include undergraduates and graduates, while some are only for undergraduates. Many serve physics students, and some are STEM-wide. Access includes sites at Minority-Serving Institutions and many Primarily White Institutions. Some sites have faculty and/or staff support, while some are completely student-led. Across most sites, membership includes significantly higher fractions of women, students of color, LGBTQ+ students, and/or other marginalized groups than their host departments, but navigating those identities looks different at different institutions. Because each site has their own needs, resources, and constraints, it is an inherent feature of responsive programming that each is different. Access aims to support students working towards their own individual and collective goals; there is solidarity in our resonances and awareness and appreciation of our differences.

To build community and allow idea sharing across sites, the Access Network funds cohorts of three types of student fellows, typically with one fellow per Access site in each cohort. Assembly Fellows (AFs) plan our annual Assembly to learn together, showcase ideas, and be in community. Network Fellows (NFs) collaborate on intersite projects and keep their local sites connected to larger network activities. Evaluation Fellows (EFs) design and carry out education research about Access and local sites. Each fellow cohort is mentored by a set of Access Core Organizers (COs), members of our leadership team. The COs are also largely students and early-career scholars, most of whom are or were student leaders at sites.

This paper focuses on idea sharing at the Assembly. Each Assembly lasts three days and usually has on the order of 20 "sessions," some held in parallel, and some as plenaries. The majority of the sessions are imagined, designed, and run by AFs themselves, so the programming is different each year. There are a few recurring sessions year-to-year, some of which organically became favorites that new AFs wanted to repeat, and some of which are organized by the COs to facilitate transparency around funding, give logistical updates, and collectively vision on the future of the network. Typically, there are 40-60 attendees, including fellows, site leaders, COs, and occasional other friends of Access (such as students, staff, or faculty at interested / potential future sites).

B. Literature on Sustained Adoption

Within the field of physics education research, the community has spent considerable energy to create and share instructional resources [4]. Despite educators' eagerness to share ideas, research has shown us that there is often a gap between "knowing" strategies and using them [5]. Khatri et al. [6] emphasize the difference between dissemination of strategies (sharing ideas) and their propagation (sustained adoption by others). For successful adoption of new strategies, they recommend: (1) interactive material development, (2) interactive dissemination, and (3) ongoing support for adopters [6].

For example, interactive material development with stakeholders across contexts from the beginning (especially those who hope to use them) allows more perspectives to inform design and give ongoing feedback during development. This makes resources more robust, flexible to multiple needs, and helps buy-in for stakeholders. Once the resources exist, interactive dissemination (i.e. through workshops, rather than "talks") allows resource creators to

flexibly react to adopters' different needs. Direct interaction with materials and their developers can also build community and engender buy-in. Lastly, Khatri et al. note that often support for adopters does not go beyond initial idea sharing and adoption [6]. This is especially important because many instructors abandon new instructional strategies after their first attempt using them [7]. Support past the initial attempt, specifically *after* the first implementation, can support adopters during a crucial time.

C. Assembly Structures for Sustained Adoption

While much of the literature on sustained adoption focuses on faculty in the context of research-based teaching, we expect the recommendations apply within Access as well. In all cases, folks are often learning something new and attempting to apply it with varying levels of support. Additionally, equity work and improved teaching are both often undervalued or sidelined in many departments, but are still carried out by passionate advocates.

In our context, the Assembly is intentionally designed for informed and sustained resource sharing across contexts. To lay the groundwork for collaboration across sites for the rest of the Assembly, the first day starts with a plenary session where sites each share about their program features, leadership structures, membership, challenges, and successes, which helps attendees from different institutions orient themselves to each site's structure and context.

For developing resources, the Assembly facilitates interactive and iterative feedback on existing resources, and for collaborating and ideating new ones. Annually, the COs lead a "Future of Access" session, which asks attendees to weigh in on the current and evolving priorities, activities, funding opportunities, and structures of the network. For example, the 2024 session allowed all interested folks to ideate around types of evaluation that would align with sites' needs. Similarly in 2023, prior to a submission to the NSF Racial Equity grant line, we all brainstormed ways the network could grow in its learning and capacity to combat racism. Building from many perspectives improved the quality of our ideas and helped us contextually prioritize.

Each Assembly has multiple sessions for developing strategies related to running a site. One of the student-led recurring sessions, "Restart, Refresh, Rebuild, Recruit, Retain Your Site", affectionately nicknamed "R5", provides space for brainstorming around site struggles. Prior to the Assembly, the AFs collect scenarios from each site (e.g. dealing with leadership turnover, pushback from departments). During the session, attendees form groups (across site affiliations) to brainstorm and/or share what has worked for them (or not). Many challenges are common, but having stakeholders from different sites allows for multiple flexible strategies that can be tried across contexts.

The Assembly also facilitates interactive dissemination. Nearly all sessions are interactive, and are often a space to pilot resources. For example, the 2024 Assembly launched our "starter kit" chapter on near peer mentoring programs [8], which had been iterated over multiple prior assemblies. In its first "complete" form, folks were asked to read sections, think about how they may use pieces at their own site, and what else they would include.

Lastly, a major strength of the Assembly is its ability to foster a sustained community. By spending this intensive (and often vulnerable) time together, attendees build fast friendships which can be on-call when they return to their sites. Additionally, the end of each Assembly day has built-in time for sites to discuss ideas to bring home and/or adapt. This allows attendees to make concrete plans while the ideas are fresh, share ideas from different sessions, and still have opportunities to ask questions of other attendees in subsequent days of the Assembly.

III. METHODS

Since Access's first Assembly in 2016, the network has conducted an annual survey about attendees' experiences at the Assembly, in Access, and in their sites, including the extent that Access has supported their growth and confidence in leadership, organizing, and social justice work. The survey also includes demographic questions.

Historically, the survey has received 24-38 responses, typically just over half of attendees. This paper focuses on responses from 2023 (N=35) and 2024 (N=27), both in-person Assemblies. The relevant subset of the survey includes a question about whether the Assembly provided ideas to improve their site, Likert-scale questions related to their experiences sharing ideas, and open-ended prompts. Qualitative analysis focuses on the following prompts:

1. Please share an example of an idea that you are interested in implementing at your local organization. If you can recall, please describe how you learned about this idea.
2. To what extent do you feel like you could adapt what was discussed and learned at the Assembly to suit your needs at your local organization? Explain.

The qualitative data was coded via emergent themes within each "type" of information shared: where ideas came from; how attendees plan to use ideas; and ideas' adaptability.

IV. RESULTS

A. General Experiences with Idea Sharing

Responding to the question about whether the Assembly gave attendees new ideas for their sites, 96% of respondents in 2023 and 100% of respondents in 2024 answered "Yes." Responses to Likert-scale questions from 2024 are also shown in Figure 1. We did not combine data across years as the sets are not independent, but there are no significant differences between the data in 2023 and 2024.

Overall, a large portion of Assembly attendees report positive outcomes related to the sharing of new ideas and building relationships and skills required to take up those ideas. All respondents agree, with a majority strongly

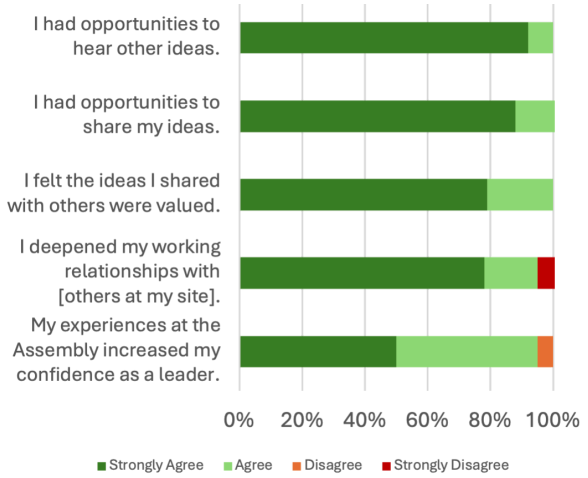

FIG. 1: Agreement with statements about idea sharing and confidence building, from the 2024 Assembly (N=27)

agreeing, that they had opportunities to hear ideas from others as well as share their own ideas and feel that they were valued. Almost all respondents agreed that they deepened relationships with others at their site and gained confidence as a leader. These two factors provide a strong basis for the adaptation of new ideas into local contexts. These results indicate a great amount of idea sharing, supported by relationship and confidence building.

B. Where do Ideas Come From?

Across responses in both 2023 and 2024, attendees typically cited sessions, specific and/or non-specific people (e.g. "other site leaders"), or attributed their ideas generally to learning about other sites' offerings. Some ideas were shared without explicit origin, though were well aligned with sessions held that year. For example, a graduate student names an idea they want to try from a specific site and session, "*From notes on the TEAM-UP session, perhaps working with admin to provide monthly office hours for students of color specific to addressing their needs, like [other site] holds…"* Another graduate student says, "*We want to revamp our mentorship training (mentorship session) and downsize our annual retreat to make space for new events (resource allocation session)."*

Many ideas were likely inspired by sessions, even if unnamed. For example, the "resource allocation" session in 2023 was alluded to often. The session asked participants to start from program goals, then assess how or where resources are best spent. One recently graduated student shared, "*We want to integrate two existing programs to better utilize our resources!*" and an undergraduate shared, "*we were talking a lot about ways to revamp programs and reassess what our goals and principles are so that we can move forward with a very well defined purpose,"* both aligned with that session. Similarly, when the mentoring starter kit [8] was launched in 2024, more responses included ideas to improve local mentoring programs.

Many ideas were also generally credited to other sites. For example, one undergraduate said they are "*taking inspiration from other groups to improve mentor mentee relations…,"* while another undergraduate noted that, *"[our site] should really benefit from the shared resources from other organizations that specialize in things that we don't, especially understanding how we can market events and have a social media presence.*" A graduate site leader shared, "*Hearing about how [other site] sorts their mentors with a focus on the goals that each mentor and mentee has for their mentoring relationship is a component that [our site] now plans on incorporating*."

C. How do Attendees Hope to Use Ideas?

When sharing ideas gained from the Assembly, folks cited a wide range of potential applications and takeaways. A large number of attendees cited intentions to directly use or adapt specific activities and strategies from the assembly or other sites. For example, one undergraduate cited two sessions at the Assembly, "*I really liked the Metacognition and STEM Story workshops and I think doing something similar to that would be a great addition to the list of events we already have."* A graduate site leader shared their intention to use another site's activity, even without experiencing it first hand, "*inspired by [site], [we want to] start a no/low jargon talk series aimed at undergraduates.*"

Many also shared eagerness to try strategies around local site structures, priorities, and challenges. One graduate site leader shared, "*we plan to implement many of the recruitment and retention strategies discussed during R5 at our site this upcoming semester."* Another graduate student, a CO and site leader said, "*There were a lot of discussions about how to find your niche and target your programming around that. I think this will help me understand where to help build more communication structures with other organizations in the department and plan for the future.*"

Amongst these structures, many respondents specifically named ideas for network-building, including new ideas to build networks at their local institutions. One graduate student said they are "*planning on contacting our PER groups to help evaluate the effectiveness of our class.*" and another mentioned that, "*the session on telling your STEM story through dance reminded us that a professor at our institution does similar work, and we're thinking about reaching out to her."* A non-student also shared a new strategy for building local support, "*[site] mentioned they were working on a climate survey…with their campus counseling center. My institution has also wanted to create a climate survey, but we've hit a few snags… I think working with our counseling center will help us past them."*

Beyond the context of Access sites, many attendees also stated intention to bring ideas to other work. For example, one graduate student shared, "*Along with being associated with the local site, I lead a program for undergraduates outside of my university to come in for*

REU-like experiences. There is a lot that I learned about mentorship and leadership structures that can inform both of these spaces." One CO faculty member cited inspiration for "*how to frame DEI initiatives in a way that aligns with faculty/dean/admin goals in order to generate more buy-in.*" Another faculty advisor—external to Access—shared that they had new ideas for "*helping colleagues unaffiliated with Access to better understand the importance of listening to thoughtful students about how to improve their experience and the power of the Access approach in doing that,*" which points to the wider value of the Assembly space.

Although less concrete, a recurrently named takeaway was enthusiasm and an affirmation of the importance of the work. One faculty member hoping to create a local site brought a student because, *"it is sometimes difficult to describe Access, but attending assemblies is a great way to really show how our community works, what we value, and what we hope for."* The Assembly does inspire many; one undergraduate shared, "*I have more motivation to go back and improve my site!*" while another says they intend to "*rally other students for accessibility initiatives, inspired by the whole idea of Access, [and] using my experience as an undergrad to mentor others in a really important way that professors can't do.*" Though abstract, the vibes and energy were often cited as "ideas" to bring home.

D. How Adaptable are Ideas?

Across both years, nearly all respondents agreed that they can adapt ideas to their local context. Some additionally mention supports that give them confidence. For example, one undergraduate asserts, "*I definitely can adapt the discussions of diversity in my host site and the ideas of active listening and good group dynamics,"* while another shares, "*I feel very confident about being able to adapt. A lot of these are completely possible given the strength of PER at [my school]."*

Some responses note similarity across site challenges, and some cite the range of contexts as a strength. One undergraduate notes, "*Since all of the sites are similar we have similar issues and talking through those to find solutions was very beneficial."* In contrast, one of the fellows wrote, "*Every site has different issues because we are all so different even if we have the same goal. Some sites have tons of people in it, some don't and some have better outreach strategies than others. I feel like taking in their advice could be applied and modified to what we need for our site,*" and one of the COs shares, "*every site is different, but there were so many ideas that the more applicable ones feel like they could be adapted."*

Many responses explicitly recognize the framing and space at the Assembly for intentional adaptation. One undergraduate says, "*I think a lot of the ideas discussed were introduced in a way that is meant to be easily adapted*." A graduate student similarly shares, "*Many of the sessions were well-tailored towards brainstorming site specific program needs, even if many of the discussions were left general."* Others also named some of the general principles that felt universal, like this undergraduate: "*I feel like almost every aspect of the topics and discussions is applicable. Everything from discussing leadership to reallocation of resources, and even talks within affinity groups, e.g. being a good ally.*" A graduate CO and site leader makes this re-frame, "*the Assembly only provides a few things that can be directly ported to our site, but is much more useful at its real purpose of providing space to reevaluate and generate ideas."* Another undergraduate shares, "*Throughout the entire course of the assembly, the idea of collaboration was a constant presence. I feel like there are really good opportunities for our site to engage."* Many speak to the site check-ins, and one graduate student says simply, "*we have a to do list and notes and a way to break up the work,*" an ideal outcome of the site check-ins.

Despite high confidence, some responses unearth potential barriers to adaptation. Some cite uncertainty due to their current role. For example, "*as a postdoc I have a more minor role in the site*," and a graduate student shares, "*I do not sit high in the power hierarchy of my institution which makes it difficult to instigate some of the larger cultural and structural changes discussed."* One faculty member also mentions difficulty getting their colleagues on board, and asserts they will simply do so covertly: "*I feel like the extent the activities are led by students will need some mindset change and a transition period but I think the underlying ideas could be implemented gradually without telling what it really is until the community is ready."*

V. CONCLUSIONS

As aligned with named Access values, we are pleased to see idea sharing (a type of resource) across attendees from various institutional positionalities, leveraging different types of expertise while still centering students as experts. We suspect that the deliberate work of creating an inclusive space with more horizontal power structures contributes to this mutual learning. We also see idea sharing at multiple levels: in principles, structures, and implementation details. As aligned with Khatri et al.'s three recommendations [6], we see folks using and appreciating Assembly structures for (1) interactive resource development, (2) active engagement with new resources, and (3) network building for ongoing support. Many cite that structures at the assembly help them adapt to their local sites; folks recognize their different sites' needs and resources, and appreciate the space for intentional adaptation. Still, it is possible that those with less positive experiences do not complete the survey, and we do not yet know if ideas are actually implemented. In future, we hope to follow attendees beyond this eager moment to better understand the extent that the ideas are adopted and sustained, challenges and successes once they are "home," and how often attendees continue to rely on connections from the Assembly for long-term support.

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