NIOST
National Institute on Out-of-School Time

# Out-of-School Time STEM Workforce Recruitment

Issue Brief #1
February 2026

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# OST STEM Workforce Recruitment

## Overview and Rationale

The National Institute on Out-of-School Time (NIOST) at Wellesley College, with generous support from the Overdeck Family Foundation, conducted an investigation of effective strategies for recruiting, training, and retaining a high-quality out-of-school time (OST) STEM workforce. We have investigated these issues across different geographic locations, program types, and program populations in combination with broad perspective gathering from OST STEM educators and program directors. Through this work we expect to inform program leaders and educators how to best obtain, prepare, and retain staff to deliver high quality STEM activities in OST programs. Developing a strong and effective OST STEM workforce is a priority for the OST field. We expect the findings to illuminate promising pathways to strengthen OST STEM staffing and STEM learning delivery. This Issue Brief #1 focuses on STEM staff recruitment. Key findings highlight the challenge and ramifications of implementing internal and external recruiting strategies, along with the benefits of relational recruiting approaches.

This mixed-methods investigation included OST program STEM activity observations in 25 programs along with 33 interviews with STEM program activity leaders in a selected sample of those programs. Program observations and interviews took place in five states: Alaska, Massachusetts, Georgia, Minnesota, and Wyoming.

## Method and Sample

High quality STEM activities were identified by the study team's use of the Assessment of Program Practices Tool (APT) STEM Activity section. The APT is a field-tested and validated program observation instrument which includes assessment items on STEM Activities including nature of activities, staff and youth engagement, and evidence of STEM skill practice and mastery based on the Next Generation Science Standards. The APT was developed in partnership with the MA Department of Education 21st CCLC Program and is currently being used throughout Massachusetts as well as 35 states nationwide.[1] The APT observation was completed by a NIOST researcher and quantitatively analyzed based on an item scale of 1 (low, not true) to 4 (high, very true). Researchers identified high quality STEM activity implementation in order to identify skilled STEM Educators for in-depth interviews.

The overwhelming majority of STEM-educators interviewed for this study and observed delivering OST STEM activities, held bachelor or higher degrees. Activity quality data collected via the APT indicated a "high quality" level of STEM activity delivery. Following quality validation through the APT-Observation, STEM activity leaders were invited to an interview with the NIOST researcher. Semi-structured 45-minute interviews were primarily conducted on site following the observation. Program staff were asked to: (a) describe their roles and responsibilities; (b) share about their work history and what attracted them to the STEM OST workforce; (c) provide insight into their education, STEM background, and interests; (d) clarify the potential impact of a variety of professional development experiences; and (e) offer their opinion on what it takes to most effectively recruit staff, to train staff, and to keep staff who can deliver high quality STEM activities in OST programs. The 33 program staff who participated in the interviews self-reported their demographics as: Female – 22; Male – 8; Non-

[1] Tracy, A., Surr, W., & Richer, A. (2012). The Assessment of Afterschool Program Practices Tool (APT): Findings from the APT Validation Study. Wellesley, MA: National Institute on Out-of-School Time.

binary – 1; White – 16; Black – 6; Hispanic – 2; Mixed Race – 2; Asian – 2; Non-disclosed – 2; Native American/Alaska Native – 1. Interviewees reported the following age categories: 20-30 years (15); 30-40 years (12); over 40 (4). Each interviewee was offered a $20 gift card delivered digitally to remunerate their time devoted to the interview.

Interviews were recorded via laptop, phone, or digital recording device. Following recording each interview was downloaded to a secure storage file and then analyzed using NVivo software. All transcripts were coded by two members of the research team. Initial coding themes were based on the interview framework. Themes were refined and added to given the patterns and content of interviewee responses. Bi-weekly meetings of the research team were used to discuss thematic analysis and support the writing process.

NIOST developed and disseminated the National OST Program Director Survey on OST STEM Workforce. The research team collaborated with organization leaders in the five geographic target regions. A total of 2406 survey responses were received between January 8 and July 17, 2025. A randomized $25 gift card drawing was offered each of the weeks the survey was open. After cleaning and eliminating incomplete responses a final set of 1547 responses was analyzed. All 50 states were represented in the response sample. Sixty-five percent of the respondents identified themselves as Program Director/Program Supervisor/Program Coordinator. There were 40 items on the survey including multi-choice, rating, and Likert scales with a skip-pattern implemented based on STEM workforce characteristics.

## Background

Existing research on STEM-focused OST programming demonstrates the key role of OST in STEM education, the challenges faced by professionals in the field, and the strategies currently used to address those challenges, including forging partnerships and appealing to the values of STEM-educated graduates. OST programs “are increasingly recognized as crucial components of the larger learning ecosystem for STEM” (Afterschool Alliance, 2016). However, implementing effective strategies for recruiting STEM-specific educators for OST programs remains a challenging task for program directors, even more so than recruitment of general program staff. According to a recent report from Afterschool STEM Hub (2025), programs have a difficult time hiring “STEM-proficient” staff due in part to the inability to pay competitive wages and offer benefits. Langreo (2022) notes that following the COVID pandemic, 74% of afterschool providers reported difficulty hiring and retaining staff.

As a means of attracting employees, afterschool programs implemented a variety of approaches: 30% said they increased salaries and 16% offered free childcare for their staff. Despite an attempt to engage in new strategies, 22% of afterschool programs reported that nothing they did was effective at attracting new employees. Lieberman (2022) suggests that the most successful programs to recruit staff have had significant funding and the ability to maintain health insurance benefits, raise staff wages, and hire enrichment specialists. OST programs have also explored more creative approaches such as referral and retention bonuses, employee wellness opportunities, flexible work hours, job sharing options, and increasing hours for those who want the additional work. Some notable shifts have occurred since 2021. Programs now allocate significant percentages of new funding towards staff recruitment and in doing so, afterschool programs are able to hire more staff, serve more students, expand program offerings, or, in some cases, simply maintain the program (Afterschool Alliance, 2021).

Research by Crawford (2016) showed that some universities are creating dedicated programs within their STEM areas of study in order to prepare graduates for STEM teaching opportunities, including in afterschool programs. At the same time, STEM-focused private sector companies are developing and funding programs or sending in volunteer employees to teach or share about their careers. Warner, et. al (2024) explored six different K-12 outreach STEM programs hosted by universities and industries revealing several important takeaways related to long-term volunteers. There are numerous ways to develop long-standing volunteer relationships, including offering course credit to college students or providing paid time off work for individuals with other jobs.

In light of the high demand for undergraduate students as staff for STEM afterschool programming, recent research (Muller et al., 2021) has begun to examine what may draw undergraduates into OST STEM work. Researchers identified three categories of value that influenced undergraduates to pursue STEM OST jobs: intrinsic, defined as the enjoyment of teaching STEM and/or youth; utility or the opportunity to develop professionally; and attainment, reflecting the desire to share knowledge and create experiences they personally lacked. This growing literature still lacks evidence-based recommendations regarding the recruitment of STEM educators. The below findings offer clarity on the state of the field regarding internal general staff who offer STEM and other types of staff who deliver STEM, and insights into recruitment practices across these different staffing situations.

## Findings

### *The Benefits and Challenges of Internal General Staff as OST STEM Educators*

Data from surveys and interviews with OST STEM educators and program directors, in the study targeted communities, yielded useful information about recruiting staff to deliver high quality STEM programming. **Almost half (45%) of the program directors responding to the survey reported relying on their own general staff to deliver STEM activities** (see Figure 1). This was particularly true of program directors in larger programs (serving over 50 youth) where 55% of program directors rely on their own general staff as STEM educators. Smaller programs were more likely to hire STEM-specific staff (see Figure 2).

**Figure 1.**

*STEM Staffing Approaches Reported by Program Directors*

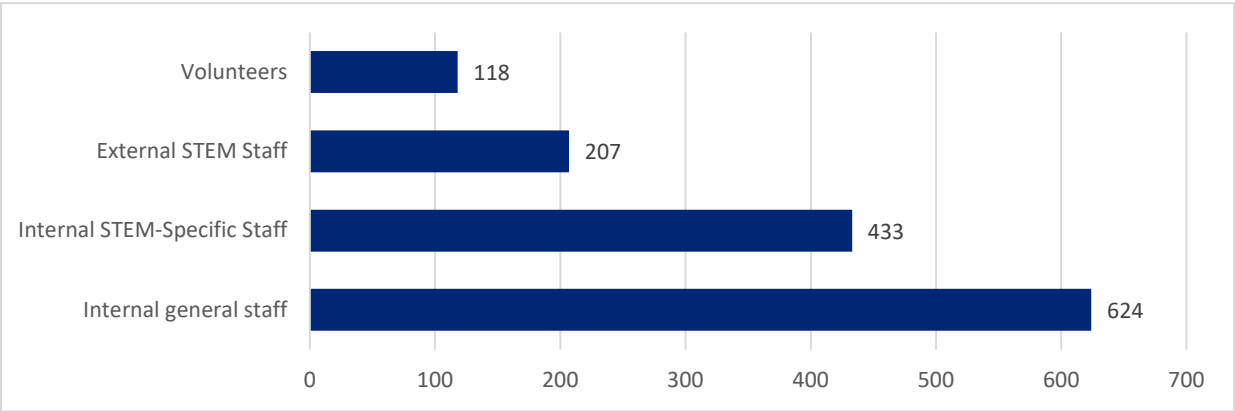
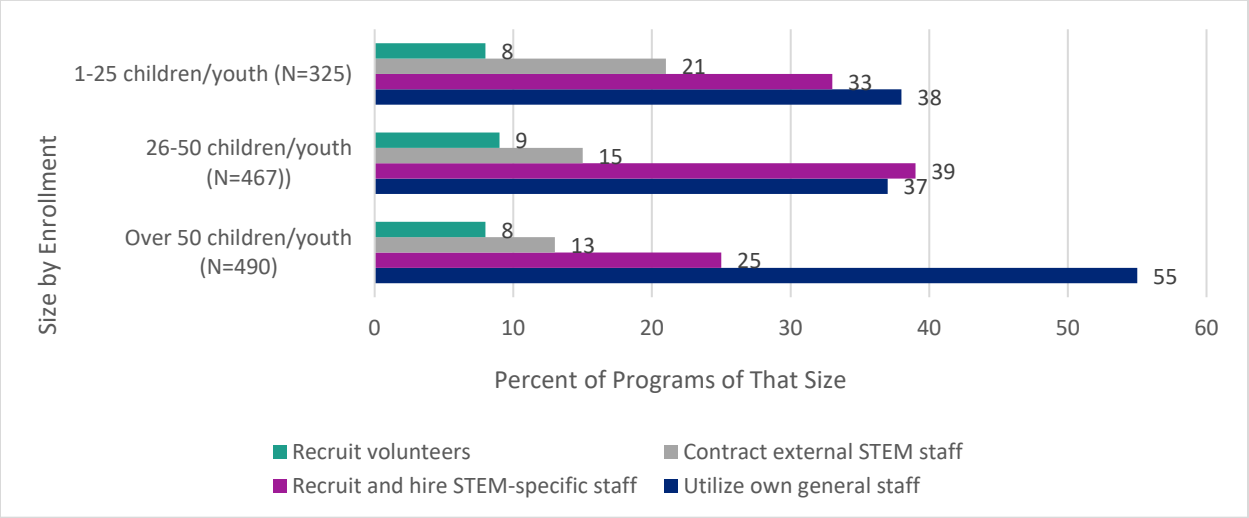


**Figure 2.**
*STEM Staffing Approach by Program Size*



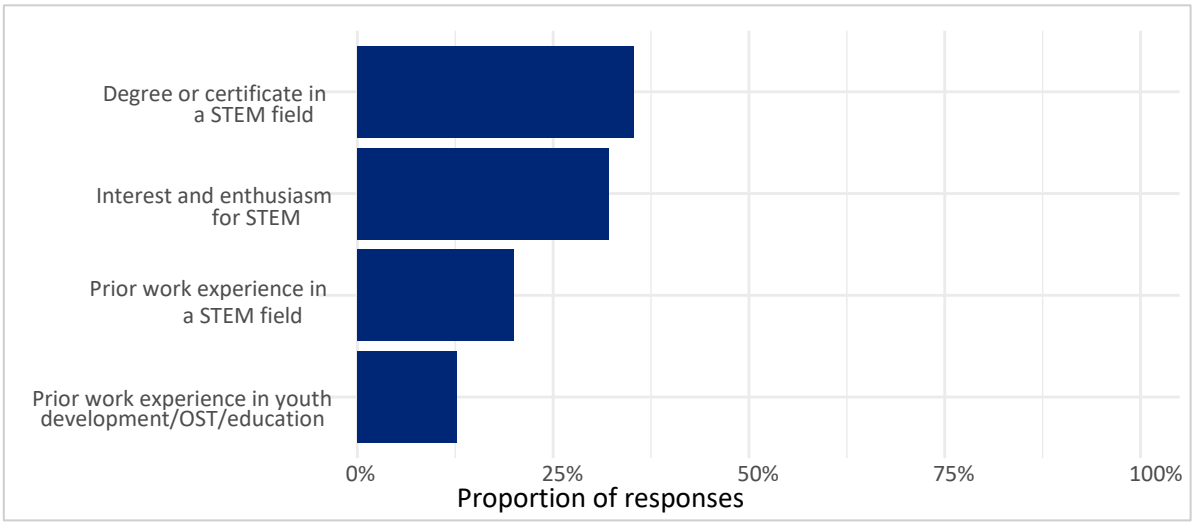

Program directors who rely on internal general staff to provide STEM facilitation tended to hire more staff with high school as their highest form of education (48% of hires) compared to staff with college degrees of any kind (undergraduate degree: 33%; graduate degrees: 19%). Despite the regular practice of growing internal general staff to facilitate STEM activities, more than 90% of those program directors expressed that they would prefer to hire STEM-specific educators.

Growing capacity of internal staff may be more cost-effective than hiring STEM-specific staff, but also likely requires significant investment in staff training, coaching, support, and resources in order to replicate the presumed high-quality STEM facilitation provided by STEM-specific educators, especially those with STEM degrees. However, there is little evidence beyond anecdotal information that internal general staff with training cannot deliver equivalent quality STEM experiences to staff with more advanced education or experience. Even among program directors who recruit STEM-specific staff, growing the capacities of internal general staff to be STEM educators is a valued staffing strategy. Of the 375 STEM educators who have STEM-specific staff, 203 (54%) said growing the capacities of internal staff was or could be a very effective strategy for recruiting STEM staff, and 129 (34%) rated it somewhat effective. Seven STEM educators interviewed indicated that they began working in their OST program as an intern or volunteer and then became the STEM educator:

> *I've been here for about six years in different capacities. I actually started as a summer intern, and I thought I wanted to go to physician assistant or nurse practitioner school. And then I fell in love with the teaching and learning here, and I came back. And now I've been working for over five years here. (STEM Educator, Assistant Director)*

What emerges as one of the possible greatest benefits to growing internal staff and risks to hiring STEM-specific staff is candidate experience in youth development. Survey data showed that program directors hiring STEM-specific staff prioritized STEM qualifications and interest more than experience in youth development in a candidate's background (see Figure 3). Directors who reported **prioritizing prior experience in youth development/OST/education** in hiring were **significantly more likely** ($p = < 0.01$, Odds Ratio = 2.37) **to report retaining staff** that joined their program in the past two years.

**Figure 3.**
*Hiring Factors for Program Directors Hiring STEM-specific Staff*




Staff with youth development experience (whether through previous employment or continuous employment within their program) come with a set of skills that makes working with groups of children, leading activities, and managing behaviors more achievable. While carrying all of the benefits of STEM principles, vocabulary, and procedures many STEM-specific staff can struggle to manage youth learning experiences in group settings. Afterschool STEM Hub (2025) highlighted this conundrum in the OST STEM workforce: STEM educators who might need training to work with youth versus youth development staff who lack the skill and confidence to teach STEM. STEM educators interviewed considered the balance between training staff in youthwork versus training staff in STEM facilitation. One STEM educator commented:

> *Does your personality fit? Because you have to have a certain personality for children. Because that's the main part of this whole thing. The science, the lesson, all that we can work with…but your connection to children and to people…teaching children and teaching them to have fun and teaching them outside of their classroom. (STEM Educator, Project Coordinator)*

Ideally, program directors can identify staff internally or through external recruitment that bring both a passion for STEM **and** experience in youth development. Fortunately, there are OST intermediaries that have stepped in to provide system level training, resources, and communities of practice to ensure that programs are supported in building the capacities of existing program staff to deliver high quality STEM experiences. Intermediary partners such as those on this project: Alaska Afterschool Association, Boston After School & Beyond, Georgia Statewide Afterschool Network, Ignite Afterschool, New Jersey School-Age Child Care Coalition (NJSACC), and Wyoming Afterschool Alliance all offer STEM trainings, resources, products, to support staff knowledge-building and facilitation. National initiatives such as the National Afterschool Association STEM Facilitation Micro-Credential, Afterschool STEM Hub, Afterschool Coaching for Reflective Educators in STEM (ACRES), and STEM Ecosystems are making significant efforts at a system-level to fill-in where training and professional development gaps have appeared.

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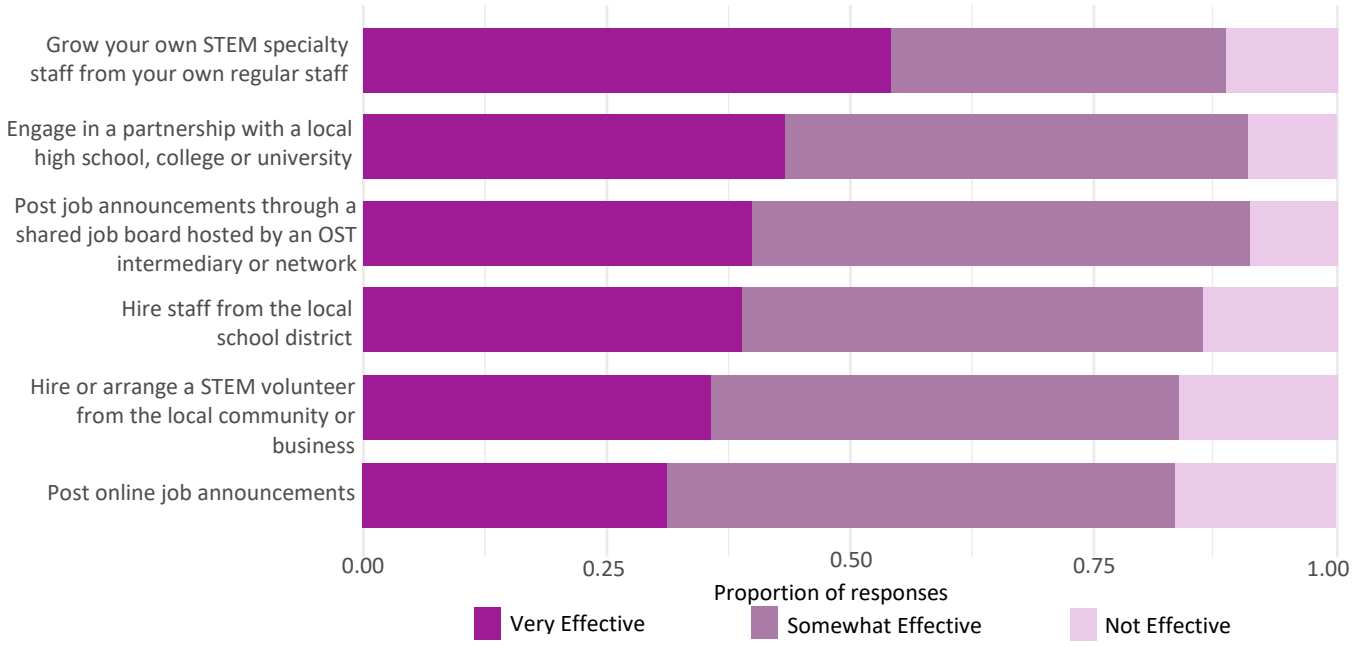
The connection between high quality delivery and specific STEM knowledge and training is essential, pointing to three potential on-ramps: (1) recruiting STEM-specific educators with evidence-based training in STEM facilitation and learning and then providing them with additional coaching and training in youth development; (2) providing existing general youth development staff with training and professional development experiences offered through system-level interventions to upgrade STEM facilitation and activity delivery; and (3) giving greater attention to STEM interests, background, and passion at initial hiring, even at the high school level, with the expectation to grow capacity for an eventual role as a STEM educator specialist.

***Relational Recruiting***

Program Directors who recruit STEM-specific staff were asked about effective recruitment strategies for attracting STEM educators. Second to the strategy of growing specialty staff from within their program, was engaging in partnerships with local high schools, colleges, or universities. Using online job announcements and postings or recruiting volunteers from the community or local business were comparatively ranked less effective (see Figure 4). Partnerships with universities and public libraries were most commonly selected by survey respondents in general, as a strategy to recruit STEM educators to deliver STEM program activities, regardless of OST program size (see Figure 5). [2]

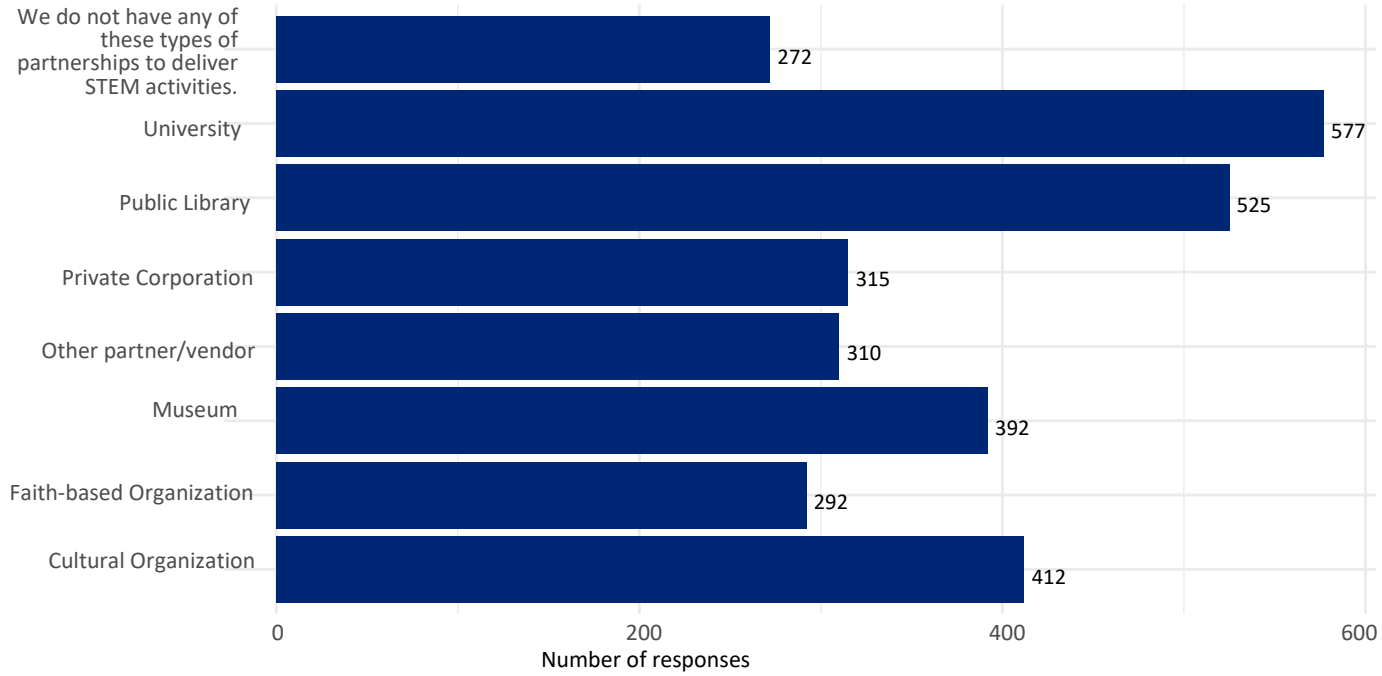
**Figure 4.**

*Effectiveness of Recruitment Strategies for STEM-specific Staff*




[2] 119th Congress Mapping, 2025. The Congressional Research Service (CRS) mapped various features, including public libraries, to congressional districts demonstrating access to public libraries in all 435 districts. https://www.congress.gov/crs_external_products/IN/PDF/IN12489/IN12489.6.pdf

**Figure 5.**
*OST STEM Partnerships*




Interviewed STEM educators also commented on the most effective approaches for recruiting staff who can deliver high quality STEM activities in their OST programs. The three most common strategies noted by interview participants included *partnerships with colleges/universities* (10), *networking* (9), and *connecting with a recruit's interests* (8). The elevating of these strategies points to the use of "relational" recruiting as a primary approach to effective STEM educator recruitment (see Figure 6).

**Figure 6.**
*Relational Recruitment Model*



One STEM educator described the opportunity of partnering with a university as a pipeline for regularly bringing in staff to their program. Other STEM educators (6) gave examples of using university partnerships to establish internships, offer volunteer/community service hours, work study, or relevant work experience for students. One STEM educator offered:

> *This is a full pipeline from your freshman all the way up to your doctoral candidates. There's a space for everyone to have something and specifically with STEM it's like this is an opportunity for you to help teachers, before they even get their own classroom. (STEM Educator)*

Another STEM educator recalled:

> *You have a biology major that needs to get hours, and that's what they want to do…finding a college kid that's a sophomore going into junior year that needs an internship…some can be paid, some might not be paid…finding somebody specifically in STEM to run a STEM program… experience for them, but it also helps me as a non-profit. (STEM Educator)*

Nineteen interview participants indicated that they were recruited for their current roles via their professional or personal networks. Participants referenced former colleagues or classmates or friends telling them about positions that might interest them. One STEM educator noted:

> *A lot of our hires have come from our network, so our partners that we work with are sharing the word. (STEM Educator)*

***Getting to the Win-Win***

Over the course of the interviews, the research team heard many times that making the clear connection during recruitment from the employment opportunity to the potential STEM educator's goals and interests was a win-win approach. Other research has shown that the ability of OST programs to allow staff the autonomy to bring in their interests, can lead to deeper connection with the work (Afterschool STEM Hub, 2025; Muller, et al., 2021). Based on data from the Power of Us survey study, **the most cited reason an OST professional working in a STEM-only focused program chose their first job in the youth field was a passion or interest in the subject or setting**.[3]

One interviewed STEM educator recollected:

> *I know what got me through the door was, I walked outside and I saw the students playing with drones. And when they were coding them, I said, "Okay, this is something I want to do. And when I joined, I got hired, and I had a chance to use the drone for myself during my training. I realized, okay, this is where I want to be. (STEM Educator, Facilitator)*

Eight STEM educators from interviews shared the importance of connecting to interests as an effective way to recruit staff, theorizing that potential STEM candidates will be encouraged to apply if they have the opportunity to pursue what Muller et al. (2021) characterized as the intrinsic and utility dimensions of their interests. **Establishing a "relational" STEM educator recruiting approach whether it be personalizing connections to universities, libraries, or museums – or tailoring employment opportunities to a candidate's needs, requires program leaders to mirror "relationship**

[3] In response to the question, "Think about when you first started working in the youth fields. What was the primary reason you chose your first job in the youth fields? Please select one response," 25% of the 1522 respondents selected "I had a passion or interest in the subject or setting (e.g., outdoors education, music, art)". This is based on unpublished findings from analysis of the Power of Us data by NIOST using responses from program staff working in STEM-only focused programs. January 2026.

**marketing,"[4] which fosters loyalty, trust, and retention in contrast to a single transaction focused solely on filling a gap.** One STEM educator explained:

> *I'm looking to hire, interview, passionate people and like, the best part about this job is your hobby gets to get paid for. "So what do you like to do? What are you interested in?" And then I would work with them to develop an idea or curriculum or a lesson plan that kind of got them in that direction, because they were still like, 16- to 20-year-olds that I was hiring who didn't have the lesson planning, but had the eagerness and the readiness to jump in and I'm like, I can work with that. (STEM Educator)*

**References:**

Afterschool Alliance. (2016, December). The impact of afterschool STEM: Examples from the field. Afterschool Alliance. https://afterschoolalliance.org/documents/AfterschoolSTEMImpacts2016.pdf

Afterschool Alliance, (2021). Where did all the afterschool staff go?: A special brief on afterschool staffing challenges from the fall 2021. Afterschool Alliance. https://afterschoolalliance.org/documents/Afterschool-COVID-19-Wave-6-Brief.pdf

Afterschool STEM Hub. (2025, October). *Exploring the afterschool STEM educator landscape: Challenges, needs, and opportunities*. Afterschool Alliance. https://afterschoolalliance.s3.amazonaws.com/documents/Exploring_the_Afterschool_STEM_Educator_Landscape.pdf

Crawford, M. (2016). A better approach to teaching STEM. The American Society of Mechanical Engineers. https://www.asme.org/topics-resources/content/better-approach-to-teaching-stem

Langreo, L., (2022). After-school programs face perfect storm of staffing and funding problems, survey finds. Education Week. https://www.edweek.org/leadership/after- school-programs-face-perfect-storm-of-staffing-and-funding-problems-survey-finds/2022/07.

Lieberman, M., (2022). After-school programs are low on staff, leaving students unsupervised and underserved. Education Week. https://www.edweek.org/leadership/afterschool-programs-are-low-on-staff-leaving-students-unsupervised-and-underserved/2022/03.

Muller, A., Christman, D. M., Rice, M. M., Soto-Apolinar, F., Hirsch, S., and Arya, D. J. (2021). Undergraduate motivations for participating in afterschool programs: A case study of the STEMinist program. *Afterschool Matters*, *(34)*, 20-29.

Warner, J.A., Bradley, J., Hargrove-Leak, S.C., and Nageswaran Bharath, A., (2024). Development and implementation of K-12 STEM outreach programs in industry and academia: Successes, Challenges, and Lessons Learned. ASEE. https://peer.asee.org/development-and-implementation-of-k-12-stem-outreach-programs-in-industry-and-academia-successes-challenges-and-lessons-learned.pdf.

[4] https://www.gofurther.com/blog/ways-to-enhance-your-relationship-marketing-strategy#:~:text=Relationship%20marketing%20is%20a%20marketing,to%20build%20trust%20and%20loyalty.