Exploring the Afterschool STEM Educator Landscape: Challenges, Needs, and Opportunities

September 2025

EXECUTIVE SUMMARY

During the past 15 years, afterschool STEM (science, technology, engineering, and mathematics) programs have become a vital part of the national STEM learning ecosystem. With students spending the majority of their waking hours outside the traditional classroom, afterschool programs provide meaningful, hands-on, inquiry-based learning opportunities that reinforce and expand upon school-day learning. These programs build critical skills—such as problem-solving, creativity, and resilience—and are essential for fostering youth interest, identity, and persistence in STEM.

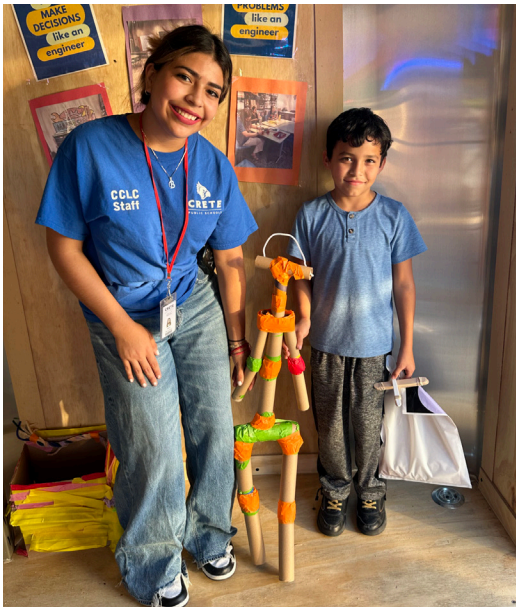

Photo credit: Cardinal Community Learning Centers, NE

Despite their increasing importance and popularity—73% of parents report their children participate in STEM activities in afterschool programs—significant gaps remain in access, quality, and support for the workforce tasked with delivering these experiences. Millions of youth are unable to participate due to geographic, demographic, and staffing disparities. A key challenge is the recruitment, development, and retention of qualified afterschool STEM educators.

To address this issue, we explored what additional supports afterschool STEM educators require to provide high-quality STEM programming for all youth (i.e., supports that go beyond the core needs of all afterschool educators). To inform our work, we conducted semi-structured interviews and focus group discussions with afterschool STEM program providers, practitioners, professional development (PD) providers, as well as youth participants in afterschool STEM programs. We also examined findings on afterschool STEM in the Afterschool Alliance's Q4 2024 program provider survey.

We uncovered challenges, but also creative solutions that programs are implementing to overcome some of the challenges. Our interviews with young people offered complementary, insightful perspectives on what they need to have a good STEM engagement experience.

Key Challenges

1. Recruitment & Retention

Many of the challenges around recruitment and retention of STEM facilitators are the same challenges programs face in staffing the afterschool program overall. The low wages in the field lead to high turnover rates, and there are too few opportunities for growth. Limited funding and the short-term nature of the roles make it difficult to offer benefits and paid vacation days while also making it difficult to undertake robust succession planning.

Photo credit: Gary Comer Youth Center, IL

Specific challenges for afterschool STEM programs include:

- Afterschool programs often cannot compete with market wages for STEM-proficient staff. Non-competitive wages, limited benefits, and part-time roles are the primary obstacles to retaining STEM-skilled staff in afterschool programs.
- There is no clear career pathway into afterschool STEM program facilitation: STEM professionals often lack youth development training, while youth workers often lack confidence and skills to lead STEM programs.

2. Access to STEM Professional Development (PD)

Afterschool STEM programs are more expensive to offer, and the constant search for limited funding leads to a lack of paid time for PD.

- Afterschool educators struggle to access PD due to funding constraints, time limitations, and logistical hurdles (especially in rural areas).
- PD costs often extend beyond registration for the conference or training—requiring substitute educator coverage, travel, materials, and compensation.
- Even where free PD exists, staff frequently lack the time or support to attend.
- Regulatory restrictions and licensing frameworks that require programs to train staff on certain topics may limit the amount of time and funding programs have to prioritize STEM-specific PD.

Opportunities and Solutions

Despite the challenges, programs nationwide are adopting innovative approaches to address their need for skilled afterschool STEM program facilitators.

- **Involve College Students & Alumni:** Many programs recruit and train local college students and former participants to serve as STEM educators or mentors.
- **Build Staff Autonomy and Support Wellness:** Offering flexible, personalized STEM curriculum design and built-in time off boosts morale and retention.
- **Implement Creative PD Models:** Programs can offer hands-on, video-based peer learning or provide blended models combining in-person, online, and peer support formats.
- **Form Partnerships:** Collaborations with schools, businesses, and higher education institutions help supply materials, expertise, and joint PD opportunities.

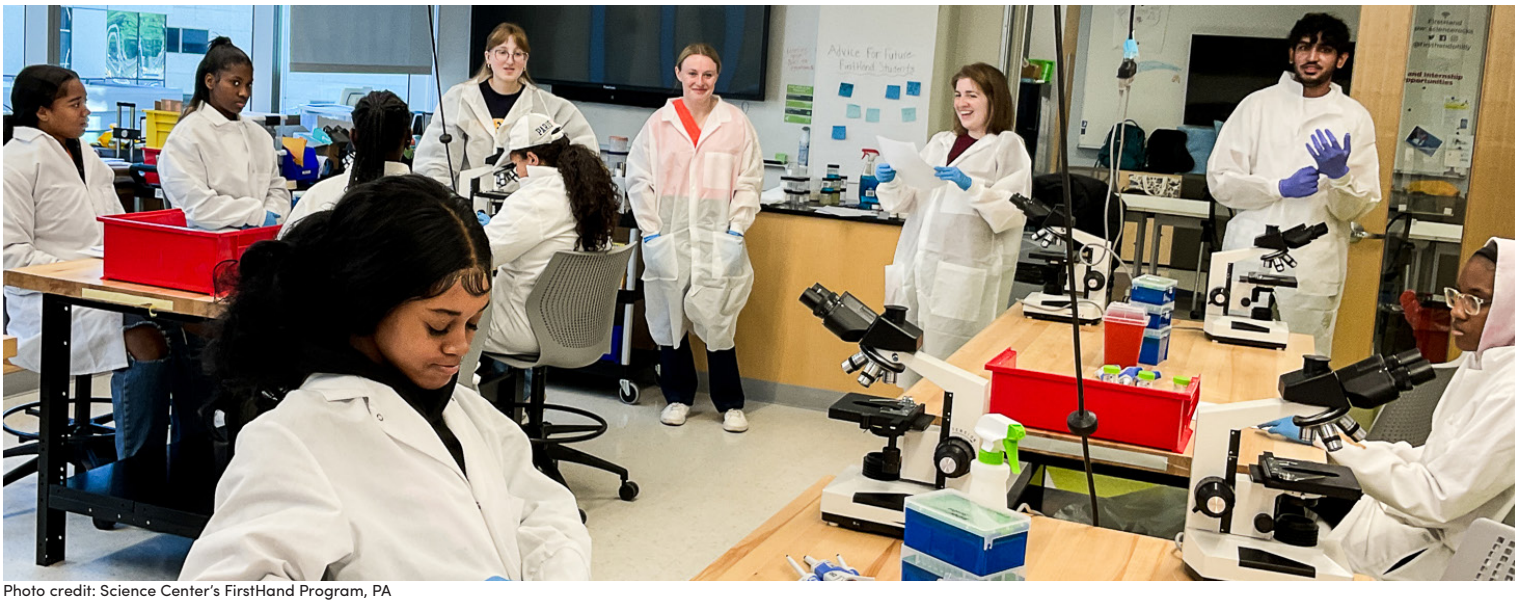

Photo credit: Science Center's FirstHand Program, PA

Youth Perspectives

Too often, young people are left out of conversations that impact their lives and shape their futures. Afterschool STEM programs ultimately want to offer youth high-quality STEM learning experiences. We gathered perspectives from youth about what they want from programming to inform the skills and expertise the educators need to design and implement high-quality afterschool programs. Young people said they want:

- Project-based, experiential learning and not traditional lectures.
- Fun, collaboration, and demonstration of relevance to real-world issues.
- Exposure to diverse STEM role models and career pathways.
- Educators who are engaging, culturally responsive, and skilled in adapting to different learning styles and different age groups.

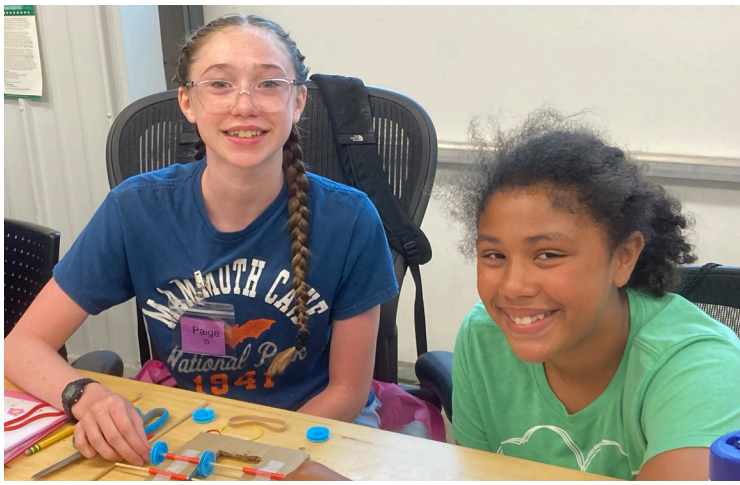

Photo credit: The STEM Connection's STEM Future Leaders Program, IN

Recommendations

Our research and analysis suggest actions that can be taken by a variety of stakeholders to sustain and scale high-quality afterschool STEM experiences and different age groups.

Federal Policymakers:

- Provide dedicated funding for afterschool STEM educator PD and career pathways.
- Amend Title II of the Every Student Succeeds Act (ESSA) to support joint PD between school-day and afterschool educators.
- Include afterschool educators in AI, quantum, and emerging technology PD funding streams.
- Fund research on PD models tailored to afterschool contexts.
- Incentivize community-based partnerships between afterschool programs and local STEM businesses.

Afterschool Field:

- Widely promote and implement recognized STEM credentials and certifications.
- Expand staffing pathways through partnerships with colleges, museums, and STEM professional associations.

Funders:

- Ensure grant awards fund full PD participation costs—including not only the cost of participation, but also time, travel, and materials.
- Include cost-of-living increases and PD investments in multi-year grants.
- Provide flexibility for mandated staff trainings to include skills in STEM facilitation and disciplinary practices, and work with programs in identifying relevant PD.
- Invest in research on the design and development of STEM PD for afterschool educators, and regularly translate and distill the findings to inform evidence-based practices that support afterschool and summer learning programs.

Conclusion

A STEM-literate society and a STEM-proficient workforce are critical for society to thrive and advance in the modern era. Afterschool STEM programs are playing a crucial role in exciting and engaging young people in STEM. But maintaining and growing these programs so all youth have access to high-quality STEM learning requires supporting the program facilitators to be knowledgeable and confident. We must therefore pay attention to the unique needs of afterschool STEM educators who play a pivotal role in introducing youth to these fields. Investing in their recruitment, training, and development is essential to ensure that all youth have access to transformative STEM learning beyond the school day that will set them up to be well-prepared for work and life.

To read the full report, visit us at 3to6.co/STEMeducators.

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