

THE FUTURE NEEDS A PUSH

MARCH 2023

FEATURED

QUALITY STANDARDS &
IMPROVEMENT SCIENCE

EXPLORE OUR QUALITY
STANDARDS

WHAT WE ARE
LEARNING

LASTING CHANGE



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PUSH-ing Toward Sustainable Change

There is power in a network, and the STEM PUSH Network is already realizing what can happen when like-minded partners with a strong, shared vision work together to accelerate change.

STEM PUSH brings together the first national network of pre-college STEM programs (PCSPs) that are working together through a Networked Improvement Community (NIC) to broaden participation in STEM.

Using our quality standards as a framework, STEM PUSH programs are using improvement science to strengthen the ways in which we recruit and prepare Black, Latina/o/e and Indigenous students to matriculate and persist in undergraduate STEM programs.

This collective work is already generating sustainable results and impact. Programs are changing aspects of their practice in response to what we are learning in the networked improvement community (NIC). We are compiling a collection of these evidence-based, best practices that will be made available broadly through our website.

In this issue, we share some ways in which the work in our NIC, along our equity-centered quality standards, has strengthened PCSPs to broaden participation in STEM.



Quality Standards + Improvement Science Leads to Lasting Change

STEM PUSH uses improvement science to strengthen programs along our quality standards, building equitable, sustainable change for PCSPs. This is the foundation of our work.

Focusing STEM PUSH's work is a set of research-based practices known to effectively support Black, Latina/o/e, and Indigenous students on a path to STEM postsecondary. These are our network's quality standards.

When PCSPs join STEM PUSH, they complete a self-study which is aligned with our quality standards and highlights areas of strength and needed improvement. In the NIC, they use improvement science to strengthen along different standards.



Check out our Quality Standards

Improvement Science

Improvement science is an approach to solving a large problem using continuous inquiry and learning. Change ideas, informed by our **quality standards**, are tested in time-bound cycles, which results in helpful feedback to inform larger systemic change.

STEM PUSH PCSPs deploy change ideas within their programming to learn new tactics to more effectively serve Black, Latina/o/e and Indigenous students. Learning from these tests is then disseminated to other programs within the Network and beyond.

Our Quality Standards

The Quality Standards are a set of research-based benchmarks that programs must meet if they are going to attract, retain, rigorously prepare, and connect Black, Latina/o/e and Indigenous students with undergraduate STEM programs.



You can learn more about the Quality Standards at www.stempushnetwork.org/quality-standards/

Program Goals

Program goals focus on intentionally broadening participation of Black, Latina/o/e and Indigenous students in STEM.



Student Recruitment

Recruitment practices that center around minoritized communities.



Student Services

The provision of student services to meet student needs.



Program Design & Implementation

Program design and implementation characteristics that include culturally sustaining pedagogical practices.



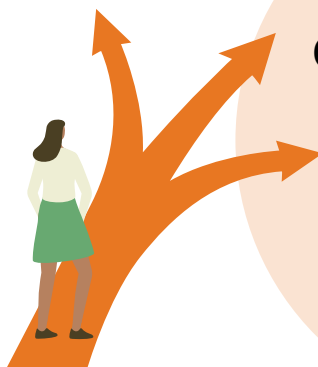
Assessment & Evidence of Performance

Assessment and evaluation for continuous improvement and outcomes monitoring



College Pathways

Articulating a clear connection between the pre-college program and the STEM college and career pathway.



WHAT WE'VE LEARNED: PCSPS HAVE INCREASED CAPACITY TO SERVE BLACK, LATINA/O/E & INDIGENOUS STUDENTS

Twenty one programs tested one to two different change ideas, participated in design teams and adaptations of ideas, aligned with our quality standards. These programs collectively serve almost 4,000 students per year.

The data shows that not only are leaders finding the changes instrumental to better serving students, the changes are also being shared beyond the programs and rippling out to other institutions and greater systems. Some programs adopted concrete changes within their programs without being involved in the initial testing cycle, based on learning from peer PCSPs.

Student Recruitment

14

programs reported an increased focus on recruiting more and/or different students.



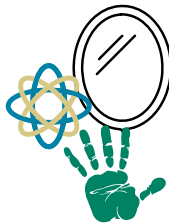
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programs reported an immediate concrete change in their programs practices or policies.

Program Design & Implementation

13

programs reported an increased focus on nurturing a STEM identity and sense of belonging in students.



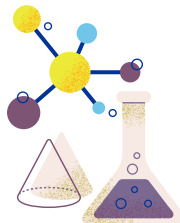
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programs reported an immediate concrete change in their programs practices or policies.

Program Goals

12

programs reported an increased focus on developing relevant STEM competencies.



5

programs reported an immediate concrete change in their programs practices or policies.

College Pathways

12

programs reported an increased focus on strengthening college-going pathways for students.



8

programs reported an immediate concrete change in their programs practices or policies.



LASTING CHANGE

Under representation in STEM is a complex problem that requires interdisciplinary collaboration to leverage and change the system.

STEM PUSH has assembled a networked improvement community of precollege STEM programs– the first in the nation to bring together such programs in an organized body.

This networked improvement community incorporates a range of expertise, from both research and practice, and serves as the improvement engine for programs to engage in disciplined testing and the development of high-leverage, best-practices for increasing equity in STEM.

The result is a sustainable national network of precollege programs that engages in joint work, and generates learnings that are disseminated throughout STEM, NIC, and National Science Foundation academic and practitioner communities.

The STEM PUSH Network is funded by The National Science Foundation's (NSF) Eddie Bernice Johnson INCLUDES Initiative, a comprehensive national effort to enhance U.S. leadership in discoveries and innovations by focusing on diversity, inclusion and broadening participation in STEM at scale. STEM PUSH is also co-funded by the NSF Innovative Technology Experiences for Students and Teachers (ITEST) program and the Advancing Informal STEM Learning (AISL) program.



www.stempushnetwork.org