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THE FUTURE NEEDS A PUSH

APRIL 2024

FEATURED

ACCREDITATION

MEET THE PROGRAMS

WHAT'S NEXT

Pushing for Equitable Futures in Admissions: STEM PUSH Partners Earn Accreditation

In a major achievement for greater equity in post-secondary STEM, six STEM PUSH pre-college STEM programs (PCSPs), have earned a first-of its kind accreditation from Middle States Association Commissions on Elementary and Secondary Schools (MSA-CESS).

Programs in the STEM PUSH Network engage in a rigorous continuous improvement process to develop, implement, and test promising practices for effective and equity centered programming for students. Six of these programs piloted the STEM PUSH accreditation process which included documenting the improvements they've made and planning for continued improvement around three core objectives. The ultimate goal of accreditation is to change how these program experiences are factored into college admissions decisions and to enable long-term student success.

Accreditation validates the demonstrated progress STEM PUSH is making in broadening access in STEM for Black, Latina/o/e, and Indigenous students. What makes this novel is that it is not solely a quality credential, but it recognizes the capacity to create more equitable STEM pathways and social mobility through higher education.

In this newsletter, we chronicle STEM PUSH's process in achieving this goal and dive deeper into the work of the first cohort earning accreditation.

STEM PUSH NETWORK

STEM PUSH Accreditation

Accreditation is intended to elevate the critical learning and skill development provided by PCSPs through increased visibility and value in the higher education admissions process. By design, STEM PUSH's research implements, studies, adapts, and ideally sustains, this accreditation model toward that stated purpose.

A research project of the National Science Foundation Eddie Bernice Johnson INCLUDES Alliance, the STEM PUSH Network is a partnership of community-based educators working with researchers to use improvement science to develop and test best practices for strengthening the ability of PCSPs to prepare under-represented students for STEM careers. Broadening participation in STEM has been recognized as an urgent need by the National Science Foundation and the Eddie Bernice Johnson INCLUDES Alliance is 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 PCSP accreditation credentials a pre-college STEM programs' ability to broaden participation in STEM and is a custom-designed process including the following:

1. Alignment with standards. Alignment with STEM PUSH evidence-based quality standards as well as selected MSA standards.

2. Evidence of Continuous improvement and action plans along a subset of standards that aligns with three priority objectives as identified in discussion with our PCSPs and admissions partners

STEM PUSH PCSPs are established, intensive, STEM-focused, out-of-school-time programs intentionally serving underrepresented high schoolers through practices that center equity and prepare students for undergraduate STEM. These programs provide more than 100 hours of programming using curricula that are rigorous and reflective of advances in their various STEM fields. While these programs intentionally identify and mitigate barriers facing Black, Latina/o/e, and Indigenous students in STEM, including ensuring that cost is not a barrier to participation, these programs are not enrolling students based on race.

Each PCSP accreditation application is first reviewed by the Broadening Equity in STEM Center (BE STEM) at the University of Pittsburgh, which was accredited by MSA-CESS as a learning services provider in 2023. Successful applicants are then referred to MSA-CESS for **external review** followed by an accreditation meeting with a representative from MSA-CESS and an external review by additional MSA-CESS staff, before accreditation was conferred by the Middle States Association Commissioners. This process repeats every seven years with a midterm review during year three.

To learn more about STEM PUSH's Quality Standards visit https://stempushnetwork.org/quality-standards/

Meet the Accredited STEM PUSH Programs

Preliminary data from the STEM PUSH Network show that across programs with enough data, 80% percent of Black, Latina/o/e, and Indigenous STEM PUSH PCSP students enroll and persist in STEM for more than a year at four year colleges and universities.

The first cohort of programs that made up the first STEM PUSH accreditation cohort worked through a rigorous continuous improvement process that included a self-study documenting improvements, evidence, and future goals. These programs include: Arthur Ashe Institute for Urban Health's Health Science Academy, California State University East Bay MESA, Gene Team at University of Pittsburgh, Joaquin Bustoz Math-Science Honors Program at Arizona State University, New York Hall of Science's Science Career Ladder, and Teenagers Exploring and Explaining Nature and Science (TEENS) / Peggy Notebaert Nature Museum.

Arthur Ashe Institute for Urban Health's Health Science Academy

The Health Science Academy (HSA) is a STEM health science enrichment, after school pipeline program that prepares underrepresented students to succeed in college health science courses. The Academy, HSA's 3-year high school program, provides advanced educational opportunities to high achieving students. The Academy is offered in partnership with SUNY, Health Sciences University (SUNY-HSU). SUNY-HSU provides the physical resources to hold weekly anatomy & physiology classes & labs.

The Arthur Ashe Institute for Urban Health believes that accreditation can help to replicate the program across other higher education institutions.

"We tried to replicate the Health Science Academy before, about 10 years ago. And my boss, Dr. Fraser felt that this (accreditation) would give us the credibility; it would make us attractive to other universities like us... an external body validated the strength of our program. We're very flattered, honored, and we're really looking forward to leveraging this as much as we can...this external body validated the strength of our program. We're very flattered, honored, and we're really looking forward to leveraging this as much as we can.

Dr. Mary Valmont, Associate Executive Director, Health Science Education, Health Science Academy, Arthur Ashe Institute for Urban Health

California State University East Bay MESA

The CSU East Bay MESA College Prep Program supports students to develop their confidence, competence, and love of STEM by building a community that fosters curiosity and exploration. Led by the Institute for STEM Education, CSU East Bay MESA assists East Bay middle and high school students, who have been historically excluded in STEM fields, to excel in math and science and go on to college in math-based majors.

Gene Team at University of Pittsburgh

The Gene Team aims to engage students in current research in Biological Sciences and provide college preparatory mentoring. Gene Team's goal is to increase participation in biological research from groups that are historically underrepresented in science, technology, engineering, and math.

"As we're doing the work we just keep our heads down and focus on the students, and a lot of times this sort of recognition doesn't happen, which is fine because the focus is the students. Something like this really draws attention to all the work that we're doing with students and with people who might not have heard about Gene Team so that's where I see this (accreditation) having impact. We are one of six in the country and this is getting people excited and calling attention to what's going on in our program."

Dr. Becky Gonda, Director of Outreach, Department of Biological Sciences at the University of Pittsburgh

University of Pittsburgh

GENE TEAM

Joaquin Bustoz Math-Science Honors Program at Arizona State University

Joaquin Bustoz Math-Science Honors Program (JBMSHP) students participate in a 6-week residential summer program and take a college-level mathematics course for college credit. Students also learn about academic success topics and get mentored in transitioning to college. All expenses are paid by Arizona State University.

ASU

Joaquin Bustoz
Math-Science
Honors Program
jbmshp.asu.edu

New York Hall of Science's Science Career Ladder

NYSCI's Science Career Ladder engages high school and college students in meaningful work experience while exposing them to a wide array of STEM career and college pathways. Participants interact with the public and help visitors to understand the science behind NYSCI's exhibits and demonstrations. They also contribute to shaping these learning experiences for our public audiences. The SCL program serves youth that are often underrepresented in STEM fields.

"This (accreditation) will hopefully provide us with greater reach and recognition of the work with students around workforce development. It will encourage students to see NYSCI as a place to work, grow and develop. It will help colleges see the value of the skills students are learning; it will give them clout."

Shihadah Saleem, Director of Youth Programs and Pathways at the New York Hall of Science

Teenagers Exploring and Explaining Nature and Science (TEENS) at the Chicago Academy of Sciences / Peggy Notebaert Nature Museum

Participants in the Teenagers Exploring and Explaining Nature and Science (TEENS) program conduct urban ecology and environmental science investigations, study the nature found in our city's parks, neighborhoods, and forest preserves, and participate in habitat restoration and other ecological stewardship activities. Teens contribute data to existing local, regional and global research projects and work in teams to develop their own research questions to investigate.

"I have been involved in digital badging efforts before and there was always a question on whether or not digital badges would be recognized. Accreditation has more legs and Middle States is an established institution. We also think it (accreditation) is an important recognition of the impact of learning in out-of-school environments. Perhaps schools will consider learning from some of our work."

David Bild, Manager, Teen and Young Adult Programs at Chicago Academy of Sciences / Peggy Notebaert Nature Museum

Now that six pre-college STEM programs have earned accreditation, a second cohort of pre-college STEM programs have started the process, with programs working to complete their accreditation process by the end of 2024. The cohort is learning from the data STEM PUSH collected about the process, during the initial pilot, and a third cohort will be launching soon.

The STEM PUSH Network is always looking for allies in ensuring equitable STEM futures for all students, and the project provides resources for educators and admissions professionals on its website such as evidence-based change ideas for programs, as well as findings and publications from the project.

STEM PUSH welcomes admissions offices to join the STEM PUSH Admissions Network and revise current systems to recognize the STEM learning experiences of these students in the admissions and enrollment process. Together, we aim to systematically elevate intensive out-of-school STEM learning experiences in admissions decisions. Learn more and connect with us at https://stempushnetwork.org/admissions

This NSF INCLUDES Alliance is funded by NSF Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science (NSF INCLUDES), a comprehensive national initiative to enhance U.S. leadership in discoveries and innovations by focusing on diversity, inclusion and broadening participation in STEM at scale. It is also co-funded by the NSF Innovative Technology Experiences for Students and Teachers (ITEST) program and the Advancing Informal STEM Learning Program (AISL).