

Changing Systems -Bridging to Sustainability

*STEM PUSH convenes leaders to work
toward sustainable systems change*

THE FUTURE NEEDS A PUSH

OCTOBER 2023

FEATURED

NEXT GENERATION
ACCREDITATION MODEL

MEASURING EQUITABLE
OUTCOMES

LEADERSHIP FOR
SUSTAINABILITY

STORYTELLING FOR
SCALE

CELEBRATION OF
LEARNING

EQUITY AND JUSTICE

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With a focus of **“Changing Systems–Bridging to Sustainability,”** the STEM PUSH Network convened 46 Network partners from 11 states to share learnings, test ideas, and envision a path forward in our collective work of equitable systems change in higher education admissions to broaden participation of Black, Latina/e/o and Indigenous students in STEM.

At the convening, pre-college STEM program (PCSP) partners gathered to further our work on:

- Accreditation for STEM PUSH pre-college STEM programs;
- Equitable measurement;
- Equity and justice centered curricula and programming;
- Communications for sustainability; and of course,
- The testing, sharing and reflections of learning.

This newsletter provides highlights of the convening.



BUILDING A NEXT GENERATION ACCREDITATION MODEL FOR GREATER EQUITY IN STEM ADMISSIONS

Earlier this year, University of Pittsburgh's Broadening Equity in Science, Technology, Engineering and Math Center (BE STEM) earned accreditation as a learning service provider from Middle States Association (MSA) Commissions on Elementary and Secondary Schools. BE STEM is the anchor for STEM PUSH and the designation is an important step in achieving an overarching Network goal – to develop an equity-centered accreditation model for PCSPs that will take into account the rigorous educational experiences and STEM skills students get from pre-college STEM programs.

Daniel Rufo, senior vice president of Middle States Association Commissions on Elementary and Secondary Schools (MSA), explained the steps forward for STEM PUSH accreditation, an evidence-based credential that STEM PUSH hopes will change the way admissions accounts for out-of-school time academic achievement. BE STEM and MSA are designing a new model for accreditation that uses STEM PUSH quality standards as the accreditation framework. At the convening the six PCSPs in this pilot continued work on their applications with guidance from Rufo.

Accreditation



Six pre-college STEM programs are participating in this accreditation process as a pilot phase.

This accreditation is a critical driver of systems change in the higher education admissions process. Our work with accreditation elevates just, equitable, and culturally responsive criteria as an alternative to traditional admissions metrics which are proven to be biased and unfair to Black, Latina/o/e and Indigenous students.

Network members also learned about a big win in the push for greater recognition of PCSP experience in the admissions equation. STEM PUSH is now a recognized program on The Common App, the platform that enables students to apply to several colleges at once, and appears on the dropdown menu for students to select in their application processes. This is an important step in validating and normalizing evidence-based out-of-school time (OST) experiences as a measure in more holistic and equitable admissions.

The Common Application is an undergraduate college admission application that students may use to apply to more than 1,000 colleges and universities. Common App is a nonprofit organization with the goal of streamlining the college application process.



MEASURING EQUITABLE OUTCOMES

Measurement, like many aspects of science, is sometimes viewed as wholly objective. But measurement, and science more broadly, can house embedded biases. Part of the learning at the fall convening was an ideation and exercise on understanding intentional measurement—using paper airplanes.

Network members formed teams to develop and test paper airplanes as a way of understanding how theories can be tested to improve outcomes. In this exercise, participants were charged with developing and testing a paper airplane that would travel 24 feet or longer on three consecutive throws. If the planes didn't meet the goal, the teams tried out change ideas for the next round— if the planes did— teams tested changed conditions to see if they got the same results.

The paper airplane exercise was a metaphor for implementing equitable measurement in assessment of STEM competencies.

NETWORK LEADERSHIP FOR SUSTAINABILITY: THE STEERING COMMITTEE

To ensure that the critical work of the STEM PUSH Network continues, and that students, families, and college admissions professionals maximize out-of-school time STEM experiences, the network recently elected a [pre-college STEM program Steering Committee](#) to help develop and guide the collective impact agenda.

The Committee is leading the development of a resource library and an Alumni Network. These projects foreground sustaining and scaling the work by sharing knowledge and cultivating relationships that will help ensure long-term progress in our collective goal of equity in STEM.

Steering Committee members also shared the groups' progress in creating a leadership structure that is inclusive, and that others would want to be part of, as well as determining what kinds of support mechanisms must be in place for the future state of the network. The Committee recommended that future leadership be peer-elected with an emphasis on representing the diversity of programs and regions within the Network.



STORYTELLING FOR SCALE: COMMUNICATIONS FOR SUSTAINABILITY

The importance of messaging, of telling an organization's story is critical in developing the relationships and resources that strengthen and propel the work. Both STEM PUSH and the NSF INCLUDES National Network are working to share strategies for communications that intentionally target audiences to sustain and scale projects.

At the convening, PCSPs participated in a messaging session that enabled them to identify potential partner audiences– from internal, to remote, to societal stakeholders– all of which are links in the chain to systems change. Participants then crafted, re-crafted, and repurposed core messaging to engage the different audiences in fast past, concise “story bites” for a variety of scenarios.



CELEBRATION OF LEARNING: IMPROVEMENT SCIENCE FOR SYSTEMS CHANGE



As the drivers of a project rooted in the use of Improvement Science to better serve students, PCSPs test theories of change and present learnings at the convening. Participants share their improvement journeys by outlining the problem they hope to address, the goal they want to achieve, and/or competency they hope to nurture.

This year, PCSPs tested ideas around alumni engagement, college admissions, community asset mapping, and racism in STEM discussions with staff. PCSPs also worked on measuring program success in an equitable way in three specific areas: critical thinking, communication, and research skills.

“WALK THE TALK” EQUITY & JUSTICE AUDITS

STEM PUSH is fundamentally committed to equity and access as counters to the systemic racism of both STEM and higher education, and our partners are selected on the basis of this shared mission. But how does an organization ensure that its principles are reflected in everyday practice, and at the curricular level? Participants in this year’s convening were guided through an equity and justice audit.

They examined “artifacts” and documents relating to their programs then decided what overarching questions would guide the audit. One example is [STEM TEACHING Tools](#)’ question: “How can I see racism, oppression, and anti-Blackness in curriculum and then act toward social justice in STEM education?” The questions, and the observations they spark, are used to evaluate and understand what must be addressed to achieve programs’ equity and justice goals.





With a focus on accreditation, measurement, storytelling, equity, the cultivation of collective leadership—and of course the launch of the new improvement cycle—the STEM PUSH convening enabled participants to reflect back on our work and achievements to date, and also to plan the future of the collective.

The strength of the Network is the dedication and willingness of PCSPs to learn from one another, to grow, and to imagine and create better more inclusive STEM futures and we're excited to continue to spread, scale, and sustain the network.

WANT TO KNOW MORE?

Earlier this month, STEM PUSH offered a [free webinar](#) that provides an overview of how the project started, where we are, and most importantly, how we are impacting the higher education equation. Watch that [webinar here](#) and learn more about how your organization might get involved.

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