

THE FUTURE NEEDS A PUSH

NOVEMBER 2022

FEATURED

RECRUITMENT:
IMPROVEMENT CYCLE

TESTING CHANGE IDEAS

LEARNING FROM THE
FIELD



More From Our Learning Engine

*Equitable
Recruitment*

In STEM PUSH, the networked improvement community (NIC) is our learning engine.

Pre-college STEM programs try out small changes to their programming and gather data about whether these changes are leading to improvements in how well they serve Black, Latino/a/e, and/or Indigenous students.

Over time, the “tests of change” that individual programs conduct help us collectively learn what works for which students, under what conditions.

In STEM PUSH, we have three improvement cycles each year. Programs participate in at least two of the three improvement cycles and share their learning at the end of each cycle. Programs can build on what their colleagues have learned to inform future testing.

STEM PUSH tests changes related to:

- recruiting new/different Black, Latino/a/e and Indigenous students
- nurturing STEM identity and sense of belonging
- developing competencies that matter for the practice of STEM
- strengthening college-going pathway supports.

In this issue, we share what we learned from the group who focused on recruitment, one of the four change ideas explored during our Winter 2022 (January - April 2022) improvement cycle. To date, six programs have participated in a recruitment improvement cycle.



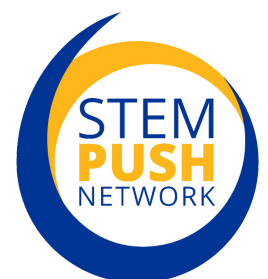
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CHANGE IDEA TESTED: NEW RECRUITMENT MATERIALS AND SPACES

THE ISSUE WE ARE ATTEMPTING TO ADDRESS

If pre-college programs are to broaden participation in STEM, pre-college programs must recruit more and/or different racially/ethnically minoritized students.

HOW WE APPROACHED THE WORK

Pre-college STEM program staff designed new routines to strategically enter new recruitment spaces.

- They identified new communities, schools, and neighborhoods to focus their recruitment efforts.
- They designed new materials and presentations specifically for the new spaces.
- They revised applications and/or application routines to reduce barriers.
- Some programs worked with students and/or program alum to design recruitment materials and recruit their peers.

WHAT WE LEARNED: PROMISING STRATEGIES



Recruiting is largely about relationships



Entering new spaces to build new relationships is a lot of work, and takes time



In the right context, printed fliers still work!

Connecting with families is key to recruiting new students

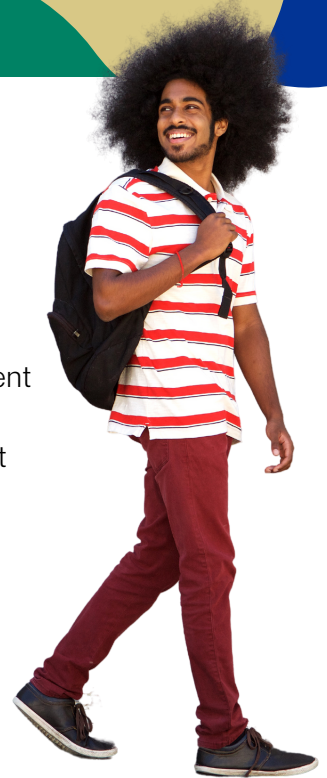


Having peer ambassadors share their STEM stories - written, audio, video, and/or live - has been very effective.

Ambassadors can share their responses to questions such as:

What does STEM mean to you?

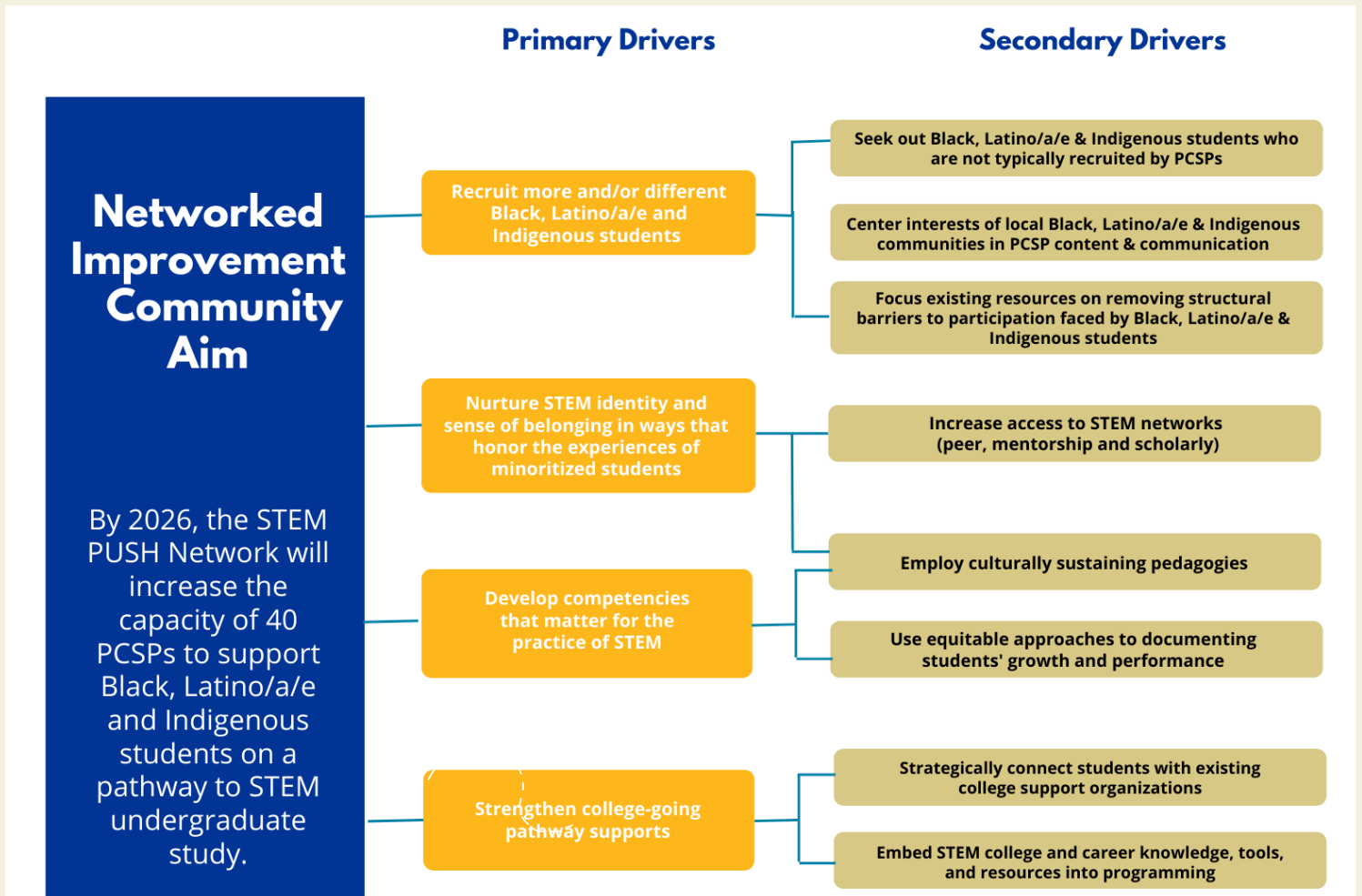
How has your pre-college STEM experience benefitted you?



Our networked improvement community tests change ideas against our overall aim to increase the capacity of pre-college STEM programs to support Black, Latino/a/e and Indigenous students on pathways to STEM undergraduate studies.

Below is a deep dive into our change ideas identified at the beginning of our work.

"If we want to accomplish [aim], we must [primary driver], through/by [secondary driver]."



When PCSPs enter new spaces to recruit, they design communication approaches that align with those communities. For example, Gene Team shifted its recruitment efforts to two new community centers in neighborhoods not yet represented in the program. Program staff ran a hands-on activity for families at a community dinner night, brought paper copies of the application materials to facilitate the application process, and staffed the computer lab to support online applications. In this way, Gene Team modified recruitment activities and materials to best support engagement in the new communities.

Programs that are not currently meeting their goals (for serving Black, Latino/a/e, and Indigenous students) start by examining their recruitment and enrollment patterns and work with colleagues to design new recruitment strategies to meet their goals. At the same time, many of the pre-college STEM programs in STEM PUSH currently serve high numbers of Black, Latino/a/e, and Indigenous students. The goal for these programs is to expand their recruitment efforts by identifying and recruiting minoritized students who would not typically attend a PCSP.

Behind Secondary Drivers



Learning from the Field



Led by the Institute for STEM Education, the MESA College Prep Program at CSU East Bay assists California K-12 students from local middle and high schools to excel in math and science, and go on to college in math-based majors.



The STEM PUSH Network has provided professional development and support that I would not have access to otherwise. The ability to work closely with STEM PUSH Leadership and colleagues has expanded the scope and quality of our work at CSU East Bay MESA (Mathematics, Science, Engineering Achievement) Center. A key example is my participation in a recruitment cycle, under the guidance of Jennifer Sherer.

We set out to implement peer to peer recruitment that centered the students by giving them the tools to develop recruitment materials, but were unsure where to start. In a development meeting for recruitment strategies, Jennifer Sherer noted the importance of storytelling, which in turn has guided our work as a throughline through all we do.

We are now asking: How do we tell the stories of CSU East Bay MESA? How do we get students to tell the stories and understand their skills? We keep bringing back to the students that this is their program - they need to tell us what they want to guide and shape the program.

Our first foray into this work was having 33 middle and high school students join us in person for two activities that were curated by our graduate student assistant, Sarah Marium. While the ultimate goal was to have students develop recruitment materials, the crucial steps to that goal was to have them talk about themselves with each other - their skills, their interests, and ultimately the role of MESA in their lives.

We grounded the conversations and materials development by discussing why we are doing this work: it is crucial to diversify STEM fields and everyone has a stake in the future of STEM.

In the end, the exercises positioned students to feel more confident and comfortable, to build materials and tools to talk to other students, and express what CSU East Bay MESA means to them. Students understand why it's important to be on the ground at their schools talking to their peers about the program and that their stories and experiences are important and valued.



- Janiene Langford, Director of CSU East Bay's MESA College Prep Program · Institute for STEM Education at CSU East Bay



A PUSH TOWARDS RACIAL EQUITY

We are building the first national network of PCSPs that is focused on equity, and we are working together to accelerate change.

By 2026, the STEM PUSH networked improvement community (NIC) aims to increase the capacity of 40 PCSPs to support Black, Latino/a/e and Indigenous students on pathways to STEM undergraduate study.

In order to accomplish this, pre-college STEM programs in the NIC will focus on the following primary drivers:

- Recruit more Black, Latino/a/e and Indigenous students.
- Nurture STEM identity and sense of belonging in ways that honor the experiences of minoritized students.
- Develop student competencies that matter for the practice of STEM.
- Use equitable approaches to document students' strengths and competencies.
- Strengthen college-going pathways supports.

These primary drivers are STEM PUSH Network's initial "best bets" about what to target given root causes of the problem we identified when the Network first launched. Improvement cycles explore and test change ideas directly related to these primary drivers.

The time is right for systemic change. Visit www.stempushnetwork.org for more information and resources.



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).



www.stempushnetwork.org