THE FUTURE NEEDS A PUSH

JUNE 2022

FEATURED

OUR FOCUS

WHAT IS STEM PUSH?

THE POWER OFA NETWORK

A PATH TO EQUITY





Alison Slinskey Legg, PhD Pl, Alliance Leadership Team, Director BE STEM Center

ALLOW US TO INTRODUCE OURSELVES

Hello! I'm Alison Legg and it is my pleasure to introduce the STEM PUSH (Pathways for Underrepresented Students to HigherEd) Network.

STEM PUSH was started to increase participation of Black, LatinX and Indigenous students in undergraduate STEM majors by addressing the high school to college STEM access barrier.

We saw high achieving, minoritized students who had participated in our Pre-College STEM programs (PCSPs) denied admission into undergraduate STEM programs. We knew that the skills, abilities and habits of mind that were cultivated and evident in our PCSPs were not being factored into admissions decisions in a systemic way.

In 2019, a group of us from the University of Pittsburgh and the Teaching Institute for Excellence in STEM (TIES) teamed up to change this broken system and STEM PUSH was formed.

STEM PUSH is a research project, funded by the National Science Foundation as one of its INCLUDES Alliances with an aim to re-invent the relationship between PCSPs and HigherED Admissions.

This inaugural newsletter will provide introduction to this work with deeper dives in our next issues.





THE FUTURE NEEDS A PUSH

As of 2018, Black students earned only **7%** of STEM bachelor's degrees, while LatinX students accounted for only **12%**.

Black and LatinX students are also greatly underrepresented in advanced degrees in STEM.¹

"THE LONG-TERM OUTLOOK FOR DIVERSITY IN THE STEM WORKFORCE IS CLOSELY TIED TO REPRESENTATION IN THE STEM EDUCATIONAL SYSTEM, PARTICULARLY ACROSS THE NATION'S COLLEGES AND UNIVERSITIES."

- Pew Research Center

The STEM PUSH Network is working to create systemic change to address these inequities in post-secondary STEM.

STEM PUSH aims to change the relationship between pre-college STEM programs and higher education admissions offices.



WHY PRE-COLLEGE STEM PROGRAMS (PCSPS)



Pre-college STEM programs have long supported Black, LatinX and Indigenous students' academic and personal development, but the programs' collective potential for filling equity gaps in higher education has not yet been fully realized.



PCSPs work closely with high school students and have a unique perspective on students' STEM competencies that could be potentially useful to admissions offices.



STEM PUSH is working to create a quality credential for use in the admissions process. While there is variability across PCSPs, programs within the Network are united by quality standards, as well as a focus on equity and broadening participation in STEM

1. Fry, R.; Kennedy, B.; Funk, C. (2021, April 1). STEM Jobs See Uneven Progress in Increasing Gender, Racial and Ethnic Diversity. Pew Research Center. https://www.pewresearch.org/science/2021/04/01/stem-jobs-see-uneven-progress-in-increasing-gender-racial-and-ethnic-diversity/#fn-2884-3

WHAT IS THE STEM PUSH NETWORK

The STEM PUSH Network supports pre-college STEM programs (PCSPs) in strengthening how they serve Black, LatinX and Indigenous students. The Network also works with admissions offices to pioneer a new way for PCSPs to carry weight in admissions processes.

This is the first-ever large, cross-program research study of the impact of PCSPs experiences on student enrollment and persistence in post-secondary STEM.

Leveraging existing networks, programs and systems to do the work:



Networks

Ecosystems, regional collaborations between schools, community based organizations, higher education institutions, business and PCSPs, connect STEM PUSH's work into the greater local efforts to develop cradle to career STEM Pathways. We are weaving together a network of networks - all working together to spread the word, build engagement and cultivate action-oriented communities.

Learning Engine

Our networked improvement community serves as the learning engine in which PCSPs strengthen their capacity to support Black, LatinX and Indigenous students in STEM and build pathways leading to undergraduate institutions for STEM study by designing and testing routines and tools. These tested routines can then be used by other OST providers to better serve their Black and Brown students in STEM.

Admissions

STEM PUSH explores a new, more equitable reality for post-secondary admissions with some of the nation's top thought leaders and experts in the space.

Research

STEM PUSH is conducting the first ever cross-program research study of the impact of pre-college STEM program experiences on student enrollment and student persistence in STEM in postsecondary education.

Accreditation

STEM PUSH aims to develop an accreditation system for PCSPs to demonstrate student readiness to admissions systems and give postsecondary admissions a new, more equitable, system with which to admit students.

NETWORK POWERS

What is a STEM Learning Ecosystem? A STEM Learning Ecosystem harnesses the unique contributions of all players within a community schools, out-of-school spaces, business, postsecondary institutions, government, etc. - to deliver STEM learning for all children.

Designed pathways enable young people to become engaged, knowledgeable and skilled in the STEM disciplines as they progress through childhood into adolescence and early adulthood.

Ecosystems foster the collaboration necessary, across sectors, to make such pathways possible.



Vince Stewart, lead of the Bay Area STEM Ecosystem, and one of ten Ecosystems operating within the STEM PUSH Network, says the goal of his Ecosystem's work is to help foster the type of STEM integration and adoption that will lead to systemic change.

"A lot of our work is focused on convening, bringing those folks together, sharing of information of data, best practices," Stewart says. "We also spend a fair amount of effort around policy work at the state level, at the local level and at the regional level."

PRECOLLEGE STEM PROGRAMS

Pre-college STEM programs (PCSPs) offer a solution because they enable students to participate in enrichment and research experiences that share analytical and critical thinking skills and habitsof-mind that increase STEM exposure, engagement and selfefficacy.

Many PCSPs are successful in attracting and retaining underrepresented minoritized (URM) high school students - Black, LatinX and Indigenous students.

However, PCSPs have not been leveraged to increase the number of URM students admitted to undergraduate STEM programs.

The STEM PUSH Network includes more than 29 pre-college STEM programs across the nation. STEM PUSH hopes to leverage the power of PCSPs in order to create longterm systemic change.





A PUSH TOWARDS EQUITY

STEM PUSH is working to create systemic change in college access and admissions for Black, LatinX and Indigenous students in STEM.

We are conducting the first large-scale, longitudinal study of the efficacy of PCSPs.

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

The COVID-19 pandemic has elevated the conversation around the inherent inequity of standardized tests in admissions.

The time is right for systemic change. We hope you join us as we PUSH for equity in STEM.

You can join STEM PUSH at www.stempushnetwork.org

You can also engage in the conversation on social media via LinkedIn, Twitter and Facebook.

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