



THE FUTURE NEEDS A PUSH

SEPTEMBER 2023

FEATURED

SYSTEMIC
INEQUITIES

RACE & STEM IN
THE U.S.

STEM PUSH
WORKING TOWARD A
SOLUTION

Race-Conscious Decisions & College Admissions

In June 2023, the Supreme Court of the United States (SCOTUS) ruled on the use of race in the decision making process for college admissions, significantly limiting how a student's race may be considered in the decision making process for college acceptance.

Alongside many thought leaders, organizations, and higher education professionals, the STEM PUSH Network is disappointed by the decision and we are concerned about the larger impact on students of color. Affirmative Action has long been a tool for universities and colleges to look beyond student's test scores – measures that have long been proven to be racially biased.

Over the past four years, STEM PUSH has worked to build the capacity of pre-college STEM programs to best serve Black, Latina/o/e, and Indigenous students. It is our core belief that students from a wide range of environments, with multiple lived experiences and perspectives, enrich not only the college campuses they seek to be a part of, but also the future STEM industries they intend to lead. Diversity of thought and experiences leads to greater innovation, creativity and quality of life in our world.

Systemic racism is a threat to our nation's STEM future and economic prosperity. In this issue, we dig deeper into the problem that STEM PUSH is working to address: inequitable opportunities for Black, Latina/o/e, and Indigenous students in post-secondary STEM-- and our plan for creating systemic change in college admissions.



THE ISSUE: SYSTEMIC INEQUITIES

STEM careers continue to be the fastest growing, highest paying industries and are projected to maintain that pace. Access to these economic opportunities is critical to build the economic mobility of students, families and communities. In essence, access to STEM learning and the continued pursuit of STEM for a future career, is a social justice issue. Those with the education and training to work in a STEM career will likely earn more and have a larger number of career options than those without.

Further projections show major workforce shortages in key STEM industries are likely. For example, a recent Deloitte study predicts 2.1 million unfilled jobs in advanced manufacturing due to significant skills gaps.¹

And technological advances in Artificial Intelligence (AI) means new demands, new skills, and future workers with STEM competencies.

However, with **only 20% of high school graduates ready for college-level STEM coursework**,² the United States is facing significant challenges in potential workforce shortages.

We need every bright mind ready to participate in the rapidly changing economy.

The U.S. Bureau of Labor Statistics projects a

10.5%

increase in STEM occupations

between 2020 to 2023; the equivalent to more than one million jobs.



Did you know?

A computer science major can earn

40%

more than the average college graduate.

Yet fewer than

50%

of high schools in the United States even offer computer science classes.³



The importance of STEM education is about so much more than just jobs. STEM fields demand curious individuals eager to solve the world's most pressing problems.”⁴

- Bridget Long, Dean of the Harvard Graduate School of Education

1. [Creating pathways for tomorrow's workforce today](#), Deloitte insights, May 2021.

2. [The Condition of College and Career Readiness: National 2018](#), ACT, 2018.

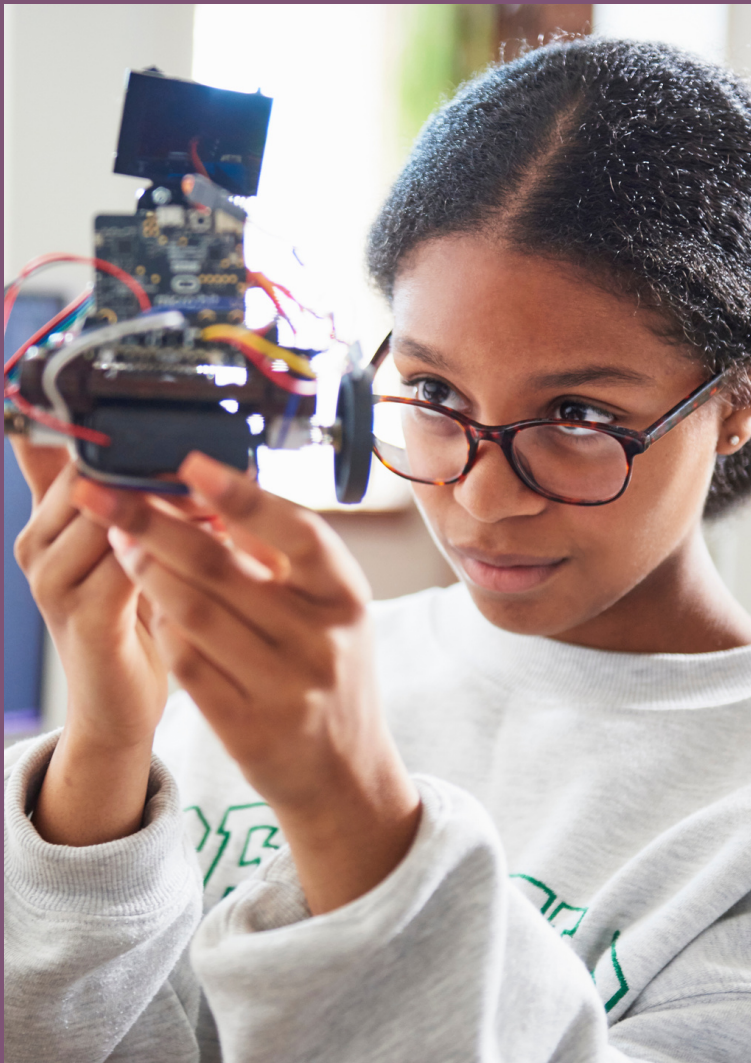
3. [Code.org](#).

4. [Growing gap in STEM supply and demand](#), The Harvard Gazette, Nov. 2021

RACE & STEM IN THE UNITED STATES

Our nation's history of slavery, segregation and discriminatory practices in education, housing and healthcare, has produced a system of inequity for many communities, especially our Black, Latina/o/e, and Indigenous populations. This foundation of generational trauma, coupled with a current reality of underfunded schools and persistent racial bias, continue to create barriers for many Black, Latina/o/e and Indigenous students.⁵

Access to high-quality STEM learning opportunities both in and out of the classroom is a critical issue in all corners of the U.S. for students of color, and for families with low socio-economic status. This inaccessibility limits the options available for Black, Latina/o/e, and Indigenous students to prepare for postsecondary and STEM career success.



We see the results of these realities in the numbers of Black, Latina/o/e, and Indigenous professionals in STEM fields. In 2021, the National Center for Science and Engineering Statistics reported that Latinos represented only 15% of the STEM workforce, Black Americans were only 9% of STEM workers and less than 1% of the workforce was made up of American Indians and Alaska Natives. These figures reflect a disproportionate number of workers compared to the general U.S. population.

Racial disparities in STEM careers are not surprising, when looking at the numbers of students graduating with degrees in STEM related fields. In 2018, Black students earned just 7% of STEM bachelor's degrees, and have continued to be underrepresented in receiving advanced degrees in STEM related majors. Latina/o/e populations remain less likely than their White, Asian, and Black peers to receive a college degree and their college enrollment numbers have declined since the pandemic.⁷

Progress in science and technology is based on the identification of problems and solving those to improve lives. Without a diversity of perspectives the United States will struggle with finding and solving persistent problems. This has major implications on the future growth of the country.

America has a STEM representation problem.

5. [Implicit bias makes its way into the classroom](#), W.K. Kellogg Foundation, 2019.

6. [Diversity and STEM: Women, Minorities, and Persons with Disabilities](#), National Center for Science and Engineering Statistics, January, 2023.

7. [STEM Jobs See Uneven Progress in Increasing Gender, Racial and Ethnic Diversity](#), Pew Research Center, April, 2021.

STEM PUSH WORKING TOWARD A SOLUTION

Many universities and community-based organizations have responded to disparities in both access and support by offering pre-college programs that increase Black, Latina/o/e, and Indigenous student interest, preparation for and success in undergraduate STEM programs.

Pre-college STEM programs are part of that response and enable students to participate in experiences that impart analytical and critical thinking skills and habits-of-mind that are predictive of success in STEM.

However, even when participating students demonstrate STEM mastery, they may not be accepted for admission into the same institutions housing their programs due to policies that filter out applicants based on standardized test scores and other traditional admissions metrics.

STEM PUSH & PRE-COLLEGE STEM PROGRAMS

Many pre-college programs are successful in attracting Black, Latina/o/e, and Indigenous students and work to engage participants in culturally sustaining experiences that increase their preparation for STEM in higher education.

PCSPs, however, have not been systematically leveraged to increase the number of minoritized students admitted to undergraduate STEM programs.

As an NSF INCLUDES Alliance, the STEM PUSH Network is building the first national network of pre-college programs to bolster their capacity in serving Black, Latina/o/e, and Indigenous students, as well as raising the awareness of PCSPs' ability to prepare students for rigorous STEM coursework in college and beyond.

STEM PUSH also partners with college admissions officers across the country to support them in their quest to diversify and support a larger student population from different racial and ethnic backgrounds. This includes showcasing the power of PCSPs in the demonstration of student mastery of STEM skills, beyond what any standardized test can do.



STEM PUSH NETWORK

The STEM PUSH Network works in the following areas to broaden participation of Black, Latina/o/e, and Indigenous students in STEM, and create systemic change in higher education admissions.

Pre-College STEM Programs

Pre-college STEM programs, from across the nation, come together in STEM PUSH's Networked Improvement Community (NIC) to test new ideas to strengthen their programs.

Networked Improvement Community: Our Learning Engine

The NIC convenes PCSPs to strengthen programming from evidence-based improvement science.

Research

STEM PUSH is conducting a longitudinal study on the impact of PCSPs on matriculation and persistence in STEM.

Accreditation

PCSPs will be accredited for meeting evidence-based quality standards for broadening participation in STEM.

STEM Learning Ecosystems

STEM PUSH leverages community based partnerships to build and foster cross-sector partnerships that support students from cradle to career.

Free Webinar

PUSH-ing Toward a More Equitable Future in College Admissions & STEM

Join the STEM PUSH Network – the first-ever national network of pre-college STEM programs –for a conversation about more equitable ways to increase the number of Black, Latina/o/e, and Indigenous students in post-secondary STEM.

October 11 at 1:00 PM ET

Register Today!

www.stempushnetwork.org

Join STEM PUSH for a conversation about equity, college admissions and STEM.

While the impact of the SCOTUS decision on college admissions systems and our students is still unfolding, STEM PUSH continues to prepare our Network of PCSPs, college admissions professionals and students to look for areas of opportunity in STEM learning and demonstrating that for college acceptance and persistence in STEM.

As a Network, we are only as good as our partners, and believe it is important to learn from the field and promote best practices, share ideas, and facilitate meaningful conversations around race-conscious admissions and representation in STEM. Share your story with us on social media channels or by contacting us on our website. Get others involved. Tell us what you want to learn and talk about.

STEM PUSH continues to make resources available for pre-college STEM programs to support Black, Latina/o/e, and Indigenous students. We encourage partnerships within communities to create stronger pathways for students. Join us at www.stempushnetwork.org

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www.stempushnetwork.org