



# THE FUTURE NEEDS A PUSH

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NOVEMBER 2023

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## FEATURED

COLLABORATIVE  
LEARNING: THE  
DIVERSITY OF PRE-  
COLLEGE STEM  
PROGRAMS

CO-LEARNING: STORIES  
FROM THE FIELD

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[www.stempushnetwork.org](http://www.stempushnetwork.org)

## Catalysts of Change: The Power of Diverse Perspectives in Pre-College STEM Programs Nationwide

The STEM PUSH Network unites 40+ pre-college STEM programs, from across the country, around common equity goals. STEM PUSH recognizes that the diversity of programs in disciplinary content, pedagogical approaches, timing, logistics, and student populations is an enormous strength of the Network.

STEM PUSH is the first-ever national network of pre-college STEM programs (PCSPs). As part of STEM PUSH, PCSPs report that the most powerful element of the Network was previously nonexistent - PCSPs now have access to programs across the country that are both similar to and different from their own.

The Network uses improvement science, which is, at its core, an approach to improvement that acknowledges and embraces variation. PCPS participate in iterative testing in which contextual variations are welcomed rather than controlled so that we learn about what works for whom and under what circumstances.

This month's newsletter celebrates the diversity and the unique connections, projects, and progress of each pre-college STEM program within the Network.



# COLLABORATIVE LEARNING

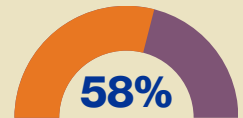
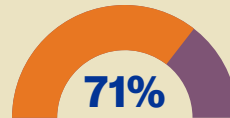
STEM PUSH fosters collaborations that leverage the unique strengths of partners around the common goal to broaden participation of Black, Latina/o/e, and Indigenous students in STEM. Through surveys, participating pre-college STEM programs have reported great value in having similar programs to use as a sounding board for planned improvements or challenges. PCSPs have also benefitted by hearing from very different programs to broaden their thinking and see new possibilities. In this way, programs are leveraging the variation to work toward systemic change in higher education admissions.

**25%** of STEM PUSH pre-college STEM programs have existed for 27+ years

**65%** of STEM PUSH PCSPs focus their programming on specific STEM concentrations, such as engineering, environmental science, or health science.

**Over 60% of STEM PUSH pre-college STEM programs are affiliated with a University. Other programs are affiliated with community-based organizations, museums, and other institutions.**

## DEMOGRAPHICS OF STUDENTS SERVED BY STEM PUSH PCSPS



On average, approximately 71% of students served by STEM PUSH PCSPs are minoritized students and 58% of students served are economically disadvantaged



of STEM PUSH PCSPs have only 3 or fewer full-time staff members



**A majority of STEM PUSH programs incorporate hands-on projects, career exposure, and near-peer mentoring in their programming**

# DIVERSITY CREATES CO-LEARNING OPPORTUNITIES

## STORIES FROM THE FIELD

New York-based Arthur Ashe Institute for Urban Health has found new opportunities and learnings through their membership in the STEM PUSH Network. Arthur Ashe staff have participated in events hosted by STEM PUSH member New York Hall of Science (NYSCI). Janille Williams, former staffer and now consultant for Arthur Ashe, has been a speaker for two NYSCI panels. Arthur Ashe staffers have attended NYSCI learning sessions as part of their professional development.

Photo courtesy of Arthur Ashe Institute for Urban Health



***“STAFF BRING BACK GREAT IDEAS, SOME OF WHICH WE MAY USE WITH OUR STUDENTS, AND IT'S PART OF MY STAFF'S PROFESSIONAL DEVELOPMENT.”***

-Dr. Mary Valmont, Associate Executive Director for Health Sciences Education, Arthur Ashe Institute for Urban Health

Photo courtesy of NYSCI



***“THROUGH OUR SHARED COMMITMENT TO PROVIDE YOUTH WITH STEM AND YOUTH DEVELOPMENT OPPORTUNITIES, STEM PUSH CONTINUES TO REMIND US OF THE VARIED RESOURCES FROM OUR LOCAL COLLEAGUES LIKE ARTHUR ASHE, AND TO USE THE POWER OF COLLECTIVE IMPACT IN BUILDING TRUSTED PATHWAYS WITH AND FOR OUR LOCAL COMMUNITIES.”***

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

Shihadah Saleem, Director of Youth Programs and Pathways at NYSCI in Queens, NY says working with partners like the Arthur Ashe allows individual PCSPs to accomplish greater goals.

Saleem finds that the diversity of programs within PCSPs and the Network empowers the work, “The diversity of programs always enriches and sustains impact and development with our youth and our staff. Studies continue to show and celebrate, each pathway is unique and not always linear. Providing students with an opportunity to discover, play and make several choices with trusted mentors, networks and advisors helps students become confident in making better career choices for themselves. It also provides institutions with better ways of knowing and co-developing programs and pathways for holistic experiences with students, acknowledging necessary shifts and pivots along the way,” Saleem said.

**“WE CAN SHARE BEST PRACTICES AND  
‘WHAT IS WORKING NOW’ CONCEPTS  
TO REDUCE FAILURE AND WASTING  
RESOURCES AS WE STRIVE TO  
ACCOMPLISH OUR GOALS.”**

-Grady Burrows, Executive  
Director, HIT in the CLE

HIT in the CLE, a Cleveland-based program that aims to grow, diversify and broaden participation in STEM for Ohio students, teamed up earlier this year with STEM PUSH partner, Case Western Reserve Provost Scholars (CWRU) a program that provides educational, interpersonal, and character development experiences through mentoring, tutoring, seminars & other enrichment activities.

The programs collaborated on an asset mapping party in which Cleveland area residents came together to identify community educational assets and explore ways to leverage them. Grady Burrows, executive director of HIT, said the collaboration made sense given the proximity and the shared populations of the programs. “Although I knew of the Provost Scholars program before joining STEM PUSH, attending the convenings in Pittsburgh gave me the opportunity to meet them in person and form a mutually beneficial relationship.” He also said that connections like these are an enormous value-add for being part of the STEM PUSH Network.

Photo courtesy of Provost Scholars



Photo courtesy of HIT in the CLE





Diversity of thought, experiences and perspectives is powerful for any network or organization. This is one of the many assets of the STEM PUSH Network. STEM PUSH's newly formed steering committee intentionally represents network diversity.

STEM fields are not monolithic and neither are the humans working in them. Therefore the way pre-college STEM programs prepare students for future STEM careers cannot follow a one-size fits all approach to recruitment, exploration, and engagement.

The STEM PUSH Network continues to learn together and share best practices and 'what is working now' concepts to reduce failure and wasting resources as the Network strives to accomplish goals. The range of expertise from STEM PUSH programs allows partners across the country to gain new ideas, crowdsource solutions to pressing challenges and connect with colleagues.



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