



# THE FUTURE NEEDS A PUSH

APRIL 2023

## FEATURED

CONVENING HIGHLIGHTS

KEY TAKEAWAYS

MEET SEVENTEEN NEW  
PRE-COLLEGE STEM  
PROGRAMS

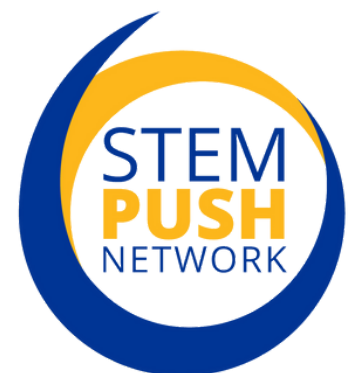
## Collective Action: National Convening Pre-College STEM Programs

The STEM PUSH Network aims to strengthen pre-college STEM programs (PCSPs) while supporting Black, Latina/o/e and Indigenous students and reimagine the relationship with college admissions to broaden participation in STEM.

At our third in-person convening, "**STEM PUSH: On the Equity Journey**" partners from across the U.S. connected to share learning, resources, and to set and enact the agenda for increasing access and opportunity in STEM.

STEM PUSH pre-college STEM program (PCSP) representatives gathered for three and a half days of networking and learning sessions designed to collectively strengthen PCSPs to broaden participation in STEM.

The convening aimed to center and affirm the Network's commitment to, and role in, building greater racial and ethnic equity in STEM education and college admissions; celebrate individual and collective progress towards equitable STEM practices and pathways for Black, Latina/o/e, and Indigenous students; cultivate leadership within STEM PUSH; and connect leaders working, across the U.S., for racial and ethnic equity in STEM.



# CONVENING HIGHLIGHTS

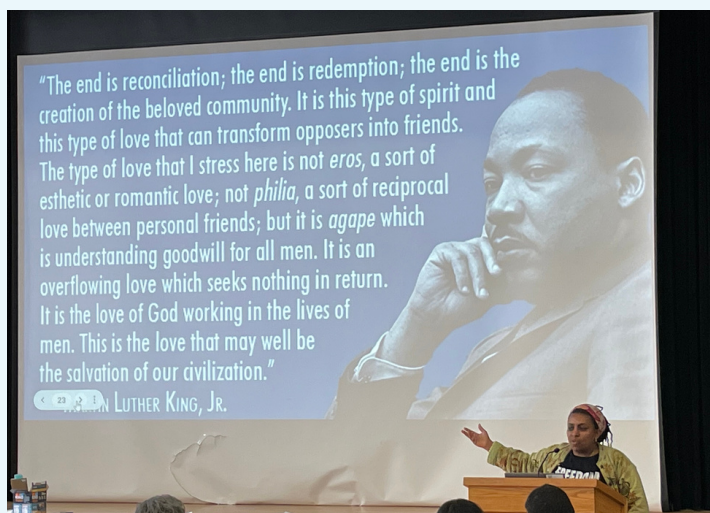
This year's keynote speaker was Michelle King, Learning Instigator, Love Activist, and Beloved-Community Architect.

King, an Army brat, child of an Ethiopian immigrant, and public school teacher of more than 22 years, inspired partners to think broadly and imaginatively about human-centered learning and institutions, "love as praxis" and the power of the collective in imagining just science futures.



**Michelle King, Learning Instigator, Love Activist, and Beloved-Community Architect**

King led participants through an imaginative ideation in which they designed an invention for the future that centered justice, equity, and love. Groups shared their fantastic creations that envisioned brighter futures through design thinking.



The March 2023 convening was kicked off with welcome addresses by Monya A. Ruffin-Nash and Dr. Alicia Santiago Gonzalez of The National Science Foundation (NSF). External evaluator, Dr. Aileen Reid, shared key milestones and metrics for STEM PUSH, and the Network welcomed Cohort 3 of pre-college STEM programs.



**Monya A. Ruffin-Nash,  
Program Director, National  
Science Foundation**



**Alicia Santiago Gonzalez,  
Program Officer, National  
Science Foundation**

# KEY TAKEAWAYS

We shared preliminary data that showed that **81% of students who participated in STEM PUSH PCSPs' enrolled and persisted** in post-secondary STEM; this is higher than the national average. Across programs with enough data, the odds of enrolling and persisting in STEM was more than double of applicants in the same program.

We consolidated learnings from the winter testing cycles and launched 4 new equity-focused testing cycles which will run through September 2023. These improvement cycles are: **Ecological Belonging, Alum Engagement, Community Asset-Mapping, and Equitable Measurement of Competencies that Matter**. Now that the network has onboarded all cohorts, over 80 improvement cycles will be completed in the upcoming year.

Programs began working on how to measure program outcomes in more coherent, powerful and equitable ways. Convening attendees participated in an Outcome Mapping Session. This session marked the launch of improvement groups focused on equitably measuring the development of the scientific communication, critical thinking and/or research skills that programs intend to develop in students.

We completed a half day human-centered ideation exercise to identify high leverage areas of focus to advance the collective impact work in the NIC going forward.

These ideas will be what the Steering Committee works with to organize efforts going forward.

Nine pre-college STEM program representatives were nominated and selected to form the new NIC Steering Committee, which officially launched in March 2023.

**“STEM PUSH helps our program dedicate time to set goals for inclusion of underrepresented students in STEM. We care about our shared mission but commonly get overwhelmed by the day to day of running our programs. I appreciate the thoughtfulness, hope, and possibilities presented by STEM PUSH.”**

- Ellen Conrad, Young Naturalists





## Welcoming Cohort 3

STEM PUSH welcomed its third cohort of pre-college STEM programs (PCSPs). These PCSPs come from urban areas in 10 states, all committed to equity for Black, Latina/o/e and Indigenous students in STEM.

### Everglades EcoExplorers

The program provides Internships for students entering grades 10 – 12 from Fort Lauderdale High School Dillard 6-12 School & Stranahan High School. It is a 40-hour Summer Training Field Study Program.

### Ionosphere/ Boys and Girls Club

The Ionosphere Aviation program teaches Club Members at the Nan Knox Unit ages 10+ about aviation principles and a career in aviation.

### AMNH Science Research Mentoring Program

The Science Research Mentoring Program (SRMP) at the American Museum of Natural History is an opportunity for New York City high school students to conduct one year of scientific research with Museum scientists.



“I joined STEM PUSH to be a part of a national network of pre-college STEM programs; to get new ideas in designing authentic and relevant learning experiences for the students that we serve. The STEM PUSH Network’s aim aligns to our existing push to ensure the students that we serve are given consideration in the college admissions process for participating in our program.”

- Ben Louie, USC MESA

### **Bridge 2 Life Digital Content Creators**

B2L's fundamental goal is to close the equity gap for post-secondary attainment at a systems level, while exploring and piloting interventions to help students in the here and now.

### **SHINE**

USC Viterbi's Summer High School Intensive in Next-Generation Engineering (SHINE) students can join a professor's research team for seven weeks to discover how engineering addresses our real world problems in various fields.

### **CSULB MESA**

The CSULB College of Engineering offers the MESA Schools Program to Los Angeles middle and high schools to prepare students to attend college.

### **CSUDH Upward Bound Math-Science**

Upward Bound (UB) at CSUDH offers a wide network of support services that help ensure academic and personal success for first-generation, low-income students. Upward Bound is designed to increase high school retention and graduation rates of underrepresented students.

### **The Coding School**

The Coding School offers learning pathways and programs for individuals at every stage of their STEM journey: K-12 students and educators, community college and university students and faculty, and members of the workforce.

### **USC MESA**

USC MESA keeps a close connection to former MESA students, who are now current USC students. MESA College Prep graduates work to help current MESA students achieve their academic dreams too.

### **Oregon MESA**

Oregon MESA equips teachers to help underserved middle and high school students excel in STEM (science, technology, engineering, and math) through hands-on invention education.

### **Hillman Academy**

The Hillman Academy is an immersive mentored research program for a diverse group of high school students at the University of Pittsburgh.

### **Women in Natural Sciences**

Women In Natural Sciences (WINS) is a free after-school and summer science enrichment program at the Academy of Natural Sciences serving young women from underrepresented communities and households facing financial limitations within the Philadelphia School District.

### **STAR Lab: Students Taking Advantage of Research**

STAR Lab is a collaboration between SARSEF and the University of Arizona Department of Molecular and Cellular Biology that provides mentorship, consultation, research supplies, and lab space for high school students to complete their own authentic research projects.

“I joined STEM PUSH to learn from people working in STEM education all around the country and help my programs become as effective and powerful as possible.”

- Maria Strangas, American Museum of Natural History Science Research Mentoring Program



**University of Kansas:  
Upward Bound Math  
Science**

TRIO Upward Bound programs are federally funded college access programs that provide fundamental support to students preparing for college. Upward Bound serves first-generation and low-income college-bound students in Shawnee, Douglas, Leavenworth and Wyandotte counties.

**Art Harper Saturday  
Academy**

The Art Harper Saturday Academy, which began in Fall 2019, is a multi-year program that will reach out to high school students from under-resourced communities who are interested in pursuing college majors and careers in STEM related fields.

**Urban Coders Guild**

Urban Coders Guild develops a tech talent that includes underserved, underrepresented, and otherwise under resourced communities. They equip Black and brown students with a confidence, level of comfort, and sense of community as they navigate their learning journeys.

**Rocky Mountain  
MESA**

Mathematics, Engineering, Science Achievement (MESA) is a low-cost program designed to increase access to Science Technology Engineering and Mathematics (STEM) pathways and encourage college readiness for low-income, minority or first-generation college-bound students in grades 6-12.



The STEM PUSH Network recognizes that our greatest asset is our PCSP partners—the dedicated educators doing the work on the ground. A key accomplishment of this year’s convening was the introduction of a steering committee composed of PCSP partners that will help lead the next iterations of the STEM PUSH agenda. The steering committee will:

- Provide thought leadership and oversee implementation
- Provide advisory input to Alliance-wide strategy
- Build steering committee processes and protocols
- Report out to the whole network, Alliance Leadership team, and Advisory Council

The **STEM PUSH Networked Improvement Community Steering Committee:**



**Mary Valmont Arthur,**  
Ashe Institute’s Health Science Academy



**Leslie Imelda Serpas,**  
CSUDH Upward-Bound Math-Science



**Grady Burrows,**  
HIT in the CLE



**Edlyn Thompson-Mettle,**  
Art Harper Saturday Academy



**Manny Leon,**  
Arizona MESA



**Elizabeth Waters Cooper,**  
Union STEM Outreach Program



**Steven Jones,**  
Hillman Academy



**Gaby Carbonell,**  
Everglades EcoExplorers



**Abigail (Aby) Romo,**  
Nature Museum TEENS



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