Building Networks and Enhancing Diversity in the K-12 STEM Teaching Workforce
Lack of Diversity in STEM Teaching Workforce

- Minority students experience difficulties accessing higher education and the ability to persist to graduation in a STEM field.¹
- Minority pre-service teachers encounter barriers to entering the teaching field.²
- In-service teachers of color have higher attrition rates than White teachers.³

1. Moore, 2006; Museus et al., 2011
2. Brown, 2014
3. Achinstein et al., 2010; Kohli, 2019
Benefits of Diverse Teaching Workforce

- Build cultural bridges between home and school for students and promotes culturally responsive teaching\(^1\)
- Positive associations between same-race teachers and diverse students’ academic achievements\(^2\)
- Minority students found teachers of color to be more accessible, caring, and more engaging,\(^3\) and saw the same-race teachers as their role models\(^4\)
- Diverse teaching workforce does not only benefit students of color but all students\(^5\)

2. Egalite et. al., 2015; Klopfenstein, 2005
4. Eddy & Easton-Brooks, 2011; Pitts, 2007
5. Cherng & Halpin, 2016
How to enhance the K-12 STEM teaching diversity?

- Where does the work need to start, and how can it lead to systems change?
- How can leadership development be shaped to better support diversifying the K-12 STEM teaching workforce?
- How does leadership development affect teachers and school leaders in their perceptions about diversity and in taking actions to diversify the teaching workforce?
- What are the challenges that schools/districts may confront while working toward systems change?
Smithsonian’s STEM Education Summit since 2017

To **diversify the STEM teaching workforce** through district systems change by:

- **Attracting** candidates to diversify STEM teaching
- Increasing **retention** of STEM teachers from underrepresented populations
- Expanding **leadership** opportunities for STEM teachers from diverse populations
STEM Education Summit 2017-2020

83 teams
24 states
55 districts
10.5+ million students
STEM Education Summit

Time to get together!
Collaboration of Smithsonian and Howard

Goals of this Planning Year:

- **Convene an Alumni Workshop** by inviting the former Diversity STEM Education Summit participants and their colleagues and networks who attended the Summit in 2017-2020
- Survey with the faculty members of Institutions of Higher Education (especially HBCUs and MSIs)
- Develop a source book from the collected information to be used in future Diversity Summit
STEM Education Summit
Alumni Workshop Objectives

- Build the networks and a stronger coalition between the participants from the previous teams and years.
- Share reflections of implementation of action plans.
- Discuss strategies and develop shared vision to attract and retain the K-12 STEM teaching workforce.
Cultural-Historical Activity Theory (CHAT)

We are going to use this CHAT to better understand activity system.

Summit
Participants: Teachers & Administrators

Subject

Tools

e.g. Logic Model

Object

Cultural-Historical Activity Theory (CHAT)
(Engeström 1987; Vygotsky 1978)

Goals & Action plans to diversify STEM teaching workforce

Outcomes

Results/Achievements

Rules

Policies, Common norms
Cultural Context
Formal/Informal rules

Community

Schools/Districts/Regions
(Administrators/HR/parents/students, etc.)

Division of labor

Responsibility, roles, work
What and when to carry out by whom and how?
STEM Education Summit Alumni Workshop

- For more information, please visit: https://ssec.si.edu/event/stem-education-summit-alumni-workshop-virtual

- This Alumni Workshop is open to the past STEM Education Summit participants and their extended collaborators.