

# Early STEM Engagement for Minority Males (eSEM) through a Network of MSIs

Jumoke O. Ladeji-Osias, Cindy Ziker, Kamal Ali, Derrick Gilmore, Clay Gloster

## Broadening Participation Challenge

Black and Latino males are underrepresented in STEM majors, graduate programs, and careers, relative to their percentage in the US population (Ginder, 2013; NSF, 2015). Roadblocks that continue to challenge minority males in their pursuit of success in STEM fields include: disparity in access to high quality STEM educational resources, a lack of role models, lower college readiness and a shortage of highly trained, minority STEM educators. This Design and Development Launch Project will build on an existing regional partnership of four Historically Black Colleges and Universities (HBCUs) that are working together to improve STEM outcomes for middle school minority male students through the Verizon Innovative Learning (VIL) Program for Minority Males.

## Goals

The common goal for eSEM is to increase the number of minority males in grades 6 – 12 who are prepared to participate in the STEM workforce. Partners will address two common goals:

- 1) Broaden the participation of underrepresented minority males in science and engineering through informal educational experiences that prepare them for careers in STEM fields; and
- 2) Create a Network Improvement Community focused on STEM achievement in minority males.

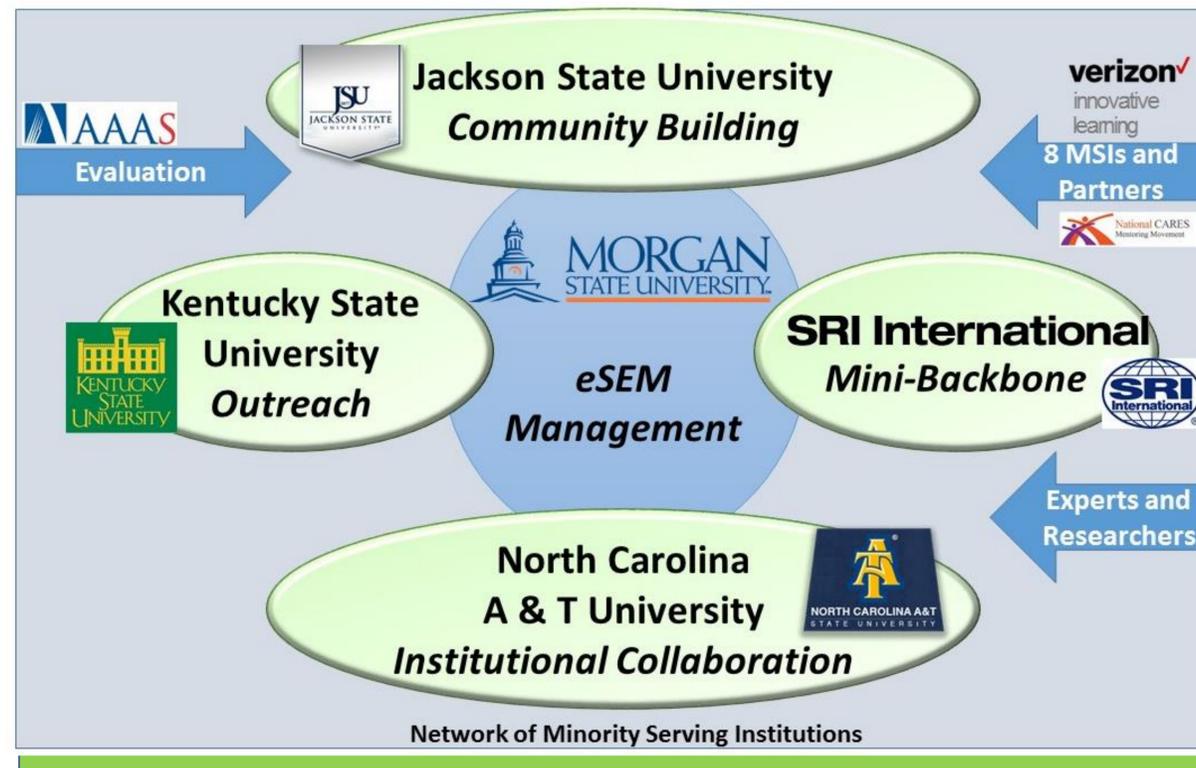
## Focus of the Project

Essential program elements include; high-quality instruction in STEM content (e.g. 3D modeling and printing, computer science, and mobile app development), mentoring, and professional development. The research questions are:

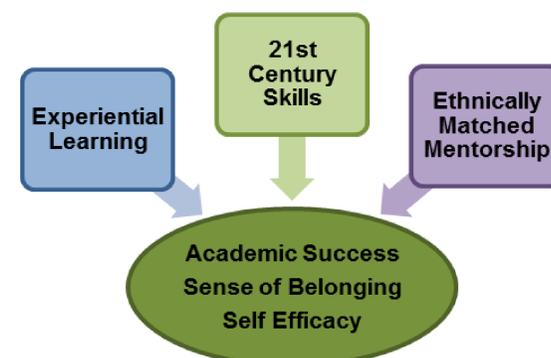
- 1) What are the most effective strategies for increasing minority male students' interest in STEM coursework, STEM careers and enrollment in college?
- 2) What models of mentorship are effective in supporting the personal development and sense of belonging among minority males?
- 3) How can partners, stakeholders, and researchers participate in a meaningful way in the NIC and in future research?

## Vision for eSEM

Using collective impact-style approaches such as planning and implementing a Network Improvement Community (NIC), project partners will collaborate to create a roadmap for developing a NIC that will address STEM achievement challenges for minority males. The project will expand to include eight additional partner institutions (six HBCUs and two Hispanic-Serving Institutions (HSIs)), schools and school districts in communities local to their campuses. The NIC will include a mechanism for developing and building the capacity of an online community where NIC participants can connect and collaborate with experts through webinars, share and receive information through a document repository, ask questions of colleagues involved in similar activities and post messages virtually to the NIC. Practitioners, social science researchers, and other stakeholders will be invited to attend a workshop at Morgan State University to share best practices and define the NIC. Partners will also be invited to participate in webinars and other NIC activities. Outcomes will include: developing a shared agenda and implementing mutually reinforcing activities, a strategic plan, common metrics, and shared measurement systems to measure collective impact.



## Theory of Action



The cumulative effect/interaction of students' exposure to the essential VIL Program elements in a university setting and school setting will lead to increases in achievement, engagement in STEM activities, and attendance at school.

## Impact And Scaling Plan

**eSEM locations (880+ participants in 2015/2016):**

- Baltimore, Maryland
- Greensboro, North Carolina
- Jackson, Mississippi
- Frankfort, Kentucky

**Expansion to include eight minority serving institutions:** California, Delaware, District of Columbia, Georgia, Missouri, Ohio, Texas, Virginia.

**Potential INCLUDES Alliance Partners:**

- Pre-College STEM programs
- Minority Male initiatives
- Minority Serving Institutions

**How to Find out More and/or Contact Us:**

J. Kemi Ladeji-Osias (PI), 443-885-1456  
Jumoke.Ladeji-Osias@Morgan.Edu

Trellis Group:

Early STEM Engagement for Minority Males (eSEM)  
– An INCLUDES Pilot

<http://esem-includes.org/> (Coming Soon)

## Upcoming Activities

- **Webinar:** Mentoring Minority Males (February)
- **Workshop:** What We Can Learn from the Research on Minority Males and STEM Engagement (May – Baltimore, MD)

## Acknowledgements

**Jumoke Ladeji-Osias** – Morgan State University, **Cindy Ziker** – SRI International, **Kamal Ali** – Jackson State University, **Derrick Gilmore** – Kentucky State University, **Clay Gloster** – North Carolina A&T University

Support for eSEM has been received from the National Science Foundation (NSF) under INCLUDES Grants 1649231, 1649213, 1649220, 1649267, 1649316. Any opinions, findings and conclusions, or recommendations expressed are those of the authors and do not necessarily reflect the views of NSF.