

Oct 14, 2021

# Factors Impacting Engineering Advanced Degree Attainment Among Black Males

## ABSTRACT:

Colleges and universities in the United States struggle to recruit and retain STEM majors, especially underrepresented students. Among engineering students in 2016, 34.6% of BS degrees were awarded to Latinx, African Americans, and women combined. The outlook is bleaker among Black males who obtain graduate degrees. Black males account for 3% and 1.7% of engineering Master's and Doctoral degrees, respectively. Moreover, Black men make up 3.6% of the engineering workforce and 2.5% of engineering faculty. Though recently, institutions have attempted to tackle this problem, there remains a dearth of literature that has sought to uncover and understand the factors that influence Black males to pursue engineering graduate degrees and how they successfully navigate the academy. Here we will discuss findings from an ongoing project that uses a qualitative approach and Community Cultural Wealth as a framework to understand the experiences of Black men in engineering graduate programs. Three themes have emerged from this study: Benefits of Advanced Degrees, Social Supports, and Hurdles/Obstacles Experienced. We will conclude with implications for policy, practice, and research that could further improve the experiences of Black males in engineering graduate programs. Findings can perhaps be extended to and applied to other underrepresented groups.

## BIOGRAPHY:

Dr. Jerrod A. Henderson ("Dr. J") is an Assistant Professor in the William A. Brookshire Department of Chemical & Biomolecular Engineering at the University of Houston. He began his higher education pursuits at Morehouse College and North Carolina Agricultural & Technical State University where he earned degrees in both Chemistry and Chemical Engineering as a part of the Atlanta University Center's Dual Degree in Engineering Program. He completed his PhD in Chemical & Biomolecular Engineering at the University of Illinois under the mentorship of Dr. Paul Kenis.

Dr. Henderson has dedicated his career to increasing the number of students who are in the pipeline to pursue STEM careers. He along with Rick Greer are the co-founders of St. Elmo Brady STEM Academy (SEBA), an educational intervention aimed at exposing underrepresented fourth and fifth grade boys and their fathers and/or mentors to hands-on, inquiry based STEM experiences. During fall 2020, SEBA was expanded to include underrepresented girls.

Henderson is also the Director of the Program for Mastery in Engineering Studies (PROMES) a program aimed at increasing engineering student achievement, engagement, and graduation rates. His well-funded research interests are in engineering identity development throughout lifespans (i.e. K-20 and beyond), student success, and the efficacy of STEM interventions. He was most recently recognized for his work by INSIGHT Into Diversity Magazine as an Inspiring STEM Leader, the University of Illinois with an Outstanding Young Alumni Achievement Award and by Career Communications Group with a Black Engineer of the Year Award for college level promotion of education.



## Jerrod Henderson

*Assistant Professor,  
William A. Brookshire  
Department of Chemical &  
Biomolecular Engineering,  
University of Houston,  
Houston, Texas*