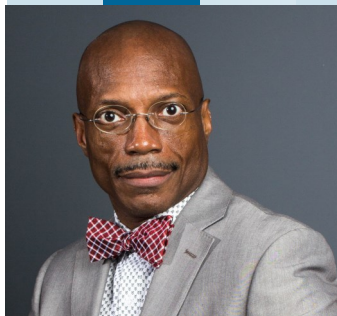


Interdisciplinary collaboration between engineering, mathematics and science

# SEMS Research Highlights



## Making a Case for Diversity in STEM Fields

Dr. Anthony Robins

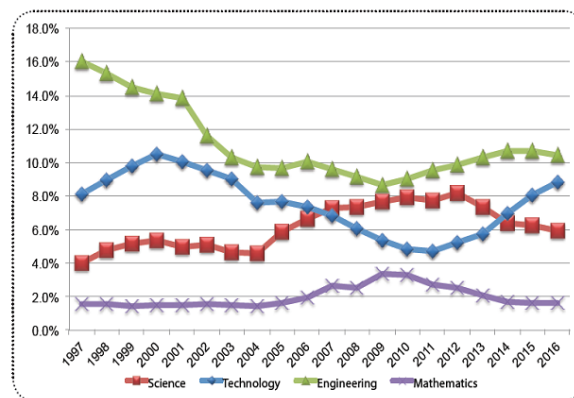
RMU Deputy Chief Diversity and Inclusion Officer and Associate Professor of Biology,  
School of Engineering, Mathematics and Science (SEMS)

This newsletter presents the research conducted within the School of Engineering, Mathematics and Science (SEMS) at Robert Morris University (RMU). It covers various relevant topics including: interdisciplinary efforts, successful research grants, student research, posters and papers, journal publications, presentations at national and international conferences, contribution to professional societies, STEM educational research, industrial consulting collaborations and applied research.

Chart on the right indicates twenty year trends (1997 - 2016) for % enrollment of African American students in STEM disciplines (Red: Science, Blue: Technology, Green: Engineering, Purple: Mathematics).

Will the science and high technology sectors have the talented African American male STEM graduates prepared to compete and be leaders in tomorrow's world? Disparities in who pursues STEM fields clearly remain and warrant sustained attention. Yet, too often, assumptions about differences between groups, whether the differences pertain to assumptions about their ability to succeed or their preferences to participate, are reinforced and subsequently lead to the creation of more disparities. Therefore, it is crucial that we recognize diversity where it does exist, noting progress toward equity and offering empirical evidence that can impede the further perpetuation of stereotypes about who belongs in STEM fields.

Statistics on the state of education in the U.S. indicate a decreasing trend in African American male students choosing to major in and successfully complete degrees in science, technology, engineering



and mathematics (STEM) disciplines. To ignore these reports could be costly and a threat to the U.S. national security. Academicians, entrepreneurs, and government officials cannot continue to ignore a population that make up its very strength—rich ethnic diversity. National data on STEM workforce, projected STEM jobs, academic preparation / discipline, and degree attainment, highlights the gender and racial / ethnic disparities in STEM fields. As White males historically have dominated STEM fields, both in number and in perception as the normative picture of a scientist, they are the relevant reference group. Attention is given to

national 20-year trends by STEM discipline. The data explores the presence of African American males in the STEM workforce and where the gaps are found. Some of the key results from this data are:

—Nationally, African American males hold 2% of core STEM jobs

—Pennsylvania employs 4% of African American males in core STEM jobs

—Males have traditionally dominated STEM fields and enroll in engineering degrees at 4 times the number of females.

—The only STEM discipline projected to grow in interest among African American males through 2020 is Technology .

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Dr. Priyadarshan Manohar,

Co-Director, SEMS-ROC, Research and Grants, E-mail: [manohar@rmu.edu](mailto:manohar@rmu.edu), Tel.: 412 397 4027

