

Chapter 43

Overcoming the Layers of Obstacles: The Journey of a Female African American Physicist to Achieve Equity, Diversity, and Inclusiveness

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ABSTRACT

This chapter documents the experiences in the journey of an African American female physicist. They correspond to those in documented studies of other African Americans and females in both the specific field of physics as well as the broader area of all STEM. When scaled with the norm of these groups, there is a thread of consistencies in the obstructions and difficulties that seem to be common to the under-represented. This writing, which is adopted from the author's previous contribution to a similar topic, seeks to continue to reinforce the challenges women of color have experienced in pushing for advances obtained thus far. The scientific Ph.D. community is an area that many have felt was immune to the difficulties faced by African Americans on the lower end of society. It is evident that our society is neither "post-racial" nor "post-sexist," even on the higher intellectual turf. With a level playing field that is established by removing the obstacles that systemic racism creates—obstacles like unfair roadblocks—accomplishing one's dreams is attainable.

INTRODUCTION

After climbing a great hill, one only finds that there are many more hills to climb. I have taken a moment here to rest, to steal a view of the glorious vista that surrounds me, to look back on the distance I have come. But I can rest only for a moment, for with freedom comes responsibilities, and I dare not linger, for my long walk is not yet ended. (Mandela, 1975)

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Addressing sexism, women have had to wait on society to evolve in order to experience equity and inclusion, particularly in STEM fields. The recognition of scientific brilliance and high technical competence are characteristics African American women are gaining but are still fighting to have recognized as attributes. The book and movie *Hidden Figures* exposed to the world their brilliance, pinpointing the fact that Space Race successes were due to the computational genius of African American women like Katherine Johnson back in the 1960's—who, by accurately calculating the correct flight trajectories, bears responsibility for the first American astronaut's orbiting of the moon (*Hidden Figures*, 2016).

In the author's field of physics, there have been only 3 female Nobel laureates in 117 years—none of which were African American—as opposed to 206 men. The most recent female is Donna Strickland (Nobel Media, 2018). Yet the author personally knows of Nobel-worthy African American females who have changed the course of science their fields—women like ophthalmologist and inventor Patricia Bath (A&E Television Networks, 2018).

Addressing racism: History is adorned with African American inventors and scientists who have made world-changing contributions despite the obstacles that surrounded them (McFadden, 2018). For women of African descent, the fight is against a double-edged sword. The anti-discrimination laws—laws which resulted from the civil rights movement of the 1970s through the 1980s, and which opened some doors—assisted in bulldozing down the locked doors of STEM. Now, there is still a big question mark as to whether there is equity once inclusion has been achieved. Despite a rich history of having been contributors in all arenas, African Americans—though many decades after Jim Crow formally ended—are poorer and have harder lives than do their counterparts in White society.

African Americans still face racism at every turn. They are not necessarily viewed with admiration, but rather as if under a magnifying glass that is expected to reveal some fault. There is no guarantee that they can count on the support of White females; as it is, often the contrary is the case. As former President Barack Obama recently stated in his speech on the 50th memorial of Bloody Sunday (as echoed in Mandela's quote above), the Civil Rights movement did not end decades ago but is an ongoing movement—a work still in progress (Obama, 2015).

Discriminatory practices thrive in climates that insist that a lack of advancement is due to a lack of adequate intelligence, skills, or motivation. Nonetheless, for the underrepresented, while moving forward with all the faculties—such as brain power, ambition, and diligence—required to accomplish and succeed in their goals, their crossing the bridge to success is still not a given. Too often, those in the higher-level technical arena, if of African descent, must double or triple prove themselves over and above what is required of Whites. This is a systemic problem for Blacks and women and is discussed at length in a report entitled “Double Jeopardy” (Williams, Phillips, & Hall, 2014). Additionally, amongst a significant segment of the scientific community, African American females are still stereotyped and perceived as being outside of the realm of “the best and brightest,” which the technical field pursues. The same words can come out of the mouth of a White male and an African American female; however, the former statement is accepted as credible and brilliant and the latter is subject to many levels of what is sometimes never-ending scrutiny. In the discussion of the term which the above-mentioned report coined as “Prove it Again” (Williams, Phillips, & Hall, 2014), the authors discuss how the resulting unfair requirement stems from the perception of what is and is not credible and scientifically brilliant by the scientific community in their maintenance of the status quo. Others' perception of scientific/technical worth has been documented in studies such as one entitled “Merit alone is not enough” (Eichler, 2012), and is further discussed throughout this chapter as well. So, for the underrepresented in these situations, acceptance of credibility is not based on merit but rather on personal preference and bias, which is highly unscientific

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