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## Why I Chose a HBCU

By: Mal'lica Gordon, undergraduate at Florida A & M University

Choosing to pursue a Bachelor of Science in Physics at an HBCU has been one of the best decisions of my life. Being a first generation college student from a poverty-stricken environment presented many closed doors for me as a child. Graduating high school was the greatest achievement in my household and attending college was just something to do. However, my siblings and I knew that education would be the key to prevent us from repeating the generational curse of poverty.

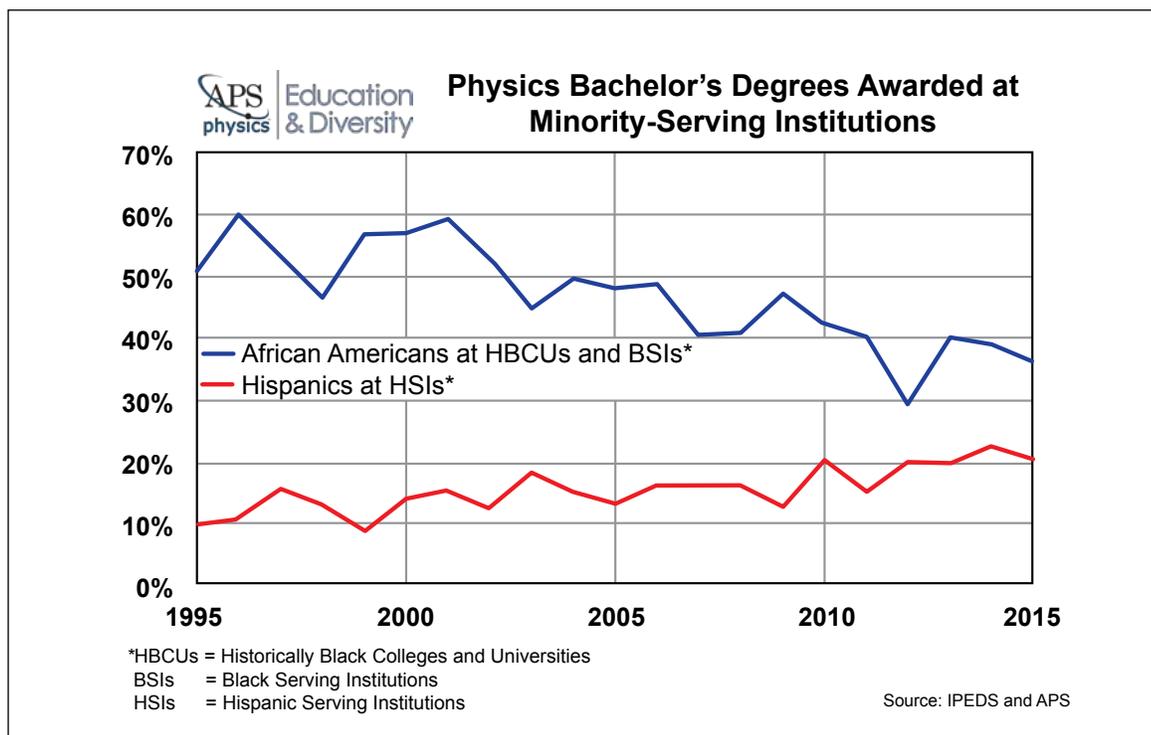
I chose to attend an HBCU because I heard rumors of the commitment to the educational advancement of minorities and underserved communities. This rumor proved to be true upon my admission to Florida A&M University, and they welcomed me with open arms. I met many students from similar and very different backgrounds than myself, which has proven to be a

great benefit to my own cultural understanding.

Personally, I believe if I would have attended a PWI (predominantly white institution), I may have been lost among the many different bright minded individuals competing for the professor's attention, research opportunities and knowledge of knowing where opportunities are offered. That type of competition can be great only if everyone has the same starting point and unfortunately, the truth is, that for various reasons, I had an unfair disadvantage.

Deciding to major in a science field has given me so many opportunities while still an undergraduate. The smaller class sizes give me the courage to speak with my professors when I struggle with certain subjects. I always have an abundance of support from

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*This graph shows the percentage of physics bachelor's degrees awarded to African Americans at Historically Black Colleges and Universities (HBCUs) and Black-Serving Institutions (BSIs) and the percentage of physics bachelor's degrees awarded to Hispanics at Hispanic-Serving Institutions (HSIs).*

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## HBCU: The Best Decision for my Scientific Future

By: *Jairrin Dickens, undergraduate at Florida A & M University*

I was accepted into Florida A&M 2 weeks before the start of the term, which I found to be very suspicious, especially since the deadline to enroll had passed a couple of months prior. However, I was eagerly assisted with the admission process. I was later informed that the reason for my quick admittance was that I fit into a category that is scarce at best: a young black person interested in science. Enrolling at an HBCU has proven to be the best decision for my scientific future because they have provided me with funds, showed me how to conduct myself, and allowed for me to interact with world-renowned professors.

The thing no one tells you about pursuing higher education is that it requires a significant amount of money. Fortunately, I have not found that to be an issue. With HBCU's catering to underrepresented and underprivileged youth, the tuition is almost a fraction of that which is charged at other major institutions. Even when I cannot afford the cheaper tuition, I am provided with financial aid, which assures me that the school is doing everything in its power to help me finish my degree.

The generous funding does not end with helping me pay for my education. There are also funds available to help me travel and workshop. HBCUs make it their mission to not let money hinder students development and learning. I have learned that there are many intangible skills required to navigate the

professional world, such as communication skills that are required to network. My university has established and cultivated a culture where this is encouraged and in some cases required. Networking has provided me with many future opportunities including internships, job offers, and possible graduate school destinations.

If I was forced to pick which feature of a HBCU sets it apart, my answer would definitely be the professor. The professors at an intuition of higher education have attempted or have been where you are trying to go, and this qualifies them to be the great mentors. They can guide you to the path they believe would give you the most rewards and the lowest cost to you. For example, I once had two internships for the same time period. One of these internships was with a professor and the other was through the Department of Energy. The professor advised me to take the Department of Energy opportunity even though this would leave them shorthanded. They saw the benefits of one over the other and advised me on the best decision.

Choosing a HBCU has had an immeasurable impact on my future education and career. Whether it is by assuring I have funding, teaching me how to conduct myself, or providing life changing professors, HBCUs seem designed to assure I succeed. I have a large family and after my experiences in college, I hope that all of them give HBCUs a chance. ■

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# On the move to increase the number of women with physics careers in Uganda

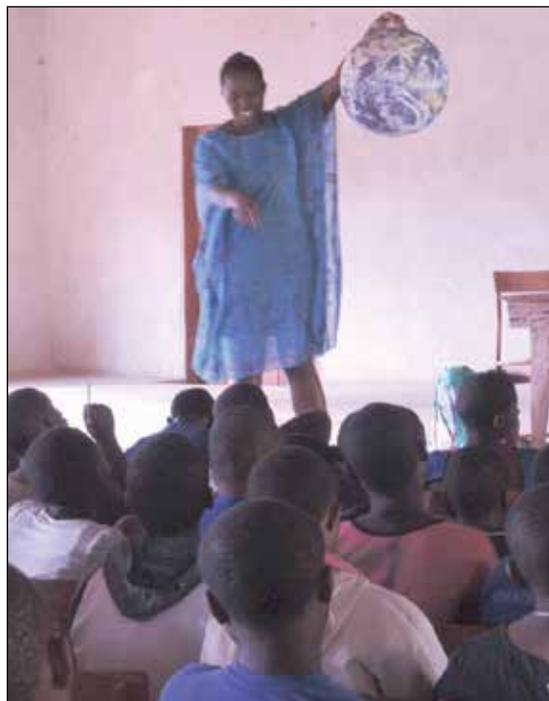
By: Priscilla Muheki, PhD student, Department of Physics, Mbarara University of Science and Technology

Although the number of women in science disciplines has been increasing steadily, participation of women in physics at both the undergraduate and postgraduate level is still low in Uganda. For example, women earn only 4% of physics bachelor's degrees at the Mbarara University of Science and Technology (MUST), while they earn close to 20% in chemistry and biology. This percentage is a result of the low numbers of girls opting to enroll in science subjects at the advanced level in secondary education (Kabunga, 2016).

Towards the end of primary school, attitudes towards science are very positive for both boys and girls and they look forward to studying more science in secondary school. However, by the end of the second year of secondary school, these attitudes start to decline markedly and it is significant for the girls (UBOS report, 2012).

The MUST Women in Science and Technology organization, together with the Department of Physics and visiting Fulbright fellow Beth Parks, initiated an outreach program to some secondary schools in Western Uganda. The goals were to learn more about girls' attitudes and also to share experiences as a way of motivating girls into STEM fields.

They discovered that learners lose interest in physics during secondary school for several reasons, including the abstract nature of some of the physics concepts, the curriculum's focus on problem solving in contrast to conceptual understanding, and the lack of intrinsic motivation to learn more. One student



Priscilla Muheki presenting to a group of students at St. Bridget Girls High School in Mbarara. Photo: Priscilla Muheki

said, "I would rather read history which is more like a story." Additionally, there are negative influences from peers and the society. The prevailing belief is that sci-

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## Why I Chose a HBCU *continued from page 1*

graduate students in my department and tutoring labs specific to my field of study.

Out of all the great things attending this HBCU has given me, the greatest of all is my ability to work in my field of study as an undergraduate. I have conducted research outside of regular class studies on many different topics. For example, I was awarded the opportunity to travel to Brookhaven National Laboratory, where I was one of almost 200 students from around the world conducting research and working side-by-side with scientists in our field of study. I was able to conduct work in the same facilities as Nobel laureates, and be a part of symposiums from world renowned scientist.

At Brookhaven, being among students with science backgrounds from so many different universities has allowed me to gain insight to their collegiate experiences and compare it to mine. Many of them had a lack of direction as upper-class undergraduates, and many of them were misguided in their understanding of employment opportunities for them upon graduation or graduate school. Sadly, this lack of understanding

can be costly; college is not free, and many students are forced to take out student loans or use grants from multiple sources hinging on the expectation that they will graduate and contribute to the workforce. Not having direction can lead to delayed graduation, unemployment upon graduation, or not being satisfied in your chosen field.

However, at my HBCU, there is strong emphasis placed on understanding my field of study. Understanding not just to get an A in all my classes, but to know how my studies will lead to employment. To enhance this understanding, my professors, advisers, and the graduate students all work together to present undergraduate students opportunities for research, lab experience, and employment. Working in labs as much as possible while I am an undergrad has given me a strong sense of self and direction. Not only do I know that I am capable of passing my courses to get my degree, but I also know why I want a degree in physics. I know how my class material correlates directly with my intended work field and I know I have the aptitude to be a great fit as a physicist. ■

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**On the move** *continued from page 3*

ence, especially physics, is meant for boys, and there are very few female physics teachers to serve as role models. Some students are uncertain of their future education due to financial constraints, and above all the teachers are not supportive and encouraging, not facilitating understanding of the concepts, and do not having enough time for all students. In mixed-gender schools, the boys frequently intimidate the girls rather than fostering a favorable environment for healthy competition.

During the outreach, we described different science careers, spoke about the benefits having careers in science, performed simple science demonstrations to explain how science impacts daily life, gave talks on attitude and how it affects performance, and most importantly shared our personal experiences. For example, we shared how we prepared for opportunities that came our way and how we overcame situations where things didn't quite work out as expected. The girls seemed very inspired and they started to see science with a different perspective as observed in their questions and experiences they shared. One of the schools we visited reported an improvement of about 5% in the girls physics grades on national exams, and the teachers hope we can keep visiting the school.

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*The author presenting to a group of students at St. Mary Girls Vocational School in Mbarara. Photo: Priscilla Muheki*

and demonstrations she prepared for us and lastly to the women in MUST WIST for their time and effort. ■

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