

## Testimony

Before the U.S. House of Representatives Committee on

Science, Space & Technology

ACHIEVING THE PROMISE OF A DIVERSE STEM WORKFORCE

James L. Moore III, PhD

Chief Diversity Officer and Vice-Provost for Diversity and Inclusion

The Ohio State University

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Chairwoman Johnson, Ranking Member Lucas and Members of the Committee:

Thank you for inviting me to speak with your distinguished committee today.

My name is Dr. James L. Moore III, and I am the vice-provost for Diversity and Inclusion and chief diversity officer at The Ohio State University, as well as the Executive Director for the Todd Anthony Bell National Resource Center on the African American Male and Distinguished Professor of Urban Education in the College of Education and Human Ecology. From 2015 to 2017, I served as a program director for Broadening Participation in Engineering in the Engineering Directorate at the National Science Foundation.

It is a considerable honor to be here today, and I would like to commend Chairwoman Johnson and Ranking Member Lucas for their leadership on the

“STEM Opportunities Act.” I would also be remiss if I didn’t thank Representatives Anthony Gonzalez and Troy Balderson for helping to make my testimony possible. I would also like to thank Representative Joyce Beatty from Columbus, Ohio. Although she’s not a member of this committee, she’s been very engaged in broadening participation in STEM education for women and underrepresented minorities.

How OSU is addressing the lack of diversity in STEM fields is best illustrated through a pair of Ohio students—Shelby Newsad and Omari Gaskins. Shelby grew up in Beverly, a village of 1,300 in southeast Ohio. Not too far—as a crow flies—from Rep. Balderson’s district.

Like many rural districts, Shelby’s small high school lacked basic science labs, and her only science courses were taught out of old, fading textbooks. While Shelby’s intellect earned her a Morrill Scholarship, one of Ohio State’s premier diversity/merit scholarship programs, she struggled in her biosciences major. As she headed to special tutoring sessions, she questioned whether she would ever catch up to her peers.

Now, Omari also grew up in Ohio, but in urban Dayton, a once-proud city now battered by opioids and joblessness.

Inspired by Marvel comics and “Iron Man” movies, Omari joined a robotics team after he left his neighborhood school for a charter high school. Smart enough to teach himself how to code but without the means to pay for college, Omari found a pathway to Ohio State thanks to our flagship Young Scholars Program, or YSP.

Now in its 30<sup>th</sup> year, YSP finds promising, low income eighth grade students in some of Ohio’s most vulnerable urban school systems. We provide our Young Scholars with ongoing academic support during their high school years and later offer them strong financial aid packages to Ohio State provided they maintain certain academic standards throughout high school and college. The ongoing support during their pre collegiate and collegiate years allows students like Omari to pursue STEM fields and other academic areas. Currently, 43 percent of our Young Scholars are in a STEM major.

Both Shelby and Omari—one white, rural and female, the other black, urban and male—teach us valuable lessons about diversity in STEM.

Lesson 1: We need to be innovative and inclusive in the way that we identify talent. We are losing too many promising students before they ever reach our doors simply because of their zip code and the schools that reside in these communities.

Lesson 2: When we find these students from underserved areas, they are often unprepared for college-level STEM coursework, requiring valuable human and financial resources to bring them up to speed. Sadly, this can cause them to want to quit college altogether. Higher education partnerships with school districts, like YSP, can help improve STEM education outcomes for students of color, especially those who attend high-poverty, under-resourced school systems.

Further, early intervention programs can be a major part of the solution to this preparation gap. YSP intervenes, at the eighth grade, to ensure that students are prepared for college and offers ongoing academic enrichment experiences and other support programs.

Major companies are beginning to understand the importance and significance of attracting STEM and non-STEM talent from diverse communities. Hence, JPMorgan Chase recently made a major investment in both our Morrill Scholars Program and Young Scholars Program to ensure that our students develop the right skills and education to enter the world of work.

My own academic research has studied the key factors impacting academic and career development of African-American males in STEM fields.

Based on field interviews done with STEM grads from historically black colleges, we found that family influence and encouragement, positive K-12 academic

experiences, their own interests and aspirations in STEM as well as their academic experiences in college with their peers, college faculty and staff were all crucial impacting factors in African-American male achievement.

Coming out of that 2014 study, we recommended that colleges look to increase the amount and quality of student-faculty interactions focused on out-of-class research and lab experience. The paper also recommended, as others have previously in the field, that pre K-12 teachers set high academic and social expectations for African-American males.

At Ohio State, we have adopted that strategy by starting a bridge program in physics that has been expanded to other STEM fields in recent years, significantly boosting the number of underrepresented students in our STEM graduate programs. These bridge programs focus on the quality of student-faculty interactions through opportunities for out-of-class research and lab experience.

Another Ohio State initiative built around decades of key research findings about African-American male academic success is the Todd Bell National Resource Center on the African American Male.

Through our programs at the Bell Center, we offer our incoming African-American males additional targeted resources including the chance for mentoring, role models and an early arrival program geared toward increasing retention. Our

best practices for African-American males have resulted in rising retention and graduation rates for males in the program and have been studied and adopted by more than 50 colleges and universities across the country.

We are also taking a fresh look at how we select students for advanced degree programs. Our screening panels take implicit bias training, and we have moved away from relying solely on GRE scores to looking at the student holistically.

While we are pushing forward with our own initiatives, we also need federal partners like the Louis Stokes Alliances for Minority Participation (LSAMP), a \$4.5 million grant that was recently renewed for a second, five-year term.

Since 1991, under LSAMP—named for the legendary Ohio Congressman Louis Stokes—more than 650,000 underrepresented minority students across our country have earned bachelor degrees in STEM fields.

I truly believe LSAMP represents the best \$46 million that gets spent every year by the federal government. In our Ohio LSAMP Alliance, for which Ohio State serves as lead administrator, we have 350 students participating from 10 member institutions across Ohio.

Our LSAMP students have been accepted into some of the world's top graduate programs at Harvard, Yale, Cal-Berkeley and MIT. Others have traveled the world conducting research in Costa Rica and Cyprus.

We need highly-trained scientists from every background to solve the world's most pressing problems. And that means advanced degrees.

I'd like to leave you today by turning back to Shelby and Omari. Shelby rose above her early struggles and graduated from Ohio State in the biosciences in 2016. After a post-graduate year spent with the NSF, Shelby is today studying for her PHD in plant sciences at Cambridge University as she works on cutting-edge science to help grow algae in space.

Meanwhile, Omari is a sophomore at Ohio State flourishing on the Dean's List who recently returned from a study abroad trip to Brazil. With plans of someday becoming a software developer, Omari is headed back to South America this summer.

I am immensely proud of both of these students. Unfortunately, the reality is that these students are exceptions. How many Shelbys and Omaris have fallen through the cracks over the years?

We all share a responsibility to broaden STEM participation to maintain our global edge and to continue to provide hope to communities where economic opportunity is limited. I look forward to working with the Committee as it works on the “STEM Opportunities Act.”

Thank you.