

Opening Remarks for Dr. Victor McCrary Congressional Black Caucus Panel on Blue-Collar STEM

Thank you to the Congressional Black Caucus for convening this panel on a topic that is so important to our country's future, and about which I am personally passionate. My name is Victor McCrary, and I am Vice President for Research and Economic Development at Morgan State University in Baltimore, and a member of the National Science Board, the governing board of the National Science Foundation. I'm wearing both "hats," today because both Morgan State and NSF care deeply about the health of the STEM workforce. This includes "Blue-Collar STEM" workers, or what the National Academies have termed the "Skilled Technical Workforce."

This workforce is vital to the well-being of our society and to the economic competitiveness of our nation. We should care about this workforce because the importance and pervasiveness of science and technology in our economy is growing. We should care because we live in a global economy where knowledge is king, and in this new world we should do all we can to make sure none of our citizens are left behind.

Businesses large and small across the United States—from Baltimore, Maryland to Livingston, Louisiana—need adaptable, STEM-capable workers at *every* education level and from *all* demographic groups in order to compete. A recent estimate suggests that nearly 12% of all jobs in the U.S. require skilled technical workers – that's over 16 million jobs! But one of the challenges for workers in this new era is that the job market is fast-moving and dynamic. We all know that workers can no longer expect to settle into a job and do the same tasks year in and year out. Now, we all need to be or become lifelong learners, adapting to a constantly evolving workplace. The computer is the new toolbox.

Here's another startling statistic: out of the 11.6 million total jobs created between 2010 and 2016, 11.5 million of those went to workers with at least

some college education. Meanwhile, the cost of a 4-year degree continues to grow by leaps and bounds, putting it out of reach for many Americans.

Given this landscape, the value of focusing our attention on “blue collar” STEM education and workforce development is clear. Educational efforts aimed at developing the skilled technical workforce help to produce the kind of highly capable workers who are in demand in both the private and public sector, and particularly in critical areas such as healthcare, cybersecurity, research, and defense. At the same time, these careers provide multiple pathways to the “American Dream” for students and incumbent workers – especially underrepresented minorities – who rely on community colleges and technical schools in greater numbers.

So how can we expand and strengthen the skilled technical workforce? Both universities, such as my own institution, and federal agencies, including NSF, have a role to play.

As an HBCU, Morgan State’s mission under the visionary leadership of Dr. David Wilson, is to provide students—especially students of color—with the knowledge and skills they need to compete and thrive – the goal is student success. For example, Morgan State is number one in the Nation in the production of African-American electrical engineers at the bachelor’s degree level and number one among HBCUs in students receiving Fulbright Scholarships (133), and number one among HBCUs with Fulbright Scholars on faculty. In the State of Maryland alone, Morgan State produces half of its African-American engineers.

From the perspective of NSF, helping to create a diverse, STEM-capable, globally competitive workforce is central to our mission. Continued taxpayer support demands that scientific and technological progress creates opportunities and benefits for **all** Americans. This means not only the scientists with advanced degrees performing research in academic labs, but also skilled technical workers in labs, on farms and factory floors, and everywhere in between. This workforce includes first generation college

students, women and persons of color, returning vets, and many others who are looking to better themselves and their families.

NSF has several specific programs targeted at strengthening the skilled technical workforce. For example, in the early 1990s, NSF created the Advanced Technological Education Program, or ATE. To date, it has awarded more than \$950M total to 492 distinct institutions, with more than 65% of the awards going to 2-year degree granting institutions. ATE does what NSF does best: it increases knowledge, catalyzes institutional change, and builds capacity.

As both the policymaking body of NSF and as an independent advisor to Congress and the President on S&E issues, the NSB Board can also play a role. Every two years, we produce and deliver *Science and Engineering Indicators*. In that report, we provide the best available data on the S&E enterprise, and we are currently thinking about how we can use this report to increase our understanding of the skilled technical workforce.

In addition, the NSB has been doing some fact finding on this topic for the past eight months, and on Thursday I expect the Board will formally create a Task Force on this issue. This Task Force will explore the opportunities and challenges facing students, workers, business, and educators involved with the skilled technical workforce, and identify ways we can help.

In my remaining time I'll preview what we've learned so far.

What we have is a failure to communicate—or more specifically, coordinate. Business desperately need STEM-capable, skilled workers, while students and incumbent workers desperately want well-paying, stable jobs. But too often the students we produce or the training we provide to workers doesn't seem to align with what industry wants. At the same time, industry hiring practices can themselves be a barrier – for example, requiring a 4-year degree for openings where a certification or 2-year degree might be a better fit.

Following that point, all too often, this is the message that parents and educators and employers alike are sending: it's 4-year college or bust. There

is a stigma associated with community colleges, technical schools, and vocational training in the minds of students, parents, businesses – and yes, academics. We need to change that perception!!

Finally, we must identify multipliers. We have to make our public investments do more for us. At NSF, we do this by encouraging partnerships between education institutions and local businesses, or between research intensive universities and local community colleges. We learn what works so others can take these practices to scale.

In conclusion, we need to change the conversation. STEM is not just for elite institutions or for researchers with advanced degrees—it's for all Americans. STEM knowledge and skills are vital for our businesses to compete in today's world, and for bringing better jobs and greater prosperity to every region of this country. Strengthening the skilled technical workforce is an essential way to meet this imperative.

We all have a role to play in this critical work – technical schools, community colleges, like Howard County Community College, trade and labor organizations, chambers of commerce, industry, and 4-year colleges, research universities and HBSUs like Morgan State are needed to build and expand this Skilled Technical Workforce. We all need to do our part to change the narrative around the Skilled Technical Workforce and Blue-Collar STEM.

I look forward and welcome today's discussion!!