After the Fact | Race and Research: Higher Education and Diversity

Originally published June 17, 2021

Total runtime: 00:21:28

TRANSCRIPT

Dan LeDuc, host: Welcome to “After the Fact.” For the Pew Charitable Trusts, I’m Dan LeDuc. This season we’ve been discussing race and research. In this episode we’re going to look at race and researchers—how diverse the science community is and what the education system is doing to nurture a new generation of researchers of color.

Our data point for this episode shows the concern: According to the Pew Research Center, people of color make up 33% of the STEM workforce.

Many leaders in the field say this must begin to change, not just because of equity concerns at a time when 40 percent of the population identifies as a race or ethnic group other than white—but because data shows that more diverse research workforces lead to better and more useful scientific findings.

One institution in particular has become a leader in developing diverse students, the University of Maryland, Baltimore County. It’s a state school in the suburbs of Baltimore with about 11,000 undergraduates and more than 2,500 graduate students that has earned international attention for how it engages with its students, with effective results.

Freeman Hrabowski, president of the University of Maryland, Baltimore County: *I always loved math. Everyone who knows me knows I get goose bumps doing mathematics. And while the name Dr. Hrabowski might suggest a certain picture, for those who wouldn’t know it, I am African American and grew up in Birmingham.*

Dan LeDuc: Freeman Hrabowski has been UMBC’s president for 30 years. We’ll talk with him and UMBC’s vice provost and dean, Katharine Cole, about how to create a more inclusive and supportive educational environment for all students, something they say is helping create a more diverse STEM workforce—and how their strategies can be duplicated at other schools.

[Music transition]

Dan LeDuc: So, today, something a little different—a conversation with two guests. Freeman Hrabowski has been the president of the University of Maryland at Baltimore County for nearly three decades now, I think. We are also joined by the school’s vice provost, Katharine Cole.

Before we begin, how about you both introduce yourselves and tell us a bit about your background and what led you into higher education? Katharine Cole, let’s start with you.

Katharine Cole, vice provost and dean of undergraduate affairs at University of Maryland, Baltimore County: I was born in Tulsa, Oklahoma. We didn't stay there very long. We moved to the Main Line in Philadelphia. And I was raised there. I went to college at the University of Delaware. And I majored in biology. I went to the University of Maryland School of Medicine Department of Pathology and got a Ph.D. in pathology, did cancer research, went to the National Cancer Institute of the NIH, and then back to the University of Maryland's Department of Pathology as a faculty member. I left the University of Maryland after about four or five years and moved to University of South Florida in Tampa. And that was the first time I really had an administrative role. I realized the amount of impact that I had on students in a very positive way by changing policy and using those skills that I had as a scientist to problem-solve. And then I eventually returned back to Maryland at UMBC as the vice provost and dean. But it was really the impact that I could have that was so important to me, and really what was the driver for me to maintain and move into higher and higher administrative roles.

Dan LeDuc: And Freeman?

Freeman Hrabowski: I was always interested in the question, how do I get more kids to be interested in math, to love math? Because most Americans don't smile when you say math. And, so, all of my life I've studied that question. And I went through the schools in Birmingham, segregated schools, still all black. Was a part of the civil rights movement. Was a child leader in that group. Went to jail with Dr. King. And was inspired when he said that we could have an impact on our own future. And it taught me the notion of the empowerment of young people, what that could do.

But, interestingly, my parents sent me to Massachusetts to have the experience in the summer of being in class with white children. And, so, I was allowed to do that. But the challenge was nobody would speak to me. The teacher wouldn't even call on me. I could be the only one with my hand up, and they would look right through me. They were not mean. I wasn''t there. I was like Ralph Ellison's the "Invisible Man." And that said a great deal to me about our country and about how children are treated.

And what I can tell you is that even there I tended to be the only black kid in the class. And, so, I wanted to study that question: How do we get more people of color, more blacks into math and science and engineering, and from the beginning I knew I wanted to do some combination of teaching and administration because I always had a big mouth. And I would speak up in grad school. And people would say, then you do it. So I began doing things that led to a variety of positions and finally to my being a dean at a young age at another college and then the vice provost at UMBC—I actually had Katharine's job years ago, years and years ago—and then executive VP and then president. So, I've been president at UMBC for—this is my 30th year coming up right now.

Dan LeDuc: The demographics of UMBC seem to track the nation. You've been riding that wave. Has that been a conscious decision or a reflection of just a reality?

Freeman Hrabowski: We are a campus that's unusual in the South—Baltimore is in the South—in that we were founded at such a time—1966—that people of all races could come to us. And, so, while it's been a predominantly white university, we started off bringing in African Americans, Latinos and others. Today, we are perhaps half and half. About half the students are white, or slightly below half are white. And the others are students of color, with the Asian population being about 25%, with the African American population being about 18%, and about 6% or 7% Latino. With half the students having a parent born in another country.

I like to say that UMBC looks like the plaza of nations at the U.N. You see people from over 100 countries, and then large numbers that we pull in from different parts of Maryland and from the East Coast especially.

We're probably best known for producing students of color who go on to get degrees, Ph.D.s in science. In fact, we are the number one producer of African Americans who go on to complete M.D. Ph.D.s by a factor of 2 to 1.

Dan LeDuc: You're describing, though, historical narratives that have been traced throughout our country's history, whether they're about race, whether they're about higher education, whether it's about immigration. And it feels like we're at a time when those national narratives are being challenged by changing demographics and a lot of other things. Are you conscious of that you're going up against that?

Freeman Hrabowski: And, so, we've been questioning the narrative about who makes it in college a long time, and about what we need to do not only to change those students to make sure they are prepared, but what we need to do to change the culture of the university. Most people don't realize that literally 2/3 of all Americans who start in science and engineering leave it within the first year. And the more prestigious the university, the greater the chance that student will leave science. So, we were seeing that, but it was just more obvious for the black students because the base of students beginning was much smaller.

Dan LeDuc: Well, one of the narratives that you're going up against is in some places, the specific intent of weeding out some of these freshman year science classes and math classes. That's not your approach.

Freeman Hrabowski: In more recent years, my colleagues and I've said, that's a terrible thing to say to a young person. Because if I'm that young, immature 17-year-old boy—young man—and I'm not quite sure about myself anyway. I'm saying, oh my goodness. He's talking about me. I may as well have a good time. And they just have a self-fulfilling prophecy and they don't make it.

And, so, we know that broadly in our country, only somewhere between 50% and 60% of the students graduate within six years. And if you look at it, it's more bimodal. Very prestigious places—you've got 85% to 100%. Regular middle-class places—you're down 30%, 40% in many cases. And the middle looks like 50%, 60%. In science, it's much worse. And we have been redesigning courses for more than a decade.

If somebody looks at the UMBC Chemistry Discovery Center, we have moved from just lecturing to having a great emphasis on active collaborative learning, working in groups, using the technology. Every person has a role. There are four or five there at each table. Somebody is a provocateur, somebody is a technologist, somebody is a facilitator. Somebody leads the group. Nobody can sit back and text and do other things. They have to be engaged. But the key is that the grades went up substantially as a result of the active learning.

Dan LeDuc: Katharine, your job is to lead a lot of that culture change. You came back to a school that you had worked at before. Something was bringing you back. What's the attraction? Is part of that opportunity to dive into these sorts of changes and the role you can play with that?

Katharine Cole: It did allow me to do the very thing that I'm passionate about, which is STEM education. We have a lot of people who want to do science. But again, 2/3 of them end up not majoring in science and not finishing in science. And the ability to impact that is just huge. We look at STEM education as well as education in the arts and humanities and social sciences as all interconnected, as we are all interconnected.

And what we found is success, certainly in STEM but in any discipline, is really dependent on three things. One is the community of an inclusive community that helps support that student. Second is that student's resilience, to be able to take a D in general chemistry exam and move past that. And then the third is really learning strategies.

And all of those things are really, really important. We have a bunch of STEM majors that come in. We just don't have a bunch that graduate. And, so, really looking at resilience of our students—because it can be taught. There's all kinds of literature about students who come from privilege are less resilient because the parents did everything. And students who struggle are more resilient because they've had to overcome things. I don't know what's the truth because there's literature on the opposite of that.

But what I do know is that resilience, you can teach it. You can encourage it. And it is absolutely essential for those students to be successful. They have to have strategies to maintain the trajectory. And that's what we try to do. We try to find the point in time that they need the help and give them the right help.

Dan LeDuc: Can you offer any specific examples that can help somebody relate to what you mean?

Katharine Cole: A lot of it is based in metacognitive skills. That's how you become resilient. So, the students that are successful and resilient do metacognition. They just don't know they're doing it. So, they're planning a strategy, they're problem-solving, they're assessing how that went. And then if it didn't go well, they're altering what they're going to do the next time.

So, for example, in many of our lower-division STEM courses, they are teaching metacognitive skills to the students. Maybe not using that term, but they are teaching those kinds of skills. And, so, one of the things that we have developed in math is what's

referred to as exam wrapping. And so that forces the students—when they get the exam back, instead of just saying, well, I'm just not going to be successful because I got a D, they're forced to go through that exam and see exactly what they did right or wrong and why they didn't do it correctly. So, they're reflecting on what they did incorrectly. And then they're coming up with a strategy to not do the same thing wrong again. So, things like that that are so woven into the course of the—students don't necessarily even recognize what we're teaching them. But we're teaching them those very fundamental skills to be able to problem solve, assess, and alter. And that's what makes you resilient.

Dan LeDuc: Well, the support you're talking about is important not just in higher education, but throughout a student's school life. How can resilience be learned early on?

Freeman Hrabowski: Let me just say that that's true at every level. We haven't talked about it, but people will say, well, what about K through 12?

One of the critical areas is in that middle school period. If we can get children to the point of being able to read well so they can begin to solve word problems and help them in those middle years with algebra and those, we can get them to the next level. But there are many children lost along the way. So, we do need work at every one of those levels.

The reason the National Academies Committee decided to focus on the undergraduate experience is we are saying in America that even when students have done well in high school, even when they have AP credits in calculus or in chemistry, they often don't do well and complete programs at the college level. So, the low-hanging fruit is to strengthen what we do at the undergraduate level while also, though, moving to do more to support teachers in our elementary, middle, and high schools. We have to do both.

Dan LeDuc: One of your distinctive programs for STEM students is the Meyerhoff Scholars. Tell us more about them.

Freeman Hrabowski: The Meyerhoff program was begun by Bob Meyerhoff, a wonderful philanthropist who asked me the question 30-some years ago, what can we do to help black males at a time when people didn't want to talk particularly about that group? And with Bob Meyerhoff's help of funding and asking a lot of questions constantly-- and he still does at age 97, I should tell you. The fact is that we developed the program with young men the first year. The second year we brought women in. Today, the program has students of all races.

These will be people who may become doctors, physicians, scientists, or research engineers who want to pull more people into the work.

Katharine Cole: The Meyerhoff program has evolved over 30 years. It's a little different than when it first began, but the fundamental principles are there. And I think what's so exciting to me is that we can take things and scale them up for everyone—not just for scholars but for everyone—and look at the challenges that the Meyerhoff program has overcome. So, we know that it's important for students to understand that they are, as a group, better than if they do things individually.

And, so, molding that and developing that piece in them—and what we've taken from that, for example, in some of our courses where we have group work—we don't let the students choose the group because the high achievers go with the high achievers. But when it's chosen for them, students who are the high achievers or maybe better in that subject help everyone. And then the entire group is better. It's sort of the rising tide lifts all ships.

I've talked to them on numerous occasions and said, what is the most important thing—if you had to pick something about Meyerhoff, what is one of the most important things that you feel the Meyerhoff program is? And there were a lot of different answers, but all of them agreed that the support from their peers, from the faculty, and from the staff was the very thing that kept them going, that gave them their resilience and their grit.

And, so, we began to move that out to support all of our students. We've had a big uptake in our ability to graduate our students and in retaining them and just in their overall success with the advocacy program. So, there are a lot of things in Meyerhoff that we've been able to scale up that I think help all of our students in all disciplines.

Dan LeDuc: Plenty of schools want the track record you've got. They want to place their undergraduates at prestigious graduate schools. But you seem to come at it from not just what it meant for your school, not just what it meant for your graduate, but you have sort of a bigger social vision, which is, there's a dearth of minorities in STEM. What is this institution going to do about it?

Freeman Hrabowski: It's so important. It's such a great question, Dan. Having worked with the National Academies, and I chaired the Obama [administration's White House Initiative] on Educational Excellence for African Americans, under 2% of the sciences at all the national agencies are black. And it's a very small percentage—under 5% are Hispanic.

So, in terms of underrepresented minorities—you're moving more and more toward 40% of the population—they're not represented in the scientific workforce at the highest levels. And we need them there. And, so, from 30 years ago, the goal was, how do we develop a program that not only will produce these students—that becomes a model that others might follow.

Dan LeDuc: Katharine, let me ask you. Scientists bring data to subjects. What is the data and analytics telling us about faculty recruitment and retention and encouragement?

Katharine Cole: Data always tells the story. I am convinced that the truth is in the data. I think for us as an institution, what is important is to not simply look at metrics. Oh, we have this many African American faculty—but how do they fit in? Do they feel included, do they feel part of the faculty? Because you can recruit them and hit a metric, but then they leave because they don't feel this is an inclusive environment for them.

And, so, I think the important thing is to look at where we're being able to recruit faculty and retain them in that department, where they're successful in that department. And where they're not, why not? And, so, I think it's really important to look at what environment are we providing for faculty to be successful, to be retained, and therefore show students, give them this role model. I can do it, everyone can do it. And I'm here to help you.

Dan LeDuc: What's the future of higher education look like? What are the challenges that need to be addressed when it comes to equity and diversity?

Freeman Hrabowski: The broader question, the future of higher education, I think, is inextricably linked to the future of our society. And right now we are in a period of great division. We know that. My students have said, oh, it's never been like this. No, we've had times like this before—the '60s, the 1860s and 1960s.

And, so, when we talk about the issue of structural racism, the first challenge is most people don't understand that that is a term that refers to all the ways in which people are discriminated against in our society—from health care to education to criminal justice—and the privileges that people of means have, number one, and that disproportionately large numbers of the people of means will be white—we know that—and that disproportionately large numbers of people who are poor of those races are the ones who are Black and Latinos will be definitely from lower-income backgrounds with an education background that is not what it needs to be for them to have the outcomes we're talking about.

While I'm encouraged that we have so much light shining on these issues, it will take major transformation of our culture to address systemic issues that go back hundreds of years. And few people understand that does require—it's not just money. It's changes in attitudes and values, given how divided our society is right now.

But here is the difference. We are challenged as universities to help our society understand the importance of evidence, of science, of the truth, and of finding common ground that can pull us together. Science can be helpful with that. But certainly, the humanities and the social sciences will be very important for students of any race in any major as we teach students to think critically and to care about other people.

Dan LeDuc: Well, Katharine Cole and Freeman Hrabowski of the University of Maryland, Baltimore County, thank you so very much for today.

[Music transition]

Dan LeDuc: Thank you all for joining us today. For more information, you can check out our website at pewtrusts.org/afterthefact. Next week join us for our final episode in this season, as we look to the future of race and research and the changes that are coming.

I'm Dan LeDuc, and you're listening to "After the Fact" from The Pew Charitable Trusts.