The Leadership Alliance Presidential Forum
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Lecture Room
2101 Constitution Ave., NW
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Panel Session: *Creating and Sustaining a Diverse 21st Century Workforce*

Moderator: Celeste M. Rohlfing, Chief Operating Officer, American Association for the Advancement of Science (AAAS)

Panelists:
- Liza Cariaga-Lo, Vice President for Academic Development, Diversity and Inclusion, Brown University
- Amri B. Johnson, Global Head, Diversity & Inclusion, Novartis Institutes for BioMedical Research
- David Wilson, President, Morgan State University
- Cecilia Elena Rouse, Dean, Lawrence and Shirley Katzman and Lewis and Anna Ernst Professor in the Economics of Education, Professor of Economics and Public Affairs, Princeton University

Introduction of Panel Presentations
Dr. Rohlfing introduced the panelists and stated that the panel discussion is intended to focus on barriers and challenges to recruiting and retaining a diverse workforce. Strategies and best practices to overcome these challenges would also be addressed.

Opening Remarks by Dr. Cariaga-Lo
I want to focus my brief remarks really to take us back to the real work of the Leadership Alliance, and that work, I believe, is about rethinking and redesigning our institution so that they can have the capacity to more fully collaborate and support the work that we need to do to diversify the 21st century workforce. And by redesigning our institutions, I mean the idea that we need to reimagine the work that we must do with respect to policy and practices in order to fully embrace the meaning and prospects of diversity. How do we define diversity? How do we do the work of diversity? Who does that work? How do we map out that work in meaningful ways so that we can fully understand where the gaps are as well as where the opportunities are?

We continue to be befuddled by the lack of underrepresentation of historically underrepresented groups in academia. I believe that fundamentally that is a problem that we need to address. As much as we have in fact diversified our undergraduate populations, and even to some extent our graduate student and postdoc populations, we have not done the kind of intentional focused work to diversify, to sway it, in order to fully support an institution that in fact embodies inclusive excellence. That is the work that we must do, and in doing that work, we need to recognize and understand how we think about merit. What does merit look like in the academic pipelines that we develop as institutions? How do we form community? Who belongs? Who has a voice in those communities, in our communities? Finally, how do we think about an ecological view of development that in fact embraces the kinds of things the

Leadership Alliance has done in order to provide support and scaffold the work that our students need to do in order to thrive and survive through the academic pipeline?

Opening Remarks by Dr. Wilson

 I thought I would take my opening comments and root them, if you will, in the great history of Morgan State University, and in doing so, acknowledge once again the president of Morehouse College, who is also in this space, Xavier University in this space, and Spelman College in this space, and Claflin University as well, because they can also be making similar comments.

Let me just say a word or two about Morgan to place it in the context of this topic, how important it is to not just sustain a diverse workforce but to grow one, because as you have heard from Congresswoman Eleanor Holmes Norton, we're nowhere close to where we need to be in terms of a diversified workforce that is going to reflect the browning of America in the next few decades.

Morgan State University is an institution rooted in the HBCU tradition. We were established in 1867, and we, like Morehouse, with the opening curtain, January 1, 2017, on our sesquicentennial year. And over the last 149 years, I can say that that institution has done a remarkable job in turning out graduates to do exactly what we are talking about here today, to be the innovators in America, the leaders in America, and to lead to a more inclusive and diverse America.

Morgan State University today is number one in the United States in producing African American electrical engineers. We are number one in producing African American civil engineers. And we're number one in producing African American industrial engineers. Now, we're number three in producing African American engineers in all fields. By the way, North Carolina A&T State University in Greensboro is number one, Georgia Tech is number two, and Morgan is number three.

We also rank 15th nationally in the number of baccalaureate degrees in all fields awarded to African Americans. Now, indeed, as I was showing these data to my colleague Dr. Wilson, from Morehouse, before this session, the National Science Foundation conducted a study, released it about two years ago, and they looked at individuals in the United States, African Americans, who have PhDs in science and engineering disciplines, and they wanted to know where they received their undergraduate degrees, every single black person in the United States between 2008 and 2012. And it revealed that the top ten institutions are all HBCUs.

When they broke it down by gender and looked at all black males in the U.S. during that time period who had a PhD and they wanted to know where they got their undergraduate degree, Morgan State was number two in the nation. When they broke it down by females, Morgan State was number one in the nation.

The takeaway here is that as we get serious about this topic, we can't get to that level of seriousness without having institutions like the ones that I'm talking about driving that conversation. You know, when we are only three percent of all higher education institutions that are out producing these graduates who are going on and getting their PhDs in the research arena and in other arenas at other institutions that are represented here today and not represented here today. And so, I have been quite vocal in this space, for those of you who have followed a little bit of my commentary, because this is the first time that I have been in an administrative position at this level at an HBCU.

I started my career at Rutgers, I was an associate provost at Rutgers. And then I went to Auburn as a vice president at Auburn. And then I went from there to Wisconsin, where I was a chancellor within the University of Wisconsin system. And then I came to Morgan. And I have seen the ecosystems in those campuses that I named, and I have seen some successes, but I have seen some great failures. And

what I've seen at Morgan has absolutely turned on its head all of the things that I thought I had seen in other places that were successful. It's an incredible culture and environment for producing the kind of talent that we are talking about, the likes of which I had not seen as a senior administrator in the other places, and I will talk more about that as we get into the next part of the program.

Opening Remarks by Dr. Rouse

I am a labor economist. I think a lot about issues in the labor market and I think a lot about issues in the economics of education. And as we're talking about the importance of diversity in the academic and research workforce, I want to make one pitch for us going beyond just thinking about it's important to have a research workforce that reflects America, it's important to have schools that reflect America. I think that's important, but I want to make a plug for another reason.

There is a lot of growing evidence that suggests that diverse groups just make better decisions. So, as a country, if we're going to remain competitive in terms of innovation, in terms of research, in terms of where we're headed, it's really important that we have all hands-on deck and that we have many different viewpoints trying to tackle many different problems.

Arguably, my profession of economics, due to the profound lack of diversity, which I will talk about in a minute, I think we may take the cake actually if you look at the numbers. Arguably, it was that homogenating, not just on racial and gender lines, but a thought which led to the severe consequences of the Great Recession, that there was just a group-think that was going on.

Because part of what happens when diverse people are thinking about problems from their own perspective, seeing different parts of the elephant, as I like to remind everybody, is that they challenge one another, they don't take assumptions for granted, and they see different parts of the elephant, and they understand that, yes, that looks like that might be a good idea over here, but if you really understand this part of our country, let me tell you what's happening over there. So, I would just make a plug for that's another reason why the work that you're doing is so very important, and the work that we all do in the academy.

I also want to say that as dean of a public policy school, we care a lot about racial and ethnic diversity, but the dimension on which our school has the biggest challenges is on diversity of political thought. And we work very hard, there's not a box that people check that says, "I voted for." We don't really know people's political views, but as a school of public policy, if I don't have all political viewpoints represented in the classroom, our students aren't getting the best education that they could be getting, and we're not helping to produce the best leaders in all spaces.

So, while race and ethnicity is critically important - and I'm going to tell you how I spend the rest of my time, which is focusing on race and ethnicity and economics - I do want to put out there that I think diversity of all kinds is really critical in the academy. And I would arguably say that it is some of the successes in generating diversity that has led us to this latest wave of thought on campuses because people who think differently, it's hard, it's messy, and when you're sitting across the dining room table with someone who just doesn't think like you do, that's uncomfortable, but it's important work to be done, and I think we can get there, and I think we can get there respectfully, but it's not easy.

One of the other things I do is I chair the American Economic Association's – Committee on the Status of Minority Groups in the Economic Professions (CSMGEP) – which is a committee that the AEA put in place in the early '70s because it recognized it had a problem back then on racial diversity, mostly racial at that point, but we brought in ethnic diversity as well. They created a committee that looks at women as well called CSWEP around the same time. What CSMGEP was initially created to do was to

oversee a summer pipeline program, and the whole purpose of that pipeline program was to help get more minority students interested in economics and to have the background they need to apply to and be successful in graduate programs. I've done a pretty good evaluation of the summer program, and it actually looks like it's been very important in diversifying economics.

Now, that's a low bar, and I don't want to say we're certainly far from mission accomplished because while there were deans in the '90s in economics for both minorities and blacks, Hispanics, Native Americans, and for women, there has been a lot of plateauing over the 2000s, and so it's been a stubborn - there is almost like a ceiling effect. There has been better success for women than for the ethnic and racial minorities.

But I'm just going to briefly say that my remarks over the course of our conversation, I kind of divide them in two ways. We need to attack the supply, which is getting students interested in economics, so I'm going to use economics, but I'm thinking about research more generally, which I understand what the Leadership Alliance does -- getting the students to understand this is an important and viable and exciting career path. And in economics, I think that's doubly challenged.

We need to make sure they're prepared for the programs that they may be applying to. We need to get them through the programs and so that's the supply side. But on economics, in particular, we recognize there's a demand side. It's on us to make the programs interesting, to make sure the curriculum is relevant and exciting.

We have a lot to do in terms of how we select students for graduate school. We have a lot to do in terms of our hiring practices. And if you want to talk about a field where we think there is a lot of implicit bias, I would say it's economics. So, that's on the demand side as well.

I would also put out there that employers need to be more flexible. We have to recognize that our students are coming with very different backgrounds, and in our workplaces, that people are human beings, and that they have lives outside of their work, and that we have to be flexible on that front, too.

Opening Remarks by Mr. Johnson
Good afternoon and thank you so much for the opportunity to be in front of such a distinguished crowd, and it's good to see so many friends. We've been at this for a minute.

Actually, years ago we wrote an article called, "Where are the Black Scientists?" and I could probably keep asking that question, particularly in industry because the numbers just aren't there and they're probably not going to get there in our lifetime if we keep kind of perpetuating the same practices that we've done for the past 25 years. It's not a bad thing or a criticism of those practices because I think we've done everything that we could. At the same time, I think there's a new paradigm that has to be begin, and for us at the institutes, it's vital, not just because we want the numbers but because we know if we're not doing this well, we simply aren't going to be able to reimagine medicine like Novartis is trying to do if we only focused on or have representation for a small part of the people on the planet.

To give a quick overview of Novartis Institutes, we're the research division of the Novartis pharmaceutical company. We're kind of like the engine of this massive 125,000-person global organization based in Switzerland. So, the research institution is based in Cambridge, Massachusetts. We also, of course, are strong in partnership with our development institution or organization. Both of us are global.

So, my perspective on this is global, even though a lot of the programs that we've done with my colleague Anastasia and Arnda, who are here today, have been very much focused on the U.S. We also have programs to develop talent from around the planet. So, we have a program that develops students

and faculty from Africa, we have students come and faculty and scholars from South America, et cetera, to bring that diversity to our campus and expose our scientists to somebody that they probably wouldn't be exposed to if we didn't bring them on the campus. So, this isn't just about a particular way of doing things like oftentimes we see around corporate responsibility in corporations. We know that this is something that's really about our bottom line and we are building these relationships because we know they're vital to us building long-term capacity in those particular areas so that we can do great science for the long haul.

I'm thinking about the entire innovation chain when it comes to drug discovery. Even though I work for the Research Division, we're feeding pretty much everything, and there are people that are coming out of research and going into commercial and coming out of development and going into various parts of sales and operations. This is a pretty broad opportunity, and it's inclusive of people that are getting PhDs and MDs, but it's also inclusive of people that decide that they want to get an undergrad in engineering and then go on and get an MBA and want to come in and work in some other part of our organization.

Three things that we've done philosophically at the institutes is that we've been focused on this notion of exposure versus aptitude. And we know that we have a lot of really bright students, and they have a lot less exposure than someone who has been sitting around the dinner table with Nobel laureates since they were six years old. We know the difference between what they do when they get to graduate school and when they get out of graduate school and the network that they have versus somebody who didn't really get turned on by science until they were 15. It's a very different trajectory if we talk about the 10,000-hour rule. We know that we've lost some hours between the ages of 6 and 15. So that's one.

We were looking at this whole idea of diversity really as intersectional. I know all the scholars in here know about intersectionality, but what does that actually mean? For us, it's the fact that all of us are not a monolithic notion of anything. We're not a monolithic notion of our gender, of our race, of our ethnicity, whatever it might be. We're myriad possibilities for innovation, myriad possibilities for contribution, and you have to be able to insert that mindset into an organization to mitigate the resistance that often comes. And it used to be that it was actually loud, and it's kind of loud right now, but it used to be where it was very loud across the board. Now it's really silent, the resistance, and we want to be able to mitigate that by framing it.

Secondly, for us, it's creating these bridge and ties. Those of us that have been looking at kind of social capital know that we have a tendency to bond with people like ourselves. We've been very intentional in our mentoring in our programs to bring people that normally would not connect intentionally together.

Lastly, these bridges to one another also create what I would say is inclusive networks, and you can call them innovative networks of difference. So, people that are exposed to people different than them also begin the process of getting access to the networks of those people different than them. As a result, they begin to share ideas a lot more rapidly and with a lot more context than you get if you're just generally interacting with people like yourselves or people in this circle. I can say the people in this room, I know a lot of you, and that's good and that's maybe not so good. It's good because you're fantastic, it's not so good because there's a lot of people that could be in this room overflowing this room so that we can build the kind of networks that we need for people to have that instrumental support and ability to consistently contribute and build their careers throughout their time in academia or industry or wherever they might be.

Dr. Rohlfing invited panelists to respond to the first question:
What is the current climate in various employment sectors and what barriers exist that prohibit the recruitment and retention of a diverse workforce?

Response by Dr. Rouse

I think we're really thinking about the academy here, and I have to say I know much more about economics than I do about a lot of other fields in the academy, in the postsecondary level. So I'm going to speak from economics, although really I think that these apply.

I work on the economics of education, I sometimes quip we're always pushing the problem down. So, yes, we have a problem at the postsecondary level, it's the fault of K-12. Yes, we have a problem in high schools and in middle school. But I assume it's with the prenatal environment that really matters. I mean, I don't want to be too light on this because we do know that those early experiences matter a lot, but at some point, you have to just - you have what you have. But I do think that part of the barriers that we struggle with goes back to our K-12 system and the fact that there's a lot of inequality there. There's a lot of inequality in pre-K and probably prenatally, but so that kids, when they come to college have had very different experiences, are very differently prepared. When they get to college, the question is, how do you handle that?

I know, when it comes to some of the STEM fields, like medicine for example, at Princeton, as an example, one of the barriers that we've noticed is that if you've been to a prep school, the math you've had, the preparation you've had, you're ready to hit the ground running on the pre-med requirements that you need in order to be set on that track. If you didn't come prepared, by the time - if you then try to jump into the typical pre-med track, you're just not ready, and so a lot of those students end up getting discouraged, they don't get the grades that they would like, they get discouraged, and they end up in a different field. So they're very bright students, but they were discouraged out of STEM.

I know that, for example, our engineering department and our math department are trying to rethink how they do some of those first year classes, even some of the advising. How is it that you can rethink some of the advising of students so they take the courses? Some of this involves what they do in the summer maybe before they come, and what else do you have over the summer? But to recognize that students are not all coming equally prepared to jump into these pre-med courses and that some of that discouragement is happening there. I think some of it is just, let's face it, is in the preparation that the students have, and they need additional help. And we also need to be revising our curricula, at not so much the level of the institutions I think are represented here. I do a lot of work in community colleges, but I think it's relevant, is also just rethinking what math and what gateway math is really important for some of the courses and some of the futures that we need.

We know statistics is vitally important for many, many fields in our everyday lives. Not as many fields use calculus, not as many fields geometry. I mean, my kids are in high school, so I can see the math teachers, like geometry sort of sticks out like this, you know, not so important, but we still force our students to go through these sequences. A lot of students get stuck at the math gateway courses, and they're not necessarily being tested on the math that they're actually going to need. I think it involves some revamping of our curricula so that it's distilled down to, what is the preparation students actually need to be successful? …and to focus on that.

In terms of the workforce, I guess what I would go to is I think in economics, and I imagine in a lot of other fields, the way we hire, the way we do graduate admissions, is it matters a lot whether I recognize the name of the person who wrote you the letter of recommendation, and if I don't recognize the

name, I don't know how to evaluate the letter of recommendation. Or if you come from an institution of which I'm not familiar, I don't know how to interpret your Algebra II class or your linear algebra class. What level was it really? We have a tendency to replicate ourselves and not take the risk on the institutions about which we know less.

So I know many institutions are trying to do a better job of reading those applications more thoroughly and more creatively, but I think that's a tough one. And it flows through to hiring. We're now in hiring season in economics. Who do you call? You call your buddies at the other institutions that you know. Economists are trying to get more creative in how they identify really talented minority and female candidates. I think the women are easier on this front than the minority candidates, but I think it's incumbent to get even more creative so that they can really uncover the students who may not be part of the typical slipstream, but nonetheless are very qualified for the department.

Response by Dr. Cariaga-Lo

I would say that part of the work that we need to do in terms of redesigning and reimagining our institutions has to be centered in many ways on the lived experiences of the diverse students that we have brought to our institutions. If we have now majority/minority learners at our institutions, what are our obligations, as institutions, to be in fact ready for those students? What are the infrastructures that we are creating? What are the programs?

Cecilia mentioned, for instance, orientation programs, new ways of reimagining introductory courses, but what other types of programs and, indeed, what other ways of approaches and innovations can we develop to rethink not just courses, but entire curricula to rethink the way in which content is developed, to rethink the way in which we provide more innovative and inclusive pedagogical approaches that invite students to broadly participate in the classroom and outside of the classroom? How should we think about the way in which we center our institutions around the life course of a student from a diverse background?

We know, as Anthony Carnevale often does say in his work around education and the workforce, that merit and opportunity is often an accident and a circumstance of birth, and that, in fact, how people have access to resources related to education and the ways in which they are prepared to take advantage of the education that we provide as institutions are often inequitable. And so what then do we do to level this playing field to support the needs of our diverse learners?

And I think what the Leadership Alliance has actually done in terms of providing resources early on, as they do with FYRE, for exposure, but also providing the opportunity to develop skills to more fully navigate and negotiate their education is a really critical piece and one that we need to look at. And then I guess I would add to that the notion again of this life course trajectory. We have spent billions of dollars at NIH and NSF over the past 30 years on pipeline programs, and to some extent we might say that those pipeline programs have in fact succeeded because the students are now at our institutions, but what we have failed to do in those programs is really to make more accountable the institutions who have received those billions of dollars of funding and really addressing what progress we have made as institutions to ensure that those students do go on to purposeful work in the areas that they wish to aspire to, whether that is in academia, so much of it in academia.

I can tell you the number of trainees that I've seen go through the Leadership Alliance pipeline who started out excited and who wanted to very much become part of the professoriate, and half of them have gone on to very productive careers, but in government, in industry, and I don't know that they would necessarily have left their goals of academic work if they had not faced the barriers. So I do think

institutions need to be accountable to understanding what are those barriers structurally that we have created that we have not yet owned up to, to ensure that we are in fact creating institutions that address the life course needs of diverse learners.

Response by Dr. Wilson

I have actually three reactions. I would like to use a football analogy to try to knit together the comments from both Cecilia and Liza. Imagine, if you will, that you had a quarterback and you put a blinder over one of the eyes, and you said to the quarterback, "Now, you've got to play this game, and you have to have a 95 percent completion rate, but you can only look at one-half the field." Well, that's going to be very, very, very difficult.

Going back to the comment that Cecilia made, if, indeed, from the employment perspective, we find a culture, and I think we do, where individuals are relying heavily on their contacts, their school contacts, who is in this network, who is in that network, and you have some perceptions about entities that are not a part of that network, and you're not looking at the whole field, then I think from an employment standpoint, you're going to have a real hard time diversifying your workforce because you're not considering the entire football field. And so that's the first point.

The second is that I have been struck in the last three or four years in particular with the experiences that I've had with numerous corporations, and particularly those that are in, quote/unquote, the innovation space, Silicon Valley and other areas, at the huge disconnect between the cultures of those institutions and perhaps the rigidity of the cultures within many of our academic institutions. And from the standpoint of our HBCUs, I think it's even more severe.

Therefore, you have a situation where you could have students coming out of our institutions with almost perfect 4.0 averages and they are very, very competitive on any kind of cognitive or academic achievement measure, but when they get to some of the corporations, and the environment there is just so different, it's just so informal, it's just so innovated, and if 35 percent of the way the corporations are selecting them is based on the fit piece -- you know, are you the right fit for Google? …are you the right fit for Facebook? -- and they are determining that through these human pieces, and they're bringing to that once again their own set of experiences … that's a problem.

I had a conversation with one entity about this just last week and said, you know, we need to talk about a different type of collaboration. We need to talk about a collaboration where when I start thinking about building an academic building at Morgan, I need to have you, from the private sector, there at least talking about how we should even think about the space in that building where we are not putting people in silos, where we are creating a climate on our campuses that is in alignment with what some of these students will have to see when they leave us. That's a way of thinking a little bit differently about curricula reform, because I've challenged them as well to make these opportunities available for our faculty, you know, to come and spend some time in that space so they begin to understand what they need to do to rethink curricula in a way now that would be in greater alignment with the innovation that has to take place in order for our country to remain competitive long term.

The third point, and this is going back to the Morgan versus non-Morgan. And this has to do with what I see in higher education. So the non-Morgan experience that I've had has led me to believe that in the case of minority professors - and I believe very strongly in representational diversity. I believe strongly in diversity of thought, and I believe very, very strongly in geographic diversity, but I also believe very, very strongly in representational diversity as well. What I saw there was that if you had very few African American faculty members, and those faculty members were in that space, invariably,

because there are so few, almost all of your African American students on campus are going to gravitate to that person; every single committee that you establish on campus, that person is going to be on it.

So you have overburdened these three African American faculty members that you have on your campus with everything, and then five years later, where are the books and where are the 15 articles? And so you have given them all of this stuff, and you are expecting them to be successful in the same way as those who are not burdened with those responsibilities. So that's what I saw non-Morgan.

At Morgan, while that is not the case, the case is similar in a different way. We are a doctoral research university. There are ten HBCUs that are doctoral research, and I would say that the other nine could perhaps be here making the same statement. The faculty there are teaching seven and one-half courses per year. Right? And I have to knock on wood, I couldn't believe it. They rarely complained. They have the mission of the university in their proverbial gut. They believe so strongly in what they do. They give the students their cell phone numbers. They still do the research, they still write the books, but they are overburdened in a different kind of way.

So if at the end of the day we truly are about creating within the university community climates that will lead to the retention of faculty of color and the retention of faculty members who are disproportionately churning out students of color in underrepresented areas, i.e., HBCUs, we're going to have to figure out a way in which we can reduce these burdens in both genres.

Dr. Rohlfing invited panelists to respond to the second question:
What models of collaborations and partnerships among academia, employers in the public and private sectors and policymakers will meet the nation's need for a skilled and diverse workforce?

Response by Mr. Johnson
About three or four years ago, we started a relationship with Claflin University, and what it did was open our eyes to what's possible when you have a dedicated faculty combining with industry to bring students through the pipeline in a way that exposes them to things that they just wouldn't likely be exposed to without that relationship. And what we found with all these amazing students - and I tip my hat to the president - is that they just needed a little bit of an opening to close the gap, and we didn't have to do a lot more than that. Now, of course, we did, but once they had that opening, it was possible.

I think fundamentally there are not enough industry-academic partnerships, and I don't know how open some of our institutions are to doing that in a way that actually is transformational to what we're trying to do in the STEM disciplines because the numbers aren't going to change unless industry starts taking a stance to do this more, and particularly in the STEM workforce. We know that's where the jobs are, and if we start thinking about economic dynamics in this country, the gap is just going to get bigger if we don't do something about that. And it's not just about people of color getting jobs. This is much bigger than that, and I think the conversation has been limited to this us-them dynamic around, "Oh, we need to get us in there," but them is not saying anything, but not letting anybody in. So it's like a cycle of reincarnation that's not actually happening, and we can't escape it, you know.

I think in terms of - I think early exposure is huge. Blacksmiths, bakers, and candlestick makers, their children become blacksmiths, bakers, and candlestick makers. And I can say I was at an event with my colleague Chad Womack a while back, and his daughter was like examining the pond of tadpoles at Emory University. Now, Chad is a scientist, and his daughter is inherently curious about science. There's something there. Not everybody's parent is going to be a scientist, but everybody can begin that exposure early, and I think when we do, the climate stuff actually becomes a little bit easier because most of the

climate dynamics aren't necessarily going away because there are like humans in corporations, and they're going to be like human, you know? But can we do some things to get people ready to know how to deal with humans and have the confidence in there and the scientific acumen to balance those two things out?

Response by Dr. Cariaga-Lo

So again I want to go back to a more systemic view of this work. I think that what we see around this room today is a remarkable group of individuals from all sectors: industry, government, public, private, universities and colleges, non-profit institutions, corporations. And I think that we need to be able to think about systemically, what are the mechanisms by which we can more fully intentionally come together?

And I want to offer up an interesting example. And I'm looking at Dr. Valantine, from NIH, who will shortly be speaking with you, with all of us. And I think that there is a particular role for agencies to play. NSF and NIH and the DOE have a particular bully pulpit to compel all of us to come together to think about and develop new models of engagement across all of our institutions.

Yes, the Leadership Alliance has been able to do this work meaningfully over many years, but it has been because we have had the support financially and otherwise of institutions like NIH and NSF and the DOE and Mellon to be able to create these systems and infrastructures that allow us to exchange faculty, that allow us to exchange students, that allow us to develop new collaborations across institutions.

I would argue for programs like IMSD that is funded by NIH, the Initiative for Maximizing Student Development. Many PIs of IMSD are here today. I would argue for programs like NSF's AGEP, the Alliances for Graduate Education and the Professoriate. I would argue for the UNCF/Mellon and the Mellon Mays Undergraduate Fellowships because those are structures that cut across our institutions that allow us to identify and systematically track students from diverse backgrounds throughout the life course of their career trajectories, and if we can do that in a larger way, I believe that we can actually address these larger issues of diversifying the 21st century workforce.

Response by Dr. Wilson

Regarding partnerships or collaborations, we were successful in getting a $23 million BUILD grant from NIH. And we are in the second year of that grant, and the purpose is to really educate the next generation of minority bioscientists. And there is a wonderful model where we are collaborating with Johns Hopkins, the University of Maryland Medical School, and the dean of the graduate school at Brown University is a part of our team that is coming in and making sure that our students who are rising sophomores, when they enter this program, are going into a really competitive opportunity where they understand research in a different way.

Just to briefly explain this model, I really have to take my hat off to the faculty at Morgan. They're always looking at ways to do things differently if indeed what they have been doing in the past has not worked. And so this particular $23 million grant is taking the whole research paradigm and turning it around. And they are introducing a more entrepreneurial approach to undergraduate research as opposed to an apprenticeship model…where a professor invites a student to work on a research project in his or her lab that is of interest to the professor, and they give the student a task, a very concrete task, and say, "Okay, you just go here and you just code this." What our faculty realized was that some of the students, their research had become turned off by that [model] because they could not see the connection between the sort of segmentation of these responsibilities and the excitement about research overall.

The entrepreneurial model is one where we are saying to students, "You come up with your own research idea, and you have to go through an eight-week summer program to perfect that idea under the tutorship of professors, you have to present your research proposal in a competitive environment." And we bring in the professors from Brown and Hopkins and Maryland, they sit as an NIH panel would, and the students have ten minutes to make that presentation. And then 20 students are selected to be funded, and they get a $20,000 grant to carry out that research which is of interest to them. The level of excitement--because I've sat through two of these now during the summer--it's just amazing to see these rising sophomores in biology and chemistry and psychology, now all of a sudden they are extraordinarily excited about research, and they can't wait now to get that PhD or to go to medical school.

And so I really want to just express our appreciation to the BUILD program at NIH. I hope that we see that program around for a while and we'll see results in terms of students coming through it going on to graduate school, medical school, getting those degrees, and we'll see even greater numbers when we have this Forum again in terms of the productivity.

Response by Dr. Rouse

So first of all I'm going to make a pitch for why it really does take a village. Many of the programs we're thinking about do not just benefit the individual students or benefit the institution that may be hosting or providing some of the funding for, but really benefits all of us. Many institutions can't support these programs because they can't justify "Ooh, these students do the summer program and they're going to come back to our institution." So they can't fully justify it if they're publicly funded or even many not-for-profit institutions as well because the trustees say, "Wait, how do we benefit?" So it really does take a village, and we have to recognize there are social collaborations.

So it gets back to the economics. The summer program is an example of such a public good where we've had the host institution moved around. It's currently at Michigan State University. So Michigan State itself is putting in substantial resources. The American Economic Association is putting in substantial resources. And they're getting resources where they can from - they're going to be applying for grants from private companies and from philanthropy. In the past, it's been funded by the Mellon Foundation, by MacArthur, by Sloan. They all get a little exhausted after a while - by NSF as well - get exhausted after a while, which I think is fair, but the point is it really does take a village even just to support this very longstanding and arguably very effective pipeline program.

Questions/Comments from the Audience

Question: *We already know that the majority of talent will not come to our doors. There needs to be a collective voice saying, how do we cultivate talent to come to our schools? In order to actually have the talent that we need in our schools, where we make great effort, once we have them and we can succeed with them, but in order to increase that pipeline of talent, we have to go deeper. How do we, as a collective, begin to actually ponder that question?*

Response by Dr. Wilson

I'm going to actually look at this from an economic perspective. But you raise a very good point, which is, how do we imbue young people, K-12, with the kind of understanding of college, the importance of college, to get them to be thinking about college in elementary school, middle, and high school, and then to make opportunities available for them to be successful?

Three years ago, the Verizon corporation had a major issue before them, and they, too, wanted to make sure that they were putting themselves in a position to continually diversify Verizon. They came to us for a series of conversations, and at the end of those conversations, they devoted what now has been several million dollars to an initiative called the Minority Male Middle School Maker Program, and this program is just a phenomenal program. It started at Morgan, they expanded it to four other HBCUs, and then just this past summer, they've expanded it to 12 other institutions, non-HBCUs in that group, on the West Coast and the like.

The whole notion is that you take seventh and eighth grade young minority males, many of them have never set foot on a college campus, and you bring them into a program where you begin to teach them coding and math at a very sophisticated level and get them excited about making things, but they have to create the program to do that, and they have access to 3D printers, they're on the campus every single day. This is just one example of how universities have to kind of reach back and use our campuses to bring to our campuses individuals who kind of look at it and say, "You know, I'm not really sure I could ever get there," and then you connect that to an economic or corporate interest. I think in this instance, that's the best of both worlds.

Response by Mr. Johnson

It's a question we've been asking for a long time about developing early capacity for young students to get involved in science and math. I think it's a policy conversation that we're not having. I feel like institutions and corporations are not necessarily really sitting down at the table and seeing where their common interests lie. So the policy influences are generally about a short-term mindset instead of a long-term one. Companies do think long term, but they don't think long term publicly, they think shareholder value publicly, and that's a short-term conversation. So it's important, I think, for policymakers, academics, and industry, whatever industry that's STEM-related, coming together to talk about policy dynamics in academic institutions and schools for students from age K-12 in ways that we just haven't yet, and it's an economic - other countries are doing it.

And that's what's really interesting to me right now. We're looking at what China is doing, we're getting sucked up. We're not going to be competitive with Asia, and in some parts Africa, over the next 10 to 20 years if we don't step it up. So, the conversations need to go beyond this kind of, "Oh, we need to get them there, and so we need to get the little black kids here, and the little Latinos over here." We need to be able to compete, and right now the way we're doing school, it ain't going to happen.

> **Comment:** *The issue of constant microagressions faced by students of color from both peers and teachers due to persistent stereotypes that are embedded in higher education. As an example, the audience member described a recent study that showed that pre-K teachers were more in tuned to keep an eye on the black children during the play period because of the perception that they would engage in mischievous behavior.*

Response by Mr. Johnson

It's not going to change anytime soon, and actually it probably is going to get worse before it gets better, given the climate that we're in now. How can we begin to create the support networks of those people who are not like that so that the allies can be able to work together to get them to deal with those situations? Because when they get into the workforce, they're going to see it, and if they are in a place where they feel like they have a social justice bent and they go after social justice issues inside of a

corporation without being very solid in what they're doing, they are going to fail. I've seen it over and over again.

It really is, how can we ground our students to be able to deal with it, have places to vent it, have places to know how to manage it, have places to know where they can go where they don't have to deal with it, and they have those safe spaces occasionally that they can go to retreat and get their energy back so they can go back and face it? Because it's not going away, and all of us sitting around this room, whether you're a woman, a person of color, or a person that has basically fundamentally stood against injustices have all dealt with it, and I think I would be able to have everybody in the room raise their hands. They've dealt with it.

Let's focus on what they've done well to be able to deal with it instead of why it's not happening and what the problem is, because fundamentally we'll keep ourselves in a cycle of kind of victimization rather than being able to come to each other and say, "This is how we break through it." And once you break through it and neutralize it, a lot of those people are just bullies and silly and they'll stop, but you have to be able to be centered in it before it actually has any ability for you to move forward. And I've seen it over and over again in corporations, and I've seen it in academic institutions as well.

> **Question:** *How do we leverage this aspect of a diverse faculty or a diverse workforce is excellence? Because often you're constantly fighting that false dichotomy that in order to get diversity, you've got to compromise excellence, when in fact they're one and the same. How do we get that message across that diversity is excellence and excellence requires diversity?*

Response by Dr. Cariaga-Lo
I think the leverage itself is about the reward systems that institutions create, right? And I think for faculty today, we need to go back to helping faculty understand what's at stake, helping faculty understand what their obligations are to educate students from increasingly diverse backgrounds. What does it mean for faculty to be able to teach inclusively? When we talk to faculty at Brown about why this work matters, we hit them with the idea of what they need to be doing in the classroom to meet the needs of those students that they are now increasingly seeing in the classroom and who are diverse.

I also think that with respect to reward systems, I do think that the institution, and certainly senior administrators, not just presidents and provosts, but basically chairs of departments, have to be accountable to a different kind of reward system that in fact influences change in behavior over time. I'm not talking sort of all of a sudden you impose certain kinds of rules about what faculty need to be doing, but I am saying that departments need to think carefully about how policies that they have fundamentally support the needs of ever more diverse learners.

Whether that means that faculty now are called upon to provide some level of accountability about how they teach inclusively through diversity statements in syllabi or whether it means calling them to account as to the level of diversity of students that they develop and support in their research groups, these are things I think that chairs of departments and not just presidents and provosts at the top, but chairs in departments, need to do to ensure that they in fact have the kind of sustainable workforce for their disciplines over the long term. I do think that NIH and NSF are beginning to reimagine how they, too, are thinking about their reward systems so that PIs of grants are able to be accountable in a much more systemic way around diversifying the cohorts of trainees that are trained through funding of these initiatives.

Response by Dr. Rouse

I do think it boils down to the incentives, and I think there are carrots and sticks. I think in terms of the carrots, I think universities that are really serious about it can put resources at it. At Princeton, for diversity in hiring, you can get portions of FTEs to just sweeten the pot. I think everybody does that when you want to tilt things in one direction.

And then sticks, we have accountability in admissions. Even pushed down to the departmental committee level, there has to be accountability to, "Who did you look at? Why didn't you select this? Why aren't there enough women? Why aren't there enough minorities on your list?" And you have to be able to explain it both in admissions and in hiring. But I actually think the tone comes from the top. And I think when the president and the provost and the trustees set out and say, "This is important," and that is through the entire organization, I think that makes a huge difference because then everybody knows that it is an institutional priority.