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Lecture Room
2101 Constitution Ave., NW
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Panel Session: *Preparing America's New Majority: The Next Generation of Leaders and Role Models in Academia, Public and Private Sectors*

Moderator: Henry Tisdale, President, Claflin University

Panelists:

- Celeste Freytes-González, Interim President, University of Puerto Rico
- Hannah Valantine, Chief Officer for Scientific Workforce Diversity, National Institutes of Health
- Karl Reid, Executive Director of the National Society of Black Engineers
- Sunil Kumar, Provost and Senior Vice President for Academic Affairs, Johns Hopkins University

Opening Remarks by Dr. Tisdale

I'm Henry N. Tisdale, the President of Claflin University, and I'm a graduate that pursued mathematics at Claflin, and, of course, went on to another institution that is also a member of the Alliance, Dartmouth College. I've been around and aware of Leadership Alliance for the 25 years because I was serving at another institution, an HBCU, that was a member of the Alliance at that time. So I'm very familiar with the work and very committed to this work and the great work that lies ahead, and that is the work of preparing America's next majority.

I don't think there is any argument about the next majority coming. I think all of the data is there for us. According the U.S. Census Bureau in 2014, there were more than 20 million children under five years old living in the United States, and 50.2 percent of them were minorities. So if we're wondering what's going to happen in the future, we need to only look back and pay attention to what is going on. I think it's also important for us to understand that we need not wait another five, ten or twelve years, we need to pay attention to what is happening to this new majority now.

Now, we have no dearth, I think, of programs and initiatives responding to this issue of preparing the next majority. We know that we have many initiatives, including the Leadership Alliance. What we're concerned about I think even now, even before these students come through and actually constitute a new majority at the higher education level – we're concerned about the success of the programs that we now have in place, increasing the numbers of students coming into higher education, increasing the number in the STEM disciplines and the like, and increasing the numbers that even attempt to pursue the doctoral degree. We're seeing increases, but when we look at the bottom line in terms of the total results, I don't think that any of us are pleased with the results today. The data suggest that given the current state of affairs, the outcome – and that's what it's all about – the outcome is below expectation.

In his book, *America Needs Talent: Attracting, Educating & Deploying the 21st-Century Workforce*, Jamie Merisotis said it's about talent and how that talent is ultimately attracted, nurtured, and marshaled, and I think we have to pay attention to all of that.

Panel Introductions and Structure of Part I Panel Presentations

Dr. Tisdale acknowledged the panel members as innovative thinkers who were both energetic and eager to share their perceptions and discuss strategies to support the development of future leaders poised to diversify graduate programs and ultimately the workforce. After referring Forum participants to the bios for each panel member provided in the program guide, Dr. Tisdale summarized the panel presentation structure. Each panelist would briefly outline their background and then provide some introductory remarks on their perceptions of the issues related to preparing the new majority for leadership in America's research workforce.

Commentary by Dr. Freytes-González

I want to just say something about diversity, and I'm going to outline some concepts here as part of my introduction, but I really think that diversity is not only what you bring, but diversity in my definition of an institution of higher education is what you take with you. So what you bring is what you have in your backpack, but what you take with you is what the institution does with what you bring. So that's very important for me to share that with you.

We have at the University of Puerto Rico, as you know, 113 years of history. We have, I think, consistently distinguished ourselves as the most comprehensive and competitive institution of higher education in the Caribbean, and I guess we have the most effective mechanism of socioeconomic mobility, and you'll see why in a minute. It would be impossible if we didn't promote non-discrimination policies, equal opportunity, and obviously diversity. The University of Puerto Rico is the largest Hispanic-serving institution in the nation, and we believe that the education of a diverse student body is essential to even the economic recovery of the island.

Due to historical circumstances, some of our challenges, those related to underrepresented populations, may be different from those that face similar institutions in the mainland. So in this context, we are probably talking about reverse diversity in a way. There's a stronger presence of ethnic heritage on our part. We have people that come from European descendants, white. We have Indian, we have black, and all that put together sometimes is baffling when we go out of the island and try to explain ourselves. But certainly there are some issues that we need to be extra sensitive about, because our definition of being Puerto Rican is very important to the part or to the identity that they bring. This is very important.

We don't have anywhere else to go. We can't move from the University of San Francisco to the University of New York. We can only move from Mayagüez to San Juan and you can do that in less than a couple of hours. So we're kind of like you are locked in, in a way, and we need to be sensitive about that.

The economic background is very important for us. A key deterrent to higher education for high school students from poor households is concern about how they will pay their tuition at the same time that they meet the rising cost of daily lives. Some are even led to believe that universities are not a wise investment because they are first-generation students. Yet when I talk about cost of tuition, here we go into reverse diversity. Our tuition cost is close to \$55 a credit. So where do we go from here? We receive students from extreme poverty backgrounds, so even the cost of that tuition for them puts us on the level of the same conversation when you are talking about \$500 a credit, for example.

Yet we have an interesting contrast, and this is information that I always share with people. The average of the grade point average of an entering class at the University of Puerto Rico, which is close to 12,000 students every year, 12,000 to 13,000 students, that average is 3.5. So we really get the best on

the island, right? Public and private are kind of equally distributed. So we have an issue there of how to structure ourselves around diversity.

And, finally, I just want to bring another important area for us, and it's language. Another variable to compete in higher education and its knowledge-based structure is language proficiency. English as a second language is a compulsory requirement in our public schools, yet this great option, which at times is associated with a political preference in our relationship with the United States, needs to be more carefully monitored and improved.

Students need to have a better grasp of the higher level language needed to understand specialized content of the discipline, which is a skill that we think can be strengthened in high school. It doesn't matter what you bring, we have special projects that we feel we can strengthen this component of our students and of our profile students.

Commentary by Dr. Reid

The National Society of Black Engineers (NSBE) was founded in 1975 as a student-governed society, six students from the South Side of Chicago at Purdue University put out a call to all engineering institutions in the spring of 1975 asking them to send their ones and twos of African American engineering students to West Lafayette, Indiana, just after a clan rally in the area, and 40 students from 32 institutions were represented, and they chartered the Society. It continues to be one of the largest student-governed societies based here in the United States.

As Executive Director, my boss is a graduate student. He can hire me and he can fire me. He manages a \$12 million budget. He manages oversight, all the documents and reviews, the Compensation Committee, et cetera. It's a remarkable organization. In fact, back in 1984, I was elected national chair of the organization, so I'm having a "Welcome Back, Kotter" moment over the last two and a half years.

What is interesting about the NSBE and about us is that back in 1985 when I turned the ranks over to the next chair, we were having the same conversation about increasing access, broadening participation, and the needle indeed has moved, but not significantly. African Americans make up only now 4 percent of all engineering degrees awarded from a population that represents – it's representative of about 13 percent of the population, women, about 20 percent, and that's pretty flat, and, of course, Native American. And the only population where they're seeing a marked increase are international students and Latino, which is a good thing.

So when I became Executive Director in 2014, I asked the question if our mission is to increase the number of culturally responsible black engineers who excel academically and succeed professionally and positively impact the community, and if we increase by one, will we have achieved our mission? And so, we really needed a big goal. We needed a "North Star" for the organization. So we established a new goal: to triple the number of black engineers this country produces by 2025 on an annual basis to 10,000. And, we have identified five key metrics that have to be addressed for African Americans in our community: fourth grade math proficiency, eighth grade math proficiency, twelfth grade completion of calculus, matriculation in engineering, and then completion in engineering. And we've deployed programs in each of those areas to get to scale, but in order to get to scale, we need partnerships and we need policies, and we need a dramatic change in the way we do things across the board.

We know this can't be done in a silo, and so we've partnered with the American Indian Science and Engineering Society, the Society of Hispanic Professional Engineers, Society of Women Engineers, to multiply the effect of our 10K. And we asked each of those organizations, "What could your charge

be? What could your goal be, your big goal, by 2025?" And it just turns out it came up to about 50K. So, we've dubbed our coalition, and now it's formal, the 50K Coalition.

We received an NSF INCLUDES grant to build a backbone in communications around that as well as a grant from the United Engineering Foundation, and we put together a coalition thus far of 43 organizations to move toward this 50K goal. We're using the collective impact methodology around a common agenda, shared metrics, constant communication, mutually reinforcing activities, and a backbone organization in order to get there. But I think my charge is, how do we do what we're doing and dramatically move the needle, and how do we get to scale? Because we know what works. High touch works.

We can take any young person from the third grade and fourth grade and almost guarantee that they'll become an engineer or scientist. We can almost do that because we know what to do, but how do we do that with 180,000 young people who have to be in the pipeline in order for us to get to 10,000? That's the challenge that we really have to address.

Commentary by Dr. Valentine

I'm a cardiologist by training, and you'll hear in my future remarks why that is important. I trained in England and in 1985 I went to Stanford University for what was supposed to be to get my BTA – that is "Been To America." I was supposed to just do a quick postdoc and get back to England, but that BTA turned out to be 30 years, and in 2014, Francis Collins recruited me to lead NIH's new efforts. And I will just say that what's new about these efforts is that we are taking a scientific view to this. We want to inject scientific rigor into this challenging problem, which is sometimes a great opportunity.

None of us in our various scientific fields think about doing our work in science without rigorous standards and controls. In fact, despite NIH's efforts for over 30 years in this field, none of the programs were set up in a way that you could really finally figure out what works for whom and in what context. So Dr. Collins and I offered a piece in *PNAS (Proceedings of the National Academy of Sciences)* last year where we articulated this new approach, that we would be taking a very scientific rigor in this work, and we articulated four areas which we thought that if we would make some progress on, we would more rapidly change the demographic.

The first one is to do with science, the science of diversity. To what extent do we know and can we say and can we make the case that the diversity amongst the scientists themselves leads to better science? We all suspected, it was mentioned earlier on. We begin to get some glimmers of that in terms of papers published, et cetera, but we need more work in that field.

Number two is, how do we construct new programming in a scientifically rigorous way so that you could ultimately know what was working and for whom? So in 2014, NIH launched what was called the Diversity Consortium Program. Essentially, the first part of it is called BUILD, Building Infrastructure Leading to Diversity, and that is a set of ten different experiments, each framed within a theoretical framework, each with controls, each with data being gathered and being analyzed in the Center for Coordination and Evaluation. You've heard one of them, the ASCEND program, which is to do with entrepreneurship at Morgan State. There are programs that are testing interventions for stereotype threats, critical race theory, and many others.

The third area that we think has been somewhat not addressed adequately are the social, cultural, and psychological factors that get in the way of us making progress and directly affect the climates in which faculty works, students, and everybody, and to do that, we are first of all going around the issues of

stereotypes and the consequences of stereotypes and implicit attitudes and explicit attitudes through the lens of training and testing and evaluating what those interventions do.

The fourth, and final, area is around scalability and how we are able to move these programs. We all in the room have heard of many programs that appear to work in one environment and when you try to replicate it, it doesn't seem to give you the same results. And to do that, we had to take a scan of the programs that NIH was already supporting, and then take a look at some of the outcomes and where the gaps were happening.

Clearly, we lose people at transitions from undergrad to grad, from grad to postgrad, and finally out. And the greatest point that we lose people is the transition into the independent scientist careers, particularly in academia. As it turns out, all of those programs that NIH has had in place, but were not evaluated rigorously, actually have worked.

There has been a sevenfold increase in the numbers of PhDs awarded to scientists from underrepresented groups, that is to say, African American, Hispanic, Native American, Pacific Islander, sevenfold increase in the last 20 years. They now make up 10 percent of PhDs being awarded each year in the biological sciences. I know the data is different from the physical sciences. And yet, we know that they are being hired as assistant professors at less than 4 percent.

Let's do a thought experiment. We know that across this country approximately 1,000 new assistant professors are hired every year. What if we had 10 percent of those hires be from underrepresented groups? That's 100. Now, let's look at the top institutions, the 100 or so that receive these major NIH grants. It would actually take just two-thirds of them to hire one person from an underrepresented group for us to bridge that 10 percent gap.

I was giving a talk at my old institution a couple of weeks ago, Stanford, and I turned around to the dean and said, "You could just take on a quarter of that, 25 percent, and be done with it." And so could Hopkins and so could many others.

So I am quite excited actually to know this because it feels like we're on a brink. We have to find ways to make that transition happen so that we can begin to diversify our faculty. I think what we have, no pun intended, is a proximal coronary stenosis. We do. It needs balloon angioplasty and then a stint put in it to keep that open so as to make the flow happen. Unfortunately, I think we've been limited by the pipeline metaphor. The pipeline metaphor has assumed that if you fill up the pipeline, you will automatically get what you want at the output. Totally incorrect. What we actually have is a series of short and often unconnected pipes, and there's drip, drip, drip all the way out. And so we need to have programming that connects one area to another, the most pressing currently being that transition into independence. And with that flow, we can then begin to look at and leverage what has been actually a successful program.

Finally, let me just mention the issue of scaling and dissemination. I really do think that we have to broaden our idea of what is the biomedical workforce. There are many elements that are critically important for the successful workforce of this nation beyond just academia. So we have to flip this on its head and say we're training people for the biomedical workforce, and we use that relative hierarchy that if you don't go into academia, you're somehow not as good. And to do that, we need to set up these partnerships now earlier in the career path with industry, with business, because business actually has the know-how of how to scale.

So I think talking about this in the form of setting up these hubs of innovation, in scientific workforce diversity, the hub itself would be run by an engine of an interdisciplinary team composed not

only of the scientists, business, industry, social scientists, and that engine would develop new programming in a rapid fashion way, test it, iterate it, and make it translatable to everybody.

So just to summarize what I think we need here is this rigor of science into the work of diversity, we need to think about the ways of scaling, and we have to embrace the idea that diversity is actually crucial for excellence, and rather than the old adage that great minds think alike, actually, great minds think differently.

Commentary by Dr. Kumar

I wanted to start by saying the Alliance has done great on the input side, but really this is about output. This is not about input. I trained in a field called operations and, for me, operations are measured by their output, not by what you put in the hopper, it's what product comes out the other end. And the problem, as Hannah so eloquently put it, with the pipeline model, is it assumes a constant diameter. What this is, is an extraordinarily narrow funnel, that's what it really is. And so for me, it's incumbent on both academic and non-academic institutions to drive the output side. Then organizations like the Alliance can do very well, even better, on the input side.

We personally think this is a big deal for us. So at Hopkins we launched – it's less than a year old – a \$25 million initiative to do two things, one of which is to fund targeted efforts at producing a more diverse faculty community. We're not worried so much initially as to the graduate student pipeline, we're simply saying as leaders in the field and significant consumers of graduate students, it's the faculty rookie search that you should worry about. Are you feeding from the funnel properly?

In particular, one of the things that our Dean of Arts and Sciences and her school have really strengthened the search process--they have forced the search committees to think through whether they are taking an appropriate amount of risk as “great minds think alike”. That saying is just a statement about risk aversion. What they're saying is, "I know I work. If the other person is exactly like me, there's no risk." Right? And the whole point, if you don't take risk, you have no upside.

In the business world, "risk" is not necessarily a negative word, "risk" is a positive word as well because if you produce homogenous product, your upside is already capped, and so if you really want upside, then you must take - you know, for me, diversity is a necessary condition for having greater upside. And if that is the case, then you must train your people to look for difference, right? It doesn't come naturally.

So for me, the three systemic problems are: not enough impact, emphasis on the output side, and not enough development of a broad enough career pallet, if you will, on the output side.

And again if you look at Hopkins, we just started another taskforce on the biomedical workforce. Ron Daniels wrote an article in the *PNAS* last year arguing exactly what Hannah said, which is it is a self-perpetuating myth that we train PIs because not a sufficiently large fraction of our graduates become PIs, right? We are really training people who are going to do research and education in a wide variety of ways. And so we do need to worry about the output side.

In particular, for me, the combination of too narrow a funnel and not enough emphasis on the output side is a real problem. And if you combine that with the fact that, as Hannah pointed out, our composition is not sufficiently diverse, and therefore the people who are in the community don't feel sufficiently supported. So, what you have is a narrow funnel which is also leaking. One of the things that the faculty diversity initiative spends money on is cluster hiring and mentoring, because we do want to make sure that there is a community that's built rather than simply a compositional table that's filled up.

And so the combination of these things for us – this is our viewpoint on this, that if we take care of our faculty well – the output side of the graduate student pipeline – and so do all the peers who are listed at the back of your Alliance magazine (and that's a pretty powerful list of people as Hannah pointed out) doubling the input side is not that hard in some sense. It is, however, harder if you are just trying to push stuff through the funnel rather than fix the funnel itself.

Introduction to Part II of Panel Commentary

Acknowledging the opening comments of panelists, Dr. Tisdale outlined questions to frame the second round of panel member commentaries. Noting that we need to continue to look at issues of attrition and transition, he affirmed that it is also important to look at what is working. What has worked? There have been a lot of case studies on the latter and Dr. Tisdale shared his own case as a first-generation student studying mathematics at Claflin University:

Why did I do it? Why did I pursue it? It was because of my mother. She was a great mathematician. Now, the rest of the story is she didn't complete high school, but she was a great mathematician, I saw it, I knew it. She gave me the confidence to pursue mathematics, and, of course, she complained later on that she didn't want me to pursue mathematics, she wanted me to become a medical doctor and make some money. I went on to Dartmouth College, first generation coming from a small HBCU in South Carolina. Why Dartmouth College? That's not exactly where I wanted to go. I had my eyes set on the University of Illinois. Why? Because I heard of black mathematicians coming out of that institution. What changed my mind? A call from Dr. Laurie Snell of Dartmouth, who called me personally and said, "I'm interested in the same type of research that you're interested in. Come to Dartmouth. I think we can work together." That changed my mind, even the snow and all. It changed my mind in terms of here is someone who truly would like to work with me. I only offer this to say that sometimes we need to stop and take a look at what has worked. And believe it or not, it was the right decision in the final analysis for me. Now, and of course there were days there were thoughts of dropping out along the way, but I pursued because Laurie Snell, by the way, became my thesis adviser and we worked all the way through.

Dr. Tisdale, at this point, suggested a series of questions that the panel members could respond to as they wished. These questions included:

- What are the causes of minority attrition at the undergraduate and the graduate levels?
- What must be done to improve our recruitment and retention of students from undergraduate and underrepresented backgrounds into advanced degree programs?
- What do you think must be done differently to improve?
- What is an effective infrastructure that you may be aware of to encourage graduates' education, an infrastructure that is fully supportive of the needs, not necessarily of past generations, but the needs of a diverse graduate student population?

Commentary by Dr. Reid

I wanted to jump and respond because I didn't want your example to linger too long, but to really root it in something that I've studied, which is this notion of self-efficacy, this confidence that I am going to be successful in this domain or at this task. Albert Bandura's social cognitive theory really points out that there is a reciprocal relationship between the environment, one's internal factors, like their motivation and

their behavior. And what you just heard in Dr. Tisdale's example was this - I call it the Home Depot effect, which is, "You can do it. We can help."

Hearing someone with whom you have respect or for whom you have respect affirming you really is a source of self-efficacy. So that subjective judgment, like Dr. Shifrin in my second year at MIT, second semester, multivariable calculus, asked me if I would consider majoring in math, and that was such a powerful moment for me hearing that from someone who is really esteemed, one of my lecturers.

Another source of self-efficacy is the vicarious experience. So seeing someone have success with whom you can relate really builds their confidence. And that speaks to the power of role models. So why you wanted to go to the University of Illinois, because you knew that someone like you perhaps had success in that domain.

And a third source is really mastery experiences. Success breeds success. Success breeds confidence. And I believe I heard you talk about confidence and how important that is. And so what some of the research finds, that African American, Native American, women, other kind of minority groups approach the challenge from a point of what the researchers call defensive pessimism, and that is, I'm going to get a C in this class, but quietly hope you do better, slightly better. And what the researchers found is white males approach it from a strategic optimism, that I'm going to get an A in this class, and quietly hope that he will fall just basically a half a grade below.

Well, what's the difference when you approach a class when you are on the offense versus defense, to use a football analogy? It changes your posture. You're much less aggressive with the faculty, making sure you understand everything, et cetera.

So what we do and NSBE and what others do, organizations and colleges that are successful, are really careful about that ecosystem to ensure that students have mastery experiences, vicarious experiences, and verbal judgment to ensure that they're building confidence over time and not tearing them down.

Commentary by Dr. Valentine

Let me just piggyback onto what you said there. There is the additional issue of benevolent sexism. And this is where the person, woman, minority, person goes and says to the professor, "Oh, this is very hard. I don't think I'm good enough to stay. And, look, I've got two children already, one on the way," and the professor says, "Oh, yes, dear, I quite understand, maybe you take this other part." I think that that is often prevailing in this, and before you know what, you have the loss and the attrition. I think the lessons learned from the attrition of women should really frame this thinking because we cannot get away from the fact that women have actually comprised over 50 percent of PhDs now for about 20 years. Guess what the percentage is for professors: 22, at best. So this is another area.

But in terms of tangible things, I get a sense that people are fatigued. And there are some very good intentions out there, but they say to me, "What can we actually do?" So one of the things that I think is this myth, that there aren't any out there. There is, "Oh, I would like to have diversity, but I can't find any." Create the database. I've started one already at NIH, and every time I go to the Search Committee, before I get there, I send them this list of highly, highly accomplished people, scientists, from underrepresented groups or women, and then let them do the outreach.

The second thing is doing outreach efforts before you have the positions. So you can create a program where you bring 30, 40 people to campus each year for two or three days and let them meet the faculty, let them get a feel of what it looks like there.

And then finally, we can't get away from this problem of implicit bias. With all the best intentions, the brain is wired such that you slip back to your stereotypes when you are trying to make a rapid decision. In other words, if you have a brain, you are probably biased. And so the good news is that educational models, linked with actually doing an implicit attitude test, can actually shift your behavior. So the stereotype is very difficult to change, it takes years, but the behavior can be modified.

These are three tangible things that will directly influence our leadership diversity if your institutions are really committed and want to do it. Everybody can do their searches. I've got two analysts who develop these protocols to find people. I won't give you the details of how they do it, but it's written down, and there are tons of people from diverse background, highly qualified to actually get into the faculty.

Let me just finish by saying you asked the question, "What is the cause?" The cause is because there are not many in the faculty. Claude Steele has described this so well, the brain is wide, you walk in the room, you start to count. These kids, they come into the undergrad, they are afraid when nobody looks like them. And so their performance actually goes down, stereotype threat, great interventions done at Yale that work.

Commentary by Dr. Kumar

I would like to add one thing to the last point that was made, which is it's actually surprising, not just the numbers, the final numbers, number of graduates with PhDs versus numbers of tenured faculty. What's also surprising is how little motion there has been in the numbers. These numbers are not growing as rapidly as you would expect. And one way to get around that is to publicly commit to measuring and being transparent about your measurements. So if you're willing to publicly commit - and it's easy to dismiss composition as mere composition--it's not. It's a lot more important than that. The composition has ramifications that go well beyond composition itself. And so public commitment to composition, transparency I think, would serve lots of institutions better.

And, of course, we all put out reports, but that's not the same as public transparency. Does the president of the university say this in his speech (right?) rather than it being put on a website that if you spent 45 minutes, you would find? So I think that's something that would help as well, where you're committing by saying at the very least I owe all my constituencies a report on how well we are doing.

Dr. Tisdale asked the panel at this point to transition to discussion of some promising new strategies. He suggested that the panel members talk about some 'out of the box' transformational type strategies that are having an impact on this issue and describe how to scale up these successful programs to bring about the transformation.

Commentary by Dr. Freytes-González

I think one of the things that is very difficult is to be an academic administrator, so I'm going to have some added comments for you because I know how - how do you work this out and measure it? As you know, the University of Puerto Rico has 11 campuses and some 62,000 students right now. How do we get this rolling at this level? What is the conversation after 5:00pm in my office or the offices of the administrators, right? I worked as Vice President for Academic Affairs as a provost, if you will, for six years at the University of Puerto Rico, and we started a marvelous program about evaluation, and they called it accreditation, program accreditation, because at that time we were so concerned that we had

these great students that were coming in, and we wanted to be sure that we could show and demonstrate that they were going to be part of great programs.

So we started with a special project that said all voluntary programs should be accredited, just as a simple vision. So some nine years later, we have good transformational experiences. All our teacher preparation programs are accredited. All our business administration programs are accredited. All our libraries are also reviewed by the American Library Association. It was a starting project for about six or seven years. But the important part of that is that accreditation was never the objective. The objective was to establish a continuous culture of external scrutiny, to have that in place, because where am I going to go to talk about diversity?

And we also wanted to meet another important objective. We wanted to participate in the national conversations about what is important for us. How do we get there? We want to be part of tech or whatever organization there is. There is something great coming back from the concept of accreditation because I know people cringe just by listening to the word for different reasons, but there is a concept that's underlying what accreditation is, and it's called self-study, and self-study is for us to be able to get together and talk about things that are important.

We have the advantage that most accrediting agencies already bring the concept of diversity as part of the conversation, the concept of institutional assessment, the concept of student learning assessment. So it's a great groundwork when we start talking and we can meet everybody for the teacher preparation programs, for example and talk about diverse faculty, and talk about data, and talk about the basic content and updated disciplines that they should have to offer students.

So in a way, I think we took the long road and over 84 percent of our programs that participated are accredited, including our services, including our libraries, including some of our museums, including our preschool programs, including the publications, what we publish, the journals that we have. We started the conversation with them. So basically, I just wanted to share that at times, as administrators, we need to establish a structure, something that we can go to and discuss or bring important subjects or important projects.

Commentary by Dr. Reid

I've just got one program. I was Associate Dean and Director of Undergraduate Education at MIT and we did a Bridge Program. William Sedlacek has done a lot of research on the non-traditional student and persistence of the non-traditional student, and one of the factors that he discovered for persistence was the ability to handle racism, or other "isms" not just racism.

We had incoming students coming from our Bridge Program. At MIT, they were admitted on their own merit, but we saw some gaps in their success. And so we surveyed them, and we discovered that 92 percent of them had aspirations to go to graduate school and get a master's degree or a PhD. But when we looked at the statistics after 5 years of who was enrolled as a first-year master's student or doctoral student, I can count them on two hands. And so there were about 80 students coming in, 92 percent said they were interested, but only 10 of them were enrolled. Now, several of them went to other schools.

So what we decided to do, again using the same self-efficacy model, the quality of interactions, the vertical integration, horizontal integration, peer cohesion, identity development, et cetera, we formed a program called Laureates and Leaders Program, which is still running today in the Office of Minority Education. We identify freshmen who have strong interest in graduate studies, build a cohort of 20 to 30 students, and then they meet monthly to plan for graduate school. And during that process, they identify a

faculty member with whom they want to study, they do the research, they ask that faculty member to do research on campus as well, they attend conferences – GEM conferences and others – and over the course of the years, some will drop off, but they will all support each other in this process...kind of like a Ron McNair Program, but a smaller program.

And so the elements there are very key. They have good quality interactions vertically with faculty members and with administrators, a good peer network to support them, and they can bring their whole selves in terms of their own identity as people of color and women in this group. And then, finally, again, the self-efficacy piece. They have mastery experiences all throughout. And so that's a great kind of model, a cohort-based model, to ensure that students are successful.

Commentary by Dr. Valentine

Building on the interventions for the social psychological factors, you might all know about the experiments that Greg Walton did with stereotype threat and undergraduate students, a randomized, controlled trial that actually depersonalized this feeling of not belonging, put it in the context that everybody feels like that when you first enter undergrad, and here are some tools to help you. And the group that got the intervention, their GPAs went up statistically so that there was no difference between the African Americans and the intervention group, and the effect lasted for 3 years. And there were some other beneficial effects, health benefits. So that is an approach that I think could be very effective, and there are a number of campuses taking that on.

The second issue is around mentoring. We know that it's very important. The NIH has launched the National Research Mentoring Network, which does a number of things. It links students who don't have the right mentoring locally, but more than that, it links them for the opportunity to get into those networks. There are those networks in which you have to be to be successful. You have your paper reviewed more favorably, more likely to get your grants, and we need to do that in a more systemic way. And the other thing that it does, the mentoring, is that it tries to get away from this assumption that just because you're a good scientist, you're a good mentor, and we know that's wrong, so there's a standardization offered. Now, maybe not always. There's a standardization of training mentors embedded in that program. So this is another approach.

There is also the IRACDA program, which focuses again on this late stage. We have a stenosis there, so what it does, it gives support for postdocs, it's a fellowship program, to get them better prepared for whatever area they want to go into, if it's actually teaching or it's more research. They get to do service work in institutions that are not well served, and that program is showing tremendous diversity and great retention within academia.

And then I would say the UC Presidents Postdoctoral Fellowship is an amazing program. The president actually supports the postdoctoral years of people from diverse backgrounds, gives them resources to finish their research, and almost guarantees their hiring within the UC system ultimately. A program like that, amazing.

And then, finally, people need toolkits for searching and search committees and hiring, and these toolkits need to be able to point them to where people are and to be able to help them make better decisions with respect to bias, implicit bias.