

Welcome to Doing What Works: Welcome to Doing What Works, exploring the Blue Economy, a podcast series that dives deep into the vast potential and challenges of the Blue Economy. I'm your host, Ashanti Blaize-Hopkins, Interim Associate Dean at Santa Monica College's, Center for Media and Design. Together, we'll navigate the uncharted waters of this exciting and rapidly growing sector. Joining us on the podcast today is a leader in diversifying STEM fields and creating more opportunities for highly skilled students from marginalized groups into the clean energy field. He has a Bachelor of Science degree in Mechanical Engineering from Southern University in A&M College, and a Master's from the Georgia Institute of Technology. He's worked in the automotive industry, became an entrepreneur, and now is at the U.S. Department of Energy where he's been for the last six years. Currently, he's Senior Advisor for Diversity with DOE's Office of Energy Efficiency and Renewable Energy. I think he may have a bit of an overachiever complex, just a little bit. Terrence Mosley, thank you so much for joining us on the podcast today.

Terrence: Well, thanks a lot for having me. I really appreciate the invite.

Ashanti: So our first question for every one of our Doing What Works podcast guests is always the same, what was your first job and how does what you learned in that position informed what you do in your current role now?

Terrence: Well, I tell you what, I can break this down in a couple of different ways because the very first job, and I don't know how far you want to go back, but my father was a masonry contractor. And so my first job was hard labor. I had to get out and haul wheelbarrows full of concrete and mortar to brick layers to work on residential projects and commercial projects all across Central Mississippi. So, I knew how to get up in the morning and get out in the heat and whatever conditions were there. I think the first lesson number one was that, you know, it taught you about hard work and having to be able to talk with folks to, you know, to be able to talk to people, communicate some of the, you know, same things that we try to get across in the education system you learn out there with manual labor sometimes as well. But first job that I had during my college years, though, was my first internship was actually in a laboratory working at the 3M corporation. And so I did my first co-op in Austin, Texas at the time with 3M. And I'm a mechanical engineer, you know, by major. And so that's why I answer it that way. So I answered two different sets of first jobs because my first real working job where I had to pay taxes, you know, that kind of thing. Yeah, yeah.

Ashanti: A real job.

Terrence: You know, that was, yeah. That was, that was when 3M got a hold of me. So, so I learned a lot going from stint to stint, just figuring out what I did want to do and what I didn't want to do.

Ashanti: So we got a little glimpse into your background. And I want to go a little bit deeper, especially your experience attending historically black college and majoring in a discipline where

people of color have not historically been represented. What was that like? And how did it shape your career trajectory going forward?

Terrence: You know what, it was great for me because I think it was part of the reason I had always wanted to go to an HBCU, I think anyway, because to be honest, I don't know that it even matters so much what your major in, you know, at the time, because all of us together where, you know, I mean, there's, there's a mix of students, but you know, 90-95% of us are African-American at HBCUs. And so when you're going through the process, and you're going through it together as a cohort or as a class, you don't necessarily even know that you're like, you're in an area where it's so few of us, you don't necessarily find that out until you get out in the world. And so, that's the other reason why those internships are so important, because when you leave from kind of the cocoon and the safety of the HBCU and the campus there and just, you know, you're around people that look like you and professors that look and talk like you and everything. And then you go off and you learn, oh man, you know, maybe it's not as many of me out here as I thought about. And so, so for me, I think, and I think it's the case for a lot of people that encouragement, that kind of safety that you feel in getting your legs together, trying to be your best in a technical area, I think all of that contributed to being able to feel more confident about your technical skills. The experience of going to an HBCU, though, was really what I needed at that time. I just knew engineering was like a profession that, you know, it paid decently. You know, I thought it had a good future to it. And so, you know, I decided to pursue that instead of business or another in reference to that question.

Ashanti: I feel like it was just a really strong foundation. My husband also went to an HBCU and he kind of gives the same insights as that the foundation was solid. And so it didn't matter where he went from there. And so I want to kind of transition then from that solid foundation to the experiences that you had in between to your current role as senior advisor for diversity with the office of energy efficiency and renewable energy. How are you working to help diversify the pipeline of students entering into STEM fields, especially with the background that you've had?

Terrence: Yes. I'm really fortunate in a sense, because even when I was, I spent almost a couple of decades at General Motors in the automotive field. And one of the things that happened, one of the biggest pieces of advice that I try to give to people is really bring your full self to whatever position that you're in. And when I say that, I'm referring to like, if it's a passion of yours to kind of keep the pathways, the pipeline going and you want to help people behind you, then you need to make it known and make it a part of what you do. During my entire career at General Motors and Delphi Automotive Systems, I never was in a, I was always in a technical or a management position. I was not, I never had a full time position doing, you know, so-called diversity work or, you know, equity work, anything like that. But it was always something I did as part of my job and I just mixed it in. And that was whether it was recruiting, going back and trying to help lead recruiting activities, you know, we helped to develop certain scholarship or fellowship programs to bring in more, you know, diversity to the industry at that time. So I've always worked around it. And the fortunate thing about it is that you never know kind of the foundations you're building until you kind of get to the destination sometimes. And so what

happened when I got into this position, I actually came into it through a fellowship called the AAAS Fellowship or American Advancement for the, I mean, American Association for the Advancement of Science. And, it's one of those avenues that a lot of people don't know about because, you know, if you think in the traditional model, you know, you go to school, you come out, you get a job or whatever, you know, you hear about networking, you hear about other things to try to get to where you maybe want to go. But there's a lot of avenues that a lot of us aren't even familiar with. And, you know, and I wasn't familiar with at the time. And some good friends of mine at the National Science Foundation, who I had done a lot of review panels with and taken part in some technical activities as I've always tried to stay, you know, kind of in the know what's going on out there. And now, and they told me about this fellowship. And what happens is that it ended up being a fantastic way to integrate the federal network to learn more about how federal agencies work, the kind of work going on, and how your talents might be able to be utilized. And so, you know, even me at the stage of my career that I was in, more like past mid-professional, you know, I found that, you know, when I wanted a change of scenery and wanted to do something a little different, you know, I had no idea I had never worked in government before, but this was a perfect entryway for me to do that. So the reason I mentioned this to get back to your question, though, is that when I was a fellow, I was able to initiate some of the programs, I reached back and got some of the same programs that I had always worked with or helped encourage. And brought them into a new situation with people who had never heard of those things. And some of these programs have been around 40, 50 years. And so when you ask that, I had to give you that background just to let you know and let your listeners know that little things that you might be working on now, little programs that you've had in effect that are developing, those things can come to fruition at any time if you go to a new organization, a new place. So I just reached back to take something that I'm familiar with that's a part of me and bring it to the organization. Now we're in our second cohort of summer of, you know, students where we've had over 20 students now that we're that we're helping the sponsor to get in. They're all underrepresented areas of STEM, which is Hispanic Americans, African Americans and Native Americans. Now they, we're supporting them to go on and get their masters and PhDs with no charge. You know, they're able to have their tuition paid for and be able to have summer internships with us. Now they're part of the federal network. That's within their, that's within their view now. Just things like that, you know, so, so when you, when you talk about the types of things that we're doing, we're trying some of everything. There's so many things that we're trying to do. And what we're trying to do is though diversify the audience that's taking part.

Ashanti: There's so much that is there to unpack and so much it feels like is in the works and is, is hit the ground running. I, you mentioned the blue economy. And so I want to come back to that a little bit. When did you first learn about the blue economy? And how important will it be to ensure that a diverse population of students have exposure to this emerging field and the training that's necessary to be successful in the jobs that are coming related to the blue economy?

Terrence: Absolutely. You know, it's funny because I kind of related the blue economy in a

sense to renewable energy overall, because when you look at the stats, we sponsor a report every year that basically comes out and it kind of gives you a sense of the breakdown of where careers are going and clean energy. And the thing that you quickly notice is that there is a lack of diversity in comparison to the population, you know, of the country. And we, we already know where we're running short at. And it's pretty similar to STEM overall, you know, as far as like the amount of people going into STEM and advanced areas and achieving those degrees and advanced degrees and what have you, it's kind of a similar situation. So, so the great part about where we work at ERE is that we have 11 technical program offices and a few of those, they're all working in clean energy in some form or fashion, trying to, whether it's, you know, a lot of it is R&D, of course, that we award and sponsor. But there's, there's more and more of it that's being dedicated towards workforce and communities now. And so I think for me, I started being introduced to blue economy concepts within our water power technology office, as well as our bioenergy office, which are just two of the offices that really kind of work in that space. And, you know, I can tell you, like I mentioned some of the efforts that we're doing with trying to diversify these fields. Well, for instance, our water power office, they have competitions each year. They have a marine energy collegiate competition and they have a hydropower collegiate competition. And I know the hydropower competition, it's done in partnership with the hydropower foundation. And one of the main tenants that I learned in meeting with them is that there are so many people that work in that industry that are getting ready to retire within the next five years. You know, there's a huge number of people that are working like things we take for granted, you know, that are working at, you know, dams and, you know, hydropower type facilities and, you know, and they have all of this experience and they may have been working in the industry 30 years or so, but they're getting ready to leave. And we don't have a proper, you know, really a pipeline of people to jump in and take the helm. And so what we're seeing is that by trying to generate a lot of these student activities and different prizes and things that we're trying to do where the process to apply is not as complicated, we're really trying to drive results in that area so that we can, you know, fill these spots that are available. Now, the other thing that I would mention though, is that as you know, whether it's blue economy or whether it doesn't really matter if it's solar or, you know, solar related jobs, if it's other things like that, the jobs that we're looking to fill, if it's blue economy jobs can be kind of specific, you know, they, it's not just, it's not as much generalist anymore, you know, where, and I'll give you just one simple example, it's outside of blue, but like with solar, you know, I mentioned that to be a solar installer, some states are different requirements, you know, but you can be a general electrician and that can be the key to jump into becoming a solar installer, you know, to really know that part of the equation. And, and of course that can integrate into housing and the commercial buildings, you know, whatever it might be. Well, with the blue economy, it can tend to work the same way. And I think from some of the efforts that are happening with the BCAP group out in LA there, you know, you start to notice that there's really specific jobs that are coming up that industry, you know, is telling us that this is where things are going. We need people to fill these slots. And so not only is it important to try to put people in position and encourage them to follow STEM paths and other paths that kind of lead them just in this general direction, but it's even more important now to give them the industry connections and the, actual examples of the work that's needed. You know, one of the other competitions that are bioenergy office sponsors is the

algae prize. And, you know, I had no idea how much could be done with algae. You know, when you, when you get into the details of that, it's incredible. And so just knowing that and knowing that that's some of the workforce areas that are being identified, where jobs are being identified, where industry is telling us what they need. I think that is kind of the important part that's happening now is trying to find out what the demand is going to be and then what it's going to take to actually produce graduates and people that can come into those positions. And part of the important part of that is that it may not take four year degrees, it may not take, you know, a community college degrees. It may be people coming out of high school that can handle some of these jobs with their, with the proper training. And so I think that's part of what's really happening now. I think that's a big part of what's happening now is trying to figure out the channels to get people to these jobs that are coming here in the near future that could lead to long-term careers in clean energy.

Ashanti: You mentioned algae prize and part of your answer. And so I want to specifically talk to you about the algae feedstocks logistics project. Why is it so important to get students at both the high school and college level exposed to this idea of bioenergy and the workforce that will be needed now and into the future? And what's at stake if we don't kind of really drill down on that and ensure that they have that exposure and the skills that they need in order to be competitive?

Terrence: Right. Well, you know, with our algae competition, you know, it's basically a two year competition because we want to give people time to really propose their projects, you know, develop them and implement them. But the great, the thing that I think is great about it is that it reaches back. It's open to students from high school levels as well. It's open to students at all levels, whether you're, you know, high school university or, you know, graduate students or what have you. And I think that tells, I think that's really telling right there as far as, you know, what you mentioned as far as like what's at stake, you know, I really think it's, it's one of the things that I talk about, regardless of industry, almost, or regardless of the clean energy area, what we're finding though, is that not only are we needing to expose kids to all of these different topic areas, but we, you know, but we've got to drive interest, you know, we've got to really get people understanding, this is why it's important. And, you know, we can throw around numbers all we want as far as, hey, we want to, you know, reach a net zero economy by 2050, you know, you hear the administration say that a lot and we're all pushing towards, you know, trying to meet some of these goals. But the truth is that if we don't secure enough people with interest, and this is once again kind of where the diversity point comes in, is that there's no way we can meet any of our goals in clean energy if we don't have enough people to take part in the transition.

Ashanti: Taking a step back and reflecting kind of the big picture, what do you think we're doing really well in this country regarding the blue economy and even renewable energy as it relates to the Department of Energy? And what nations can we learn from, you know, who's ahead of us that we can maybe say, OK, that's a bit of a template or maybe we can borrow that it looks successful. What does that look like from that, you know, kind of 50,000 foot view?

Terrence: Yeah, I think from a bigger view standpoint, I'll try to answer the last part first is when it comes to examples. I think part of what we look at sometimes is European countries. Situations are a little different, as you know, like in Europe, you know, air conditioning isn't as prevalent as it is over here. But one of the things that we have that we have learned from is that from the like from the building stock, you know, buildings contribute, you know, a large percentage of carbon in the you know, in our atmosphere. And that's one of the things that we're doing research on and working on now is trying to find ways to have alternative materials outside of just, you know, concrete or different things that that are less, less carbon, you know, carbon intensive. And so one of the things that we see from like from out of European countries and you can go to places like, you know, Denmark or Sweden or different areas and you can see that the housing stock is different where they're producing more net zero housing, really more use of wind energy, more use of, you know, water power in the blue economy sense, more with solar and, you know, battery storage, you know, different things like that. So I think we try to take what we can from those examples and see what other people are doing. And we're, you know, constantly trying to keep up with what's going on, benchmark, see what people are doing around the world. And but, you know, when you I guess when you ask for an example, you know, I think we're doing some things good in the space, but we just have such a, you know, such a vast problem to hit, you know, to try to really reduce what's happening in this country that it's really taking a multi-prong approach, where in California, where there's more open policies towards, you know, solar energy and connecting to the grid and, you know, utilizing water and wind, some areas of the country don't have that. I think that's where part of the issues reside as well, is that from state to state, there's so many different attitudes and, you know, policies that are that are in effect. It can make it difficult to try to have consistent effects across the entire country because of some of those policies. And, you know, we try to make sure that we're trying to provide programs and opportunities that are available to everyone and that are open to everyone to take part in. Doesn't happen all the time. But that's what we, you know, that's really what we focus on trying to do.

Ashanti: Yeah, one of one of my favorite questions to ask people in general is what would you do if you were unimpeded, right? So if you had a magic wand and you had this dream state, right? All green lights, no red lights. What is your dream state for the blue economy in this country and the areas of energy efficiency and renewable energy? What does that look like?

Terrence: You know, I really would love it if we could have nationwide, you know, codes that really were able to truly take effect in a similar way across the country. I think that's part of, you know, when it comes to the blue economy, though, obviously, there are some areas of the country that, you know, don't have the same access to, you know, whether it's hydropower or, you know, some of the different industries. And so I think the thing that I hope for all of the renewable energy technologies, including blue economy technologies, is that the areas that can fully take advantage of them, do so. You know, and I think if I could show you a map, there's been, you know, research done from some of our, you know, chief scientists and people that that are in the know on the R&D space that show you projections of which renewable technologies are most available in different areas of the country or that could be available if the

policies were in place and people could implement them fully. And it really shows you that if we had that green light that you talk about and if you could fully implement and connect to the grid in all of the ways that are out there and that are possible, if you could do that, we would really benefit the people of this country so much because we would have access to lower cost energy. And of course, like anything else, the more people that utilize a technology or the more people that buy it or that have access to it, the more the prices can come down. If we're in a situation where only certain people get access to solar or to, you know, water power or wind energy, whatever it might be, the prices are not going to really benefit all Americans like it really should. You know, it's great that you give me the permission to have a green light. But yeah, I think that's if, you know, if I have my rather as they say, I think that's the part that I really would like to see is that take advantage of the natural resources in whichever area of the country that you're in. In some areas, it's not going to be, you know, geared towards necessarily more of a blue economy in some areas on the coast and, you know, on all of the coastal areas and areas that have, you know, access to some of the natural resources needed to do that, that would be fantastic. And there, like you say, there's other parts of the country that are more available for maybe solar energy, more for wind or what have you. But the bottom line is that, if we were allowed to really wave a magic wand and say, OK, everywhere across the country, you can build to this standard. It's guaranteed that you will see better resilience, that you'll see better utility costs, that you'll see better health, air quality, better air quality and better health for your for the people living in these homes, you know, who wouldn't want that? But, you know, like you said, a lot of the other things get in the way and things don't happen like that. And so, so we continue to show the examples where we can. But yeah, but I think that's what I that's the only thing that I would want to do is just for every area of the country to really take advantage of the natural resources that they have, and to take advantage of the connected technologies that could go along with those natural resources to help be able to, you know, lower cost for people, for constituents in those areas, to be able to provide jobs for people in those areas. And really to, you know, just be able to take care of ourselves more off of our land and natural resources.

Ashanti: Terrence Moseley, thank you so much for sharing your insights and expertise with us. And thank you for joining us on this incredible journey through the blue economy. We hope this episode has inspired you to explore further and learn more about this vital sector. If you enjoy doing what works exploring the blue economy, be sure to subscribe to our podcast and leave us a review. Stay tuned for more exciting episodes that push the boundaries of knowledge and open new possibilities. Until next time.