**ORISE Featurecast**

**Indian Health Service Internship Program**

**March 26, 2024**

You really have to have a strong sense or drive for public service and that's not for everybody and that's completely okay. So we're looking for students that are open to engineering and open to public service.

 So you know they're just it's just such a great way to get exposure without the commitment to see if it's a good fit for your academic and your personal goals.

This is the ORISE Feature Cast. Join host Michael Holtz for conversations with ORISE experts on STEM workforce development, scientific and technical reviews, and the evaluation of radiation exposure and environmental contamination.

 You'll also hear from ORISE Research Program participants and their mentors as they talk about their experiences and how they are helping shape the future of science. Welcome to the ORISE Feature Cast.

 Welcome. - Welcome to the ORISE Feature Cast. As ever, it's me, your host, Michael Holtz, in the Communications and Marketing Department at the Oak Ridge Institute for Science and Education.

 And as has now become routine and I'm very excited, I have a co -host, Mr. Matthew Lunderwood, also from the Communications and Marketing Department. Matthew,

 how are you? - Good, Michael. How are you doing today? today? I'm good. We're recording this on a Monday. So it is a Monday, but that's, that's okay. We'll make it further. We've started with technology issues and hopefully we can,

 hopefully we can sail through this conversation. And today is, is an interesting conversation and one that we have not had the opportunity to do very often in terms of kind of introducing a new program.

 for ORISE to be recruiting participants for. So we have a great guest today, Melissa DeVera, from the Indian Health Service.

 And Melissa, I just want to very quickly welcome you to the ORISE feature cast. Thank you so much for being here. Thank you so much for having me and inviting me. I am very excited about this opportunity.

 We are too. I want to just start quickly if you would tell us what your role is with the Indian Health Service and then we'll get into sort of what you're looking for.

 My role at the Indian Health Service, so it's kind of a newer role. I am one of the assistant directors of the Division of Sanitation Facilities.

 Construction. Right now, one of my primary responsibilities is recruitment and retention. Our division had received quite a bit of money through the bipartisan infrastructure law.

 That law actually appropriated to our program an additional 3 .5 billion dollars. dollars to address over 3000 projects In Indian country and so this was this is actually a fourfold increase in funding to our program over the course of the next Over the course of five years We're in the midst of it actually And so that's why you know my primary focus is recruitment and retention We need a lot of engineers.

 - Yeah, so Melissa, just talk a little bit about the program that you're trying to recruit for and just tell us a little bit about it. - Our program is the Sanitation Facilities Construction Program, we call it SFC.

 Our program was actually created in 1959 by the enactment of Public Law 86 -121, the Indian Sanitation Facilities Act. And it was created by the enactment of Public Law 86 -121.

 and that act authorized the Surgeon General to provide essential sanitation facilities to American Indian and Alaska Natives through construction. So today the Indian Health Service is now responsible for carrying out the program.

 So this act is what is now a very effective program in improving American Indian and Alaska Native health in 1952 less than 20 % of Native American homes had access to adequate drinking water and waste facilities so we're talking about Families hauling water for drinking and cooking and washing,

 you know from ditches and creeks and stock ponds and other unprotected and unmonitored sources Um, my, uh, my mother was actually one of the,

 you know, part of one of those families and so were some of my cousins. So, you know, this, you know, this lifestyle, you know, occurs even still today.

 Um, so the act also did something that was kind of novel at the time and it required, um, console. with and encouraging active participation by tribes in project planning and implementation of construction projects.

 So because of this, the act was one of the first steps towards tribal self -determination of their own health programs, and that's kind of how our program came to be.

 And then, you know, kind of like jumping into the present, you know, I talked about a little bit about the bipartisan infrastructure law and that additional 3 .5 billion.

 So that money was really intended to kind of close that gap because we still have over 10 % of Native American homes that don't have access to adequate drinking water and waste facilities.

 So that's just like a very, very high level overview of the kind of the genesis of our program to where we are today and what our program looks like today from the perspective of an SFC engineer is really quite different from our initial humble origins.

 I read that our first budget and this is comparing in comparison to the additional 3 .5 billion that we're having to manage. Our first budget was $200 ,000 and it was for 37 projects.

 So, you know, our program, I think, you know, you can, it is very, you know, I think it's very successful in its mission. So today,

 you know, our engineers, you know, on a day -to -day basis, they work really closely and cooperatively with tribes. to identify deficiencies in water and wastewater and solid waste infrastructure and decentralized systems also because you know they're usually very remote or the tribes can be very remote or rural.

 And you know from there they you know we start to evaluate solutions or alternatives and we're looking you know for a best match to a community's resources, their capabilities,

 capabilities, their accessibility. We consult with the tribes, you know, to select the best alternative. And, you know, we design engineered solutions if necessary and we manage construction.

 We might have some more complex projects that require multiple engineering disciplines. So we will, we might work with the tribe to select, to solicit architecture and engineering.

 firms or A &E firms. And in my experience, even if you're hiring an A &E firm, I find that IHS engineers, SFC engineers,

 we still need to be closely involved with these kinds of projects, because we know our tribes and we know their resources, their needs, the accessibility. And that's why we need to be involved in these kind of projects,

 you know. and because the communities or the systems might be something that, you know, the A &E firms are completely capable, of course, of handling, but they might not have had, like, extensive experience with that yet.

 So, like, you know, for instance, you know, everyone, you know, IHS, A &E firms, like, we all use 10 -state standards as a guideline to design,

 like, our water or waste facilities. facilities. But in IHS, we also have IHS design standards that are more specific to our tribal communities just because some of them can be so small and so remote or just very,

 very, very small that 10 state standards might not always cover or be a, you know, or their design standards might not not always be appropriate for what we have to accomplish because those are intended for much larger systems.

 We're talking about systems with maybe less than 50 homes. Then we have other systems that probably have hundreds of homes on them, so a really wide range.

 range. That's awesome. It amazes me, you know, in that short amount of time how much this program has grown. That's incredible, you know, talking about not that long ago, the funding and just how it's increasing, you know,

 it kind of speaks the importance of, you know, the work and the program and what the work that you guys are doing. So, talk to a little bit about what kind of students and applicants you're looking for for this opportunity.

 So, these are summer internships. So, we're looking for STEM students who are going to be returning to school in the fall. So though, you know, our positions are,

 you know, classified as like civil or environmental engineering positions, you know, you don't really, you know, we're not, the students don't need to be majoring in civil or environmental engineering.

 I mean, it's helpful, you know, definitely, but it's not always the top priority for the type of work that we do, you know, to be successful in. our work, you really have to have a strong sense or drive for public service,

 and that's not for everybody, and that's completely okay. So we're looking for students that are open to engineering and open to public service. So,

 you know, they're just, it's just such a great way to get exposure without the commitment to see if it's a good fit for your academic and your personal goal. And so even if it's not a hundred percent fit for a student,

 maybe that exposure to our program and to our tribes will help students with understanding the unique challenges that are faced by tribes with water and wastewater and solid waste infrastructure.

 And they can take that into consideration as they decide to maybe pursue graduates. school or research or maybe like you know whatever future career that they decide that they're going to pursue.

 Awesome so you talk about a little bit about you know who you're looking for in the program as a whole what does the this particular program entail for the participants what can they expect to take part in? Yeah so you know we're we're just looking you know I guess to summarize you know we're just really looking for students that are open,

 you know, to engineering in Indian country and, you know, public service and, you know, that are interested in figuring out, you know, whether or not that's a good fit. - Awesome,

 okay. How did you get to the role that you're in today? (laughing) - Oh, that is, it was,

 an open -ended question and, you know, it was not a straight path by any means, you know, and you can answer that in so many different ways,

 but, you know, I feel like the only way that I ever go anywhere is, you know, when I step out of my comfort zone. And,

 you know, clearly a person cannot live that way 100 % of the time, but I feel like I've done it enough that I've grown to almost embrace the uncomfortableness and sometimes I encourage myself to leave my comfort zone because it's time to learn something new or it's time for growth or change,

 you know. my last job, I was actually a, I've always been in IHS, but my last job, you know, I was a district engineer and it was tough and had many challenges,

 but it really was my dream job. And I had actually come across this position that I'm in today and I had a day to decide if I would.

 going to apply or not. And I really wasn't ready to move on. And I always thought like, well, you know, I'm only gonna, you know, move on if the perfect opportunity presented itself.

 But this job had like those tasks like that, that recruitment and, you know, the retention and kind of, you know, kind of like advocating for engineers in IHS. And I,

 you know, I really wanted to work on that. But the, you is remote, and I, you know, I didn't want to work remotely, and I didn't feel like I knew how to do it well enough,

 and I really enjoy being in the office, so I had doubts that I would be able to live up to the expectations, and that made me really, really uncomfortable, and I'm glad to report I'm wrong.

 I work with a great group of people. they are wonderful communicators and leaders and I find that myself, I am actually able to be pretty productive in a remote environment and it has not been the challenge that I thought it would be and I'm going to attribute that to you know again like I stepped out of my comfort zone and you know like and and it really the payoff was very,

 very big, so I'm very, very happy where I'm at now today. Awesome. And it sounds like for folks who might be interested in applying,

 it sounds like the Indian Health Service is a great place to work, you know, as you've talked about with your colleagues, and just, you know, the level of of people you get to work with.

 So it sounds like a strong selling point for interns to come work for a great organization. Yeah, I think it is. I really, you know, for those that,

 you know, where the job is a good fit, you know, for those public service driven engineers. Yes, it's a wonderful place to work. So in the,

 internships, one of the first things that the participants will be doing is they'll be taking an OSHA 10 hour training for construction, you know, because they need to be aware of the hazards and be able to be safe observers at construction sites.

 This is a construction focused internship. So, and that's a great training. They'll be able to add that to a resume because employers might be looking at that experience and also to a CV.

 As far as the opportunities to get their hands on stuff, they're going to be different among the field offices because every office kind of has different needs but similar.

 But interns in general, they're going to have the opportunity to gain hands. -on experience with surveying, construction observations, maybe some GIS,

 sanitary surveys and inspections. They're going to get exposure to project management, technical or engineering specifications,

 construction reports, construction meetings. There are a lot of different kinds of construction meetings that they don't tell you. you about in school. Construction logbooks,

 engineering reports, they're gonna get exposure to all the practical aspects of engineering and, you know, engineering construction management. And they're,

 you know, the exposure is just gonna be, you know, to what engineers are responsible for, you know, just beyond. theory and design. So Melissa you talked a little bit earlier about you know your family background and how you know it actually ties into the job that you're doing now and then kind of where you are now has STEM always been an interest for you as well?

 Of mine? Yes. No. And that's why I think I'm very important for for this role.

 role. No, and it's not because I didn't like it. It's because I didn't have the right exposure. So, you know, I think that's why, you know, when we're talking about these internships and these opportunities, they're really about just,

 you know, giving students exposure in a way that's non -committal, you know, to them, you know, like knowing what you don't like is just as important as knowing what you do like,

 right? >> Absolutely. So, I think that's why I think I'm very important for this role. I actually had no idea what I wanted to do when I was kind of going through school and I was kind of doing okay in math,

 made it calculus, you know, once I had kind of those prerequisites, I was doing pretty good like in Jen and OCam. So I just kind of kept going and I had no idea like what kind of career that would be like for me or even what degree I was going to pursue and I just had no clue you know that I was or could be technically competent at anything but I do actually remember when things started to align in my path

 started to become more clear and it was actually I had it it was one of those mandatory like electives I kind of had to take this class this class and I you know wasn't really looking forward to it and I it's an environmental class and I'm an environmental engineer today.

 And so it's just like some little introduction to the environment class. And the professor, he required us to go out into the environment and document observing something.

 And so I went out and I observed flood irrigation. And it got me to thinking about the environment And I was like, "Oh, I'm going to go out and do that." And I was like, "Oh, I'm going to go out and do that." And I was like, "Oh, I'm going to go out and do that." know, I grew up in this town, you know,

 I lived in the desert and, you know, yet, there was, you know, our community, you know, was based on like a lot of dairy and alfalfa farming, and we had a wetland,

 you know, in our community. And that was actually just created from flood from the runoff from the flood irrigation, which was fed by like an irrigation ditch with water that actually came from snowmelt from the Sierra Nevada mountains So,

 you know, like the fact that I was like really thinking and like looking into this I you know, it was just so interesting and that's what actually led me to you know, find out about environmental engineering as and as a discipline and and that's kind of how I Ended up study it,

 you know deciding to study that that's a really cool path. I love that kind of accidental Accidental scientist almost Melissa have there been obstacles that you've had to overcome to get to where you are today,

 you know, yeah A lot and I feel like it that's that's different that definitely sums up life.

 So I started college later in life and, you know, because I didn't actually have a very strong foundation, you know, it took me nine years to graduate with a bachelor's degree.

 Granted, I did work full -time for the first six years and was just kind of getting that going. to school part time and in the evenings, you know, and I went to a community college those first,

 you know, six years and I actually started my college career by taking pre -algebra and all the other pre -college level classes just because I didn't,

 I didn't, I didn't know where I stand. I didn't, you know, I didn't have that really strong foundation kind of coming in. So it was a long road, but I kind of, you know, I really finally figured out what I wanted to do towards,

 you know, towards the end of my community college days, you know, and that, you know, that was because of that environmental class that, you know, I that I had to take. And, you know, you know,

 that gave me a real tangible goal to work towards. And then, you know, just like everything happens kind of like, accidentally or incidentally.

 [BLANK \_AUDIO] You know, as around that time, I was also talking to one of my cousins who she lives, she lived in Phoenix at the time. And I was telling her that I was finally planning on going to a university. So when I told her that I was going to study environmental engineering,

 she said to me, she's like, you know, that's a public health field. You should come, you can, you should consider coming to work for IHS. And then, you know, she was telling me the environmental engineers are just one floor below me.

 So. So I went to Phoenix to visit her and she had set up the meeting and I met with the engineers and they kind of just showed me some of the projects that they were working on or had worked on with their tribes and,

 you know, by the time it took a few minutes, you know, I kind of knew that my goal was going to be, you know, to work for IHS. So then I had that, you know, the environmental engineering piece and then I'm going to work for IHS.

 IHS. So, and then, so my last three years were at the university, so, you know, this was shortly after that, I decided I quit.

 I had a federal job as an administrative assistance for a rotary wing weapon school at a local Navy base. So I quit that job. It wasn't a bad job.

 You know, it was a limiting job, but, you know, not bad. And I just kind of figured that I will just figure it all out, because I felt like the pieces were kind of coming together.

 And my friends and family were all really worried that I wasn't going to be able to pay for school and that was taking a huge risk. So I enrolled at the university, I quit my job,

 I signed a lease on an apartment near the university, you know, and was still kind of unsure how I was going to kind of pay for pay for everything.

 And I had actually applied for the IHS scholarship, but I didn't really have like great hopes that I would be selected. And then it was probably a less than a month out,

 like it was pretty late in the summer. I mean, you know, and I, you know, I was pretty committed to moving, but it was probably probably, you know, right around a month before I had to move and, um,

 I got the letter in the mail that I was selected for the scholarship and it was, you know, a full ride scholarship with a living stipend. And I remember just dropping to my knees when I go,

 when I was reading that letter, like out by the mailbox. I don't know if anybody drove by while I was reading that mail, reading that letter. But, you know, it, it was like after.

 that moment that I knew that my life was gonna completely change from kind of what I've always known. So that was, I think, some of the challenges that I had to persevere through in order to obtain my nine -year bachelor's degree.

 - That's an awesome story, I love it. - It is. - So you talk about, you know, that professalum. professor in that first environmental class and then some family that, you know, was able to get you where you are.

 What other mentors have you had? I know now you're mentoring some of these other scientists and getting them, you know, a step in their career, but who are some of those other mentors that got you to where you were? - Wow,

 so I feel like I've had a lot, a lot, a lot, a lot of mentors in, you know, in my career and... And, you know, I think that that's kind of just the nature of,

 you know, engineers, you know, we're kind of always all mentoring. And, you know, one of the best things as a mentee that you can do is realize that anybody can be your mentor. But, you know,

 this ORISE opportunity and like really thinking back on my school days, you know, I really think back to, you know, I had several professors that gave me me like advice that like really stuck with me and they and it really helped me make decisions differently than I was making them before.

 So in community college like I had a chemistry professor and you know he had asked me what I was planning on studying and that's when I had no clue. And I just said I was going to just keep going and taking the next class and the next class until I fail and then I'll know when to quit.

 And he told me, "Oh no, you should fail at least three times before you start considering quitting something." So, you know, and then he went on to tell me,

 like, you know, of his own failures, and he actually failed a chemistry class as an undergrad, and then, you know, and then I was a professor. So, you know,

 it wasn't really immediately that aha moment, it took me, you know, probably years to really grasp that idea of failure differently, you know,

 but I always think of that conversation and, you know, I always think of, you know, some of the other guidance that, you know, he kind of just like gave to me and, you know, what that really taught me was that,

 you know, fear of failure probably held me back more than failing ever did. So that might be why I might have just jumped into feet first or head first in the university,

 but At the University I had two very different professors who gave me, you know opposing advice and One professor told me that I needed to work on expanding my vocabulary so that I sound more scholarly.

 And, of course, he was an Ivy League trained engineering professor, so I was actually working on writing a paper in another class, and I had mentioned that to that professor that I was working on sounding more scholarly,

 and that professor told me, "Why would you want to do that? Then no one will understand you." And, again, not immediately. immediately that aha moment, but like both of the comments really stuck with me for like years.

 And then what I realized today is that they were both right, you know, in a way, you know, not 100 % of the time, but they're both right, you know, it just depends on who the audience is. And,

 you know, being able to communicate those complex engineering and issues is so critical to being an engineer. Like, if your audience,

 you know, is all engineers, you know, then very, you know, very technical, you know, scholarly is going to work, you know, and might actually, you know, might be required if you're going to, you know, convince that group of people of anything.

 If your audience is a non technical group, and then that's completely different. So, and, you know, the way that that applies to, you know, our work at the IHS,

 you know, you know, in IHS, we have to be able to communicate complex things so that our communities can make, like, informed decisions that impact,

 you know, public health for their communities. So, you know, no engineering decision is a slam dunk, you know, there are always pros and cons for every decision.

 So, you know, our communities are trying to. leaders, they need to be aware of the pros and the cons so that they can make the right decisions for their communities and their families.

 You know, those decisions where they know and can accept the risks, whether they're big or small. And, you know, if we communicate complex issues in a confusing way,

 or if we do not present those pros and cons for each alternative, then... then we really can't be confident that we're not imposing decisions on a community and imposing risks that might not be acceptable to them,

 whether financially or culturally or otherwise. So I think those were some of my most favorite moments looking back that really kind of helped.

 helped shape the type of engineer that I am today. I love it. Between your story of becoming an engineer and the mentors that you've had,

 it's an awesome story. So I love that you've had the opportunity to share with us, you know, where you've been and how you've gotten to where you are and kind of the people that have have been part of your journey.

 And Melissa, I just wanted to have one more question for you. Okay. What brings you joy? Oh, what brings me joy?

 Outside of like family and my dogs, you know, helping people and having an impact, I think that brings me me joy.

 And just knowing that I can have this little tiny legacy, whether it's saying that one right thing to somebody that changes the course of their life,

 like what happened for me. I feel like I was forced to take a class. I didn't want to take and, you know. that's actually the type of, you know, I'm an environment,

 you know, I took an environmental class and now I'm an environmental engineer, you know, you know, I had another, you know, my chemistry professor telling me that, you know, you need to like quit a lot or fail a lot of times before you consider quitting anything,

 you know, like, if I can just have, you know, like, any type of impact like that on anybody's life, I think that that is, that's going to bring me so much joy. And I think that's why I'm so excited about this ORISE opportunity because I know that exposure is the biggest thing that students need in order to know what they're gonna do.

 And so I'm hoping that we can kind of get that out there and they can consider coming to work for us or not. And just, you know, they know, check that off the box. That's not for me,

 you know. There's like, so I think, you know, being able to help people and see it go forward 'cause I also like just the idea like,

 you know, one little, you know, you know, if you have this interaction that ends up being positive and it, you know, just kind of like spreads and carries on, you know,

 like thinking about that. brings me a lot of joy. I love it. Well, I hope you have the opportunity to be that person for other in for other interns in the program.

 And we will include in the description for this episode, a link to the opportunity in Sintellect, which is our application platform, and more information about the Indian Health Service.

 So hopefully you'll get a bunch of applicants to choose from. - I hope so. And I, you know, if somebody is feeling a little hesitant or uncomfortable about emailing me a question,

 just email me the question. Like... (laughing) - Just do it. - Yes, just do it. You don't know. You don't know.

 Just email the question. No judgment. Awesome. That sounds great. Well, Melissa Bivera, thank you so much for your time today. And I really appreciate the opportunity.

 And I sincerely hope that you get some great candidates for this internship opportunity. And lots more people like you who get to sort of accidentally discover what it is that's that they want to do with their lives.

 So thank you so much. You're welcome. No, thank you. Thank you for having me. Oh, this was fun. Thank you for listening to the ORISE Feature Cast. To learn more about the Oak Ridge Institute for Science and Education,

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