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Speaker 2: You're listening to Further Together: The ORAU Podcast. Join Michael Holtz and his guests for conversations about all things ORAU. They'll talk about ORAU story history, our impact on an ever-changing world, our innovative, scientific, and technical solutions for our customers, and our commitment to the communities where we do business. Welcome to Further Together: The ORAU Podcast.

Michael Holtz: Happy Wednesday, and welcome to another episode of Further Together: The ORAU Podcast. My name is Michael Holtz. I am your host, and I am really excited today to be talking about one of my personal favorite topics, ORAU directed research and development, which is in our lingo, ODRD. ODRD funded research projects as a research enterprise that had been around for 75 years. I'm proud and I know most of us who are here at ORAU are proud that we actually fund our own research. So I have three people with me today who are going to talk about ODRD research, Casey Thomas from the Research and University Partnerships Office and Laura Davenport and Davida Hammond, who are two of our current ODRD funded researchers. So ladies, if you would just briefly introduce yourselves and Casey, I will start with you.

Casey Thomas: Yeah. Good morning. Thanks, Michael. I'm happy to be here too, to talk about this. It's one of my favorite projects too. So I am Casey Thomas. I am, as Michael said, in the Research and University Partnerships Office, and I am the program manager for the ODRD program. So I get to oversee all of the documents we put out and coordinate closely with these ORAU principal investigators on their work.

Michael Holtz: Awesome. Thank you, Casey and Davida.

Davida Hammond: Good morning, Michael. I am within OGS, ORAU government services, and I serve as a group manager and project manager within the safety culture program, which is housed and health studies. And I've been at ORAU for about seven years.

Michael Holtz: Excellent. Thank you, ma'am, and Laura Davenport.

Laura Davenport: Hi, Michael. I am Laura Davenport, and I've also been with ORAU for about seven years, and I am an evaluation specialist with the assessment and evaluation team here.

Michael Holtz: Thank you very much. So, Casey, let's start with kind of an overview of what ORAU directed research and development is. I know we have specific priorities. There's a process. There are applications. All of those things. So let's, I guess start with the basics of when we talk about ODRD in our world. What are we talking about?

Casey Thomas: Yeah, it's a great question. And I have to give you props for being able to say, ORAU directed research and development. It's quite mouthful isn't it?

Michael Holtz: It is.

Casey Thomas: So ODRD was started back in 2016 and it's gone through a few changes over the years. We've, just last year in fact, in 2020, we took the opportunity, since COVID kind of threw everything for a loop, to revise the program a little bit. So it looks a little different now, but at its core, what it's always been is an opportunity for our subject matter experts at ORAU to collaborate on a research project funded by ORAU.

Michael Holtz: I know that this is... It's, we fund it, we work with university partners. What are our, and you say the program's been revamped a little bit because of COVID. I know we have a new set of priorities for the kinds of projects that we look for. So maybe talk about those.

Casey Thomas: Sure. So for FY 21 and FY 22, we decided to narrow the priorities to three, and they could be crosscutting projects could be crosscutting. So we actually encourage people to address more than one of these topics in their projects and those topics were public health, data science and analytics, and then diversity inclusion and equity studies. And we had a couple of areas of emphasis within-

Michael Holtz: Okay.

Casey Thomas: ... each of those to give folks a little more to go on, because those are, are fairly broad.

Michael Holtz: Sure.

Casey Thomas: So for instance, public health, areas of emphasis there were health communication, emergency preparedness and response, and worker health. And then for data science and analytics, we were looking at machine learning and artificial intelligence. And then we had quite a few diversity equity and inclusion studies areas of emphasis, climate, environmental justice, minority health disparities, stem education, and effective career and workforce mentoring. So all priorities-

Michael Holtz: Got you. So-

Casey Thomas: ... ORAU works on.

Michael Holtz: Right. I was going to say, so our capabilities are still in there. We're just focusing them on kind of the three key priorities, as opposed to, let's do something on our first development or that sort of thing.

Casey Thomas: Exactly, exactly. And a question we get asked a lot is how did we arrive at those priorities and are they going to change. And so we went through a fairly comprehensive process internally. We had a group of, I think, around 25 people looking at what we thought our priorities were for the next couple of years and what we thought our university priorities were, research priorities were, for the next couple of years and where those might intersect. And so that's how we came up with these three. And the idea is that they will... We'll look at them again. We will actually get together in January to look at the next couple of years' priorities and see if we want to make changes, if we want to stick with what we've got and just kind of how the research climate has changed, what trends are in the field and things along that line.

Michael Holtz: Okay. So Casey, if I'm a researcher or I'm a subject matter expert at ORAU, and I'm interested in pursuing research project in diversity and equity and inclusion studies or public health, how do I approach the Research and University Partnerships Office about the possibility of that research getting funded?

Casey Thomas: It's a great question. So we... There's a couple of different ways. Anyone at ORAU can be an ODRD researcher. It's not limited to certain groups, certain positions, doesn't matter how long you've been at ORAU. Anyone at ORAU can do it.

Michael Holtz: Okay.

Casey Thomas: Our offices here to support. So we put out, every year, we put out a call for proposals, and every fiscal year, I should say, we put out a call for proposals that has basically those priorities listed, has the kind of the schedule, the deadlines also has a proposal template, tells you what we're looking for. The proposal's not super exhaustive. I think it was about six pages last year, which I know sometimes is a little more challenging to have a shorter proposal. And then, the big thing is making sure you have a university partner. So these do have to be split between our staff and the university researcher. No more than 50% on either side. And so we are happy to help facilitate that connection. If you don't already have a partner at a university, we have a mechanism where we kind of do that in reverse too. So if university researchers want to partner with ORAU and they don't have a connection, we help facilitate that conversation and do kind of the matchmaking, as Kathy Fore likes to call it.

Michael Holtz: For sure. Well, so this is where I'd like to bring Laura and Davida into the conversation. And Davida, I'll start with you. Talk a little bit about the research project that you got ODRD funding for, and how did you make the connection to your university partner?

Davida Hammond: Sure, Michael. Well, first I need to start off saying that when I heard about these three focus areas, I was super excited and it's because before I came to ORAU, I had done post-doctoral work in air pollution and public health. And I had worked for the EPA and I felt like that was a part of me that I wasn't able to carry to ORAU just because I'm focused on serving customers, doing safety culture work. And so I felt like this was the opportunity to tap into a different side of my brain that kind of was laying dormant. So first of all, that's what drew me to it. The fact that, oh, this is opportunity for me to get back to doing some research that I kind of had left behind.

Davida Hammond: Now, how did I find my university partner? I really did a search on LinkedIn. I know that sounds kind of weird, but I knew what I wanted to do. I wanted to look at the intersection of COVID 19 and public health, because we have these concerns prior to COVID about environmental justice and that lower income communities, those with lower education, those with more minorities tend to bear the brunt of exposures to air pollutants, because of incinerators, coal-fired power plants, diesel traffic. And so this is something that's been well studied. And I wanted to say, "Hey, if we are in a situation where we know air pollution is decreasing, is it fair to say that air pollution is decreasing the same across the board? Or are those environmental justice communities still experiencing a higher level of exposure relative to other communities?" So the way we typically look at this problem is that we look at our air monitors that are across the nation, and that's not enough, it's only 400 of them to cover the whole mass of the United States.

Davida Hammond: So this idea of using AI, a machine learning, to try to fill in the gaps was very intriguing to me. So I just did a quick LinkedIn search looking for professors that focus in on data analytics, machine learning and AI, along with air quality. And lo and behold, I was looking and I found this researcher at university of Houston, Dr. Choi, and he has this whole air quality machine learning lab. And so I just kind of called him, of course it was an email, and he was very excited about the idea. And we just kind of like two peas in the pod. And it was a very easy process to work with him. And so, I know most people probably already have existing relationships or they use a relationship that is generated by the University Partnership Office. But in my case, I just did a cold call and it worked out well.

Michael Holtz: And you were looking for something very, very specific.

Davida Hammond: That's true.

Michael Holtz: So you probably needed maybe to do a little extra digging to get there, so. Awesome. Thank you, Davida. Laura, talk about your experience a little bit.

Laura Davenport: Well, my experience was quite different from Davida's. My research partner is Dr. Firouzeh Sabri at the University of Memphis. And back in 2019, she actually approached ORAU with a research topic that she was interested in. As a physics professor, she's acutely aware of the lack of females studying physics. And she wanted to look more closely into some of the barriers of entry into the field. And so I met Dr. Sabri back in 2019 and Kathy Fore had done some matchmaking for us after Firouzeh had contacted over a youth. And Kathy reached out to my group, the assessment evaluation team, and found some people who would be interested in meeting with her and developing some research concepts and a research proposal.

Laura Davenport: So I've actually then known her since 2019. And we did submit an unsuccessful ODRD application in 2020, but then as the pandemic came upon us and we maintained our relationship. We realized that we could actually revise our study and look more closely, not only at the systemic barriers of entry into science, but also pandemic related barriers that women are having in scientific fields. And so we've maintained our relationship and decided that we would go for another application and in another application cycle. And we significantly revised our proposal and were successful in obtaining the funding that we needed for our research.

Michael Holtz: Awesome. Laura, thank you for sharing that. So, Casey, kind of going back to what we talked about earlier, there are obviously various mechanisms to get research, our researchers and the university partners connected. We've heard two very different experiences, and I love that we can share that with folks who are listening and so that both our university partners and our SMEs on staff can see that there isn't just one way to make that love connections as it were.

Casey Thomas: Yeah. I love that. I actually didn't know that Davida, that you've got on LinkedIn. That's pretty awesome. I love to hear that.

Michael Holtz: So Casey, Laura and Davida have gotten funding for their projects. What, if you can, talk about what the funding level is, how long is the funding for kind of all those details?

Casey Thomas: Yeah. So I will, again, kind of fall back on. Things have changed a little bit.

Michael Holtz: Sure.

Casey Thomas: When we first started, we did... Projects were 75,000 and we were able to, for FY 21, to increase that our amount to 150,000. So projects are... I'd say that FY 22 is a little bit weird because of yet another change that we're making, we'll pick back up in FY 23 with the standard 150,000 again, moving forward.

Michael Holtz: Okay.

Casey Thomas: Long story short, we're trying to align the ODRD cycle with the fiscal year, so that it's easier on our university partner, easier on our ORAU staff. So we did a little bit of shifting around, but I won't go into those details right now.

Michael Holtz: Sure, sure.

Casey Thomas: So, yeah, there're for a year long projects and Laura and Davida's project started in, yeah, we'll say May. It was April, May of last year. It will end in may of this year. And they had 150,000 split between them and between the university. So they were able to divide that up more or less to the extent that they wanted. We did ask folks to try to keep it as equal as possible. We put a few boundaries on that just to make sure that everyone was contributing equally.

Michael Holtz: Sure.

Casey Thomas: The other thing that I do want to kind of stress is that our ORAU subject matter experts really kind of have the run of how this works. So Laura and Davida are 100% in charge of their projects. It's not me, it's not our office that's handling the reins on this. It all lies with them.

Michael Holtz: Okay.

Casey Thomas: So the ownership is theirs and they're both doing a fantastic job.

Michael Holtz: Awesome. And then, and this may be a question for Laura and Davida as well, after the year, if work needs to continue, or you arrive at conclusions that need more research, can they reapply? Can they... Is there a mechanism to, I guess, keep a project going if necessary?

Casey Thomas: They can reapply. But what we really encourage with these ODRD projects, we really hope that they don't stop there. That they springboard into something that, because we know these folks are passionate about what they're working on, so they springboard into something that they can continue working on. Potentially with an external funder to keep it going 5 years, 6 years, 10 years, whatever it might look like. Whatever's necessary. So that's actually part of what we ask them to do during their proposal and towards the kind of closeout of their one year project, just to start thinking about. Do they write white papers? Do they give presentations at conferences? Do they publish in journal articles?

Michael Holtz: Got you. So they can keep the work going.

Casey Thomas: Mm-hmm (affirmative).

Michael Holtz: That sounds great. Is there anything that I haven't asked you that we want to make sure we cover?

Casey Thomas: We've asked our... Like I said, they are 100% in charge of their projects, but, as I've said a couple of times now, I think, that we're really here to support them. And so in order to do that, we've asked that the three ORAU principal investigators give us kind of quarterly updates on there. We invite their university counterparts. I think Firouzeh joined us on the last one or maybe the one before that, but we just talked through kind of... But we're very cognizant and trying to stress, this is not like a pass fail kind of check in. We just want to hear, what's going on, what progress have you made, tell us about any issues, anything that you need help with.

Casey Thomas: I, not to put Laura on the spot, but I know she had a couple of... She had a software purchase that we needed to help her kind of incorporate. So we were able to work that issue. So it's just kind of those things. Let us know what cool things have come out in your research. Where are you? Are you... Has your project changed? Because we know research changes.

Michael Holtz: Sure.

Casey Thomas: It might not look the way it does when you first started. So we, I think our last one was middle of October and we'll have another one in January or so, or maybe it's February just to kind of touch base and see. And at that one, I think will be really interesting because we'll have passed the six month mark. So I know these guys have already started getting some really cool results.

Michael Holtz: Awesome. Well, on that note, I look forward to talking to Laura and Davida and Julie Crumley, who could not be with us today, about their projects in more depth in future episodes of the podcast. Davida?

Davida Hammond: I am so sorry to add-

Michael Holtz: You're fine.

Davida Hammond: ... something else.

Michael Holtz: No, you're good.

Davida Hammond: I think you may be good to talk about how our workforce is changing with the influx of new people and that the ODRD program gives us a way to bring... It's not necessarily just for people who have experience doing research, but it's a way to kind of build that expertise within ORAU among the people who are coming into these entry level positions. And so it's a nice way to bridge that gap and to provide some type of mentorship to younger staff.

Michael Holtz: Oh, I love that. Thank you for saying that Davida because you're right. I mean it... As Casey said, anyone can apply for ODRD funding. So that's a great point. That it's a good mechanism for folks who are just entering the company.

Casey Thomas: Same thing on the university side too. It's a good opportunity for young researchers there, as well.

Laura Davenport: I just wanted to add that on our quarterly check-ins, I have felt particularly supported by the University Partnerships Office because it's an opportunity for us to talk, not only about our success, but also our challenges and the offices really helped me think about other ways that I could resolve some points where I might be a little bit stuck or just kind of help me resolve other barriers that I have. And so the quarterly check-ins aren't punitive at all. They're actually a support mechanism and I look forward to them because it's just another mechanism to help me move forward with our research.

Michael Holtz: That's great for, and I think an important point, for, again, going back to those check-ins and how important they are. Not just to make sure that the research is progressing, but to resolve any issues that you all may be facing or hurdles that might need to be jumped over for whatever reason or, like you've said, many ways of thinking about something. So, all right. Ladies, I thank you so much for your time today and I will look forward, Laura and Davida, to talking further about your specific research projects and letting folks know a little bit more about what you're specifically looking at. So thank you and everyone have a great day. Thanks for listening.

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