Ôªø- Since we're not regulators, we are not there to point out that someone might have done something wrong or there might have been a mistake made, that is not our role at all. We are really there to help the institution, organization, site, you know, what have you get through an incident and have the best outcome for the individuals involved. So that is really our goal.

- [Voiceover] This is the ORISE Featurecast, a special edition of the ORAU podcast. Join 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 Featurecast

- Happy Wednesday, and welcome to another episode of the ORISE Featurecast. I am your host, Michael Holtz, and I am thrilled. Thrilled is a good word for this today. I'm thrilled to talk to Dr. Carol Iddins, who is the director of REAC/TS, and if you don't know what REAC/TS is, and hopefully, I can get this right, the Radiation Emergency Assistance Center/Training Site, which is one of ORISE's crown jewels and it's also a huge Department of Energy asset, as well as an asset of the National Nuclear Security Administration. And I'm thrilled to talk to you, as I've already said, to Dr. Dr. Carol Iddins. Carol, welcome to the ORISE Featurecast. I'm so glad we finally have an opportunity to do this.

- Well, thank you, Michael. I'm really thrilled to be here as well and always love an opportunity to get to speak with you. We don't get to do it enough. So thank you for having me today.

- Glad to have you. So talk a little bit first, just a little bit about who you are and what it means to be the director of REAC/TS.

- I have been a physician now for, oh gosh, I don't wanna do the exact math, but for a couple of decades and I have experience both in military medicine, civilian medicine, and various specialties along my way of training and education. And I actually was not aware of REAC/TS until I had come back to the local area. I had moved away from this area of east Tennessee where I grew up for my Air Force time and part of my education. So coming back to the area, I got to meet all the people that work at REAC/TS and met them and my experience really fit in very nicely with what they needed for a knowledge and skill set. And it was for me after my work in the Air Force, found a way for me to still have a job with a mission, which was very important to me.

- That sounds great. And REAC/TS has a very important mission. So let's talk a little bit about what REAC/TS does and really why it exists in the first place.

- Well, thank you, Michael. And that is a great question. We were actually established in 1976 and the founders of REAC/TS recognized that there was a real need to have a medical emergency response capability primarily to support the Department of Energy sites and even particularly here in Oak Ridge, having the Oak Ridge Reservation right at our back door. So that was really the impetus for the foundation of REAC/TS. In the early years of REAC/TS, it was really found to be important that we're not just an asset for Department of Energy sites, but also for the United States and throughout the rest of the world. We participate with the World Health Organization, the International Atomic Energy Agency, and many other entities throughout the world to help to respond to different types of incidents that may occur around the world.

- And I know sometimes that has involved, I don't know that it's involved recently, but where you've had to travel sort of on a moment's notice there's been an incident and you have to go, but oftentimes it's sort of telephonic or digital availability to provide advice, support, insight, all of those things if there's an incident somewhere, right?

- Right. And it's interesting, Michael, because recently I heard someone describing us, an outside entity, and they said, "Oh, they're a small group of people that respond to a one-off situation." And it was kinda like, "Hmm." We wouldn't call it a one-off. Now while these incidents don't happen every day, thank goodness, nor do we want them to, our response is much broader than what it looks like on the surface. People usually when they think of radiation incidents they think of Chernobyl, they think of Three Mile Island, they think of Fukushima. And while, yes, two of the three of those were significant radiological incidents, there are actually things that occur much more frequently that involve smaller numbers of individuals. So that can be certainly every bit as important if you are that individual or the family of that individual. So I would say that that's a complete mischaracterization. No, these things don't happen every single day, but we can provide assistance, as you said, telephonically. I mean, these days we can do pretty much everything virtually as we found out in the pandemic, but also still with a physical response. In addition to a physical response, clearly, we are a small group of people. We are not going to be there to jump in the trenches and be treating this patient or that patient, we're really to be there more as a force multiplier. If I can steal that term from the army.

- Right.

- Yeah, a great commercial, that. But really, we're there to be more of a force multiplier. We're there to let the physicians, let the hospital incident commanders, let the decision makers and stakeholders know that, hey, this is a situation you have currently if we take these steps and these actions, you can help improve the outcome of the public health and safety for this incident.

- I know in my early days with the organization, I was impressed by the fact that if there was an incident that you had to physically respond to, like you all have like go kits and you're ready to go within a few hours, kind of less than a day's notice if you do have to dispatch out to site I'm assuming that still holds true, even in a pre-pandemic, post-pandemic world.

- Yes, absolutely. And we do have our equipment and gear that stays at the ready to go, like you said, at a moment's notice. We would not be the first people to arrive on a scene per se. And let me couch this in bigger terms, as REAC/TS, we fall under an area of the National Nuclear Security Administration called the Office of Counter-Terrorism and Counter Proliferation. For short, we call it CTCP, for obvious reasons.

- It is shorter.

- And yes, the office of CTCP manages the Nuclear Emergency Support Team, or NEST. Now we are one of the NEST assets under that organization, if you will. And as part of that, we could be sent, in fact, a lot of our deployments in the past, we may be sent somewhere and none of the other assets may go, or maybe some of the other assets may get sent somewhere and we would only provide some backup response to them. So it can really vary in a lot of different ways as to how we can actually respond. We've had... And I guess part of it too, most of our responses, we don't talk about. There's a saying in the military, you always know the true quiet professionals are those who either cannot or will not discuss what they do, and for us, it's, it's more a matter of since we're not regulators, we are not there to point out that someone might have done something wrong or there might have been a mistake made, that is not our role at all, we are really there to help the institution, organization, site, what have you get through an incident and have the best outcome for the individuals involved. So that is really our goal.

- And I know one of your most important roles is training other medical professionals. So not only do you do that at the REAC/TS site, but you also travel the world training other medical professionals in responding to radiation incidents. You know, I know you've been to places like Morocco and elsewhere in the Middle East. And that's a huge part of what you all do.

- It is Michael, and we actually really prefer education. We do provide education because a lot of individuals aren't aware that for our physician members of our audiences, we provide the highest level of accredited medical, continuing medical education, for physicians that you can attain. So it's not just a, "Hey, we're gonna put on this little kinda show that"-

- A hands-on, yeah, you know.

- Yes, yes. Now that being said, we do provide some training with some smaller in-service type sessions that are more geared towards first responders. And oftentimes those are done either in conjunction with an educational course, or for example, we are about to deploy for a national level exercise this weekend. And with part of our deployment and response for this exercise, we'll incorporate an educational course before the exercise kicks off for the medical assets. And as part of that, that would be more the educational component, but we will also do some more specific training and education for those first responders as part of that. So that's one way in which we accomplished that. We do have our usual courses on site, though the pandemic did throw everybody a bit of a hiccup on that one, though, it actually, we had always wanted to get virtual content out and that was the ultimate stimulus for us is if we can't bring 'em here, let's take it out virtually. So we did create some virtual courses that we'll be putting back online over the winter months. But right now, we are back into onsite in-person courses hopefully from here on out. That's our plan at least. But we do still do the international courses as well. We do both the NATO and what we call multi-lateral courses where perhaps a country does not have their own radiation education entity set up. So we will, through in an essay, we will work to help that country get their educational abilities up to speed and things like that so that they can respond. But we did just have a team, just got back in this past weekend from Estonia. So yes, we're back in business, full steam ahead as it were.

- Back on the road.

- Yes.

- I know one of my favorite days or two of the year is when I get to be part of the exercises at REAC/TS, when I get to play the member of the media that has to try to crash through the emergency room.

- And you do it well.

- The first responders always get a little freaked out. They don't expect, you know,

- Yeah.

- Andr√© the Giant to be...

- Yes. And as a rule, what we do that's different from a lot of courses. Of course, we want everybody learning the material. So we have the didactic portion where, or some people will call it the death by PowerPoint, but we try to minimize that as much as possible. And there is a large hands-on component to our courses so that when we did the virtual version and paired down to what people could really tolerate in a virtual session, taking out the hands-on pieces of the course really shortened our course by half. So we really tried to get people involved and do a lot of hands-on types of things. Now, the course you're referring to, this year we have deferred that course for a variety of reasons. One, we just weren't through the pandemic restrictions for the first one. And now for the second one, trying to get it scheduled conflicts with a lot of other professional society meetings and exercises. We've got exercises right and left right now, so.

- Everyone's trying to get caught up, right?

- You know, I think it's a perfect opportunity to do so as well. While there have been things that have happened during the pandemic that kept us on, what we might want to call a soft alert, to where we're following things very quickly and we had a virtual exercise that was on a global scale that kept us also on our toes 'cause we always participate in that exercise as a real time event. So in other words, when everybody else stops playing at five o'clock in the afternoon, we don't until it's done just to keep ourselves kind of tested on things like that. But yes, it's a perfect time to get back into doing the exercises and to really be looking at our preparedness for obvious reasons.

- Right, absolutely. And the other piece I know really well, 'cause you and I just recently did this, is serving as experts and it's part of the reason that you're available telephonically or virtually as the case may be, but even to experts in the media who have questions about radiation dosing and we actually just were on a call with a reporter from the local newspaper who was doing a story on severe gastrointestinal radiation and you provided great information to him about kind of what to expect and what happens to the body. And so you all can provide that level of information as well. So kind all over spectrum in terms of this important work that we do so

- Well, thank you, Michael. Yes, and thank you for that opportunity as well. Obviously, if you ask a REAC/TS staff member something about REAC/TS for what we do, you will get more than you bargain for, we're very passionate about what we do and we are very dedicated to the mission. So as with our reporter friend, it it's a good thing he was very excited about the subject matter too because that turned

- He was.

- into quite the conversation. He was, I didn't expect that call to go as long as it did, but he was into it and very clearly from observing the conversation, you were excited to tell him and he was nerding out on the information you were feeding him.

- In a good way.

- In a good way, absolutely. Yeah, that's the story.

- Yeah, in a good way.

- The story turned out really well. So is there anything we haven't covered that we need to, either about you or about REAC/TS?

- One of the things that people don't realize as part of our mission is that with our other NNSA assets, we provide support for NASA launches when there is an RTG payload, if you will. I'm probably using a little bit wrong terminology, but for the recent launch of Perseverance, the rover that was launched, we had about two years of buildup with planning education for regional assets in the State of Florida and working with all the other agencies that would be present for the health physics and medical aspects of the launch, should something have gone wrong. And it was a wonderful launch, we've participated on, I think that's our fourth launch, and I should know what year the first one was, but I do not.

- That's okay.

- Yes, and for those of you not familiar with the term RTG, and I'll try to get this one right, it's a mouthful, a radio isotope thermal electric generator. So if you've seen or read the movie The Martian, if you've read the book or seen the movie, they deal with an RTG in that movie. So that just kind of a bit of interest. And in fact, our team gets an award from NASA this Friday. So along with all the others,

- Awesome.

- it was a large community effort to help with that response, so. But yeah.

- Excellent. Well, congratulations on the award. That's exciting.

- Thank you. Thank you, yes.

- REAC/TS has received a lot of honors of late. So that's another feather in the cap, so to speak.

- Well, thank you. Thank you. Yes, well, the Department of Energy secretary has been very generous with awards and as always, we're a part of our larger team of DoE and NNSA, but we're proud to be a part and feel very lucky to have the jobs that we have.

- Awesome. And you're exceptional at them. I always love talking to you and your team about the work that you do. Is there anything we haven't covered that we should?

- The only thing we maybe should mention is we do have this very unique laboratory on our campus.

- Yes, absolutely.

- Yes, yes. We have a cytogenetic biodosimetry laboratory and Dr. Balajee is our lab director and he actually performs a biologic test to assess radiation dose. And the test that he does is actually our gold standard that we've used for many, many decades now. There are newer techniques that are being developed, which is great because it does take a little time to process the tests that he does, but we always still try to compare those or validate those against the DCA, or the dicentric chromosome assay. These tasks do have special indications for their usage. We do get a considerable amount of calls from the public saying, "Oh, I was exposed. I need this test done." And it's generally not really done in that way, but we do try to get people the help they need when they call and just work with their healthcare professionals to make sure that they get the best outcome they can, so.

- Excellent. Excellent, yeah that's another important asset that we have because we're one of three? I've only heard of two

- Well, they're- in the country.

- There are two federally funded, one is at the Armed Forces Radio Biology Research Institute. There are a few other university labs that are primarily dedicated to research, and there are some commercial labs that are devoted to research and development. We are actually just through good will and good spirit trying to partner with the labs in the United States, so that we develop a little more formalized network. Actually, it's such a small community in the biodosimetry world that they all know each other and all know that if someone were in trouble, you reach out and lend a helping hand. But we're trying to make that a little more formalized, so.

- Gotcha. Okay, that makes sense. And actually sounds like a really good thing to do is to have everyone kind of playing together and helping out if, God forbid, there were to be

- Absolutely.

- a large scale incident, so.

- Oh, absolutely. And that is one thing, we do try to keep close ties and relationships with our sister agencies and organizations that will all come together, heaven forbid, should there be an incident, and there's a great group of people out there and we're proud to be part of them, so.

- Awesome. Well, Dr. Iddins, thank you so much for your time talking about REAC/TS and a little bit about the cytolab lab here at the end. It has been a pleasure. It is always a pleasure to speak with you and to learn a little bit more about REAC/TS and what what you all do and the importance that REAC/TS plays in our national nuclear security apparatus. So thank you so much for your time.

- Well, thank you, Michael, and always a pleasure speaking with you as well. And next time I'll try to have some props or something. I didn't even think about something like that, so

- That's okay. That's quite okay. I appreciate it very much. Have a great day.

- Bye, thank you as well.

- [Voiceover] Thank you for listening to the ORISE Featurecast. To learn more about the Oak Ridge Institute for Science and Education, visit ORISE.ORAU.GOV, or find us on Facebook, Twitter, and Instagram at @ORISECONNECT.