

Oklahoma Innovations Radio Show

Air Date: July 25-26, 2015

Guests: **Kathaleen Reid-Martinez, Kenneth Weed, William Ranahan and Kim Falcon,**
Oral Roberts University

>> From the OCAST Radio Network, this is *Oklahoma Innovations*, a weekly science and technology radio magazine, brought to you as a service of OCAST, the Oklahoma Center for the Advancement of Science and Technology. OCAST is the state's only agency whose sole focus is science and technology. The OCAST mission is to identify and fund promising research and technologies that allow Oklahoma to compete in a global market economy from our own backyard. This program features some of Oklahoma's most gifted scientists, inventors, entrepreneurs, manufacturers, educators and business leaders who all have one common goal: developing technology based economic growth for all Oklahomans. Now, here are your hosts Gary Owen and Tessa North.

[Music]

>> Welcome to this week's edition of *Oklahoma Innovations*. Tessa and I are back in Tulsa and guess where we are.

>> We are at the lovely Oral -- ORU -- Oral Roberts University campus.

>> We have never been here before.

>> We have not ever been here before. Now I have been here before. And it is, it is one of the prettier campuses I've ever been on. Has a unique architecture that I'm sure we'll touch on in a little bit.

>> Yeah and it has stood the test of time.

>> Absolutely.

>> Yeah, it's kind of when it was started it was very contemporary and it's just, you know it's like where you can find it if you're on the highway. You can see it, the campus and go okay, I know where it is now.

>> It glows definitely.

>> Yes it does and it's a beautiful campus. And a lot of new things going on. And we're going to be talking to a lot of people on the program today that are integrated into different areas of the university. Why don't we share the mic with Cornell? Cornell, you have been on our program before many times.

>> Yes, I have.

>> Because you run the OCAST Tulsa office. Cornell Cross is a great guy and you always bring some dynamic guests when we come to Tulsa. Tell us about how you got hooked up here between OCAST and ORU. And you brought this guest collaboration to the table.

>> Well that is a long story but I will try to condense it real fast. I actually moved to Oklahoma, Tulsa in 2005.

>> From?

>> Vermont.

>> Vermont, yeah.

>> So I actually attended ORU for my undergraduate. Later on I actually went to TU, so whenever I talk to people I tell them I'm a golden something because ORU is a golden eagle and TU's the golden hurricane, so. I graduated in 2008. Went on to get my master's degree and then eventually ended up at OCAST working as the associate director here in Tulsa. One of the things I really wanted to do when I took the position was to try and bring OCAST programs to the University.

>> Interesting.

>> And that is slowly, but surely now caught on as ORU has actually won 2 of our intern programs now since they have come on board.

>> Nice.

>> This is exciting times.

>> Well that's great. I have a connection with ORU as well because as the national announcer for an organization called Enactus, which is headquartered in Springfield, Missouri. It used to be called SIFE. Some of our listeners might be familiar with the organization. It was Students in Free Enterprise, now it's called Enactus because they now have -- since the organization's started way back when, and I don't know when. And I started with the organization back the early 90's as their announcer. Did their national and international competition. And I've watched this organization grow over the years. And they are, kind of on the same mission as ORU with globalization, integration of universities from around the country, around the world. And it's very fascinating to see that ORU was in competition. I've said their name many times back stage in competition, and so, long history there. So let's turn the microphone over to their provost who has only been at the university about a year and a half. And you have -- I'm going to let you introduce her because she is a fascinating lady but we want to -- I'm going to let you kind of take the lead here, okay?

>> Sure. So today we are talking to Dr. Kathaleen Reid-Martinez. And as Gary mentioned, you're fairly new to ORU. So welcome. Thanks for being on the show today. Can you tell us a little bit about yourself first of all?

>> Well, thank you very much for inviting me. I am delighted to be here and I'm excited about being at ORU. One of my specializations has been in leadership development. And ORU has had a great reputation for its graduates serving in multiple leadership positions and doing extremely well in those. And I've always said that I could tell an ORU grad as soon as I would meet them. They were always one of the outstanding students that I had. So at other institutions I've served as a professor. I've served as administrator, provost, dean, executive vice president for international.

>> Wow.

>> So a lot of academic background. But it's exciting to finally be in an institution where over the years I could identify in my graduate classes, a student who had graduated from ORU. I could tell it immediately.

>> Really?

>> Uh-huh. Within the first week to 2 weeks.

>> What was the indicator?

>> The combination of their capacity to be able to be articulate. To be disciplined in their studies. To have a broader world view and able to see things from a bigger picture as well as to deal with the details. And they knew how to handle themselves in the situations they were in.

>> Interesting. Interesting.

>> So let's, now that we know a little bit about you, can you tell us a little bit about your university here? How big is ORU? How many students do you have?

>> Oral Roberts University is currently at 3,481 students and we have a growing online program.

>> Oh.

>> So we're increasing our numbers through that as well as increasing our residential programs. We have students from all 50 states and 83 nations.

>> Wow. That's amazing.

>> We're going to talk about your mission on globalization education. Something that many Oklahomans may not be aware is this year you're going to launch a 50th anniversary campaign. You want to talk about that? That's quite an honor.

>> Yes, we're very excited about it. This past academic year, we actually welcomed our 50th freshman class.

>> Wow.

>> So that was an exciting time and we had our brand new freshmen introduced and meet our original freshmen 50 years ago.

>> Oh how cool.

>> So that was a very exciting evening and very memorable and very meaningful evening. And then of course we will have in 2017, our 50th graduating class. So we're going to have 3 fun year of celebrating what it means to be an institution that in 50 years, not only was planted with a clear mission and vision, but today still thrives and carries forward that mission.

>> Something the university should be proud of too, and many Oklahomans may not realize this, ORU no longer has any long-term debt. As a matter of fact, I noticed financially that their recent fiscal year closed in the black without using any lines of credit. That's quite an accomplishment for this university and for any university actually. So talk about that.

>> Yes.

>> You should be proud of that.

>> Yes. Many of us have been aware of the situation at ORU over the years. And we've watched the trauma and the difficulties of the past 10, 15 years. But it's also been exciting to watch the leadership that has developed through this crisis situation. Being a dean of organizational leadership and doing a lot of studies in that area, it has truly been a case here, a case study that exemplifies excellence in leadership. From a board that understood what an organization needed to the appointing of the right presidents to help the university move forward. And then the right people in place in the university. But when I say, ORU, the heart is still in the faculty. And those

faculty have stood the test of time and they have kept the mission going and with their backbone, and the excellent staff on this campus who's also part of that backbone, the university could go forward as the leadership took hold of the difficulties and transformed the situation. It's an exciting case study. I love to look at it.

>> Yeah, I can see why you're attracted to the university.

>> Very much.

>> Most people think of ORU as a primarily a theology school, but obviously you know we're here today to talk about science and technology as part of this show. And obviously ORU has quite a big stake in science and technology. Can you talk a little bit about how that works?

>> I can, but I'd like to share with you that we also have 6 colleges. We have arts and cultural studies. We have a business college. College of education. Nursing. Theology and ministry as well as science and engineering. We have 65 majors, 14 masters programs and 2 doctoral programs. So we are very concerned with reaching across the spectrum of the different professions that our graduates will need in the 21st century.

>> So it's so much more than what many people may be aware of. Very cool.

>> What do you think is a challenge in today's times for a university like this? Do you have many challenges when it comes to student recruitment, growing educational programs, those kind of things? Cause this university's grown quite a bit. So talk about that.

>> Yes. ORU faces the same problems that every higher education institution faces around this nation. And I might even say globally. And the challenge is how to continue to meet the needs of the culture and also fulfill your mission. So, being true to our mission, we recognize the importance of carrying whole person into all that we do. And in today's scenario of higher education, the challenge in front of every institution is how will you adjust and adapt to the workforce needs of the culture. So for us that means that we are looking very carefully at how we position our general education. How we weave it into the skills and competencies that will be needed for our students upon graduation. And how that ties very closely with their majors. So that we can continue that mission of whole-person education.

>> The mission for the college on globalization. Could you elaborate a little bit about that? We're going to talk about that a little bit later in the program but just as provost, talk about that.

>> Well ORU has always been international in the way it approaches the students and approaches our constituencies. And it's an institution that we have had students from around the globe over the years. But our current initiative is to actively pursue opportunities for partnership globally and opportunities for students who want and ORU experience to come not only to our campus, to participate in our learning online as well.

>> Now talk about the new globalization center. This is something exciting for the campus.

>> Yes, we're very excited about our globalization center. We are in the process of developing that and I hope that we will have it available. See our start date for that we're anticipating will be now. So we're looking forward to the things that we'll do there. We're going to have a number of different sim -- learning simulations that will be available from all occupational fields. We're designing to increase the learning outcomes for our students. And we were also wanting to work with private companies and industry in the area on student research and internships. We're going

to have a virtual reality showcase room that will be wonderful for full immersion learning experiences and it's just a lot of opportunities. Supercomputing node will be located there.

>> Wow.

>> So, we're looking forward to what we can do.

>> Now Cornell was telling Tess and I when we were coming on the campus about you having the largest television screen. Cornell, what is that about?

>> Oh, well, you know.

>> Oh, well, you know.

>> Coming back 10 years later and thinks to their selves, they're just a little jealous of what's on the campus after you're gone. But one of the things that is obviously extremely different from when I was here and graduated in 2008 is the student center.

>> Ah hah.

>> It was kind of a dream

>> Uh huh.

>> For a lot of people who went here and actually came to a reality and one of the things you walk right into when you go downstairs. You walk into the main hall and you turn to the right and boom. There is this extremely large wall full of, well it can be one large TV or it can be broken up into multiple ones, so.

>> Okay.

>> It's a really neat setup that they have here.

>> Dr. Martinez, we only have about a minute left. Any final thoughts about what you want our listeners to know about the university from your chair?

>> Well just following on our campus facilities and how they're growing. The ability to have fully cloud-based global video conferencing configuration, and to reach every continent. The ability to leverage our telepresence through -- telepresence through robots. All that's happening now at ORU. And our new building is going to enhance it.

>> That's awesome. Coming up, we're going to be talking with a profession of co -- a professor of college of science and engineering at ORU. His name is Kenneth Weed. We're going to find out about -- learn about some of the programs going on there. And also how STEM is going to be integrated in some of this. Got a lot to talk about and we have more guests to follow on the ORU campus when we return on *Oklahoma Innovations*.

[Music]

>> When I invented my new product, I faced a lot of challenges. From securing capital to recruiting qualified employees. It's a very complex path from innovation to the market place and I needed some help navigating the process.

>> The Oklahoma Center for the Advancement of Science and Technology and its strategic partners the Oklahoma Manufacturing Alliance and I2E help entrepreneurs. They support existing and startup companies so they can succeed and create jobs, increase per capita income and grow the state's economy. In its 26-year history, OCAST has funded nearly 2500 research

projects and provided support to hundreds of Oklahoma-based companies. The investments made in these businesses yield high returns for our state by strengthening and diversifying our economy. Advancing innovation is investing in a positive future. That's what OCAST is all about. For more information, call OCAST toll-free at 866-265-2215 or visit us on Facebook or our website at OCAST.ok.gov.

>> Now back to *Oklahoma Innovations* with Gary and Tessa on the OCAST Radio Network.

>> We're coming to you from Oral Roberts University in Tulsa and we are delighted to talk to Dr. Kathaleen Reid-Martinez. She's the provost for the university. Tessa has a very important question because she heard about this through the grapevine, and she wants to ask about it.

>> That's right. So a lot of people are probably familiar with, you know, the architecture, the original architecture here on campus. You know it's very interesting for sure. But there's a lot of really cool new stuff going up here. The building that we're sitting in today is amazing. It's new and it's ultra-modern looking but it still fits in with the rest of the campus. But that just goes along with a lot of the building that you guys are doing and this global learning center that we talked about earlier, I understand that you have a pretty neat high tech classroom that's going in there. Can you explain that for our listeners?

>> Yes, I would love to share with you about that. But just as an aside, I am an art and architectural historian,

>> Oh.

>> With some of my undergraduate and graduate work. So if you ever want to talk about the campus and the technology and innovation, it is in all of the buildings here. That's why you find it progressive and interesting even if you don't always understand it.

>> Right.

>> But it's exciting because that's in the DNA of ORU. And when we look at where we are today, and we look at our classrooms, we're bringing that same innovation -- it's always been in the DNA -- into the classroom as well as in our research. And in the classroom now, with our multimediated functionality, a 100% automated across that classroom, we are able to have motion-activated, 360 degree recording of research in our classes. And we are able to have a faculty member or a student who speaks, the camera will turn immediately to them. A student who may be 5000 miles away on another country or continent, is able even to come back to us and speak to us, and it will rotate to them and bring them up on the screen.

>> Wow.

>> So it will be as though it's seamless classroom, whether you are in Northern Canada or whether you're in China or whether you're here in the U.S. sitting in that actual classroom in our global learning center. So we're very excited about these learning opportunities and these experiences for our students.

>> Now did you say that the, at off mic when we were -- during break I thought you said that some of this technology is operated by a cell phone?

>> Yes, we are actually, as I mentioned earlier, using telepresence robots. And in that process, a student who may be distanced from the campus, it can be any distance from the campus, all they

need is their cell phone. And they need to be activated or connected to one of our telepresence robots and that student is able to go anywhere on our campus.

>> Oh my.

>> And they can take it to our classrooms. To our labs. They can take it to meet an administrator or professor. And it's as if they're present on the campus.

>> Wow.

>> They can turn it. They can move it. It rolls all around. And we have these little robot people all over campus.

>> That's amazing.

>> That's cool. Let's shift gears now and talk to Kenneth Weed. Professor for the college of science and engineering at ORU. Welcome to the program. Tell us a little about you.

>> Thank you, yes. I'm the dean of the college of science and engineering. I've been here at ORU for about 18 years. I attended here as an undergrad. Went on and received my masters and PhD at the University of California in San Diego. And returned here to ORU to teach and have loved it ever since.

>> Now I've read something interesting about you. That you are somewhat of a gourmet chef. It's not totally unusual that chemists tend to dabble in cooking.

>> Actually.

>> I just thought that was really interesting.

>> Well that would make for some interesting meals, let me tell you.

>> Absolutely.

>> I had a corrosion chemist professor in my master's program that intrigued me. And I started participating with him and his cooking endeavors.

>> Interesting, very cool. So can you talk a little bit about, you know, we kind of about, in the very first segment, Dr. Reid-Martinez talked about the different colleges that the university has here. And one of the ones she mentioned was yours, the college of science and engineering. And obviously, OCAST, we're super interested in science and engineering. So can you give us a little bit of an overview about your college?

>> Sure. The college right now has 5 different departments. And that includes behavioral sciences. Health, leisure and sport sciences. And then the STEM related departments that included biology and chemistry, engineering, and computing and mathematics. So.

>> How many students are typically enrolled in your college? Is it one of the bigger colleges on campus? Or growing, perhaps?

>> It's the second largest college on the campus.

>> Excellent.

>> And it is growing. Especially the engineering department is the largest or most quickly growing -- fastest growing department on campus followed by the biology and chemistry program. So the largest department in our college is behavioral sciences. There is a large

contingent of students who are interested in psychology and in social work. So that new social justice major is attracting a lot of attention.

>> Awesome. I'm a social scientist myself so I totally understand the draw there. Now, Cornell talked, touched at the very beginning of the show about -- or touched on a recent OCAST awardee on the campus and I believe he's actually in your department. Is that right?

>> That's right. Bob Leland is a professor of engineering. He just received an OCAST internship. Robert Stewart, chemist, received an earlier internship through OCAST. So we're very excited about that. Especially in terms of our relationship with local industry. One of the engineering focuses is to provide student-engaged learning experiences. That's throughout the curriculum. And that's actually throughout our college. Our student-engaged learning programs are very important and drawing local industry in to provide these relationships is one of the features of our engineering program. Especially at the senior level.

>> Here's something interesting, speaks loudly for your school. 100% of recent engineering graduates were employed with an average starting salary at \$65,000.

>> Wow.

>> That's impressive.

>> They -- we have a program that really focuses in on the FE exam, the Fundamentals of Engineering Exam. All of the engineers will take this exam prior to graduation. By focusing in on that, we really heighten their engineering abilities. It's also an ABET accredited program, which is the engineering accreditation. And that program validates their engineering experience. It is a general engineering degree. That fits well with our whole-person education mindset. To really prepare them for engineering with concentrations in mechanical, electrical and computing possibilities.

>> Do you guys offer masters degrees or are these all at bachelor's level?

>> These are all undergrad level.

>> Okay.

>> That does prepare the students for graduate work.

>> Right.

>> And many of those who have not gone on to walk directly into jobs do walk into very prestigious graduate programs.

>> Sure. Well and I think the fact that you guys are now being funded under our intern program, you know, shows that the students are getting a quality education here but perhaps may, more importantly they're also getting hands on experience in the real world.

>> I'm going to have to interrupt you. We're going to have to take a little break here. The clock always commands and so we have to take a little pause here but we'll be back in time -- more with our guests from ORU in Tulsa here on *Oklahoma Innovations*.

[Music]

>> From Oklahoma City to Tulsa, Woodward to Lawton, this is your science and technology radio magazine, *Oklahoma Innovations*, on the OCAST Radio Network.

>> Pancreatic cancer is the 4th leading cause of cancer deaths. The median survival range is only 6 months. As an oncologist, I see far too many families suffer from the effects of this terrible disease. We need better treatment options for patients.

>> With the support of the Oklahoma Center for the Advancement of Science and Technology, the researchers at Core Biotechnology have what they hope will eventually be a treatment, even a cure for pancreatic cancer. They have identified a protein that if blocked, may prevent tumors or keep them from growing. With help from OCAST and I2E, the team at Core was recently awarded an SBIR research grant to enable them to continue their research and move closer to a treatment for pancreatic cancer. If you are a researcher or small business in Oklahoma and are considering for applying for SBIR funding, contact OCAST at 866-265-2215 or visit us on Facebook, or our website at OCAST.OK.gov.

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>> Research and development, technology transfer and commercialization. Creating high-paying jobs in Oklahoma. It's what OCAST is all about. This is *Oklahoma Innovations* on the OCST Radio Network.

[Music]

>> We appreciate so much you joining us on *Oklahoma Innovations*. You never know, every week, we try to bring somebody interesting. You just never know who's going to pop up and this week we are so thrilled to be on the campus of Oral Roberts University, a globally recognized brands since 1965. Students from all over the world have come, 115 countries, have sacrificed greatly to travel to Tulsa, Oklahoma to get an ORU education. That's impressive. The global need for education continues to grow and we've been talking about globalization programs and initiatives here at ORU. It's very, very impressive.

>> That's right. And before the break, we were talking to Dr. Kenneth Weed, dean of the college of science and engineering here at ORU. And I was say that I think it's really neat that here at ORU, students can come and they can get a great classroom education but they can also get a really good hands on experience through things like internships. And you were telling us, or starting to tell us that you guys actually have a student right now that's doing an internship at a pretty cool place. Can you talk about that for our listeners?

>> Sure. We have one student this summer who is interning at Sandia National Labs. We try to create a wonderful intern experiences for them as part of the interest in combining with OCAST to try to provide these opportunities for students. Another one of our students has received the 2015 Portz Fellowship. This is based on her study of breast cancer shell -- breast cancer cells and her work with Dr. Manahan.

>> Awesome. And so, that's a great Segway to our next guest who maybe I understand, not that I want to date anybody here, but I believe our next guest may have been one of your very first students?

>> That's right.

>> Dr. Weed, is that correct?

>> Early on in my professorship here at ORU, Bill Ranahan was a student of mine. Very intrigued with the mission of ORU. I was very, very excited to be rehire or hire him once he was eligible and thrilled with what he's done

>> He's blessed you.

>> Excellent. So that brings us to our next guest, Dr. William Ranahan. You're a professor in the department of biology, correct?

>> That's right.

>> Tell us a little about yourself. First of all, welcome to the show.

>> Thank you, thank you. It's great to be here. Thanks for having me. I am a graduate of Oral Roberts University. I left here, and I have to say that my training here allowed me to go right into industry. So I worked in Ziman Genetics in Seattle for a while and got some great experience there and ended up at Indian University school of medicine in the molecular biology department and had a really amazing opportunity to discover a whole different kind of target for breast cancer while I was there. So we identified a novel target and I've taken that research here. And part of the unique training I received sort of set me on that trajectory to be successful, both in industry and later on in my PhD work. And when I heard the position was open and one of my favorite professors was then the chair now, the dean, I sent him a little email. Just kind of feel it out, what's going on, you know. And the rest is history.

>> What he's not telling you is he really missed you. That's what trying to say.

>> Yeah, there you go. Yep.

>> So one of the things I know about you, Dr. Ranahan, is that you run a pretty interesting opportunity for a small number of students during the summer.

>> Yeah.

>> You have some students working in your lab. Can you tell --?

>> Right now.

>> I think you have 3, is that correct?

>> There's 4 right now. I got up to 7 last summer, I don't know how that happened. And we mentioned Julianna, this is a great example, she came to me before classes started her freshman year and said, I want to do research. So I was like, all right, my lab is across the hall. Let's do

this. She is fully-trained, she's a sophomore, and she was awarded this Portz Fellowship. They only give 3 away nationally. So we're competing against all, you know, Ivy League schools, everybody.

>> Right.

>> And they only give 3 of these away. But she is fully-trained as a sophomore undergrad generating novel breast cancer research data, and that is a distinction. And so my hope is that I can offer that to other students here that I can get them trained at the graduate level, and get them generating novel data. As I mentioned, I had this, you know, new discovery during my graduate work. We're following up on that here. And we have 2 unique technologies that I had contributions in when I was working on my PhD. One of those, for the first time ever, we're able to edit the human genome. And we've never been able to do that with precision. And last summer, a student at ORU was able to use that technology to target a triple-negative breast cancer cell line and actually kill those cells by targeting this, the human genome editing technology. And another student was able to use this other technology we use where we can actually go to the lab and grow the mammary glands in the lab. And so this is really the cutting-edge of cancer research, is to be able to grow the whole organ, to actually have a functioning organ to work on in the lab. To do all your tests with mice are great and all that, but really the absolute edge of research is with this three-dimensional --

>> Yeah.

>> You know, growing the organs --

>> Right.

>> And testing them. So we're combining kind of the latest technology, and we're doing it right here on campus.

>> ORU graduates are highly sought after. Obviously I could ask you why, but you've given us a pretty good description of why. But can you elaborate on that?

>> Yeah. I guess the difference is a lot of undergraduate education is conceptual, you know. A lot of it is just trying to wrap your brain around the concepts and terminology. What was different for me was that I took that and then went into the lab and did it. Like I actually have a real project. I actually made novel discoveries. I actually had impact. And as an employer, when you're looking to hire, you know, concept is nice. But to be able to execute in the lab is much, much nicer.

>> Right.

>> Oh, sure.

>> You know? Like that's really marketable. So I was able to immediately join a lab, and know what I was doing, and have an impact. And that distinction really just sets you on a different trajectory for your whole career. And that -- I mean, that's what I got here. I got 1-on-1 time with my professors and I got hands-on personalized training. And, I mean, that just made all the difference. And that's what I want to do now that I'm back.

>> Let's talk about faculty research. Looking at some of the information provided to us, it looks like it includes studies in aquatic biology, which is in marine biology. You wouldn't think that being here in central Oklahoma, would you?

>> Yeah.

>> Part of the country. You'd think you'd be on a coast somewhere, right?

>> Exactly. Right. Well, we do have facilities and collaborations that we have, not just here in Tulsa, but reaching out to northern Michigan, also onto the west coast. It's a small university, but the range is really remarkable. And that's, you know, no less so in our department. Because, yeah, you can talk about marine biology, or you can go over to engineering, or mathematics. I'm actually -- 1 of the projects I'm working on this summer is with an organic chemist, and they are synthesizing compounds and then we're testing them against our cancer cells to see.

>> Wow.

>> So there's a lot of collaboration, and I'm not just saying this. Like it is -- it's amazing, the amount of collaboration. Like people are really working together, cross-disciplines, to be more effective. And I think that's a really important skill to have, especially in the STEM. Being able to collaborate, work together, I mean, that's kind of part of the whole person education that ORU is about. It's not just intellectual. You know? Like you really need interpersonal as well. You need to be able to do something with the knowledge that you gain, and a lot of that is interpersonal too.

>> Let's talk about the precollege programs that are available. Are there some STEM programs for high school students?

>> That's right. We have some STEM relationships with local high schools. For example, the robotics. The robotics teams will come here and use our facilities to help build their robots, test them, model them. We encourage the use of solid works and then the design of them. We also have great math and science engineering at the summer academy.

>> I was going to ask you how. They're kind of teaser programs to kind of get them involved in the campus world and --

>> Right. This is for the eighth and ninth graders.

>> Oh, really, that far?

>> This is through the Oklahoma regions for higher educations.

>> Oh, wow.

>> And that program is a very successful summer program.

>> I bet. Yeah.

>> They get to come and do all the fun stuff.

>> Oh, sure.

>> We don't tell them that there's some hard theoretical work behind all this later on.

>> But what about intern programs, or what I would call precollege programs to prepare juniors and seniors in high school for coming to ORU?

>> We have a variety of different programs beyond math and science.

>> Okay. Kathaleen, you want to talk about that [inaudible]?

>> So we have -- primarily in the education field, we have developed these new advantage courses. The advantage courses provides the opportunity for high school students to actually participate in the courses themselves where they will actually interact with the faculty, interact with each other, and actually take courses at their own facilities, at their host facilities, interact with each other but interact with the faculty as well. So these are our -- what we call the ORU advantage programs.

>> Wow. We have about a minute left on this segment. Anything we missed on this point between you 2 guys in the science and engineering part of this, have we missed something that you want to talk about?

>> I think that the rarity of what is happening here is worth highlighting. As we mentioned, Julianna winning this Portz Award and only 3 people in the nation getting that. It is really rare to be trained at the graduate level, especially, you know, doing research at the undergraduate level. It's very, very rare. That is not common. And it's happening right here.

>> That's great. Coming up, we're going to be talking with Kim Falcon, she is director of development operations and sponsored programs, when we return on Oklahoma's science radio technology show. We learn lots of stuff here, don't we? It's like going to college. *Oklahoma Innovations*, we'll be right back.

>> Gary and Tessa will be back after the break with more interesting conversation. This is *Oklahoma Innovations* on the OCAST radio network.

[Music]

>> As a police officer, one of the most dangerous parts of my job is arriving on a scene where an armed suspect has barricaded himself or where we suspect some type of booby trap. We're most vulnerable when we don't know what kind of explosives or weapons are on the other side. It can be deadly.

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>> Every day, the men and women of the United States Marine Corps demonstrate their commitment to defend the American way of life. Since 1775, we have served our nation as a force in readiness. From combat operations to humanitarian assistance, in every corner of the world. No matter where the mission takes us today, or wherever our country needs us tomorrow, we'll always remember the land we call home. As Marines, we take a stand for each other, for our nation, for us all. The few, the proud, the Marines.

[Music]

>> We're back at ORU, Oral Roberts University in Tulsa. Back in March of this year, ORU had a wall-breaking ceremony celebrating the start of construction of a new state-of-the-art global learning center. If you missed the first part of the program, the global learning center, one of the

core components of the university's 50th anniversary campaign, will pave the way for ORU to open satellite campuses around the world. How exciting? Who's our next guest?

>> Well, before we jump too far into that, I actually wanted to bring up a couple of small points that we might have missed in the last segment. Because I actually went here, I'm actually an accolade --

>> He's bragging, folks.

>> Dr. Weed as well who -- I wouldn't be in chemistry if it hadn't been for him. A couple of the things that we didn't touch on, and I wanted to get them real fast --

>> Okay.

>> Was the fact that ORU actually has the Helmerich-funded engineering laboratory, the three-dimensional laboratory that you have for flow dynamics, the DNA laboratory that's downstairs there as well. There's a lot of different science in the building that people don't even know are there and --

>> That's true.

>> I'm wondering maybe you can talk about some of that.

>> So, Kim Falcon, she's director as I said before the break, director of development operations and sponsored programs. That's a big title.

>> It is.

>> I mean, how do you get your mouth around that?

>> It is, it's just words behind the name.

>> Yeah, I guess.

>> Whatever is needing to be done.

>> Well, tell us first of all a little bit about you.

>> Sure. I actually -- my background, I'm originally from Canada, and ended up here in Tulsa because my family came here in the 80s to actually work when it was the city of faith. So I'm a transplant, love it here, wouldn't change it, and it's just exciting.

>> Everybody says that that comes from out of state, you know.

>> Absolutely.

>> It's just -- yeah, once we get you here, you just don't want to leave. Or if you leave, you come back, go, "Why did I leave? That's crazy." So what is your job responsibility here at the university?

>> It's part of the STEM initiative here on campus. My role as the director of research and sponsored programs is a little bit pom-pom waving, cheering, encouraging faculty, as well as just doing some of the legwork to help them branch out to new areas of grants, of research, et cetera. And that's really been, as Cornell mentioned, some of the exciting things in the last probably 5 years. We have been to tap into grant-funding both state, federal, as well as foundational. And many of our new labs have been a result of that. The fluid dynamics 3D visualization lab was a grant project. And it's really helped us, again, tap into student-engaged learning, as well as

industry because in that particular lab, what happens is we're able to expose the undergrad student to fluid dynamics, which then can be translated into knowledge in their field with heater - - let's see, what am I -- heater cores, the oil industry, et cetera. So they're leaving here with a knowledge that they wouldn't normally get, and it's all simply because our faculty have really jumped on board and started to pursue those industry connections, as well as grant-funding. So we're really excited and proud of them.

>> Wow. You are -- you have quite a challenge sometimes, don't you?

>> Many pom-poms, yes.

>> Yeah, I guess so.

>> Yes, we have gone through many --

>> You're a busy lady.

>> And that's okay. Cookie bouquets, chocolate, whatever it takes, a lot of caffeine and -- but they've been great folks to work with and --

>> Tessa, one of the things, not to interrupt you, one of the things I know I've picked up on, and Cornell coming from a former student, a lot of passion about this school. Have you noticed that?

>> You know, it's interesting that you mentioned that, and that Kim has mentioned pom-poms here because I recently had the opportunity to take a tour of parts of campus actually led by Kim. And when she was up there talking to us, I thought, "Man, she is a great cheerleader for this school.

>> There is just so much passion here on this campus with all the -- from all the faculty and staff. It seems like a really exciting place to be right now. So I think it's a pretty cool little jewel we have here in Tulsa.

>> So one of the things we always ask people at the end of our shows when we can is: What is the vision for ORU within the next 5 or 10 years? Where do you see -- because you've come a long way in the last decade? Both of you can probably talk about that. Kim, you can talk about, and Dr. Martinez, you both can collaborate about that. Why don't you both talk about that?

>> Sure. From the college of science and engineering perspective, we're really looking at this as the sky is the limit. With the new leadership on board, the exciting things that are happening here, it really comes back to we're doing this for the students. So with the technology enhancements that are going on, Dr. Ranahan talked about being able to have a student who is living in a different country be in his lab via a robot and be able to look, and see, and interact. So what's happening in the future for STEM here, we can't even begin to dream of what's coming next? We're just very excited. We've also done some internal things to encourage research. We have something called the HERE Initiative where we're internally funding opportunities for faculty to bring to the table new research opportunities to again engage those students, impact them, change their life, and bring them to a greater knowledge at the undergrad level. So from that perspective, we're terribly excited.

>> I guess so.

>> Well, we do have the intention of being a globalized campus and not just a campus that is physically located in Tulsa but, as you mentioned, with partnerships around the globe. And we're not just talking about being globalized. When you talk with many institutions today, many will

talk about being international or global. But when push comes to shove, all too often they are a national university that has some international students or international contacts. But our faculty are actively wrestling with, "What does it mean to be global not just go global?"

>> Yeah.

>> And so we're very excited about that. The technology, our mobile learning, 24/7 asynchronous and synchronous learning experiences, gamification that we're developing in learning process, all of this is putting us cutting-edge in the capacity to be a global institution.

>> Well, the other thing too that I'm impressed with is when you talk about 115 countries in the bio that I read here you're dealing with a lot of language barriers and culture barriers. I mean, how do you do that? That's amazing in an educational environment.

>> Yes. We work actively on those areas of acquiring language, making certain that there's understanding. We're working now in scaffolding with curriculum. We're looking at how we bridge that between our student life services as well as in the academic community. Again, we believe in the whole person so that we know in order to have the most successful graduate who can make the most influence and do the most for their communities and their nations will be those who have that whole person capacity. So we are very intentional about how we're weaving this together across the campus and the development of our learner.

>> And how do you compare yourself to some of the major universities around the state, around the region, when you talk about the programs you offer, the students that you attract? I mean, talk about that a little bit.

>> We can talk about individual programs, and you've heard some wonderful things about them. I mean, the opportunity for a sophomore --

>> Yeah.

>> To have this type of learning experience and capacity, it's incredible. But I want to talk about what is really the jewel of ORU, and that is the synergy. The synergy that comes in our general education, woven and connected with our majors, it is how we're even relooking at that now. We're reinventing how that will be done in the 21st century without losing the values, without losing those basic skill sets that create the university outcomes. And we want to assure that they continue to be socially adept, that they're intellectually alert, that they're spiritually alive, and that they are able to make a contribution in their profession. We are holding on to that, and that's a synergistic approach.

>> Yeah.

>> So when you talk about coming to ORU, it's not exactly which program, which we want you to find --

>> Sure.

>> The right program and get those excellent experiences. But it's about who you will be as a whole person.

>> That's interesting. Good stuff.

>> I think I read somewhere touching back on to your mission to become a more globalized university. But ORU have a goal to put a campus on every continent, is that correct?

>> That's correct.

>> How? I guess, do you have any campuses elsewhere at this point?

>> We are in the process now of establishing some of those partnerships and determining those directions.

>> Awesome. That'll be really interesting.

>> We're in the strategic-planning process of year 1 of our adaptive plan.

>> Cool.

>> That's a whole other show.

>> Yeah, I can imagine.

>> You realize that? All right we have about a minute left. If you could share a final thought with our audience, what would that be about ORU? Because I know there's a lot of people who listen to this program, particularly if you live in Tulsa northeast Oklahoma, you're very familiar with the campus. But statewide, when you hear about ORU or you don't hear that much about ORU, what could you say? Because you guys have come a long way. We've seen the campus. We've seen a lot of new construction recently and a lot of new programs. Talk about that.

>> I think the vision of ORU is very much alive. The founding vision creates a lot of the passion that we were talking about earlier. And that is very much alive not only in the faculty, but also in the students, and even in the new students when they come. So this idea of this whole person education within the context of a learning environment provides a lot of that passion. That leads them into expertise. How do you continue to live that out in your profession? What does it mean to be a whole person chemist? What does it mean to be a whole person engineer? Does that make any difference at all? And I think that question drives a lot of the passion.

>> Well, anyone who's listening out there who has a student who is interested in meshing themselves in a science, math, or engineering program, we certainly would encourage you to get online and check out about Oral Roberts University and some of the new programs they have going. You guys were wonderful guests. We are out of time. We want to thank everybody for being a part of the program today. And, Tessa, see you next week.

>> Next week.

>> At *Oklahoma Innovations*. Have a good week.

[Music]

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