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Speaker 3:

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's storied 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:

Welcome to Further Together, the ORAU podcast. As ever, it is me, your host, Michael Holtz from the Communications and Marketing Department at ORAU. And I know I say this every episode, but I am really excited to be talking to my guest today. My guest is the brand new chief research and university partnerships officer at ORAU, Dr. Ashley Stowe. And Ashley and I have been working on a bunch of projects already since he's been here, so we've gotten to spend a lot of time together. So that in part drives my excitement for this conversation because we've been doing some really cool stuff together. Ashley, welcome to Further Together.

Ashley Stowe:

Thanks for having me, Michael. And you're right, we were working on quite a few things together.

Michael Holtz:

We got a lot of irons in the fire. Ashley, to start with, tell me a little bit about who you are. Where did you come from? What's your background? I know you've got some patents, all that good stuff. Who is Ashley Stowe?

Ashley Stowe:

Let's see. It started a long, long time ago in a faraway land. No, so I grew up in Columbia, South Carolina. Sort of your regular background, lots of sports, lots of goofing off, little bit of learning and ended up going to college to play baseball actually at Furman University in Greenville, South Carolina. And turned out I really liked chemistry, got involved in the chemistry department actually to do construction and I started asking too many questions and so he gave me my own experiments and the rest is kind of history.

Met my wife second day of college, which was awesome. It kept me out of all kinds of trouble. And got married at 21, went to graduate school down at Florida State, then had a couple kids, went to my postdoc out in Washington State at PNNL, Pacific Northwest National Lab. And then it became this period of just wandering across the country, trying out all the national labs. And after three and a half, four years of trying different labs and having three kids in three different states, my wife said when we landed in Oak Ridge, "I'm not sure what you're doing next, but I'm not moving again." And I said, "Yes, ma'am." And we've been here ever since.

So I actually interviewed at ORNL and got hired at Y-12 off of that ORNL interview, which was really kind of trippy. And I've been at Y-12 until April 14th of this year, 18 years at Y-12. Lots of research and development, university partnerships, a lot of engineering hiring and career development kinds of opportunities. I ran their minority serving institutions program, ran their intern program and mostly tried to cause trouble at every turn. The nice thing about working in a government lab is if you do good work and you have creative ideas, there's enough space to work on the things you want to work on.

And from that I was able to meet a lot of really smart people at universities, other labs and form collaborations that turned into a lot of things that ended up on my resume. But more importantly, some amazing impact in terms of the work we were working on. And it's things that you hear about in the news, it's quantum computing, it's hydrogen powered vehicles, radiation detection equipment, virtual and augmented reality. A lot of those kinds of things I had the opportunity to work on. So it is been a privileged career.

And before April, the last three years at Y-12, I was involved in opening the Oak Ridge Enhanced Technology and Training Center out in West Oak Ridge. So I said, it's been a long and checkered past.

Michael Holtz:

I mean, you have some patents. Talk about what your patents are in, if you don't mind.

Ashley Stowe:

Yeah. So probably half of my patents are related to different uses for a semiconducting material called lithium indium diselenide. It's a wide-band gap semiconductor that has all the right properties to absorb thermal neutrons at a really high efficiency. And so as we think about looking for radiation in places that shouldn't be or using neutrons to do science, it's a material that shows a lot of promise in those types of uses.

And so I think I have nine patents across that suite of technologies. Everything from neutron imagers to spy decoder rings, because the material changes color based on how many neutrons hits it and that's kind of cool. One thing I'll point out on the patents, we had one patent with a Slovenian company. And so here I am in East Tennessee doing work for the Department of Energy and end up with the opportunity to partner with a small startup company in the country of Slovenia, which I'd never heard of before meeting them. And we ended up making a detector that got sold based on that technology, which was really cool.

Michael Holtz:

That's awesome. Your work really has taken you everywhere.

Ashley Stowe:

Yes.

Michael Holtz:

And it feels like you are always upped, in the best possible way. There just always seems to be a lot going on. You're the new chief research and university partnerships officer at ORAU. What drew you to ORAU? What was it about this organization that you wanted to become part of it?

Ashley Stowe:

Well, it's probably a cliché answer, but the people of ORAU. Being in Oak Ridge for 18 years, I knew about [inaudible 00:08:20] drove by the main campus building every day moving through ORAU. And I knew a few folks over here, Ken Tobin, of course, Cathy Fore, Andy Page. And everything I heard about ORAU was it's a great place to work, they're great people here and they do something that's important. And so that got me interested.

And then I guess three or four years ago, Cathy and Ken and I started to have more conversations because as ORETTC director, I asked ORAU to stand up and manage our steering committee and bring in experts from around the country to help ensure that ORETTC was going in the right directions. And so that gave me a little bit bigger window inside of ORAU. And at ORETTC I knew I was there for a certain period of time to do a certain thing, which was stand it up, get it started, and then I needed to get out of the way so that it could continue to grow.

Michael Holtz:

Okay.

Ashley Stowe:

What it takes to found something is a little different than what it takes to continuous growth. And so I knew that it was about time for me to get out of the way, and that happened to be about the time that Ken was announcing his intention to retire and the job was posted. And so took a swing at it and here I am and I'm really excited to have made that change.

Michael Holtz:

Awesome. Well, as someone who, and listeners of this podcast will know, I am a huge fan of the research and university partnerships office and the work that we do there. As I mentioned at the top, since you've been here, you and I have had the opportunity, and other members of the communications and marketing team, to work together on a bunch of stuff that's happening really quickly, including the ORAU STEM Accelerator and raising awareness of how we engage with our member institutions and talking about employees seeing themselves as researchers and the Giants of Oak Ridge Project in the Children's Museum.

So talk about, I guess, all of these things because they're all important, certainly from the perspective of someone who is involved in this work with you. It's all really important. It all seems really, really relevant right now as we are seeing a change in the government and how we're adapting to meet the changing needs of the federal government enterprise.

So I guess let's just sort of hit that list one by one. Let's talk about kind of laying the foundation then with everyone at ORAU can be a researcher, and I have experience in this area. But talk about why that's important for ORAU employees to see themselves in that role.

Ashley Stowe:

Yeah, it's a great question and it's something that surprises me and frustrates me everywhere that I've been, this concept that you have to be blessed to be a researcher. And it's just not true. Early in my career, I was a freshly minted PhD with far too much arrogance to go around and I thought I had all the answers. And I built a project that technically was really, really smart and it was a piece of equipment that did some surface quality measurements. And I asked my technician that was working with me... I explained it to him and I said, "I need you to push this button and record these measurements and it gives you a number." Let's say the number was one to 10 and it had to be below five to be good. Well, he asked me a couple of questions and he goes, "Well, I can tell you whether it's good or bad just by looking at it."

And I went, "Oh, that's nice, but do my experiment." Well, in the course of about an hour every time that he ran a measurement, he told me beforehand whether it was good or bad and was a hundred percent correct. And then got, by hour two, to the point that he was telling me the number that my machine was going to tell me from the measurement before he took it, and was right every single time. So I finally just stopped and asked him, "How are you doing this?" And he said, "Well, I can just look at the color of it." There was a slight color change in the way that it reflected. And so that taught me a really good object lesson of there's a lot of smart people that have a lot of incredible and diverse experience that can be used to provide insight into really complex problems.

So instead of building a $5 million machine, I could have started by asking him what does he observe when he does the job every day? And then build a solution around things that he already intuitively knew. And so I tell that story because he was a technician with 30 years of experience and wasn't considered a researcher, but I learned a ton from him that shaped all of the rest of my experience. And I'll tell you, every single one of my patents came after learning from him and applying some of the same things that he just intuitively did.

So, again, if we're willing to open up our experience to say, "Well, I do have value to bring to hard problems regardless of my credentials," we can get to even better answers.

Michael Holtz:

That's awesome. And it is exciting from my experience. As you know, I consider myself a researcher because of the time that I've put in here. And it really for me started with a question of, "We used to run a cancer hospital, why don't we talk about that as much as we could?" And then took that history combined with my experience as a cancer advocate and said, "I have these questions. And perhaps with some research dollars we can put some weight behind these questions and do some research."

And one of those questions is being studied, the benefits of peer-to-peer support for men with cancer. And it all started because I said, "We should talk about this more." And so it starts with a question. And we all, I think, have those kinds of questions about our work, about the work that the company does or has done or, as you said, that we have experience with that no one else does. So we might be the only person who has that question, but we can look for answers, right?

Ashley Stowe:

Well, that's exactly right. Yeah, that's exactly right. And you've got the perks of being a researcher too. I mean, not only were you able to work through a problem and make discoveries, but you were able to go and present your findings at a conference, which is so cool.

Michael Holtz:

It is cool.

Ashley Stowe:

And to me, it's one of the perks of being a researcher. You get to travel and talk to other people who are experts and share your expertise as peers in the learning process. And there are a few places that can be that kind of incubator of sharing great ideas and great findings.

Michael Holtz:

So I will just say to my fellow employees who are listening, think about that and get involved because it really wasn't that difficult to do. I mean, I came to the RUPO team and I said, "I have a question." And we have thought leadership research awards, and I applied for one and got one and was able to do that work. So the mechanisms are there to allow that to happen. So I guess speaking of which-

Ashley Stowe:

That's right.

Michael Holtz:

We can talk about that.

Ashley Stowe:

I was going to make that same transition. We have the innovation partnership grants, we have the Powe awards, and we have ODRD. And ODRDs were just turned in the last week and we had the most proposals that RUPO has ever received, and by the most people. It's a broader group of people and more people submitting their research ideas. And that to me is really exciting.

We still will only have four awards, but the fact that there's more interest in exploring ideas is the first step of what we need to be able to go ask for more funding to grow the program. And I personally believe there's great value for the individuals who are researchers here at ORAU, but there's also incredible value in doing the research as it leads towards more proposals and winning additional funding or additional programmatic awards from external customers.

So to me, my sort of philosophy is these internal investments, whether it's the IPG, the POW, or the ODRDs, these their levers we can pull internally to improve our chances of winning external funding and diversifying our portfolio and having greater impact across ORAU and across the nation.

And so I get really excited when there's a lot of interest, there's a lot of people putting ideas out because you get the best ideas that can be developed into the best proposals for the next phase of the development for the external funding programmatic kind of cycles.

Michael Holtz:

For sure. And it helps with the university partnership aspect of our work in that it helps us engage with member institutions, the ODRD projects, our partnerships between our subject matter experts and a subject matter expert with a university partner depending on the work. And the great thing is Casey Thomas and Cathy Fore have this awareness of where folks expertise lies.

So when we were talking about the study on peer-to-peer support for men with cancer, Casey was like, "Oh, this is who you should talk to." And we did, and she loved the idea. And so it gets the proposal off the ground, and then of course you have to go through the application process and sort of vetting the proposal. But it got funded, and I'm exceedingly proud of that, and we will have data in a few months. So I'm excited about that as well.

Ashley Stowe:

Yeah, that's great. Yeah, and again at ORAU's core, we have always had a university consortium and we've always leveraged the excellence and the diverse expertise across these universities to improve the work that we're doing. And so in ODRD, we're able to do that. And I can't wait to see the results of that study in particular.

Additionally, with the Powe Awards, it's been going on for 35 years, which is quite a history in and of itself. And I've heard anecdotally, and I am still trying to get our team to gather the data, but I've heard anecdotally that at least one university, if they looked at their fellows, the people who've achieved the highest levels of recognition across a variety of industry organizations at that one school, every one of those fellows has a Powe Award in their CV, in their resume. That's a pretty good leading indicator of excellence.

Michael Holtz:

Absolutely.

Ashley Stowe:

That to me really moves the needle. And as we think about this mutual benefit of the consortium, what are we getting from the universities? Well, we're getting access to a great diversity of expertise without having to build it from inside or anything like that. But also the universities are getting those kinds of awards as leading indicators of really good staff members or faculty that they have, just like they're getting access to the world that we live in and the types of projects that we are trying to address and impact we're trying to have across the nation.

So it's a really great synergy that we have always had with the universities. And as I'm stepping in, I'm hoping that we continue to build and magnify that impact in both directions.

Michael Holtz:

And to that end, just kind of building on that a little bit, I know we've talked... And to the extent that we can, because I know there's a bit of sort of secret sauce involved in this. But we have research clusters of groups of universities that have specific skill sets in different areas. Research focuses in different areas. And I know we're endeavoring to do a lot more around those clusters and helping those universities be part of meeting our customer's needs.

Ashley Stowe:

So we have a series of research clusters that really have been stood up in an ad hoc fashion. In other words, someone from inside of ORAU reaches out to Casey or Cathy or Tracy to say, "We have a customer who wants expertise in X, Y, and Z," or we have an industry partner reach out to ORAU saying, "We're looking for universities with this expertise to so that we can apply to a proposed funding call."

So one I'll give you briefly is a FEMA call to look at earthquake preparedness and a research cluster was stood up to support that along with folks in OGS. And that has brought university expertise to the table, allowed them to partner with us, and we're performing that mission really well with the scope that's been granted. And we were able to move quickly to set that up. And that's the great thing about the consortium is we can move quickly. We're now, I believe, at the point that we are going to take that team and apply for a second grant with USGS, again, with the earthquake preparedness and OGS team to be yet additional work coming in and engaging the universities through collaboration.

But another example I'll give real quick is we had a vendor, an industry partner, that reached out to us and said, there's an intelligence community call for funding and we're interested in universities that could support with AI expertise and work in this unique secure environment kind of setting. And in a matter of just a couple of days, we had 19 universities respond that they had those capabilities and 11 of them actually sign letters of commitment to support that proposal process as it moved forward.

So we can move quickly and create teams that sign up with their expertise and that their true capabilities, their true ability to commit to the work if it is funded and build very strong teams. And so that's something that is a competitive advantage for ORAU with industry partners wanting to come to us, but it's also really important and a competitive advantage from the universities' standpoints that they can access all those opportunities through us.

Michael Holtz:

And we talk about the consortium being a differentiator for us, but that really is a demonstration of how it is a differentiator in that it complements and enhances the subject matter expertise that we have in-house and expands it to our university partners and brings them into the fold, so to speak.

Ashley Stowe:

Yep, that's exactly right.

Michael Holtz:

Let's talk about the other sort of major activity, I guess, is the ORAU STEM Accelerator and the focus on nuclear energy workforce capacity building and trying to get people trained up to meet the needs of the, I guess, coming existing nuclear renaissance. Because people are needed to do this work, right?

Ashley Stowe:

That's right. Yeah. So if you listen to the East Tennessee Economic Council, nuclear is here. It's already here. And Oak Ridge is unique. Oak created the nuclear industry basically, from the Manhattan Project to the work of Admiral Rickover and the nuclear navy, to TVA and the graphite reactor at ORNL. So this is really kind of the birthplace of nuclear and it will be the epicenter of the nuclear renaissance as we think about where we are today and moving forward with the diversity of missions across Oak Ridge.

And so a few years ago, the ORAU board made the recommendation to create this ORAU STEM Accelerator and then pointed it at nuclear first. Liv Blackman and Ken Tobin were leading a lot of that, with other folks helping out. Well, I guess as far back as 2023, Michelle Goodson took the reins actually the week after I started. So just at the end of April.

Michael Holtz:

That's right.

Ashley Stowe:

And so what started a couple of years ago with a lot of work that was kind of quietly happening behind the scenes is now springing to the forefront this summer because of all of the things that are happening across the region and the country, everything from President Trump's executive orders around a nuclear renaissance to Governor Lee's thrust and funding to build a nuclear workforce and lead the nation here in Tennessee, to the Oak Ridge Corridor Development Corporation, a economic development corporation that encompasses the city of Oak Ridge, Anderson County, Roane County area, and all of these commercial and government missions.

There's so much activity and momentum. The fact that we, ORAU, we're working diligently behind the scenes to gather information from all of the stakeholders has positioned us to stand up this summer and say, "We can help solve the problem by taking a leadership position across the city." The Oak Ridge Corridor Development Corporation has asked us to lead a 45-day nuclear workforce challenge, which we are deeply in the middle of.

I'm not sure when this will go to air, but that is due July 14th of 2025. And we're talking with leaders across the whole region, employers, economic development, government, all of the educators, the organized labor, everyone that has a place at this table to pull this off. And we have the opportunity to say, "This is what the solution should look like and here's what true partnership looks like." And it goes back to our core of providing national impact and doing that by bringing together a consortium of entities to bring the best out of all of them.

Similarly, we are intending at the end of the summer to stand up the Tennessee Nuclear Energy Workforce Center, TNUC, excuse me, as we call it, on the ORAU campus. We're looking to put it right next to Pollard and the Paul Frame Museum so that we get a consolidation of all of these assets that we have in nuclear workforce and training to make TNUC... I've kind of been calling it the welcome center for next gen nuclear. So it is a single place both physically and virtually where a citizen that wants to figure out how work in the nuclear industry, what training they need, an employer that's looking for workers or an educator that's looking for what type of workers need to be created, you can bring all of these opportunities together in a single place so that no matter where you are in the nuclear success model, you can see yourself and figure out where you need to go.

And that's why I kind of think of it as a welcome center. When you come into a town, you go to this place and say, "Well, what is it I'd like to do today?" Well, I need some nuclear credentialing at a Roane State or at the trade hall or at the University of Tennessee or at ORAU, maybe it's PTP, or maybe I need to go over to AMSE and take my kids to learn that sort of foundational awareness around nuclear, or the Children's Museum of Oak Ridge to learn about the history of the Manhattan Project.

So again, this region is amazing because it has so many assets that already exist and we're trying to coordinate all of them and maximize their value to achieve this grand challenge of a nuclear workforce of tomorrow.

Michael Holtz:

I love the idea of the welcome center and I can't wait to see it come to fruition. Because I know it's been a lot of energy and a lot of great work has gone into you making this happen and knowing that it's coming I think is exciting for a lot of us. So a lot of excitement, a lot of excitement in the days ahead, for sure.

Two other projects, just to touch on, you talked about the Children's Museum of Oak Ridge and also the Giants of Oak Ridge Project, which I know two totally different things.

Ashley Stowe:

Yes.

Michael Holtz:

The Giants of Oak Ridge project though is really exciting, and this is another project that you and I are working on together. But really again, bringing together what from the outside looks like a diverse group of people, but working together for a really brilliant and I think innovative project. So talk a little bit about that.

Ashley Stowe:

Yeah. And of course, this is something that we're partnering on and I'm so thrilled that you're a part of that team to bring a storytelling aspect to it. So what it is, this was an idea that Gordon Fee, who's got a lot of history around Oak Ridge, talked to myself and a few other leaders about, oh man, two to three years ago.

And the concept is Oppenheimer's got a statue and General Groves has a statue and Einstein has a statue. And turns out there was a lot of amazing history that happened here in Oak Ridge around the nuclear age. And so there's about eight individuals that he and a few other folks that were involved identified as key players to the nuclear age, to creating the nuclear industry, the nuclear navy and all of that, that had roots in Oak Ridge. And so he wanted to create a statue garden that helped to tell that story. And it included... Now, I don't remember all the names off the top of my head, but I know Ken Nichols is one of them, Admiral Rickover is another, and we're also going to be... Or his vision was to get a conning tower, which is the part of the submarine that sticks up out of the water to put as part of this.

So you kind of tell that story from the Manhattan Project all the way through to the nuclear navy. And it was a project that was going to involve a lot of different folks. The folks over at ORDIC that are working in working in AR, VR, the museum, the city, the students at Oak Ridge High School with what Mark Buckner is doing in his wildcat manufacturing.

And so as time went on, and we kind of all thought about this, a few pieces were taking place in this summer. It's kind of coming to a head where the team involves us here at ORAU support from AMSE, from the City of Oak Ridge, from Oak Ridge High School and Wildcat Manufacturing. The equipment that those students are using at Oak Ridge was donated along with staff time from ORNL. And then on the digital side, thinking about immersive experiences, digital twins and augmented and virtual reality type experiences, it's the ORDIC team.

And so we put all of our expertise together, and this summer the students at Oak Ridge are fabricating a 12-inch tall statue of one of those gentlemen from history, building in a lot of components of advanced manufacturing, digital twins, and this concept of born qualified. So if we think about the workforce of tomorrow, those are the types of keywords and ways of working that employers are putting into place or the technology is building out for the future.

So these high school kids are getting experience in a practical way on how to work in a 21st century advanced manufacturing prototyping type of job. But they're also learning about all of the digital twin and the digital engineering side of things as well as they're learning about storytelling around how do we not just make this, but how do we craft a story that other citizens can tell through the process and then through your expertise in... Another gentleman from ORDIC will be recording that, recording the student experiences, and then be able to deliver a small statue with an XR experience and sort of a behind the scenes how it was made to the key stakeholder companies that have supported this effort to show the community what's possible when we all work together and we think differently.

So in the grand scheme of things, it's a really small project, but I think it shows what's possible with when we remove constraints or at least our typical constraints. Now the end vision is they actually build full-size statues and they build the statue garden that theoretically would be what these high school kids envisioned. And maybe even these high school kids build the full-size statues themselves with the other players across the community, adding in their pieces to a full-blown outdoor statue garden experience like you might see on the National Mall in D.C., but right here in Oak Ridge.

Michael Holtz:

Sure. It's really exciting and to spend time with the students and also the interns at ORDIC who are doing the virtual reality aspect and the digital twin aspect has really been eye-opening for me just to see what's possible and how capable young people are with the technology. I mean, they're essentially building a digital twin of Ken Nichols, fully dressed, fully... and recording his voice. Just all the pieces are amazing.

Ashley Stowe:

Well, and I think you hit on something really important that I hadn't mentioned in this conversation. So, yes, we are building a digital twin of an individual from history, a person. We got permission from his family to do so and to use his voice. And so the last piece of that project this summer is we're building an AI-empowered interactive experience. So when you launch the virtual experience, you can have a conversation with this person from history using his own historical written and spoken words, so his own persona, at least as best as we can get with permission from his family.

Michael Holtz:

Sure.

Ashley Stowe:

So that in a way you get to speak to him to learn what he did, why he did it, but it's not reading in a book, it's not watching a video, it's having a conversation through the use of this technology. That's just fantastic to me. It's a different way of seeing and interacting with the world to help us learn.

Michael Holtz:

Absolutely. I'm really looking forward to spending more time with the students and with the team at ORDIC to see the statues be fabricated and all of this come together, at least this initial summer push that we're going through. But getting to spend time and see them thinking and thinking through problems and problem solving on their feet has been really fun for an older guy.

Ashley Stowe:

Yeah. As you say, the capacity of young people to think and problem solve and innovate and create is usually only bounded by us, not by them.

Michael Holtz:

Right. Right.

Ashley Stowe:

And so letting them loose to figure some stuff out is a lot of fun to watch.

Michael Holtz:

It is, absolutely. Lastly, on the 9th, we are re-signing or re-upping, I guess, our memorandum of understanding with the Children's Museum of Oak Ridge to support K through 12 programming, which is something we do really all year long with internally and externally and with partners like Seymour. Talk about why this is important.

Ashley Stowe:

So I'm really excited to be able to sign the renewal of the MOU with the Children's Museum of Oak Ridge on July 9th as an ORAU executive, because I also serve on the Children's Museum board, as does Manon Fleming, and Jennifer Tyrell used to, just recently rolled off the board. And it was something that actually, I think, she put most of the into recreating and for whatever circumstances it wasn't able to get executed before she rolled off. And so I'm really glad that we could pick this back up.

And now is a good time to reiterate our commitment to the community, to the Children's Museum. It was my kids' favorite place to go as they were growing up in Oak Ridge, to wander through the old school building and see all of the different diverse pieces of the museum. And so on the 9th Seymour has a children's camp and ORAU will be going to do a robotics experience with them. And it's a great time for us to come and just say what the Children's Museum is important to the awareness and the education of our youth. And we, ORAU, are committed to providing those STEM education tools and committed to growing STEM participants and STEM leaders even at the youngest ages.

And so for me, yeah, I'm going to do the MOU signing, but I'm really excited to watch these kids play with the robots and see if they can teach me something from all the robots as well.

Michael Holtz:

Absolutely, absolutely. And hopefully spark some interest in robotics and beyond.

Ashley Stowe:

That's right. And maybe we'll learn something from them even they can be researchers.

Michael Holtz:

That's exactly right. That's exactly right. They can be. For you, Ashley, I guess on that subject personally, how was your interest in science fostered? Was it an interest that you always had? Was it something that you fell into late?

Ashley Stowe:

Yeah, I knew from 15 or 16 that I wanted to do chemistry.

Michael Holtz:

Okay.

Ashley Stowe:

I have this philosophy, there's two kinds of people, people that want to build stuff or break stuff. I was usually on the break stuff side because I really liked firecrackers and things that went boom. Rapid disassembly was something that I was very fond of. And so when I got into my chemistry class in high school, I had this young teacher that basically threw us the keys to the chemical cabinet and said, "What do you want to try today?"

And so unlocking and creating this sense of you can do whatever. And he made sure that we didn't burn the building down or any of that, but he just allowed our creativity to go. And I remember one time he showed us how to make fireworks with common chemicals. And we started piling it up on this big glass plate, and he paused right before we lit it all on fire. He's like, "Hang on a second, hang on a second." And we thought we were in trouble. And he said, "Hey, let's go outside for this." And it wasn't, "Don't do it." He was just like, "Let's just go outside." It was a good idea because-

Michael Holtz:

Let's be a little safer.

Ashley Stowe:

Yeah, so it was on sort of a eight-inch round glass plate with some sulfur and magnesium and a few other things on it. And I never found the glass plate after we set it off.

Michael Holtz:

Really?

Ashley Stowe:

It was just gone. I must have vaporized. But that ability to take common things that are stable by themselves and put them together and make different things happen really sparked my interest in exploring new things. And so that was kind of what got me started. I thought that I wanted to do things around chemistry or materials and nuclear. I actually almost signed up for the nuclear navy right when my scholarships came in. And so I wandered away, but ended up where I thought I would start just on a way cooler path than I could have ever imagined at 15 years old.

Michael Holtz:

Awesome. And it sort of goes back to what you said earlier about if you set young people free without a lot of boundaries, right?

Ashley Stowe:

That's right.

Michael Holtz:

... they can get a lot accomplished and figure some things out. Who are your scientific heroes?

Ashley Stowe:

So my undergraduate research professor, Lon Night, who actually just died this May, is definitely one of my major mentors in science. Because he saw a 17-year-old baseball player and said, "You'll be a great chemist."

Michael Holtz:

Awesome.

Ashley Stowe:

That vision was profound. And I remember my first paper, he rewrote every word that I wrote down on my first draft, including correcting my name, which I thought I had figured out by the time I got to college. But he followed it up and said, "Good work. This will get published." And I looked down at it bleeding all over because he still used all of old red pens.

Michael Holtz:

Oh, sure.

Ashley Stowe:

And I just remember thinking, "Oh, okay, I can do this." And so he's one, although controversial, I think of people like Einstein, I think of people like Elon Musk, I think of people even like Benjamin Franklin who had this level of curiosity and drive to not accept the norm, that they thought differently. And so that has always inspired me to look at the norms and ask, "Is it this way? Because it always has been or because it's supposed to be?"

Michael Holtz:

Right.

Ashley Stowe:

That really challenges me to think differently and think about what should stay the same and what is just there because it's always been, and maybe if we change it, we could end up with something better. So yeah, those are a couple, one personal and a few others that I've just read about and kind of watched at a distance.

Michael Holtz:

Right. So we've talked a lot about life at ORAU and all of the stuff that is going on, because it's a lot. What does life outside of ORAU look like for you?

Ashley Stowe:

So I've got three kids all in college, a lovely wife that teaches at Roane State. And about a year ago I left West Knox and suburbia and bought a farm out in Roane County. I've got 21 acres of raw farmland, built a house. And most weekends I'm cutting trees down and burning down the forest and reseeding with wildflowers and grasses and moving cattle and chasing chickens and all that kind of stuff. So I guess on the weekend I'm a farmer, which is a pretty good balance from using my brain all week.

Michael Holtz:

Right.

Ashley Stowe:

So yeah, I mean, I think that's it. I love being outside. I love doing manual labor and seeing a lot of things that we do, it takes a while to see a conclusion, it takes a while to see progress, and it never ceases to fail when you take a chainsaw to a piece of wood at the end, it falls over and that's good progress. That feels really good. So it's a nice balance between thinking hard all week and working hard with my hands all weekend.

Michael Holtz:

Nice. I like that a lot. Last question for you, Ashley. What brings you joy?

Ashley Stowe:

What brings me joy? Oh, man. Well, I love Jesus and he has blessed me with so many great opportunities to see a lot of places, to meet a lot of great people, to be humbled when I needed to be humbled and have good friends to give me wisdom in any of those moments. So that brings me significant joy. My wife and my kids. I don't need a whole lot more than that.

Michael Holtz:

Awesome.

Ashley Stowe:

So, yeah, I mean that really brings me joy. I guess the other thing is working with students a bunch. At one point I had 23 students in my research group, probably 10 years ago, and seeing a couple of students that didn't think they could make it have that aha moment that allowed them to overcome the paper tigers in their life, or whatever it was, the barriers that they set in front of themselves that makes you feel really good. Not that you had any part to play in it, but that you got to watch them remove their self-imposed barriers and figure some stuff out, get the light bulb to go off. So to me, I mean, that's a practical thing. But, yeah, those are the things that bring me joy.

Michael Holtz:

I love it. All right. Well, Ashley, thank you so much for spending this time with me. It has been great getting to know you even better and spending some more time with you, and I look forward to continuing our partnership and working and helping make all the great things that are happening come to fruition.

Ashley Stowe:

Michael, thank you so much and have me on anytime, man. I love chatting.

Speaker 3:

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