Rich Granger

Rich Granger: [00:00:00] We would love to see startups growing out of this in addition to established companies. We have a phrase we use with our industry partners, we'd tell them we want them to come here to test and stay here to grow. So, even if you didn't originate in Ohio, we want you here.

Annalies Corbin: [00:00:17] Welcome to Learning Unboxed, a conversation about teaching, learning, and the future of work. This is Annalies Corbin, Chief Goddess of the PAST Foundation and your host. We hear frequently that the global education system is broken. In fact, we spend billions of dollars trying to fix something that's actually not broken at all, but rather irrelevant. It's obsolete. A hundred years ago, it functioned fine. So, let's talk about how we re-imagine, rethink, and redesign our educational system.

Annalies Corbin: [00:00:52] This is Annalies Corbin, your host of Learning Unboxed. And I am super excited today to be back in the studio at WOSU. And we, today, are going to be talking about the role of transportation, mobility, things that fly, things that drive, things that scoot along, you name it. It is the thing that everybody is talking about across the country and around the world, what do we do as it relates to transportation?

Annalies Corbin: [00:01:19] And so, there is an amazing opportunity for schools to be part of the conversation tied to a variety of different transportation issues around the globe. And joining us today is Rich Granger, who is the Managing Director of Workforce Development at DriveOhio, which, by definition, is the state's one-stop shop for connected and automated mobility solutions on the ground and in the air. That's the official statement. So, Rich, thank you so much for joining us.

Rich Granger: [00:01:52] Thank you for having me. I'm thrilled to be here.

Annalies Corbin: [00:01:54] So, let's start with that official statement about what the heck is DriveOhio and then, we'll get into the weeds of the really cool stuff you're doing with the schools, because I've known Rich for a number of years now. And so, it's been really, really fun to sort of see the evolution of what he's got going on in school. So, let's start with DriveOhio. What the heck is this thing?

Rich Granger: [00:02:13] Sure. So, just about two years ago in January of 2018, DriveOhio was created because of two funding awards and a phone call. So, the two funding awards, one was Smart Columbus, which many people have heard about. It was a US Department of Transportation award. And then, the other was along the US 33 Corridor heading from Dublin out towards East Liberty for anyone who's familiar with Central Ohio. And then, the phone call came in from, at the time, Auto Trucking, an automated trucking company. They wanted to deploy technology on the turnpike.

Rich Granger: [00:02:46] And it took us many phone calls inside the government machine to say yes. So, everybody decided, let's consolidate a little bit. Let's pull it together. So, DriveOhio was created to be that sort of one-stop shop for industry or government, for education, and for community partners. And that's who we work with to deploy this technology to unlock the benefits. So, we've got that finely crafted elevator pitch that you described and then, we've got a bunch of reasons why we're doing what we're doing to go behind all of that.

Annalies Corbin: [00:03:14] And so, just for clarity for folks, especially for folks from other places, not in Ohio, DriveOhio has a pretty high-profile presence currently in the state just because of all the different moving parts and pieces and as you pointed out, the initiatives that are happening here. But for other places, is this a state agency, a partnered agency, private, public, hybrid? What the heck or how does that sit?

Rich Granger: [00:03:41] Yeah. So, the official answer is we are an initiative of the Ohio Department of Transportation. So, we are part of state government. Our mindset is that we are a startup inside what we call ODOT. And so, we are an innovation group. We are a team that's looking ahead to the future as part of the executive order that re-established us under the new administration. But building on the previous administration, we have what we call the DriveOhio Alliance. And that's where we realized we have to do this through teamwork, through collaboration. If it's just a small team inside one state agency, that is not sufficient.

Rich Granger: [00:04:16] So, even within state government, we have several named liaisons to other state agencies to partner, but this DriveOhio Alliance pulls in those same group of stakeholders, I mentioned, government, industry, both startups and established companies, education partners from pre-K to PhD, the whole spectrum and then, community organizations, whether they be nonprofits or others. So, we get that alliance together, at least quarterly. And then, we keep that network going. And that's how we accomplish things collaboratively around the state.

Annalies Corbin: [00:04:45] And it's a lot of things. And we really want to dig in today on the stuff that's happening in education. And I use that term, not schools, not K-12, because the reality is, certainly, at least, the pieces of your work that I've had the privilege of being able, A, to watch from afar and sometimes, even be involved with. It's across that full spectrum by design. So, let's talk a little bit about the buckets of education work that you're doing. And I'm just going to let you pick one end of that spectrum or the other and let's sort through them.

Rich Granger: [00:05:19] Sure. Sure. So, this is the talent piece of the focus area for DriveOhio. Just for reference, when we talk about smart mobility, and I referenced earlier, we have these mission areas, we have five pillars, safety, mobility, access, reliability, and talent. That spells out smart if you're keeping score. That's how people like me can remember it. And so, in the inside that talent bucket, let's click in and zoom in on that.

Rich Granger: [00:05:44] So, within that spectrum, we talk about engaging the early and emerging workforce. So, that's your pre-K to 12 portfolios, we've got an area where we're, what we might say, preparing the workforce as they're taking their first, hopefully, their second internship if they had a high school internship or hopefully, their third if they had a middle school internship. But anyway, as they're getting closer and closer into the workforce, we're working with higher ed partners from career tech two-year and four-year schools.

Rich Granger: [00:06:13] We've got programming for upskilling incumbents. And we can give examples of how we're picking some in-demand careers that are being actively affected by this technology. And then, we actually have a fourth bucket where we talk about getting people to work. Using the technology to connect the gaps where transportation is a barrier to the workforce and becomes a hindrance for employers as well. So, that's sort of the broad sweep of the portfolio.

Annalies Corbin: [00:06:38] And so then, within that portfolio, in that collective intent, there are a variety of different sort of educational programs or initiatives or partnerships that you've actively and by design, oftentimes, found yourself in the middle of. So, you know, for example, there's a variety of different things and programs that you're doing specifically with schools, whether it be in elementary or middle school or even high school, design challenges that are happening in and around the state in a variety of different components.

Annalies Corbin: [00:07:09] We have been involved with DriveOhio and the work that Rich is doing through teacher professional development. So, there are some pretty intriguing opportunities in the space of education as it relates to what you're working on. So, give us a sort of a case study, I guess, if you will, of a couple of the pieces that you feel like are best reflective of the mission of DriveOhio.

Rich Granger: [00:07:33] So, within the the pre-K to 12 spectrums where we're engaging the emerging workforce, we have a mixture of in-classroom and out-of-classroom visits, hands-on engagement. And then, we pair that up with, as you mentioned, design challenges. And in the state of Ohio, we're kind of blessed with the Ohio STEM Learning Network, which is the statewide network. And as they were preparing their statewide design challenge for the current school year, we had an opportunity to partner up.

Rich Granger: [00:08:01] And so, that is the theme for this year's challenge. So, you know, we've got problem-based learning and work-based learning baked into the DNA of all of the workforce development activities that we're doing. And so, we are pulling problem statements from smart mobility projects all around the state. And we're offering those up to students of all ages to engage with those problems and solve them. So, through that OSLN design challenge, we've got a series of online resources that teachers can access during the current school year.

Rich Granger: [00:08:32] And this is meant to be an enduring relationship with the schools. So, in future school years, that content will live on. And then, for the in-classroom visits, just yesterday, I was at Columbus City Schools and we unveiled our Ozobot fleet. So, we've got a dozen of these great accessible STEM kits. And while the robots themselves do have a certain price point, all the materials we brought were office supplies. And that was what they did their coding with.

Rich Granger: [00:08:56] So, for anybody who's familiar with that robot, we had students doing maps of the autonomous shuttle that's about to be deployed next month in the Linden community in the Columbus area. And so, some of the students, I would hear them say, "There's my house", or, "My parents work there", or, "I rode on the other shuttle when it was downtown." So, we bring these authentic problem statements and, you know, along the way, we don't have to say the word career. They end up catching us afterwards and talking about what they want to do.

Rich Granger: [00:09:25] We did something similar with third graders with these Blue-Bot e-bot platforms. And, you know, I had one little girl stop me and say, "I want to work at ODOT." How often does that happen? Right? I mean, those are the kind of outcomes that we're aiming for and they just kind of happen organically when we have these events. So, in the K-12 space between the classroom visits, which are starting mostly with teachers, because we're just latching onto that infrastructure through the OSLN network, but we're adding an informal STEM component for outside of the school building.

Rich Granger: [00:09:57] So, we're working with—you know, we went down to the Cincinnati Museum Center recently, had a great collaboration there. We've been strong partners with COSI in Columbus. And we've engaged with a wild science center in Youngstown. And we've got all the other science centers around the

state. I'm warning you now, if you're listening, you're on our list, we're coming. We want to have DriveOhio ambassadors all around the state sharing this content.

Rich Granger: [00:10:19] But, you know, if you're into—you know, I look at these music notes in the studio here and I think about an improv player in jazz or something, it's, here's the basic theme that we're going for and you can stretch it in different directions and make it local. So, that's sort of the earlier examples of what we're doing. And then, when you look at the higher ed spectrum, kind of zoom it out and then, zooming into that age group and constituent group, we've got work going on in Dayton right now with our capstone challenge.

Rich Granger: [00:10:48] And it's another statewide program that we're just starting to prototype and deploy. We're in our third semester of this program. We've had, I'd say, at least four or five different private institutions involved and we plan to scale this up bigger in the fall. We bring a problem statement that's linked to local partners. In Dayton, we're working with the City of Dayton and Greater Dayton RTA and DriveOhio have all been talking about routes for an automated shuttle that would solve a community challenge. We always listen to what the community partners say. And so, they presented to us a specific challenge of connecting the right Dunbar district on the west side with the Oregon district and other areas on the east side.

Rich Granger: [00:11:27] And so, we've had this as the premise for the project. We have an opportunity last semester and now, in this—carrying into the second semester to have the University of Dayton, through their innovation center, have a team of students work directly with those local partners. So, they're on almost weekly calls with the city and RTA. And they're developing route maps and doing the real work. So, it's almost like an internship, but they're getting college credit for it. And so, there's something in it for everybody and they're doing great work on that. So, those are just a few examples.

Annalies Corbin: [00:11:58] Yeah. And as it should be, the whole getting credit and doing work and, you know, having it tap into multiple places. And there's absolutely, in my mind, of course, no reason why we can't do that from our smallest learners to our most mature learners and everything in between. One of the other things that is intriguing to me about the work that you're doing and certainly one of the conversations that I have frequently and I certainly hear a lot, especially as you deploy into new communities, and you and I have had this particular conversation before, it's always hard to get started, right?

Annalies Corbin: [00:12:36] DriveOhio has the advantage of the disadvantage, right? There is not a community in our state. And I would argue probably not a state in our nation that doesn't have some type of transportation issue that they are wrestling with as it relates to accessibility for folks, whether that's getting to a job or getting to hospital or moving folks from here to there. It's a global issue. It truly is, especially at the rate and pace of change of technology.

Annalies Corbin: [00:13:03] And so, especially when you go into these communities to start those new conversations and quickly, you know, roll schools and community altogether in that conversation, one of the things that I get asked frequently is what the heck does this work thing have to do with us? How do you overcome that barrier wearing your Rich Granger hat? I know how I overcome it wearing my, you know, crazy Annalies hat, but you're out there with a sort of a different purpose in mind. But the goal is the same. So, what does that conversation in those communities when they're like, "Why do we want to be part of this?"

Rich Granger: [00:13:38] So, we've had many of those over the past two years and we have another one coming up just next week in Marietta. So-

Annalies Corbin: [00:13:44] We do. And we'll be together in Marietta, won't we?

Rich Granger: [00:13:47] We will.

Annalies Corbin: [00:13:47] We'll come back around to that. And I had completely spaced out that that's next week.

Rich Granger: [00:13:51] That is next week. And so, if I were to predict how that will go, it's—so, the reason we're going to Marietta is because we—DriveOhio and the Transportation Research Center and several higher ed partners and industry partners, we all want a grant, which is different from the ones I mentioned earlier. And this grant is focused on deployment of automated driving systems in rural areas, because we are a statewide program that's focused on all 88 counties. And many of them are rural. And much of the technology is being deployed in urban centers right now. And it's our strong belief that this needs to be an inclusive deployment of technology for everybody.

Rich Granger: [00:14:30] So, we're going to Marietta to talk with teachers and community members and local stakeholders about this grant, what it's about, what is smart mobility all about. And then, we're diving into professional development in the afternoon to work with teachers to hopefully get them engaged directly in this OSLN design challenge. And so, when we have these discussions, we're there to say, "We're here to talk a little, but we're here mostly to listen. We want to hear from you, what is your local regional version of the transportation challenge, whether it is getting people to work, getting people to health care appointments?"

Rich Granger: [00:15:06] It turns out when we turned in that grant application in partnership with many local partners in Southeast Ohio, including Ohio University, Buckeye Hills Regional Council, City of Athens, other regional stakeholders, they were—as we were preparing that proposal, they talked about challenges people have getting to health care appointments, working with the Ohio University Diabetes Institute. That is baked into our proposal. So, the idea is to take that initial concept and now, pull it into execution with partners from the communities.

Annalies Corbin: [00:15:38] And I think that the other thing that is very, very clear in that message is it's not even just about pulling in folks within sort of wrestling with the transportation issue or the partners, but at the most ground level, saying this is a very comprehensive and holistic community issue, that it has many, many ancillaries, right? And by tackling this through this lens, we will ultimately be able to touch all these other pieces that are happening and related within whatever your community happens to be.

Annalies Corbin: [00:16:12] Just for our listeners, so the PAST piece of what's happening there, as Rich said, in the afternoon, we'll be working with teachers trying to, at the very earliest phase, from a workforce development sort of standpoint, say, "Hey, as you're prepping students in this emerging workforce pipeline-" Good on you, Rich, those conversations have paid off. And, you know, we really want to empower local educators to feel prepared and ready to help students see the future career opportunities.

Annalies Corbin: [00:16:47] Back to a point that you made earlier, oftentimes, you don't have to have that conversation, because it emerges from what kids see. But we also know that as students move through middle and especially into high school, it's really, really easy to get pigeonholed and to have or believe that there are limited career paths or that career paths can only be X, Y, or Z when the reality is, especially within transportation or whatnot, it's a pretty diverse set of options.

Rich Granger: [00:17:12] When you unpack what's happening in this world of smart mobility, and as we've defined it, connected automated vehicles and infrastructure, ground and air, that's still pretty broad. You could

throw other things on top of that if you started bringing in scooters or Hyperloops or electrification. And we were involved in those discussions, too. But since we're a startup, we've got to stay focused.

Annalies Corbin: [00:17:31] Right.

Rich Granger: [00:17:32] Right? And so, when you just think about automated vehicles for a minute, there's a really rich discussion that we have with students of all ages about this. And it starts with some pretty basic things that I talk with my five-year old daughter about when she's asking me to switch the playlist and I say, "I've got to keep my eyes on the road, my hands on the wheel." We start with that discussion with students and then, start pressing them to say, "Well, what if there's no one in the driver's seat? How does the car see? How does it make decisions?"

Rich Granger: [00:17:57] And if you look at this current state of technology, the seeing and sensing is getting there. The decision making, not so much. They're working on it. Now, I'm not criticizing industry by any imagination, but they'll be the first to admit there's more work to be done. Who's going to do that work? They're in middle school right now. And so, this is really their problem to solve. And they're getting started on it right now.

Rich Granger: [00:18:19] And when we think about back to Southeast Ohio, our ambitions in that region are not just to execute a four-year grant. It's to transform the Appalachian Region into a national test center for automated vehicles. That is an ambitious goal. And we can't do it just with a grant. We need community partners. We're talking across state boundaries. Ohio is part of what's called the Smart Belt Coalition that pulls in Pennsylvania and Michigan. We've done other collaborations with Indiana.

Rich Granger: [00:18:44] So, this is as much a regional project as it is a local project. And, you know, how do we tap into economic development to grow jobs that these students will then be able to move into? And maybe they're the ones starting the company. We would love to see startups growing out of this in addition to established companies. We have a phrase we use with our industry partners, we'd tell them we want them to come here to test and stay here to grow. So, even if you didn't originate in Ohio, we want you here.

Annalies Corbin: [00:19:11] That's awesome. I love that. Come here to test, stay here to grow.

Rich Granger: [00:19:14] Yeah.

Annalies Corbin: [00:19:14] That's absolutely spectacular. And I have zero doubt that you're going to end up with so many different ideas and startups that come out of those exact middle school kids, right? Because you're 100%, it's going to be not only their problem to solve, but their problem and their world to live in, right? You know, we talked about this all the time in education and the reality is we're prepping for something so much bigger than what we know right now. The beauty of it, I would argue, is that, you know, our Gen Zs, which are the kiddos we're talking about, they're fearless in this space in ways that you and I are not.

Rich Granger: [00:19:49] Yes.

Annalies Corbin: [00:19:49] To some extent, right? And we're very open to a thousand different possibilities or we wouldn't do what we do, but the reality is these kiddos do not know a world that is not connected. They do not know a world that is not completely immersed by technology, by, with, in, around, and for. And they are going to come at all of these things from a very, very different perspective. They're not afraid of coding. They may have teachers who are afraid to teach coding, but the kids themselves, not so much.

Annalies Corbin: [00:20:22] And so, I also think that it's really important for our listeners just so there's no confusion. So, the work that Rich is talking about and the grant and the funds that made it possible for them to go down into Marietta community, it's a different sort of grant funds to make it possible for us to go to the teacher PD. But these two things come together and we see this all the time. I just don't want local stakeholders go, "Wait a minute, that's not what we agreed, you know, to fund."

Rich Granger: [00:20:48] Right.

Annalies Corbin: [00:20:48] And the answer is, "No, no, no, you're right. You did not." Out the State of Ohio and the generosity of the legislators are making it possible for PAST to be part of that project to help work with and train teachers. So, just that way, we don't get anybody's little fires going.

Rich Granger: [00:21:03] No, it's always good to clarify, because we view this as kind of this full stack.

Annalies Corbin: [00:21:08] Exactly.

Rich Granger: [00:21:08] There is a stack of technology and infrastructure and economic development programs and then, we are just swarming around that with these workforce programs. And in every community, large and small around the state, we have a different version of those discussions, whether it's in Springboro and towards Southwest Ohio, where we flew off a swarm of drones to map the school traffic. And now, we want to work with Tripaway and their school safety patrol program to get students looking at drone data. Now, we're just—I mentioned the Dayton case study. We're just trying to bring that whole perspective, so everything kind of stitches together.

Annalies Corbin: [00:21:44] And that's the thing that I love about it so much. And you can see it play out locally. And so, I'll sort of step back. And yesterday, I was at Reynoldsburg, one of our local schools, working and visiting a classroom that is also one of the classrooms that the teachers that Rich and DriveOhio have been able to participate in. And it was very, very clear to me, very clear to me, because the kiddos have been working in this project for the better part of the year in Ms. Forino's classroom, and it's another episode you can listen, too, as well.

Annalies Corbin: [00:22:15] But what I was struck by in this conversation was how much these third graders understood about exactly what you're talking about, right? And it wasn't so much that they could say, "Hey, because so-and-so was here and shared this thing with me", it's because they've literally been working in developing a grid, just like you were talking about with the Linden kiddos. And here's my piece and here's my neighborhood and here's where our streets are and here's the things that we don't have. And they understood the connectivity of the world that they were living in, both the physical space and the technological space.

Rich Granger: [00:22:49] I am completely floored, by the way, by what they are doing in Reynoldsburg.

Annalies Corbin: [00:22:54] Yeah.

Rich Granger: [00:22:54] The only reason I haven't been to that building yet is because they told me, "Let us finish our business case and then, we'll be ready for you." And I—third graders doing a business case just makes me so happy I can't even put it into words.

Annalies Corbin: [00:23:06] Yeah, it's absolutely remarkable. And they fully understood. So, it was clear they've watched videos, they've seen stuff online. You know, one of the little kids even on their map I saw has a DriveOhio station.

Rich Granger: [00:23:21] Love it.

Annalies Corbin: [00:23:21] Right? I mean, DriveOhio never intended to have a station, maybe they never will, right? But the kid in their mind was saying, "Hey, this thing, we understand what it does, is a waypoint in our bigger community and what we're trying to accomplish." So, when you get there, you will be absolutely blown away. But that brings me to an interesting question that I get asked frequently. And so, I love when I have the opportunity to have a guest on, who's working on the flip side of the same coin, to be able to ask this question, because I get asked it all the time. So, what the heck does workforce have to do with K-12, that emerging space, right? Because there's an intriguing push/pull. I think we do a great job of it here, but that is not the case everywhere. Lots of places, it's like school is school and work is work. How do you argue around that?

Rich Granger: [00:24:12] Well, I think it's such an easy case to make once you just experience it, like we have been talking about here. When you talk to employers and they talk about where the gaps are, I'll stop short of saying skill gap, because I know some people use that phrase, other people don't like it, but they always talk about human skill, soft skills. There are different phrases for it. How do you learn that? You learn it through problem solving. How do you do problem solving? You solve a problem. And so, when you have this problem-based learning, you're strengthening those muscles that the students need to go solve those problems and you're filling the gaps that you've got.

Rich Granger: [00:24:49] And when you look at the creativity that's brought by these students, it's—you know, I'll give an example. Last summer, in affiliation with Senator Brown, statewide Summer Manufacturing Camps, we worked with OH WOW! science center in Youngstown. And they set up for us an event at the YWCA in Warren, a room full of middle school girls ready to do an innovation challenge with us as part of their week-long event. So, we brought to them the transportation paradox. The paradox of I don't have a car, how do I get a job? I don't have a job, how do I get a car?

Rich Granger: [00:25:21] Now, there is a team in Northeast Ohio through the Fund for Our Economic Future that covers 18 counties up there. To their credit, they've—after mapping job hubs all around the region for two years, then they went and pulled together a million dollars' worth of prize money. This is a real problem. And it's a nested problem that doesn't have a clean solution, but they are working on this problem in that region. So, we said let's put the middle school students to work. And in an hour, they were kicking out ideas that were comparable to the proposals that our team has been reviewing as part of that initiative.

Rich Granger: [00:25:51] So, when people say, "Well, what ideas might younger students bring", I point them to these examples and say, "With almost no context, they're jumping right in and providing ideas that are not cluttered by years' worth of thinking in a certain way. That's a fresh perspective. And it's the talent that you're going to need. And they have digital skills and ways of thinking that are much more agile." And, you know, on the infrastructure side, I have literally sat in meetings where I saw someone who's much more used to the, so get a little technical, going through a waterfall program management approach where you're just going step by step and someone started talking in agile software development language and the meeting had to be stopped, because some people didn't know what that was.

Annalies Corbin: [00:26:36] Right. Right.

Rich Granger: [00:26:37] And no offense to the people in the room, but when you've thought a certain way for a long time, that's what happens. And you've got people coming up that think in a way that they don't see these boundaries that we've all kind of gotten used to.

Annalies Corbin: [00:26:48] And it's really intriguing, because I literally, over the last week or so, have engaged in an online debate. I'm not going to tell anybody what forum, because I don't want people to go in there. But I have been engaged in this online debate with some industry folks. And these are some industry execs. And the question that I posed was literally around, why can't we transform education or packets of education utilizing an industry R&D sort of approach? Right? I gave it no more background knowledge than that. And it was fast and furious.

Annalies Corbin: [00:27:29] And what I heard repeatedly was that the reason we can't do that, to the statement you just made, which is why I loved what you just said is that, you know, industry, it requires too much knowledge that if solving big, giant, hairy, audacious global problems was that simple, implying that for middle school kids to be able to do that, it must be a simple problem, and I would argue, BS, they said, "It would already be done." So, my premise was completely flawed, because the two paradigms can never align, which was my point, right? So, I love the notion of not having or being hampered by that cluttered mind, right? That I love. I'm going to borrow that, by the way.

Rich Granger: [00:28:17] Sure.

Annalies Corbin: [00:28:17] And as you well know, because you've been at the Innovation Lab many, many times, we thoroughly believe in that same thing that, you know, the kids don't know, they don't come in with a suitcase filled with all the reasons why not. Instead, their suitcase is empty and they start stacking into it all the reasons why.

Rich Granger: [00:28:38] And what I would add on top of that is, I love complexity. I mean, my training was in engineering.

Annalies Corbin: [00:28:43] Yeah.

Rich Granger: [00:28:43] And so, I'm sometimes accused of making things too complicated. So, those are the moments where I remind myself to zoom out and simplify, because I mean, what's the old cliche? If you can't explain it to a five-year old, like my daughter, whom I love dearly, then you can't really get to what you're saying. So, okay. Let's zoom out. Let's simplify it. And then, we can zoom back in. And if they can—you know, if the students are helping you see things that you didn't see before, then okay, bring your more experienced, seasoned people with the depth of knowledge along for that zoom back in and have those students at least observing, shadowing, watching, and engaging and then, zoom out again and check in. You know, I would just—you know, if that's the line of discussion, I would push back a little and say there are ways to have those kinds of engagements.

Annalies Corbin: [00:29:32] Oh, I push.

Rich Granger: [00:29:33] Yeah, I don't doubt it.

Annalies Corbin: [00:29:36] Oh, I push hard, you know, because I do believe that it's an immersive experience, right? And that the best teaching, the best learning and quite frankly, the best workforce on the backside of it, in my mind, is folks who have matriculated through a progressive, immersive experience. They grow those human skills. They grow those complex problem-solving skills. And, oh, by the way, they contribute to the solving of real local, regional, statewide, global, take your pick, problems along the way. And at the end of the day, as we mentioned earlier, it's their problem to solve. It's hubris of us to say they're not capable.

Rich Granger: [00:30:20] Yeah, I mean, problem solving is just this amazing laboratory for learning. When I was teaching capstone at the university level, I would just tell the students' teams constantly, "You were in a course about decision making, whether you realize it or not. And every week, you are making different decisions, some of them big, some of them small. And sometimes, you have to make the decision on the spot and other times, you have the luxury of a little bit of time."

Rich Granger: [00:30:44] But I would always push them to take a mental exercise of answering the question, what if you had to make the decision right now? What would you decide and why? And then, if you had the luxury of more time, what additional information would you go get to help make a better decision? And you're just reducing risk. You're burning down risk every time you're going through that. And that's project management, that's—and the earlier we're teaching students that lesson and it's just a mental model that they can use throughout their whole life, not just in their career.

Annalies Corbin: [00:31:14] It absolutely is. And you can see that muscle flex. I saw that yesterday when I was in Miss Forino's classroom. She assigned a young man to me to be the ambassador to me for my visit, which was awesome. And the thing that I was so incredibly struck by, and in fact, I pulled her aside at the end and I said, "I don't know if you realize that this kid has made this leap", because you're in the weeds with the kiddos and sometimes, to your point, you've got to zoom back to really see the progress that you've made, sometimes. And I felt very strongly that she needed to know, because this was a huge, huge nugget, this sort of an outcome that you might not have even realized. And as this young man was taking me from group to group to group that were working on your problem-

Rich Granger: [00:32:07] Love it.

Annalies Corbin: [00:32:07] ... he knew what they were not only all doing, but more importantly, after listening to me interact with the groups of kids and the questions that I was asking the kiddos, he very quickly picked up which questions were not yet being answered for me, because I was asking them again, right? And he would then—as he introduced me to the next group, who was working on the next piece of the puzzle, the map for, you know, solving mobility in their community, he was crafting the question to the group through his introduction.

Rich Granger: [00:32:38] Yeah.

Annalies Corbin: [00:32:38] That's massive. This is a third grader. And it was artful and it was deliberate and it was building on all of that collective knowledge.

Rich Granger: [00:32:49] And the more that we can recreate and make systematic that type of magic that you just described, to me, one of the great goals here is to take problem statements that we're currently putting in front of university capstone students and slide that back to high school. And-

Annalies Corbin: [00:33:08] And then, slide that back to middle school.

Rich Granger: [00:33:09] You got it. You got it.

Annalies Corbin: [00:33:10] And back to upper elementary.

Rich Granger: [00:33:12] That's right. And then, eventually, get it all the way down to pre-K.

Annalies Corbin: [00:33:14] Yes.

Rich Granger: [00:33:15] Because the thing—the fire that burns hot inside me is getting STEM deployed below the age of 5 everywhere for everybody in an accessible way, because that is just the right thing to do and it's fair and it's what everybody deserves and needs to be ready to succeed in the world that we live in and we'll be living in.

Annalies Corbin: [00:33:33] It has the potential to be that global equalizer, right? Because everybody has now had that experience.

Rich Granger: [00:33:38] Yeah.

Annalies Corbin: [00:33:38] That's huge.

Rich Granger: [00:33:39] I mean, I still remember the meeting we had at your Innovation Lab, where I brought in a physical copy of that National Science Foundation report, STEM Starts Early and your team was featured in there. And that was the moment when you realized you were featured in there. That was just a cool moment.

Annalies Corbin: [00:33:54] Oh, yeah. We had no idea that we had been included. Yeah, that was awesome.

Rich Granger: [00:33:57] And that—but what was buried inside that report was this awesome idea of STEM charging stations, recharging the learning. And going back to the earlier remarks about informal STEM working with, I mentioned, the science centers and museums, but we're also talking with libraries. The Marysville Library, to their extreme credit, is setting up a SMART mobility section in the library and they sit along the US 33 Smart Mobility Corridor, which is one of those two grants I mentioned at the very beginning. I got all this started with the DriveOhio experiment that we're running, but we're planning to have these charging stations all around the state as the vision, you know, having them inside libraries, community centers, after-school programs, maybe bus stops or multi-modal smart mobility hubs, if that's what we're evolving to. So, that's the goal.

Annalies Corbin: [00:34:47] It's a awfully amazing goal. Yes. It's very awing as to think of that and the progress you've already made. So, I want to thank you very much both for the work you do and for the work that DriveOhio is doing, but for your passion to make sure that it's done well.

Rich Granger: [00:35:02] Well, I appreciate it. It's great to be here and talk about things that I feel very deeply about. It's always a good time.

Annalies Corbin: [00:35:09] Thanks. Thank you for joining us for Learning Unboxed, a conversation about teaching, learning, and the future of work. I want to thank my guest and encourage you all to be part of the conversation. Meet me on social media at Annalies Corbin and join me next time as we stand up, step back, and lean in to re-imagine education.