



## Angela Hattman and Audrey Strickling

**Annalies Corbin:** [00:00:00] So, Welcome to the next episode of Learning Unboxed. We're very excited about our guests today and our topic. We're going to talk about robotics. And, specifically, we're going to talk about robotics experiences in K12, and how those experiences can be very meaningful as it relates to helping people make decisions, experience the world, explore career.

**Annalies Corbin:** [00:00:25] My guests today are Angela Hattman who is a fabulous science teacher at Upper Arlington High School. And, more importantly, for the purposes of this conversation, is the fearless, passionate, and compassionate teacher who was willing to say, "Sure, I'll volunteer, and be the coach, and help students start a robotics team at a local high school."

**Annalies Corbin:** [00:00:54] Joining Angela is Audrey Strickling who is a wonderful high school student at the same high school UA High School, Upper Arlington, in Ohio. And was the founder, if you will, of the BearBots, the high school FRC robotics team. So, thank you both for being here.

**Audrey Stricking:** [00:01:14] Thank you for having us.

**Angela Hattman:** [00:01:16] Thank you.

**Annalies Corbin:** [00:01:16] Okay. So, for our listeners, we've talked before about robotics. In particular, we had conversations, really, sort of about the first robotics program, and a lot of the things that it's done at, sort of, global reach. So, we've got some context for the broader program implications. What I'd really love to talk about today is the actual application of what it means to not just to start a team but, more importantly, about what happens with these types of programs, and the influence and impact in that K12 system. Specifically, what's going on in the high school.

**Annalies Corbin:** [00:01:55] So, Angela, I'd like to start with you. Teachers' lives are busy. Teachers lives are very, very full. It's a profession where folks, you shouldn't go into it lightly. Most folks don't. You give a lot of your heart and your soul to what it is that you do. So, taking on something like this was a big lift. And I remember the first time that I met you. Actually, it was at a FIRST Lego League tournament. It was your first experience, as I recall, in the world of robotics at all. And if anybody has seen, or heard, or been part of one of those elementary, middle school Lego robotics tournaments, it's utter chaos. It's awesome. There's utter chaos. And you left that, and you still did this. So, what were you thinking?

**Angela Hattman:** [00:02:44] It was extremely exciting. And I think, for me, it was a professional growth phase that I was excited to experience. I have taught life sciences my entire career. And so, jumping into something that was just a different branch of science was exciting to me. And being surrounded by great students who were enthusiastic about the program made it even more welcoming.

**Annalies Corbin:** [00:03:09] So it was a big leap, but-

**Angela Hattman:** [00:03:10] It was.

**Annalies Corbin:** [00:03:12] ... willingly, clearly. So, Audrey, same question back to you. It's a big deal to start something new at a school. And interestingly enough, at UA, there had been queries off and on over the years around robotics. And there was a teacher that had done some classes in utilizing robotics in pieces, but that's different than taking on and starting an entire FRC team. So, for you, what was the motivation in this space?

**Audrey Stricking:** [00:03:42] Well, I had no idea how much work it would actually be, but my motivation was to create a robotics program different than the one that they offered at the high school with a broader reach. The old program was a local Ohio team, like a local Ohio competition. And I talked to the Metro kids when I was a camp counselor, and I heard how they competed internationally, how competitive it was, and just how widespread it was, and how the overall goal wasn't just to build robots. It was running a business. It was outreach and working with kids. And I think that's really what it was. I was like, "Wow, I want this at our school."

**Annalies Corbin:** [00:04:20] And so, Angela, how has this been just generally sort of received at the teacher and staff level before you even get to because the kids love it, and never been around robotics where the kids were immersed up to their eyeballs but not necessarily so? What has been the internal school culture impact, I guess, if you will, of having this team be there? And it's a very visible team. More credit to you guys and, certainly, to the team itself to taking on that ethos of, "I have to market this team for it to be successful." So, how does that dynamic play out in a fairly traditional high school setting?

**Angela Hattman:** [00:05:02] All right. It's been widely accepted by our administration at our high school. They have been very welcoming of any ideas or concepts that we've created, and have just let us take the reins and run with our program. Even at the District Level, our central office is extremely supportive. When we had a push to raise money to go to Worlds last year in Detroit, Michigan, they were fully supportive, and even closed the gap for our finances, so that we could make it to Detroit. So, it's been widely accepted.

**Annalies Corbin:** [00:05:35] Do you have other teachers volunteering yet to say, "Hey, can I help you?"

**Angela Hattman:** [00:05:39] A few. We've been very, very lucky to have the other robotics teacher involved in our program to help us out with the engineering side of it. I mainly focus on the administrative, and advertising, and marketing, and just leadership side of our program, but he has been a great resource for us. And then, we also have two new volunteers who are going to work with our team this year that we've recruited, one with programming and the other just an overall team mentor for us.

**Annalies Corbin:** [00:06:11] And mentorship is everything in these types of programs.

**Angela Hattman:** [00:06:13] It is.

**Annalies Corbin:** [00:06:14] So, Audrey, as you think about launching this team and having been around students that had been participating for a number of years and established teams, did you have a sense, not just of how much work it was going to be, but really sort of where the biggest obstacles were going to be? So, if you step back and think about it, "If I had known X," as you were going down that path, what were some of the things that were big surprises to you?

**Audrey Stricking:** [00:06:46] Oh, there were a lot of surprises starting the team. I think, the biggest surprise was taking on the leadership position. I just didn't have a lot of experience and taking it on was a lot more work than I thought. And like the culture of being a new sophomore who still didn't really know anything about robotics and figuring out that the older kids who had years of experience with other robotics wouldn't be as accepting to that. And I think that was a big obstacle.

**Audrey Stricking:** [00:07:15] As well as the fundraising aspect at first. I got to say that was a very big surprise, but I feel like our team worked together really well, and just having to work together really well to be able to fund raise for the team. I just was not very clear on the financial implications of the program.

**Annalies Corbin:** [00:07:33] So, share that with our listeners. A lot of the folks that will be listening to this might be contemplating running down this road. There's a ton of global push around robotics, and manufacturing, encoding components. Robotics is a great way to wrap a lot of these concepts together into something very applied and tangible, but the folks are thinking about doing this. Angela, what's the push there as it relates to having folks leap all in or not?

**Angela Hattman:** [00:08:09] I think the difficulty with our situation was we were laying the foundation in Upper Arlington for this. This was something new that our school district -- They had tried to venture into it before, but we were really pushing to make it happen this time. And so, we were laying the groundwork and the foundation with our school district, but the neat thing is this program is worldwide. And so, that foundation is already set.

**Angela Hattman:** [00:08:35] And so, the businesses, the organizations that are already out there to support your team if you are looking to venture down this this path, they're already out there, and they're in place. And they're our local businesses. There are national businesses that want to support the teams that are just starting. There are grants out there that are specifically for rookie teams to help you get off your feet, and to make sure that you have a program for the first few years.

**Annalies Corbin:** [00:09:06] The BearBots was one of the recipients of STEM Equity Grant with CORI and PAST, correct. Yeah. And so, that gave you some of the startup components that you needed. But, hopefully, the real contribution in there is the access to the support network and the established teams through CORI and whatnot. So, what would your response, Audrey, be to a teacher or a student and community saying, "Do I really want to do this?"

**Audrey Stricking:** [00:09:38] It's 100% yes. You have to do it. I think it's the best experience I will have in high school because it's learning how to take responsibility. I think, everyone on the team learns how to be responsible, how to actually work together rather than class projects in a group. It's learning how to think fast, to think on your feet, and how to function in the professional world. I think that was the best lesson I learned from this.

**Annalies Corbin:** [00:10:06] That's amazing and remarkable. And there's been great growth. So, last year you were rookie team. And how many participants? How many students?

**Audrey Stricking:** [00:10:13] 21.

**Angela Hattman:** [00:10:14] 21.

**Annalies Corbin:** [00:10:14] So, this year, a few weeks ago, actually, I stumbled into your opening conversation with your team, and I was blown away. Out of full transparency to our listeners, the BearBots' field and practice at the Innovation Lab is one of the teams onsite. So, we get to see you guys frequently. But I was shocked by how many students were there.

**Audrey Stricking:** [00:10:45] There were about 67 students who signed up to be on the team this year.

**Annalies Corbin:** [00:10:49] So, three times. That's awesome. Ladies, congratulations.

**Audrey Stricking:** [00:10:54] Thank you.

**Annalies Corbin:** [00:10:56] How are you going to manage that, Audrey?

**Audrey Stricking:** [00:10:57] We'll figure it out. There's a lot of different leadership styles that we're using this year. We have different leaders of each subgroups. And subgroups are programming, and the actual parts of the robot are all split up into subgroups. So, we have leaders for each of those. And then, a committee system to make decisions that affect the whole team. And I think that will be really helpful this year. And that's going to be a lot of delegating tasks, and it's going to be a lot of instruction, but with letting them figure out more emphasis on how they learn. That's what I'm excited for this year. With so many people, there's a lot more room for them to learn than just to rush through and build a robot.

**Annalies Corbin:** [00:11:36] It's not about the robot after all, right?

**Audrey Stricking:** [00:11:39] Yeah.

**Annalies Corbin:** [00:11:39] Yeah. Absolutely, absolutely. So, Angela, how does this experience or being part of this team, how does that translate into what you do day-to-day in your own classrooms? Are you seeing the connections in a different sort of way?

**Angela Hattman:** [00:11:56] Absolutely. There are a few situations where I feel like this work is more important almost than what I'm doing in the classroom just because of the opportunities, and the tools, and the resources, and the networking that you're exposed to just within working at the PAST Foundation with CORI. In the classroom, I almost feel like there are four walls surrounding you, and you feel boxed in because you just have to start venturing now, and making those connections, and almost simulating the situations that students have at the PAST Foundation within your classroom. And it's something that's very difficult to recreate in the classroom, but you do have to take parts and pieces of the experiences that they get with FIRST Robotics and implement those in the classroom.

**Annalies Corbin:** [00:12:47] And so, what does that look like for you? So, your life science teachers. So, can you give us a couple of small examples of how you -- Maybe you changed something that you did, or the way that you think about it, or the presentation back to the students. What does that look and feel like? Because this is a transitional moment. And you and I haven't had that conversation, but in PAST work across the country over almost 20 years now, we've seen people in this exact moment that you are now in as a teacher and as a leader. So-

**Angela Hattman:** [00:13:20] There's lots of exploratory learning, not necessarily giving them the procedures to go all the way through the labs that I have implemented in my classroom. There's a lot

of trial and error. It's neat to see the students struggle and grapple with the content. And I think that's the thing that I've pulled into my classroom-

**Annalies Corbin:** [00:13:40] Perfect.

**Angela Hattman:** [00:13:41] ... is to create more of that exploratory learning situations where they really feel like they're getting it, and the content is applicable to the activities that you create in your classroom. And so, just with labs and experiences like that.

**Annalies Corbin:** [00:13:56] That's wonderful. And I get it. That echoes the sort of thing that we hear, that other piece of that experience influences so much about the way you then do your own practice. And so, that's a lovely side benefit. No doubt. So, Audrey, I ask the same question to you because in the same way that we, historically have watched teachers make these shifts from these experiences, we've also noticed that not only does it impact individual students, but the way you think about learning and the way you think about the teaching and learning as it relates to your journey right now in high school and translates post-secondary. So, what of this experience -- how does that play out for you when you go to traditional classes or when you go to really not traditional classes. How does this play into your day-to-day thinking about your high school experience?

**Audrey Stricking:** [00:14:54] I think, it really translates to the way I work with other people, and the openness, and the communication skills that I have gained through FIRST because there is a lot of communication that has to happen during those six weeks in order to be successful. I think, it really comes over in the classrooms when I'm working on a group project or when I'm working with a teacher. I'm learning the communication skills. I'm learning. And even career paths, I'm learning more career paths through FIRST and exploring what I want to do.

**Annalies Corbin:** [00:15:23] And so, how do you sort of think about that? I mean, does it translate? And maybe the answer is that it doesn't, but I'm really curious. I'm the language arts teacher in a traditional high school setting teaching, English 11. And so, I've got all of these students that participate in this crazy thing I may or may not be overly invested in, this robotics club sitting in my class. And how does what happens to you when you're in that fully-immersed applied environment where you are the problem solver translate into interpreting or understanding Shakespeare or whatever it is that you have to? How does that experience cross over or does it as a student?

**Audrey Stricking:** [00:16:07] I think it's hard to go from a very proactive learning environment like FIRST to a very rigid learning environment like a classroom. And I think that's a hard transition to make, and the way you think, and the way you go about problem solving, but I think the problem-solving skills are there, and they've helped me go through classes a lot easier because I have those. But I would say the transition over to very exciting learning environment to more of a traditional classroom is a big transition because I'm thinking about, "Oh, what can I do with FIRST Robotics when I'm sitting in language arts?"

**Annalies Corbin:** [00:16:47] Well, but hopefully, right? It starts to become this groundswell movement. And we see lots of communities do that. It's a journey to transition from a very traditional environment to a more implied environment, but we do see that there's that doubt, there's that groundswell from the participant side that is meaningful.

**Angela Hattman:** [00:17:08] We're in a really unique spot too in our district.

**Annalies Corbin:** [00:17:11] Exactly.

**Angela Hattman:** [00:17:12] They've incorporated a robotics class. And so, they've seen the value of our program and the learning that's taking place. And they've embraced it, and even created a class for our students to continuously foster that environment.

**Annalies Corbin:** [00:17:25] That's awesome.

**Angela Hattman:** [00:17:25] I know.

**Annalies Corbin:** [00:17:26] That's a huge win.

**Angela Hattman:** [00:17:28] Yeah. Even in our -- We're building a new building, and that will be finished in 3.5 years to four years, and they're asking us what resources and materials does FIRST Robotics need in the robotics class. What materials they would need in that building? So, extreme amount of support. And it's just we're in a really great spot right now to grow our program and to create these great learning situations.

**Annalies Corbin:** [00:17:56] So, you're currently sitting right in the midst of a culture shift happening in your school and in your community. And it's pretty awing. And that you get to not just be there but to recognize that it's happening. But 3.5 years, that new fancy buildings, you're going to be long gone, Audrey, off into the world. But you have the opportunity as you move through on one of the things that we consistently heard in these collective conversations on Learning Unboxed is about mentorship. And you both mentioned that earlier today as well that one of the keys to the success both of the program and of the individual students is tied to this notion of mentorship.

**Annalies Corbin:** [00:18:40] I want to talk about that a little bit because if you're on the other side of this equation, what we often hear from mentors, especially mentors coming out of business and industry, and these programs are constantly looking into our industry partners to try to pull folks in to be mentors, they struggle with that. We've got an adult population that may or may not be very good at that sort of teaching interface. It's not as easy as everybody seems to think, or as soon as you get in with the rest of the students, you realize how difficult sometimes that can be. So, let's talk about the mentorship piece a little bit. So, as a student, Audrey, what do you need more than anything else from the folks that are coming in to mentor you?

**Audrey Stricking:** [00:19:28] I think that's a broad question.

**Annalies Corbin:** [00:19:33] It is, that's true. So, for the folks who are coming in for robotics, when you ask a mentor particularly - You said you have two new ones coming in, one in programming and one in general. And so, in programming, what was it that you need from those folks outside of their contextual expertise? They've got to bring something else to the equation or it doesn't work.

**Audrey Stricking:** [00:19:51] I think listening to what the students have to say is very important. I think some mentors come in with the mindset that they are already in the professional world, and they know what they're doing. But there's a thousand ways to solve one problem. And I think giving the students the room to figure it out for themselves and really only helping them but guide through it, not giving them a path for themselves. I think that's the super important part of mentorship that, I think, some adults kind of don't recognize.

**Annalies Corbin:** [00:20:21] Yeah, that you actually have a lot of ideas.

**Audrey Stricking:** [00:20:25] Yeah.

**Annalies Corbin:** [00:20:25] Well, what about for you, Angela, what is that conversation with these folks as they're coming in? And you know your kids, right? At the end of the day, these are your kids very personally and selfishly. But that's a big deal. You bring other adults into this equation and you ask these folks on the outside, "Teach with me."

**Angela Hattman:** [00:20:47] Right. I was reading an article the other day, and it was talking about for high school students, how mentorship, and interning, and opportunities to shadow are some of the best ways for high school-aged students to learn. And I really strongly believe in that. And so, these connections that we have, the mentorship that we have with the great people, mentors at the PAST Foundation, or even OSU, or even people that we have pulled in from the talent our community, I think one of the conversations that I have with them at the beginning is just to bring their expertise to the table but, also, allow the kids to experiment, and to try to find solutions for problems that are based on our goals as a team, and to kind of just merge themselves within our program, and be open.

**Angela Hattman:** [00:21:40] It's almost the Wild West for six weeks when we go through this program. And so, it's just wonderful if you kind of relinquish some of that control, and you're in, and let go that you know it, that you have your expertise, and just kind of see where you can guide and lead these children, these students in just amazing directions because they have so many amazing questions-

**Audrey Stricking:** [00:22:03] They do.

**Angela Hattman:** [00:22:05] ... and great ideas. And so, just seeing them kind of put that into play and maybe try and fail on a few things. And then, you come in, and give them a little direction, I think, is some of the most beautiful work I've ever seen. And so, I am just excited. We've got really great people coming in to help our team this year. And I think they're all on step with that kind of mentality. So, it's just a really great learning experience Yeah, I'm just impressed with this entire program.

**Annalies Corbin:** [00:22:34] Yeah, and it will grow it's amazingness, right?

**Audrey Stricking:** [00:22:38] Yes.

**Annalies Corbin:** [00:22:39] Because, again, having been part of observing and interacting with FIRST, for me, it's been about probably about 15 years now of sort of watching through this program. And one of the other things that I have found that's quite remarkable that will be fun to watch with your team is that, not only do you get these mentors to come in, but, suddenly, it becomes a different sort of role for those mentors, companies, directly or indirectly, to play in school because we have tons of global conversations about the role of business and industry in education. And we should be having those conversations. But one of the things that we find is active participants and mentors through these types of applied learning programs often translate into excitement to be part of that system back at that home company. So, that will be an intriguing thing to watch as you guys go through. Yeah.

**Angela Hattman:** [00:23:40] One of our mentors who's joined our team this year is excited that his son is in our school district. He's in the elementary age right now. And so, he's excited to see this program grow for the future of his own child.

**Annalies Corbin:** [00:23:52] Yeah.

**Angela Hattman:** [00:23:52] And so, there's a lot of resources in our community, and they want to see our program be successful.

**Annalies Corbin:** [00:23:58] Oh. I totally understand that 100%. A lot of my work over the years has been selfishly about my child's going to be in this thing. So, my son, a freshman this year, and finally getting to join an FRC team. So, I totally understand that. So, very, very selfishly.

**Annalies Corbin:** [00:24:19] So, let's talk about one of the other components of these types of programs that we haven't talked about yet, and that's the parents. And parents in sports or activities are often a point of intriguing conversation. So, what has your experience been? I mean, it's new for you, but I will say, also, coming from that same community of Upper Arlington, the upper Arlington parents can be a force. So, how do -- And, again, sort of from the lens of other communities thinking about doing this, how do you set expectations, and so that you can manage the influence of a strong parent base as it relates to programs? So, either one of you. Who wants to take that one on?

**Angela Hattman:** [00:25:08] I have two schools of thought on this. I mean, coming from my background in sports, a lot of parents are extremely exposed to the sports mentality, and rules, and regulations to games. But when it comes to FIRST Robotics, there is a lot of unknown out there with parents. And so, I think a lot of what you see is just enthusiasm and great positive reactions to what we're trying to do. And it's very new to them.

**Angela Hattman:** [00:25:37] But when I think, as a leadership role, as the role I have and being the lead coach or mentor for this team., managing parents, you have to learn how to create that positive environment and make sure that parents, even if it is a criticism, that it's constructive, and integrating that change, and letting them know that you really hear their voice. And so, whether it's from the student side of it or the parents' side of it, it's just giving them a voice to feel like you're really trying to correct the program, and and fix, and lead in a great direction.

**Angela Hattman:** [00:26:16] And so, we really haven't had many negative experiences with this. I think it's just because it's unknown to a lot of parents. And the parents that do know about the program want to jump in and help us. And even other expertise, like they may not know what their child is doing in robotics, but they have community and network connections, and they want to find resources to support our team, whether it is fiscally or finding lunches for us. So, the support's been really great. It's definitely a different world than coaching athletics. And that's kind of the big difference that I've seen is just the difference in knowledge and exposure to what their kid is actually involved in.

**Annalies Corbin:** [00:27:03] Yeah, yeah. Audrey, same experience?

**Audrey Stricking:** [00:27:05] Yeah.

**Annalies Corbin:** [00:27:06] So, do you think though that as -- I mean, again, I've watched it for years. But, now, I'm wearing a different hat. I'm wearing a parent hat, not just a sponsor because I've been a sponsor, I've been an advocate, I've been a mentor. I mean, I've gone through so many different roles in that program, but it's very, very different, I have to admit putting the parent hat on. And I, suddenly, find myself sitting in the parent meeting for my son's team and realizing I have a whole different set of questions. It's still an enigma for me even after all these years because, to your point, the rules and the understanding of the game are fairly complex in part because of the way the program is structured because it changes somewhat year after year.

**Annalies Corbin:** [00:27:52] So, with that in mind, your season is about to launch. And when we say launch, we really mean launch. It launches globally at the same time around the world. So, Saturday. So, two days out from now, you guys have your season launch, and off you run, and you've got six frantic weeks. Six frantic weeks. So, how do you think about structuring the six frantic weeks to meet your team goal at the end of that six-week moment before you even go to your first competition? So, Audrey, what was your thinking around prepping for that.

**Audrey Stricking:** [00:28:32] Design, 100%. It was design and thinking through our ideas before we implement them. I think, our committee of like decision makers made a very good -- had a very good discussion about what we wanted out of the six weeks. And it was design, it was testing, and it was reserving time for the building, and getting ahead of everything by really thinking through every step of the way.

**Annalies Corbin:** [00:29:00] Right. And each year, the game part of FIRST is different. And you don't really know what it's going to be until they released it, launched it to everybody. So, it sounds like you're early prep pieces is accounting for a lot of what could be viewed as consistencies in preparation. So, how do you transition now that you went from a small team to this really large team in thinking about that sort of success component? And where's that interface? So, do you guys sit down and think about that together? What does that look like?

**Angela Hattman:** [00:29:38] We do. We have our committee team, our leaders from each of those five groups. And we, actually, sat down a few weeks ago and created a schedule for the first week. And my biggest push was when we divide into groups, what do you want those groups to look like? What's going the best situation for us to maximize productivity? And so, I think, we all kind of learned that there is this underlying pressure to make sure that we're really thinking about how we want to break down our groups, what we want to accomplish on a daily basis.

**Angela Hattman:** [00:30:14] And so, last year, we kind of just jumped into it. We didn't really know what we were getting into. But now that we've had that experience from last year, we're going to keep working on thinking through those steps that we want to take to make sure that we're not just throwing 10 people in a group. What people would be best in those groups? And to really think about what we want out of our team meetings and making sure that they're goal-oriented and specific. And so, we've just tried to organize a lot better this year. A lot of Google Docs to try to streamline ideas and make sure everybody feels like they are contributing.

**Annalies Corbin:** [00:30:57] But you're ready?

**Angela Hattman:** [00:30:57] Yeah, we're on.

**Audrey Stricking:** [00:30:59] We are ready.

**Angela Hattman:** [00:30:59] For the first week, at least.

**Audrey Stricking:** [00:31:04] For the first week.

**Annalies Corbin:** [00:31:04] Yeah. So, any big fears?

**Audrey Stricking:** [00:31:06] No. I'm actually very confident in the capabilities of our team this year. I think, we have a lot more people, but we have really strong leaders for every subgroup. And the only thing I'm worried about is someone feeling like they don't have a voice, but I feel like we have a very strong system set in place for that. I just really want to make sure everyone is learning as much as they can this year and getting exposed to. I think, it's going to be a little chaotic with that many people, but I don't have a lot of big fears because I'm very confident in everyone being able to step in and take responsibility.

**Annalies Corbin:** [00:31:42] Well, I have to say that it will be chaotic, but I'm kind of looking forward to the chaos. I actually have to admit, I love build season at the Innovation Lab because it's insane. I mean, it really is. I mean, there are three in-house teams on an ongoing and regular basis. And then,

other teams that kind of come and go as you well know. There are a lot of you milling around, running around, solving problems, having these gang conversations, and shifting onto something else. And it's joyful. It's even joyful when I have to call a teacher onsite and say, "It's 1:00 a.m. You need to go home." I didn't call you with that message, but the security camera is paying me, and I'm like, "Okay, you got to kick kids out of this building now." So, that's an awesome thing, and it's coming, and I'm very, very excited for it.

**Annalies Corbin:** [00:32:37] So, as we say we sort of wrap up and hope that more communities say, "Hey, I want to do that thing. I want to do what Audrey and Angela have sort of put in place, and be willing to take that risk in my time, and my expertise, and my experience," but people also want to know if there was one thing that you could have done differently up to this point, what might that thing be, so that we can try and avoid that?

**Audrey Stricking:** [00:33:09] I would say create a business team first. I think me and Ms. Hattman were the business team until a little bit like halfway through build season, and we didn't really realize how much of an actual business your first robotics team is. And that was a very shocking component that me and Ms. Hattman had to face by ourselves. And I think creating that foundation and making sure you know, "This is a company. This is how it should be run."

**Annalies Corbin:** [00:33:38] And it's a startup, right?

**Audrey Stricking:** [00:33:39] Yeah.

**Annalies Corbin:** [00:33:39] And it's a serial startup. And that's one of the things that we haven't talked about even when we talk to robotics in previous episodes of Learning Unboxed is because the game changes slightly every year, it's a new startup every year to some extent. That's something to keep in mind. That's awesome.

**Annalies Corbin:** [00:33:58] Yeah.

**Annalies Corbin:** [00:33:59] Yeah.

**Angela Hattman:** [00:33:59] My suggestion would be to reach out to other mentors and coaches of teams, and sit down, and have a dinner with somebody. Well, I didn't really get that exposure until we went to the Buckeye Regional where I sat down with five or six coaches and really learned how to grow their team, and how to recruit, and how to fundraise. And so, there is a wealth of knowledge out there, and there are people that have strengths with fundraising. And so, find those people and have conversations with them.

**Angela Hattman:** [00:34:32] One of the things that I learned through this experience my first year was I was timid at the beginning because, again, STEM and reaching out into robotics was a field that was unknown to me. And I feel so strongly about fostering this opportunity for our students. And it's a humbling experience knowing that you do not know as much as the students do going into this but being able to offer them your enthusiasm and your time even if you don't know what you're really getting into is one of the most powerful educational moments that I've had.

**Angela Hattman:** [00:35:10] This year definitely has changed a lot of my feelings about education and has just given -- It rejuvenated my teaching experiences and has just brought life back into my career. And so, if you're thinking that you don't know about robotics, jump in anyways. Jump in. It's an experience that you will never regret. And it's been awesome.

**Audrey Stricking:** [00:35:37] I think, it's fun to jump into something that you know nothing about. I had no idea what FIRST was, but, I think, the jumping part is what makes it very fun.

**Annalies Corbin:** [00:35:46] It's that risk, the thrill, right?

**Angela Hattman:** [00:35:48] Yeah.

**Annalies Corbin:** [00:35:48] Well, ladies, it has been a true pleasure. And it is a privilege of mine. And, certainly, I know I speak on behalf of the entire staff at the Innovation Lab. We love, love, love having you guys with us, and we wish the Bearbots nothing but great success this year. So, congratulation, ladies, and good luck for the season. And thank you so much for being part of this.

**Audrey Stricking:** [00:36:14] Thank you so much.

**Angela Hattman:** [00:36:14] Yeah, thank you.