

Annalies Corbin: [00:00:00] Welcome to Learning Unboxed. I'm very excited today to have three amazing young women as my guests. All three of these ladies are with us from Metro Early College High School. They are current participants in a very applied, integrated STEM program that we've talked about frequently in the first batch of shows here.

Annalies Corbin: [00:00:20] PAST Foundation actually lives and breathes with these folks because Metro Early College is our school and residents partner at the PAST Innovation Lab. So, we have a very special and unique relationship with these kiddos because, quite frankly, we've got to see them grow up.

Annalies Corbin: [00:00:39] So, I'm thrilled today to introduce you all to Fatima Bainazar, a 17-year-old senior from Metro Early College, whose interest is in engineering, is the project manager for the Metrobots, FIRST FRC Team that we've talked about before, and who is very, very excited about systems engineering, as it turns out, and a really wonderful kiddo.

Annalies Corbin: [00:01:02] Joining her is Melissa Olvera, who also is senior at Metro, and is the Administrative Project Manager for the Metrobots. Both Fatima and Melissa are legacy kiddos, which means they had siblings that have gone through the programs that we've been collectively talking about as well.

Annalies Corbin: [00:01:21] And then, also with us today is Elizabeth Drake, who's a junior at the same school. Interested in mechanical integration and engineering. Also, deeply passionate about everything that has to do with space.

Annalies Corbin: [00:01:33] And together collectively, these three ladies represent kids from a variety of backgrounds, experiences, opportunities, and passions. So, it is with great pleasure to talk with you all today. So, thank you for being here.

Melissa Olvera: [00:01:47] Thank you for having us.

Fatima Bainazar: [00:01:49] Thank you for having us, yeah.

Annalies Corbin: [00:01:49] So. I want to start our conversation today to sort of some context for our listeners. The majority view, I've had the opportunity to get to know you, at least, since you were a freshman. Maybe even a little bit before that. And so, we've got to spend a lot of time together over the last few years. And one of the things that I love about my day-to-day experience and the times that I get to spend with all of you at the PAST Foundation is the fact that I actually get to watch you guys learn and grow. And that's been probably one of the single most rewarding experiences that I've had. And I do talk about you guys a lot out in the world as this great, amazing group of girls that are kind of rock stars.

Fatima Bainazar: [00:02:33] Awesome. I'm smiling.

Annalies Corbin: [00:02:39] Yeah. So, part of the program is, how much can we embarrass you guys? But the truth of the matter is we are on, on a daily basis, at the Foundation. And everybody who comes in and around this program needs to understand that you are part of our school and residents program. And as such, it means you're here an awful lot doing lots and lots of different things.

Annalies Corbin: [00:03:02] And so, let's talk a little bit. Elizabeth. Let's start with you, if you could. So, tell me why you chose to go to an alternative school, sort of, program rather than stay in your traditional district, in a traditional school? What was the one thing that said, "Hey, I want to go and do this STEM school instead"?

Elizabeth Drake: [00:03:25] Okay. So, I came to Metro in sixth grade. And before that, I was at a private Catholic school. And I think my parents recognized that at school, I struggled, but at home, I was expressing lots of interest in science and STEM type of things, but that wasn't reflected in my grades. So, they saw that something wasn't right. I wasn't happy at school. So, they started looking around, and they came up with this concept of -- or they saw Metro. And I wasn't for sure because I didn't want to leave my school. And then, I met someone at the local library, and they were talking about how much they liked Metro. I can't remember exactly what it was, but I was willing to try something new because I was struggling at school, and I knew I shouldn't be.

Elizabeth Drake: [00:04:05] So, I got to Metro, and everything changed. Who I was at home, I could be at school, and all these roads opened up that things I didn't realize I would have been interested in. I realized I could go look at engineering, look at genetics, all these things. So, it was just a really game-changing opportunity for me.

Annalies Corbin: [00:04:24] And you're the first in your family in that school?

Elizabeth Drake: [00:04:26] Yeah. My sister is at Metro now.

Annalies Corbin: [00:04:28] But she's younger?

Elizabeth Drake: [00:04:30] Yeah, she is in eighth grade right now.

Annalies Corbin: [00:04:32] But that's not the case for the two of you, right? So, both of you, Melissa and Fatima are legacies, so to speak, in that sense, right, which is not uncommon in a lot of new schools. So, you're trying to have families participate in multiple generations. So, Fatima, other than the fact that you knew about it because you had siblings who had already participated in the program, at the end of the day though, what's truly the appeal?

Fatima Bainazar: [00:05:00] I was, actually, home-schooled up until third grade. And from then on, I went into my middle school, my sixth grade year, I went into a charter school. And so, I really never had the experience of a regular school. And Metro is just appealing, not just because my brothers and my sister went there, but this idea that I get to kind of create my own path into my future.

Fatima Bainazar: [00:05:25] And the only reason I am now interested in engineering was because of a class that I took at Metro. I was never exposed to engineering before that. My dad's a computer scientist, but there was never that appeal because he just told me that he codes, and like, "Coding?" Like "Uh, okay." But that class really gave me that, immersed me into the world of engineering. And that's what really kickstarted my

interest into it. So, just the difference of how things are taught. That's what Metro really appeals.

Annalies Corbin: [00:05:54] And exposure.

Fatima Bainazar: [00:05:55] Exposure, entirely.

Annalies Corbin: [00:05:55] So, for you, because you've never even contemplated, "Hey, I might want to do this thing."

Fatima Bainazar: [00:05:59] Not at all.

Annalies Corbin: [00:05:59] And until you had the chance to actually not just try it but live it because you were immersed in it.

Fatima Bainazar: [00:06:04] Exactly, exactly.

Annalies Corbin: [00:06:04] We're going to talk about that again in a minute.

Fatima Bainazar: [00:06:05] Okay.

Annalies Corbin: [00:06:05] Melissa. Same for you. So, you're a legacy kid into the program, but, really, why? Why opt in?

Melissa Olvera: [00:06:14] So, for me, I was always good at school. I guess, I was always taking advanced classes. So, going to, I guess, a normal middle school. I came from the Columbus City School District. So, everything kind of was slower paced. So, then, when my brother was taking calculus as a junior, I was like, "Oh, I want to do that, but I want to do it better." He was doing robotics while he was a junior. I was in eighth grade, and I would wear Metrobot t-shirts, and go to school, and people are like, "Oh, what's Metrobots?" I'm like, "Oh, they make robots. I'm going to do that next year when I go to Metro."

Melissa Olvera: [00:06:45] So, it was him doing that kind of got me into it. And I was like, "I want to have that experience that he's having," because it's so fast paced and so much different than the school I was at. It was a different -- It was like a change of pace that I kind of needed to grow further as a person.

Annalies Corbin: [00:07:02] So, just for our listeners, especially if you didn't listen to one of the previous episodes, so Metro STEM is also an early college, Metro Early College High School. And through that experience, the students have the opportunity to taste, to try advanced coursework or an accelerated coursework program.

Annalies Corbin: [00:07:24] I'd would be really, really mindful, though, to say that the expectation isn't that every kid who shows up is like Melissa who says, "Hey, I want to take calculus yesterday." The expectation is actually that this type of learning environment fits all kids from all backgrounds, experiences, and gives them the opportunity, if they're behind, to catch up; if you're on pace, to stay on pace; if you need to accelerate because that's your personality or your temperament Ms. Type A, that you have the ability to do that in an environment that's kind of all inclusive.

Annalies Corbin: [00:08:02] So, just very briefly, Melissa, so, let's go circle back and let you go first this time. So, when you think about what was required of you to be ready to take on the acceleration piece, we hear all the time, 'That's really, really hard to do. We don't know that that's good for all kids.'" How do we really differentiate to make sure that you're actually going to be ready to do that? Talk to me a little bit about how you feel are the things that you had to have to be ready to do that.

Melissa Olvera: [00:08:33] So, the things that I had to have was more than just grades. Kind of like how Metro does it, where you do a gateway, and then you are able to take college classes. It was to have the kind of work ethic to actually be able to do the accelerated thing. So, it's not just doing your homework every day. It's doing your homework, and mastering it, and understanding what you do, and having good, I guess, study habits to go into accelerated courses and not just trying to fake it till you make it through metro classes just to get to the college level, if that makes sense.

Annalies Corbin: [00:09:06] Fake it till you make it. That's a thing.

Fatima Bainazar: [00:09:10] Oh, yeah. Everyone does it.

Elizabeth Drake: [00:09:10] Do it all the time.

Annalies Corbin: [00:09:14] All right. So, Liz, so would you say the same is true for you? Your path is a little different. So, what would you say for you was the thing that made sure that you felt like you were ready?

Elizabeth Drake: [00:09:26] Yeah. So, coming into Metro, I wanted to be like "smart," but I didn't necessarily have the transcript to back that up. I'm dyslexic, so I really struggled learning to read and write at my elementary school. So, my parents said to me, "Elizabeth, you'll be able to take science classes that are accelerated because it's good at, but Metro will also let you take maybe longer English classes or retake a few English classes." So, they gave me that cushion of I would not necessarily be taking seventh grade classes. I would be taking wherever I needed to be.

Elizabeth Drake: [00:09:59] And then, it's one of those things I always say to people who are touring Metro, you need to try it because it's not for everybody. But if you want to do it, and you're willing to put in some nights where you're upset, and you're struggling, you can get through it. So, it's that will to strive and understanding that you might be uncomfortable at times, but that's okay because you see your future ahead of you. So, you have to keep the end goal in mind when you're up late, and you're stressed, and you're beating up on yourself.

Annalies Corbin: [00:10:28] Yeah. Good advice. What about you, Fatima?

Fatima Bainazar: [00:10:31] I've learned that -- so, going off of what Liz said, the idea that you're staying up late and that willpower to keep going. For me, I spent my first year at Metro just beyond stressed because I just wasn't able to transition into what this new school is just like applied STEM. And so, that took me half of the year to get used to it.

Fatima Bainazar: [00:10:58] And then, I gained the study habits, the time management, and the support from, not only my family, but from teachers and my advisers. And that, really, that was the clicking point, I guess, where I realized this is how I will be able to accelerate through school. And also, there is no, "This is a 7th grade class," like Liz said, "and this is an 8th grade class." It's "This is Algebra 1, and this is Pre-calculus, and this is Trig." It's not, "You're 9th grade. You're supposed to be here, and you're supposed to be here."

Fatima Bainazar: [00:11:29] Our classes are mixed. As a freshman, I've had classes with seniors. And that was awkward for me at first. I was like, "Whoa, you're three years older than me. What are we doing here?" But after that, I realized we're all on the same level, and we all have the same work ethics.

Annalies Corbin: [00:11:45] So, it really is a different way to think about a school environment. When you say that those sort of arbitrary boxes or buckets largely that have been imposed from well over a hundred years ago about thinking in terms of as a freshman, as this age, these are the core group of things that you are going to take in. But it requires that folks to think about readiness very, very differently.

Annalies Corbin: [00:12:12] And I'm intrigued about one of the things, for example, Liz, that you said that you had feedback early on, "Hey, you can take advanced science classes, but you can be in this regular English class over here," but lots of places don't make that easy to do.

Elizabeth Drake: [00:12:27] I really needed that. I would be so uncomfortable if I didn't have that because I'd be in a boring science class, but I'd be struggling in English. And that's just not a happy situation to be in.

Annalies Corbin: [00:12:37] Yeah. But again, I do think that that's something that lots of school environments struggle with how best to do that. So, that's a great advantage to be able to be immersed in that. How does going through sorting out the process, getting comfortable, because, at the end of the day, I think all of you have sort of

stressed you somehow have gotten so comfortable in your own skin, so to speak, after a little bit of time and transition.

Annalies Corbin: [00:13:04] So, I want to really get into sort of the meat and what I think the experience is, and that is all of the hands on, the applied, the putting it into some kind of real-world context. So, there are a variety of different ways that schools approach this. We talked about STEM schools, the applied schools, the hands-on, problem-based. It's a lot of words, basically, to describe that we're going to immerse what you're doing in some real-world opportunity.

Annalies Corbin: [00:13:33] So, talk to me a little bit about some of the projects that you worked on that you think, sort of, helped you build the contextual pieces. Fatima?

Fatima Bainazar: [00:13:44] I would probably go straight to design challenges that we have every year at Metro School. So, it's kind of in its name. It gives us an issue that our current society faces. So, two to three years ago, it's infant mortality. And then, it was the opioid crisis. And those really got us to think. And we had come up with a solution.

Fatima Bainazar: [00:14:12] And so, I mean, as a high school student, you're thinking, "How can I affect the opioid crisis? And how can I help that?" But using the tools and the resources we got, a lot of kids came up with great ideas.

Elizabeth Drake: [00:14:26] We really did.

Fatima Bainazar: [00:14:28] Yeah. Some-

Annalies Corbin: [00:14:28] They're amazing, some of them. Yeah.

Fatima Bainazar: [00:14:30] Some came up with the idea of a pill bottle that would open only when needed, when the dose was-

Annalies Corbin: [00:14:35] The right time.

Elizabeth Drake: [00:14:37] The right time that it had to regularly be given. Personally, we created -- we went into more of political things. And so, we wanted a three-day prescription refill type thing, and we got to actually go present it over at Battelle. And we had to present it to Mike DeWine, a couple of others, political-

Annalies Corbin: [00:14:58] Ohio political folks.

Fatima Bainazar: [00:15:01] Yeah, Ohio political folks, yeah.

Annalies Corbin: [00:15:02] Absolutely.

Fatima Bainazar: [00:15:02] So, it was fun.

Annalies Corbin: [00:15:03] And you learned a lot from that experience.

Fatima Bainazar: [00:15:05] So much. I didn't recognize that the opioid crisis was a crisis until we were told it was. And so, that made me realize that we're living in a world where things need to be improved. And so, being able to really see that real-world issues was really eye-opening for, I think, all of us really.

Annalies Corbin: [00:15:25] Yeah. Melissa, you want you want to build on that with with an experience for you that was powerful?

Melissa Olvera: [00:15:31] Yeah. So, I was thinking the same thing about the Metro School's Design Challenges because that was the first time for me that I saw that STEM could be applied to the real world. Before, it was like, "Oh, you do like your science and your math classes." And then, that was like you bring in the outside world, and connect it to what you're learning into school, and you do something with it.

Melissa Olvera: [00:15:48] So, that was the first time that I was thinking outside the box of things in the political science world, but also in making tangible products that would help the crisis. And like we're saying, that was the first time that I realized that I can use

STEM and what I'm learning in school for something outside that's actually affecting the community.

Annalies Corbin: [00:16:08] So, even in the STEM school, right, you struggle to figure out the real-world connections until you actually translated that experience through the context of a Design Challenge. Yes?

Melissa Olvera: [00:16:19] Yeah.

Annalies Corbin: [00:16:19] Is that what you said?

Melissa Olvera: [00:16:19] Yes.

Annalies Corbin: [00:16:20] Is that what you said?

Fatima Bainazar: [00:16:20] Yeah.

Annalies Corbin: [00:16:20] Awesome.

Melissa Olvera: [00:16:22] She said it.

Annalies Corbin: [00:16:25] She said it. She said it. And the reason I'm stressing that is because over, and over, and over again, as schools think about how we start to transition into this -- everybody agrees we want really engaged kids. And I think you're hard pressed to find folks that say that kids can't do an amazing array of things because it's just endless. But we do struggle with how do we meet the needs of broad population, state and federal standards, and family and community expectations, and keep it all real. It's a lot of stuff to juggle, right? And one of the things that I spent a lot of time talking about is stop trying to juggle so much, and just make it real, and see what happens.

Elizabeth Drake: [00:17:14] So, I have thoughts on what you're saying, yeah. Usually, when someone says hands on, you kind of think of maybe a chemistry lab. But the

issue with that is everything's all set up. You're going to be using chemical A and chemical B, and you're going to be using these tools, and this is what you're going to do, and it's literally written down. And that's worked for so long because that's easy to replicate. One teacher can make that, and then you can pass that on for the next 20 years because chemistry doesn't change.

Elizabeth Drake: [00:17:39] But with getting kids real hands-on experience and actually making them learn how to use their STEM skills in the real world, you kind of have to have nothing on your sheet of paper for your lesson plan. You just have to -- it's a lack of walls, and kind of seeing the look on their faces when they're like, "Wait, I'm really not for sure what we're supposed to be doing with this." And the answer is what you want.

Elizabeth Drake: [00:18:02] So, when we started doing Design Challenges, sometimes, I would get frustrated because I never encountered an academic situation where there were very minimal guidelines. I was like, "So, you mean the entire opioid crisis? Anything? Anything?" That's a big thing. And I just got the guidance, "You focus on something, but within that realm, you can do whatever you want."

Elizabeth Drake: [00:18:25] So, it's that being a little bit uncomfortable with how many options you have, and then learning to work with that uncomfortableness because in the real world, you don't sit down to solve a problem with the tools that you're going to need put in front of you and procedure sheet next to you.

Annalies Corbin: [00:18:42] Why do you think that we wait around for that? Why do you think? I mean, you're sitting in the middle of this right now, and you guys are actually -- because the particular school you're at, also, early colleges, you are moving into the next phase a bit a step ahead. And so, given that, why do you think? So, you're living in that transition every single day because you're transitioning on an ongoing basis, unlike in a traditional setting where it might be a break at middle school, a break at high school, a break at college, or a break at career. It's a little more seamless for you guys. So, why do you think, as Liz pointed out, it is easier to teach that way, but it's also scary? What do you think the implications of that are?

Elizabeth Drake: [00:19:33] Are you seeing the implications of the factory-based education system that we've been going with for the past few hundred years? Is that what you're talking about?

Annalies Corbin: [00:19:41] Yeah, a little bit. I'm really thinking more about the fact that as we think about going into the world of work and transitioning or translating that, actually, back into the classroom as a mechanism to help prepare folks for that world of work.

Fatima Bainazar: [00:20:00] One thing, so, kind of like a metaphor in ways. Regular schools, they give you the resources and tools. And kind of like they give you a screwdriver, but they don't give you the drill to make the work easier and give you better resources. But in a way, this applied STEM and the real-world application gives you the drill rather than just the screwdriver that you have to manually do yourself because those applied -- like the real-world application of everything creates that seamless transition like you're talking about.

Fatima Bainazar: [00:20:34] I mean, as students, we're in school for most of our lives up until college. So, 22 years of school in a way. And none of that is you applying anything to the real world. It's just, "Here's a paper that has the times table on it, learn it, and try to spew it out when you're making a rocket ship somehow." But the applied science gives you that to apply what those times tables into making, not a rocket, sure, but making a little robot car or just, in any way, applying it creates that connection between what you've learned in the classroom, in that boring class where you need to really find to learn what two times two is. But, now, applying that, you're like, "Wow, I'm going to, now, sit through my classes to understand how I can apply that to the real world." I don't know if that makes sense, but-

Annalies Corbin: [00:21:26] Yeah. It's kind of a crazy sort of way to think about it, right?

Fatima Bainazar: [00:21:30] Yeah.

Annalies Corbin: [00:21:30] Yeah, yeah. So, let's talk a little bit about the robotics piece because I know-

Fatima Bainazar: [00:21:37] My favorite.

Annalies Corbin: [00:21:40] I know because you guys all all love it. But I also want to be really mindful for our listeners on a couple of things. The first one is that not everybody has the opportunity to just sort of blow up what they're doing and start something new as it relates to teaching and learning. So, we have to do a lot of adapting and transforming within a traditional setting, all which I would argue is 100% doable.

Annalies Corbin: [00:22:00] And you are examples of that because everything you've talked about is possible inside of what already exists, if it's just applied a little bit differently. And I think that robotics is almost the epitome of that in many ways, having watched you guys over so many years really think about what that program offers. But is it really for all kids? All interests? And tell me why, Melissa.

Melissa Olvera: [00:22:25] Yeah. So, before I came to Metro, I wanted to be a Music major. I wanted to go to school. I wanted to go to school for music, which it's crazy because, now, I don't. I'm the complete opposite side of the spectrum.

Fatima Bainazar: [00:22:39] I didn't even know that.

Melissa Olvera: [00:22:39] Yeah, because I want to go into industrial design. And coming to robotics, I never went into the engineering side, and I was always doing the media, the fundraising. Everything that wasn't building robots. And then, my sophomore year, I had that one interaction where me and one of the seniors who graduated last year from Metro Schools, we were making something for our pit space. It was like one of the work benches. And she told me to CAD it.

Melissa Olvera: [00:23:05] So, I was CADing it on shape, which is a really simple CAD software. And that was the first thing that got me into it. I was like, "Wow, I really like

CADing," after doing that. And then I was like, "Let me try to do more of this CADing thing." And then I was like, "Oh, this CAD makes you create products and then you can design those products and make it look the way you want." And that's what sparked my interest in engineering and doing things like industrial design. And I was like, "I don't need music. I can do music on the side," and then follow my true passion of creating tangible things that came from my mind, and that I'm making that product, and just doing every step of the design process, if that make sense.

Fatima Bainazar: [00:23:45] You can just make the musical instruments.

Melissa Olvera: [00:23:48] Yeah, I'll make music, what I used to make the music rather than-

Annalies Corbin: [00:23:50] Well, you tap into the same side of your brain. So, clearly your passions lean that way, but you found a way to apply that previous experience to that new one. And more importantly, to take that new experience and turn it into something you never even imagined. So, that's pretty darn awesome. Yeah. What about for you, Liz?

Elizabeth Drake: [00:24:08] So, I have always been interested in space. I loved that growing up. I still love that. I'm wearing a NASA hoody right now. So, the engineering, that wasn't a big jump for me. But when I talk about what I learned from robotics, I rarely mentioned the actual engineering techniques that I've learned. I bring up all the things that I've learned that I think I will need to be a successful person that wasn't taught in schools.

Elizabeth Drake: [00:24:34] So, I know people always say time management, but when you have six weeks to build a robot, you really learn how to manage your time. And then, also, just being comfortable with myself and learning how to interact in that kind of like semi-professional environment and just where I'm comfortable.

Elizabeth Drake: [00:24:56] Sorry, this is lots of open-ended stuff, but we are all friends on the robotics team, but we also have a leadership structure that we need to follow.

So, I deal a lot with realizing that Fatima is the Engineering Project Manager. So, she's above me, but she's also my friend. So, sometimes I'm like, "Is she mad at me because of the schedule or is she mad at me because it's something that I did as a friend?"

Elizabeth Drake: [00:25:15] And I know that doesn't seem like it's related to education, but these are things that you experience in the workforce that if you can figure out how you're comfortable dealing with those situations and who you are as a person when you're younger, your style, that really translates to help you move into that.

Annalies Corbin: [00:25:32] It's all good.

Elizabeth Drake: [00:25:35] Yeah.

Annalies Corbin: [00:25:36] So, Fatima, talk a little bit about your experience with the robotics team, and how that, sort of, for you, translates.

Fatima Bainazar: [00:25:45] Yeah, I would say same as Liz again. When I'm talking about robotics, I don't talk about the engineering concepts. I mentioned that, yes, we have only six weeks to build a robot and just our bare hand. Not bare hands but with some tools and all our ideas, and that's it. But, really, what I talk about is who I've developed into and become because, I mean, I'm helping run an entire team. And I never would have imagined that as a student myself doing that, but really just the interpersonal skills that you learn.

Fatima Bainazar: [00:26:20] And our coach, Dr. B., always says, "We're teaching you the soft skills." And that's so true. And soft skills is like, "Ugh, they're soft skills?" But no, those are the skills that you need for your future, for your workforce to interact with people. And when we say robotics, it's like, "Oh, a bunch of nerds building a robot." But, really, it's not. It's developing into the people that -- like the next generation of the workforce really. And so, all those skills, the soft skills that you learn is why I love robotics.

Annalies Corbin: [00:26:53] Yeah, absolutely. And for our listeners, Dr. B is actually Andrew Bruning. A previous episode, again, when we were actually introducing the first robotics program. So, if you want some more details about the ins and outs of how the program works, feel free to just jump back and have a listen.

Annalies Corbin: [00:27:12] So, I want to sort of follow this with a piece that Liz mentioned about, "Hey, I'm not sure if Fatima is upset with me," right? Because that gets-

Elizabeth Drake: [00:27:24] Okay, that's good. That was good. I wasn't for sure if that was on the right topic.

Annalies Corbin: [00:27:28] So, really, where I'm going with that, though, is actually that not only has this collectively been an experience for all of you to learn, but it has actually been an experience for all of you to lead. And so, as girls who lead, as students who lead, as young folks who are going to become that next generation of citizens of our country and of our world, the stewards, let's talk a little bit about the different ways that, in creative environments, you can learn to lead or have the opportunity to lead.

Annalies Corbin: [00:28:03] So, first and foremost, the program scaffolds you guys all to be able to do that. But there have been other opportunities that you've had as it relates to leading through your journey. So, share a few of those opportunities with us. You want to jump in, Melissa?

Melissa Olvera: [00:28:19] Few opportunities to lead. That's a good question.

Annalies Corbin: [00:28:21] Yeah. So, how do you think about that? How do you think about leading and your experience leading? And somebody else jump in if you want to.

Melissa Olvera: [00:28:28] Yeah. So, I think my leadership experience, kind of like what Fatima was saying, has shaped me into like a different person who I never thought I could be. So, I used to be really shy. Now, I'm super outgoing. I like to do stuff like this, and I like to talk to people. And I did not like that four years back.

Annalies Corbin: [00:28:44] I remember the Melissa coming to the Innovation Lab the first time.

Fatima Bainazar: [00:28:51] Both of us just wouldn't talk.

Annalies Corbin: [00:28:51] I know.

Fatima Bainazar: [00:28:51] And, now, we're here doing this.

Melissa Olvera: [00:28:55] Right. And, now, I like doing things like this. I would have never imagined myself wanting to do that. So, that leadership experience brought me out of my comfort zone, and it makes me comfortable now in whatever situation I am to go talk to someone, and share my experience, or just have a conversation with them because, now, I'm like, "Oh, if I can lead a team of 6 people, I can talk to this random person and be okay with it."

Annalies Corbin: [00:29:17] Yeah, that's awesome.

Elizabeth Drake: [00:29:20] So, as a young woman and hoping to be a woman in STEM one day, you always read reports about there aren't that many women in STEM and in leadership roles. There aren't that many either. And they always talk about kind of will likely be respected, being bossed around. And I never thought that that was something that I would struggle with because I've kind of been pretty outgoing.

Elizabeth Drake: [00:29:39] But this past year, I've struggled with lots of self-confidence issues when it comes to that. And it's really been nobody's fault but mine. But I think it's really important that I'm learning how to deal with that now, so in 10 years, I can walk into my new engineering job and not feel threatened by anyone because I'm secure in who I am.

Elizabeth Drake: [00:30:01] And then, if I'm secure with who I am, I can lead, and I can relate to other people struggling with that. So, it's becoming more comfortable kind of

leading from behind and feeling confident in who you are, so you don't need that encouragement. And then, you can turn that into encouraging your team and just keeping an eye out for everybody else.

Elizabeth Drake: [00:30:21] Once you've experienced those things, you kind of know, "Hey, maybe..." I don't know. So, let's say Sofia is struggling with that a little bit and going to talk to her. And also -- Okay, sorry.

Elizabeth Drake: [00:30:33] I went and had a conversation with some of the young girls on the robotics team the other day. It had nothing to do with robotics, but I felt like I was just kind of coaching them through that transition from middle school to high school. And that created such a tight connection that I realized - I was working in the shop the next few weeks - went so much smoother just because we had that baseline of being girls and relating to each other in that way. So, it really builds that foundation.

Annalies Corbin: [00:30:57] That would be better near-peer mentoring.

Elizabeth Drake: [00:31:00] Yeah, yeah.

Melissa Olvera: [00:31:00] Yes.

Annalies Corbin: [00:31:01] Yeah, yeah, yeah. So, Fatima, you participated in an awful lot of near peer-mentoring in and around the PAST Foundation Innovation Lab. And so, I do want to to just sort of highlight a little bit. And I don't know if when all of you were having the experiences realized how -- I don't want to say that you guys were set up, but you were set up, right?

Annalies Corbin: [00:31:25] I mean, that's the reality of it because we would have you guys come in as freshmen, and you start working and living in that environment. You get involve in the team. The team, by design, because we're home hosted here at the PAST Innovation Lab, we engage you guys in almost everything we do here. We don't view those things as separate.

Annalies Corbin: [00:31:47] And so, through that, you volunteered at Maker Manias. You volunteered at a whole host of different pieces and things. And then, you're participating in summer camp maybe as a participant or maybe as a Metrobot team. And then, the next thing, it's like, "Oh, hey, let's design the Design Challenge to run at this thing." And then, all of a sudden, I believe last summer, all three of you guys actually, not just participated and volunteered, but actually led summer STEM programs for elementary and middle school kids in some capacity.

Fatima Bainazar: [00:32:26] Yeah, that was-

Annalies Corbin: [00:32:28] Did you realize that was happening quite like that?

Fatima Bainazar: [00:32:29] Honestly, no. I got the opportunity to run a camp. And I was like, "Oh, cool." I like mentoring and teaching kids because I like to see that light bulb turn on. They're like, "I like this," or like the aha moment of, "Now, I know how to do this." And so, I was like, "Okay, this is cool." I always like to -- when my little sister needs help, I'm always there to help. And I like to help.

Fatima Bainazar: [00:32:56] And so, when I got the opportunity to run a summer camp, I was like, "Yes, let's do it." It took me three weeks to come up with what I would actually do for it. And at first, I was like, "Oh no. Maybe this isn't the right way to teach it." So, trying to figure out how I learn, and how others learn, and how I could put that into a summer camp, and make it fun, and teach elementary kids.

Fatima Bainazar: [00:33:19] And so, to me, I didn't realize it until, really, you kind of said it, and I'm like, "Wow. I did kind of run that and teach all those kids how to code or build on things." So, the opportunities that you get, really, from PAST, and Metro School, and the whole network, it's amazing because you don't realize what you're doing until someone kind of tells you, and you're like, "Oh yeah."

Annalies Corbin: [00:33:41] Yeah, yeah. Well, I mean, just think about it. And maybe this is a little bit weird, but, Melissa, your brother comes back from time to time. And so, it's an intriguing thing. And I remember I'm actually the first time, I think it was maybe

this last fall, and I walked into the afterschool program, the Innovators Club, which you guys have all interacted with in so many different levels. And there was a team of engineers in there from Ohio State University who had come in to do a program with those middle school kids. And I look up, and who do I see?

Melissa Olvera: [00:34:19] My brother.

Annalies Corbin: [00:34:23] Yeah. But I think that's part of that journey. And the reality is we've had so many students who participated either in the PAST programs, the Metro School, or any of the partners school programs that find their way back into that opportunity to teach others. And that is an incredibly rewarding thing to see, because it says to me that you are passionate about what you know and that you're confident that you can then share that with others. Melissa and Liz, you also have participated in those near-peer mentoring opportunities through the campus and the programs. Any highlights or experiences that surprised you?

Elizabeth Drake: [00:35:05] I don't know if I'd say experiences that necessarily surprised me, but I would reflect on how much robotics has changed my life and how much it's meant to me. And it's just been such an important part of my life. And, now, I want to share that with everybody I can.

Elizabeth Drake: [00:35:22] So, I have to remind myself when I'm having a casual conversation in public, and someone mentions they're a mom, not to jump and be like, "Hey, put your kids in robotics" because that's just been such an important part of my life, and I want to share that with other people.

Elizabeth Drake: [00:35:37] So, that bridges that gap of maybe being a little fearful that I want to be able to do it well. And then, you just start doing it. And it starts with a conversation. It starts with helping a kid put a shaft into a Lego wheel. And the next thing you know, you're talking them through how to code, and you're talking them through how to testing. It just snowballs. Yeah. So, it starts with wanting to share the great experiences that you've had with other people. And the next thing you know, you're leading a summer camp.

Melissa Olvera: [00:36:04] Yeah. My experience has been kind of along the same lines as Liz. I never had that like aha moment, but I realized the importance of giving back and sharing your experience with others. I remember, this was a year ago or two years ago, I would volunteer at the Innovators Club. And I went every single day until-

Annalies Corbin: [00:36:23] I'm sneaky that way. [Crosstalk], go watch out. I hope you win.

Melissa Olvera: [00:36:25] I know. I was coming in every day after school until like 5:00 or 6:00 for a month or two before robotics started. And I was like, "Wow, I'm mentoring these kids, I'm helping them in this activity that they're doing." And it's like that's when I realized, "Wow, this is..."

Melissa Olvera: [00:36:43] It's a great feeling, helping kids and sharing the knowledge that I kind of already went through with them at a younger age. And it was a very rewarding experience, kind of like what you talked about. Like when you see people come back, that's what kind of makes me passionate about doing outreach like that and wanting to come back after I leave Metro, but still staying involved with robotics but, also, with PAST Foundation whenever I can.

Annalies Corbin: [00:37:08] And then, ultimately, that translates, right? So, that translates into you're going off into college or going off into the adult version, the real world. You've been living it for a very long time, and it takes you into career. Well, if you could name the one thing that your experience thus far that you want to carry with you, things that are the most important piece for you to carry with you into that career, what would that be?"

Fatima Bainazar: [00:37:37] That's a loaded question.

Annalies Corbin: [00:37:38] It is a loaded question.

Elizabeth Drake: [00:37:41] Yeah.

Annalies Corbin: [00:37:41] It is a loaded question. And as always, I have an agenda. So, play my game.

Melissa Olvera: [00:37:43] Okay.

Elizabeth Drake: [00:37:45] Okay, I can go first.

Melissa Olvera: [00:37:47] Yes, please.

Elizabeth Drake: [00:37:47] So, I think there's two parts of that. There's-

Annalies Corbin: [00:37:49] No. I said for one.

Fatima Bainazar: [00:37:56] Hey, come on, Liz.

Annalies Corbin: [00:37:56] 0.5, so it halves. Make one. Okay.

Fatima Bainazar: [00:38:03] That's [crosstalk].

Annalies Corbin: [00:38:03] It's your way to quantify. Go girl.

Elizabeth Drake: [00:38:03] Okay. So, first, there is the you side, and then there's the other side of things. So, for me, sometimes, before I go into the shop, and I know I have a stressful day, I literally stand outside the door, take a deep breath and like, "Liz, you got this." And then, I open the door, and I go for it. And I know it sounds cheesy, but you got to be secure in yourself before you can help others.

Elizabeth Drake: [00:38:19] And then, comes that other part of you got to have each other's back. I distinctly remember, I think two years ago maybe, a few people in the leadership team, including myself, we were having some quibbles between the three of us with who was doing what. And one of our mentors sat us down. And I was like,

"Look, I don't care if you guys want to go like rip each other apart after this, but you are a leadership team, and you need to present a-

Fatima Bainazar: [00:38:41] Unified.

Elizabeth Drake: [00:38:42] "... a unified front to the rest of the team." So, that's when I realized, you know what, I have a job here to kind of go beyond my personal interest. And maybe, I'm not never mad at Melissa, but let's say if I'm mad at Melissa, walking in together and looking like we're best friends because we need to keep the team moving. So, you got to be secure in yourself. And in that way, you can help the entire team go forth into whatever they need to do.

Annalies Corbin: [00:39:12] Anybody else?

Melissa Olvera: [00:39:17] I'm still thinking.

Fatima Bainazar: [00:39:18] No, it's a good question.

Melissa Olvera: [00:39:18] I was admiring her response.

Fatima Bainazar: [00:39:18] Yeah.

Annalies Corbin: [00:39:18] Just jump back in as we move through. So, as we sort of think about, then, sort of, what those sort of parting shots, I'd like to end all of the podcasts recognizing that our listeners, many of them are out there in the trenches, in the world of teaching, learning, and work, doing really amazing, wonderful things. But they're also contemplating, "What's the next thing I could or should be doing?" And there's going to be a tough road to get there. It's never, never easy. So, as we think about helping those folks down that journey, if you could you could tell a teacher that you don't know somewhere out there in the world, "If you'll only do one thing differently"?

Elizabeth Drake: [00:40:15] Oh god. Oh god.

Annalies Corbin: [00:40:15] But the reality of it is what would that thing be? And I'll lead for you. Okay, I'll lead for you because -- and some of our listeners know my back story and my journey, but I came out of applied research science field. And the thing that I have seen over and over again, and it has created the foundation of why I do what I do and certainly why PAST does what PAST us in the way that we sort of think about crafting, our sort of role in all of this has been that there is so much value in believing in the people who walk through my door, before I know anything about them, that they are infinitely capable of anything I hand to them. It may be up to me to help backfill the gaps, or the skills, or the knowledge to help lead, share, and mentor along the way. But the foundational pieces that I don't have a moment of doubt that you, Fatima, or you, Melissa, or you, Liz, or you, total stranger who walks through is capable.

Elizabeth Drake: [00:41:22] I think that's really important.

Fatima Bainazar: [00:41:25] Yeah.

Elizabeth Drake: [00:41:25] Yeah, yeah.

Fatima Bainazar: [00:41:26] The idea of having someone who believes in you and supports you. And even that simple, like, after you finish something, and you're stressed, or even that simple homework that you did, and your teacher gives you a "Good job" or a thank you for whatever you helped with, that really, for me, I'm like, "Oh, wow. I helped with something," or I did something good. And that fuels you to want to do more.

Fatima Bainazar: [00:41:52] You may think that it was a simple "Good job," but for a student, that might be the only motivation they get from anyone. Maybe like, I don't know, family life is hard for them. And so, school is where they grow. And so, having those teachers that can tell you that you did a good job or really anything and help you with things when -- that you can go to.

Fatima Bainazar: [00:42:16] Because if I didn't have a family that I could go to, I have a family at robotics, and I have a family at school. But if I didn't have that school family, because I never was able to connect with any of them, I wouldn't have anyone to go to if I didn't have family or school. And so, I think, just having the teacher. You don't have to be amazing and inspirational and like, "You can go to the moon," but that, "Good job," it's so simple, but it really can change someone's day and, really, their outlook for the future.

Elizabeth Drake: [00:42:47] I think you, as a teacher, creating a space where mistakes are not only okay, they're encouraged. I know you hear this all the time, but I was reading an article a while ago about a teacher who is teaching girls to code. And a girl raised her hand, say she had an issue. And she'd come and look at her screen, and the girl would have nothing on her screen.

Elizabeth Drake: [00:43:10] And then, the teacher, one day, realized Command Z backspace, and what came up on the screen was all of the times the girl tried something out and it didn't work, but she didn't want to present all those failed efforts to the teacher. So, she'd just leave the screen blank and say, "I'm struggling."

Elizabeth Drake: [00:43:25] And I do that all of the time. I'm so guilty of that. So, creating a space where it is okay to say, "Hey, I got three parts of this equation, I don't understand the other four, but this is my best go at it," and really encouraging them to be able to do that time and time again. Safe space to make mistakes. That's what you need.

Fatima Bainazar: [00:43:48] I like that.

Annalies Corbin: [00:43:48] Perfect, safe space to make mistakes. That's a good one. Yeah.

Elizabeth Drake: [00:43:53] It rhymes. It's good.

Melissa Olvera: [00:43:54] I was thinking, so, with robotics and mentors, but also at Metro Schools, how you have your adviser. It goes back to the same idea of having that one person that is always there, kind of like your personal cheerleader in a way that's always cheering you on are always there for you whenever you have an issue. So, at Metro or, at least, before I was comfortable with the mentors at robotics, before I knew them, it was always my adviser. I was like, "I'm struggling in this class. How do I do better?" or like, "I don't know what to do for this project," because I was also new to like the Metro ways of doing things.

Melissa Olvera: [00:44:27] So, I would go to my adviser my freshman year. And then, I started going to my mentors at robotics. And it's always like that person, even if it changes, that you go to for advice or to just help encourage you and give you that extra shove that you need to go on and keep doing things.

Elizabeth Drake: [00:44:43] One last thing. So, as you guys have heard, we're on the robotics team and Dr. Corbin, her office is on the other side of the building. And it seems, at first, one time, I just like walked from the robotics shop across the building and just walked into our office. I was like, "Hey, Dr. Corbin." And it felt kind of strange because in a normal school environment, you can't just walk into the principal's office if you need help with this, but I can just walk into your guys' office space, and bring something up to you guys, and you're just welcoming. And there, once again, it's being available without that formality of closed doors. Yeah.

Annalies Corbin: [00:45:24] Best part of my day is when you guys show up. I mean, if I have a bad day, I tell people this all the time, as I'm wandering around the planet and talking about this, if I'm having a bad day, I'm going to go sit in the atrium at the Innovation Lab and just watch you guys.

Fatima Bainazar: [00:45:39] We get excited when you come.

Elizabeth Drake: [00:45:39] Oh, yeah.

Annalies Corbin: [00:45:43] Well, okay, we'll talk about that another time. But, for me, it's just the joy of watching guys. And, I guess, in closing for me and for the show today, part of what I talked about, and I do talk about you guys all over the world. I talk about you guys all the time. And the staff will tell you that that's very, very much true.

Fatima Bainazar: [00:46:09] Hopefully, it's good stuff.

Annalies Corbin: [00:46:11] It's all good stuff. And the thing that I tell the world when when I'm asked about why do this, and why should more do this, why do I think that is really possible, part of what I say is that when I step back and watch, and I think about sort of really what's capable, and I reflect on the fact that the reality of it is I would put you guys up against any R&D team in the world.

Elizabeth Drake: [00:46:37] Oh, no, no, but thank you.

Annalies Corbin: [00:46:41] And we would.

Elizabeth Drake: [00:46:41] Thank you.

Annalies Corbin: [00:46:41] And my reason for that is because you are fearless. There's nothing you won't try. And I use you in this case, and the big giant uses all the students that we see consistently that go through programs, whether it'd be this one or programs in other parts of the world that are very similar that carry a lot of the same characteristics that we've been talking about today. There is a sense of fearlessness of the students. It's that confidence, that collaboration. It's all those soft skills you didn't know that were out there that come to play. And at the end of the day, it means you were an amazing collaborative group of people. And quite frankly, I'm awed by that. We are turning the world over to you, and you're going to be amazing.

Elizabeth Drake: [00:47:22] We have you to thank for that.

Fatima Bainazar: [00:47:22] Yeah, yeah.

Annalies Corbin: [00:47:22] Thank you for being here today.

Melissa Olvera: [00:47:27] Thank you very much. Thanks.

Fatima Bainazar: [00:47:28] Yeah, thank you.

Elizabeth Drake: [00:47:28] Thank you for having us.

Fatima Bainazar: [00:47:28] This is fun.

Elizabeth Drake: [00:47:28] Yeah, we were excited.

Melissa Olvera: [00:47:31] We'll do it again.