

Joe McCormick (00:00):

Being disabled. It's like trying to find some way to be flexible and find some workaround. There's always a way to get there. It's just going to be maybe a little bit different or a little out of the box.

Eric Cross (00:12):

Welcome to science connections. I'm your host. Eric Cross. My guest today is Joe McCormick. When Joe is applying to Ivy League schools and leading the robotics team, he suddenly started losing his vision. By the end of his senior year, he had completely lost his central vision in both eyes due to a rare genetic condition. Joe ultimately went to Harvard to study engineering while navigating his new world with vision loss. Eventually, he graduated and fulfilled his dream of becoming an engineer. One of the things I was inspired by in this conversation was Joe's resilient optimism. This theme arose again and again, as he shared his story and gave his reflections on how educators can support students with visual impairments. And now please enjoy this great discussion with Joe McCormick. So you're in the middle of school. And how did that realization come about that something was wrong?

Joe McCormick (01:10):

Yeah, so I was definitely more student than athlete and student-athlete. So my primary thing was robotics club. So I was like really big in robotics. We did a program called Botball and so that was like my primary sport. The board that we play on is built of PVC pipe. And so I went to like, look through a PVC pipe and then I went to take the cap off of it. And there was no cap. It was just literally, I just couldn't see through like a 12-inch tube. And then I quickly realized something was wrong here. And so I had to kind of go through the motions of trying to figure out like what was wrong. And luckily I was diagnosed fairly quickly for it being a super rare disease and they figured out within a couple weeks.

Eric Cross (01:47):

What's the name of it.

Joe McCormick (01:48):

It's called, Leber Hereditary Optic Neuropathy. People just call it LHON for short. It's like super, super rare. I think the last stats I saw is that there's like 60 new cases a year in the U.S.

Eric Cross (01:59):

I figured the advancements in genetic testing since it was first diagnosed 'til now, have there been treatments for gene therapy?

Joe McCormick (02:08):

So I got lucky that I'm in a trial. I got in a trial when I first started losing my sight. So I was the third person in the world to get this particular drug to treat it, and it actually was pretty effective for me. But on the unfortunate side, because I was the third person in the world to get it, I couldn't really get the dosage I needed for a while. From the time that I got kind of what my current dosage is, my site has not gotten any worse and this is typically a degenerative disease, but it took them like two months to legally get me to the right limit. And in that time period I lost a decent amount of sight.

Eric Cross (02:39):

And you're still currently in that trial.

Joe McCormick (02:41):

I still am. Yeah. They stopped enrolling patients maybe seven years ago. So there's, I think 10 of us left in the trial, but luckily I'm still in it, which is awesome.

Eric Cross (02:50):

You were humble as far as like your athletic skills, like you played sports. You know, in high school and that's like a big feat, and then you, you did Botball, which I'm pretty familiar with is that the building the robots to be able to ...

Joe McCormick (03:00):

The games were, I would say, made up, but revolved around, trying to usually move like POM POM balls or small items through some sort of obstacle course. So our team finished on our best season. We finished third internationally.

Eric Cross (03:16):

How early did you get involved in that?

Joe McCormick (03:17):

I started my freshman year of high school, so, back in 2006. And pretty quickly was able to kind of get to captain on the team, I think, in my sophomore year. And so they'll pursue that for, for all four years in the process.

Eric Cross (03:32):

So you make it through high school, you're in college now and now you're navigating college. Now, have you lost your vision or is it a slow progression?

Joe McCormick (03:41):

It was interesting, because obviously the spring of senior year is also when you have to commit to college. So I found out I lost sight in one eye first and basically with this disease, it's kind of a ticking time bomb that I was going to lose sight in my other eye. It was just a matter of, is it days, weeks, or months? I found out about this disease at the beginning of March of 2010 and two weeks later I found out I got into MIT. So that was super exciting. And right around that time, when I started to lose my sight, I got in this clinical trial. I also found out I got into Harvard off the wait list, which was now an interesting decision, because obviously Harvard is probably less strong historically in the engineering side, but really strong in computer science and really strong at everything else.

Joe McCormick (04:24):

And so Harvard, I think gave me a much more vast array of choices, where again, if it turns out that after losing my sight, I can't do engineering well, I could fall back into like anything that Harvard offers because it kind of offers everything and it was an awesome fit for everything I wanted to do at the time. And, the other thing that is interesting is obviously on the accessibility side is Harvard had a really, really awesome accessible education office and did a really good job of making sure I'd be able to integrate with the rest

of the students, get the books I needed, get everything I needed, accessibly. And MIT surprisingly did not. I mean, they had something, but it was as one big concept. They say, I won't be able to read any printed material once you lose your sight. And at Harvard they say, okay, cool. We'll look at your course and we'll know that you need these books. We'll go get all those books, turn them into PDFs and send them over to you.

Eric Cross (05:13):

During those first couple years, what was it like having to transition with a new kind of learning style using these accessibility tools?

Joe McCormick (05:21):

Harvard very much did not want me to start immediately. They were very much like, oh, take a gap year, go learn all the tooling, or at least take the first semester off and come and start afterwards. And I was extremely adamant that I did not want to do that. In that I wanted to be able to kind of start college with the rest of my friends and finish college with my friends, the timeline kind of worked out was I started to lose sight in my second eye in May and obviously school starts in end of August. And so it was a very quick turnaround where I had to learn these tools. For me, it was like, okay, like I can't work on a piece of paper anymore 'cause I can't read my own handwriting at all. So what, what can I do?

Joe McCormick (05:54):

And so, I thought of, okay, let me just get a whiteboard. And so we installed the whiteboard in my dorm room and then I worked with a whiteboard and a whiteboard marker, so I could write whatever font that I could see. And then what I did is after I filled up the board, I would just take a picture on digital camera and I would basically then wipe the board, do all over again. And at the end of a lesson, I would just connect that to my printer and print out eight and a half by 11 sheets of paper with my work on it that started on a four-foot by four-foot board and now ends up on eight and a half by 11. I hand that into the professors. Ultimately I think, especially, being disabled, it's like trying to find some way to be flexible and find some work around, because I think there's always a way to get there. It's just going to be maybe a little bit different or a little out of the box.

Eric Cross (06:33):

The question I wanna ask is like, was there an emotional component for you in this as you were going through trying to find these solutions or did you just find it as another thing to tinker with?

Joe McCormick (06:44):

Yeah, I think I'm relatively unique in that I am like, optimistic to a fault. I always think that something is going to work out in my favor and maybe something's eventually going to blow up my face, but, usually they don't. And so I think from my side, it was like, well, this is, is just another challenge that I have to work through. One night in the very beginning, when I first found out the actual prognosis being kind of permanent loss of central vision, and that's one where it's like, oh wow, this, this hits you hard. And at that point in time, I was really thinking about the future and like I'm never gonna see my children's face. I'm never gonna do all that stuff. And I now have a son to look at his face and yeah, I can't see him from across the room, but if I'm a few feet in front of him, I can still see that smile and see him be excited about stuff.

Eric Cross (07:22):

What advice if you're thinking about teachers that are working with students who are visually impaired, what advice would you give them or, teachers with IEPs or disabilities in general? Is there anything that you kind of looking back would, would tell them?

Joe McCormick (07:35):

Yeah, it's interesting. I think it's an interesting factor too, because I also myself was a teacher in that I was a teaching assistant for computer science courses. And so obviously then on the other side, I need to be accommodating to my students in the process. So I was a teaching assistant for two years, for the intro CS course at Harvard. And I think the same thing that probably teachers are doing on a daily basis, just in non-disability scenarios, of being flexible is key, right? As you mentioned, like not everyone's gonna receive information the same way, whether that's due to any number of disabilities or just that, I don't know, they're not feeling it that day or different people are visual learners versus auditory learners versus hands-on learners. Like I think for everybody there's some different way that they probably best process that information and best work.

Joe McCormick (08:21):

And I think for teachers, it's trying to find the strength and find it in each person. And I think it's a collaborative effort, right? I don't think it's the teacher's job be like, hey, this is exactly how you should do it. It's like, oh, let's talk about some different ways that we can solve this. And that's much easier to do when it's a high school student than if it was like a second grade student. But as a high school student who's particularly, I'd say, if they're motivated, they're gonna collaborate with the teacher to help brainstorm different ways to do it. But I think really starting to think outside the box. And when I would join classes in college, one of the first things I'd say to a professor was like, hey, I can't see anything you're gonna write on the board. So anything you ever write, as long as you say what you're writing, I'll be able to follow along. But if you don't say it, I'll have no idea what you're talking about.

Eric Cross (09:05):

Is that something you would say in the beginning, like when you met them, you'd lead with that?

Joe McCormick (09:09):

I would, 'cause I would say, basically you have the equivalent to an IEP, but I would have like a letter of accommodations, which is what I was by the university kind of permitted to be accommodated for. And that included like, extra time for testing, private room for testing so I could do this whiteboard setup, use of my computer in the classroom to take notes. And so I would come to them after the first day and I would say like, hey, like just so you know, like these are accommodations that I have, but I was like, here's some basic tips that would work well for me. And again, the saying what they wrote on the board is super important in math and science classes. I wouldn't need to tell that to the literature class right?

Joe McCormick (09:46):

Everyone would be talking anyways in the process. But again, for most professors, all they needed was that little prompt and then they were fine, and maybe they needed a reminder after a little bit. But the other thing is like people get into teaching because they want students to learn. They want them to

succeed. So having an accommodation, I don't think is going to feel for them to be like this huge burden. It's like, oh yeah. If I did this little thing, your life gets better. And then they quickly realize like, yeah, that's not too hard. Like I can gladly do that in the process. And so for me again, maybe it's just me being lucky, but I never got any pushback from any professor ever in my four years to do any of the things I was asking for in the process. And I think some of that is again being flexible for both directions, but also just kind of presenting the why behind the what, right? Like it's not saying like, hey, you need to do this. It's like, hey, this will help me because X, Y, Z. And I think for motivating anybody, if they know why they should be doing something, they'll be much more interested in doing it than if they're just told what to do

Eric Cross (10:40):

And hearing that self-advocacy, like when you are in college, I'm thinking about how do I encourage my students to also advocate for themselves and own what they need. I'm teaching middle school science students. And they're at an age where they know if they have a special learning need or a health impairment. They know these different contexts that they live in that impact their learning and then advocating for their self and saying, this is my learning, how do I communicate that to an adult, which at that age just can be tough because the adult, there's this huge power difference and age difference, but them knowing like, no, it's about me, I'm going to advocate for myself and speak to this teacher and let them know this is what I need for my support.

Joe McCormick (11:19):

I can't picture myself as a 10-year-old or a 12-yearold being able to advocate like I can as an 18, 19, 20-year-old, right? So it's definitely a lot tougher from that side. And I think it will probably require much more work as the teacher to help pull that out of the students more than when it's basically having as a college student, basically an adult in the process.

Eric Cross (11:36):

It is. And demystifying that even though they're adults and we're adults, that it is okay to speak about the things that you need. And everybody comes to it from a different background and perspective on that. Especially children, they look at adults in different ways. And if you come from a family that says whatever they do is right, then you're not gonna be as likely to speak up for yourself. And if you come from a family that encourages you to engage in inter-generational dialogue and things like that, you're gonna be more active in participating, and as teachers, it's important that we empower our students to use voice and to advocate for themselves. And right. It is a process of allowing them the permission and feel like they can do this. And it is okay to do.

Eric Cross (12:19):

It's not disrespectful. It's not, they always know best. It's something that I always try to do with my own students. And I know many teachers who are listening, it's one thing that we want to do, 'cause once they're away from us, once, you know, especially the teachers who are trying to make sure they're serving and differentiating the various needs, they may not always have someone like that in the classroom. They might always be that person or be with that teacher who's doing those things. And so because you know, our kids see what 60, 70 different teachers throughout their career as K-12, I mean, so many different educators around. Shifting gears a little bit. I read that you're a beast at beat ball.

Joe McCormick (12:58):

Yeah. So as mentioned on the sports side, I feel like I am a significantly better blind athlete than I ever was a sighted athlete.

Eric Cross (13:05):

People who are visually impaired, you said, there's a spectrum. Like you have your peripheral vision. Does that give you a little edge in beat ball?

Joe McCormick (13:11):

No. So the way beat, well, somewhat, but the way that beat works, beat baseball is its full name. It's an adaptive version of baseball for the vision impaired, but every player wears a blindfold. So it equals the playing field. When it comes to the actual game, often being more sighted is a disadvantage because you're not used to using your ears, which is a key part of, of beat baseball. The ball is beeping and that's how we can follow it and play in the process I've been playing now for, this would be my 10th season. Our team is pretty good, so we finished as high as second place. Last we finished in third place and I've made the offensive all-star team in the process. So it's a ton of fun, again, a way to kind of get back out there after playing sports. Again, another fear of losing sight is like oh, can I still do the stuff I used to do? And the answer is like, not exactly, but again, flexibly, yes. Like I can't go and play regular baseball with my friends, but I can play this version and have a ton of fun doing it.

Eric Cross (14:04):

People say when they lose one sense, another one gets enhanced. Has that been your story or your feeling? Is that true?

Joe McCormick (14:10):

I'd say it's generally true. For me again, because I still have peripheral vision, I definitely not seen like the crazy increase in hearing or something in the process, but definitely I can hear a train off in the distance that most people can't, type stuff. But it is also interesting to see typically the best defensive players in the league are folks with no vision and they've never had vision, because they're used to listening and using their ears constantly. And so picking up a beeping ball is much easier for them where they can hear it and just stick their hand out and pick it up. And I think with all this too, and I didn't mention enough in the beginning is like even beat baseball is heavily based on support from sighted people in the process, right? Like as I mentioned upfront, the pitcher and catcher in the sport are both sighted.

Joe McCormick (14:53):

It'd be far too hard if they were also blind and blindfolded, 'cause they'd have no way of hitting the bat. There are teams all over the country, if you are particularly keen in sports, definitely look up if there is a team near you, likely there is. Most teams are always looking for volunteers to help. I'd recommend the national beat baseball association nbba.org and looking to see if there is a local team that you can help out in the process. Sighted people are a key part of that sport. I think it kind of goes back to the theme upfront and the same as when I was back at Harvard, having a lot of support is like, there's no way to go through these journeys alone. Or if you do, it's just significantly harder. And so whether that's friends taking me to class for the first time to find where in this building the classroom, or my girlfriend at the

time, now wife, helping me by driving me to places or doing all this stuff. No matter where you are on this journey, I feel like it's hard to go through it without some form of support.

Joe McCormick (15:41):

I think, for me, even just finding this blind baseball team, the Boston Renegade, when I first lost my sight is, I had never met someone who was visually impaired before losing my own sight, right? So it's like, I had no idea what it was even like to be blind, but finding this team pretty quickly then gives you friends with that same experience and a shared experience can make it much easier, but then also helps you to figure out these ideas, right? Like, I can give an idea to someone else and they can give me an idea on how to best find the train or whatever it is. And I think finding people with shared experiences will make, whatever is, whether that's because it's also impairment or other disabilities or yeah, It's just like anything, finding people with common interests and common backgrounds is going to make your life probably a little more successful in the process.

Eric Cross (16:22):

Looking back on your education, are there any teachers that inspired you or who stand out to you as you think back?

Joe McCormick (16:28):

Yeah, and I think, so the drama teacher I mentioned, his name is Mr. Gleason, obviously a strong influence 'cause that pushed me towards the robotics side, which ultimately, at the end day, I'm now a computer or software engineer, a computer science major by trade that I would've never been probably into that area at all without the robotics background. So I think that that clue is a big influence and then jumping onto the college side, I started in mechanical engineering, but that turned out to be not as interesting and also harder once losing sight. Like, that is a very, very visual and very hands on thing, which I was super interested in, but not being able to then do those hands on things, once I lost my sight was a much less interesting journey when I can't be using the AutoCAD machine or can't be doing all these different things in the process.

Joe McCormick (17:17):

And so from there, I took the intro to computer science course because it was a requirement to be a mechanical engineer and I kind of immediately fell in love with that experience. And a lot of that was thanks to the professor, who, who offered the course, his name's David Malan. He's pretty well known amongst the computer science industry. He teaches CS 50, which is the intro CS course at Harvard. And that definitely got me interested in computer science, which now has been my career for the past eight years. And he ended up offering me a teaching assistant position. I then taught that course, and without his influence, wouldn't have been as interested in the computer science aspects and made that major switch, and then a career switch after that.

Eric Cross (17:56):

You said mechanical engineering was harder being visually impaired because there's so much that maybe visually and spatially you have to see, but you're a software engineer and there's lines of code that you have to be able to go through. And so how do you navigate that? And you're a successful dude, like you you're doing this well.

Joe McCormick (18:17):

Yeah. So I'd say there are two main strategies that I use. So one is a technology called a screen reader, and what that software's job is, it's named pretty well, it reads your screen, right? So its job is to take everything that's visibly displayed on the screen and read it to you, for you to then interpret. The other thing I use is a screen magnifier. And so if I want to see something, I will zoom it in substantially for it to be useful for me. So if I'm using my computer, I'm typically zoomed in between eight and 10X zoom. So I'm only seeing whatever 12 and a half to 10% of the screen at a time. And in front of me is a 34-inch monitor. So, here's not a lot of characters on that screen at once if I do wanna look, but obviously that'd be pretty hard to be able to like physically be scrolling and reading that. So most of the time, if I'm writing code or reading code, it's all listening to it. When I'm typing, every single key that I press, it tells me. So if I'm typing out Joe, it's gonna say J O E and then I hit the space bar, say space. And so it sounds both annoying and hard, but after you've been doing that for a few months, and now for me, 11 or 12 years later, it's totally normal to just be like used to listening all day every day to everything that is being shown on my computer. But the other thing is it's crazy the work that Apple has done for accessibility. All of Apple products are fully accessible and for free. So you don't need to install extra software, it's just built in, it's called Voiceover and Magnifier on those. And so I use an iPhone and that is a total life changer.

Eric Cross (19:49):

So there are tools beyond Snapchat, Instagram,

Joe McCormick (19:52):

Definitely. And if not those tools just make Snapchat, Instagram, more usable as well, especially the bigger companies have put the time in to make them accessible and usable to people who are visually impaired. And for me, especially even like the Google suite of products, which I'm sure a lot of teachers are using, those type of things, Google has made all of those fully accessible.

Eric Cross (20:09):

On that conversation about software. Have you heard of the apps—there're two of them that I share with teachers in the grad school that I work in. One of them is called, Be My Eyes. And for teachers who are listening, it's, it's an app that allows people who are visually impaired and people who are sighted to be paired so that the sighted person could tell, using the camera almost like FaceTime, they can be called, and they're a volunteer, and the person needs them to identify two different brands of something in the grocery store, could be like cans of soup, you know, chicken noodle versus tomato soup.

Joe McCormick (20:38):

Yep. That's one I'm a huge fan of, I use that multiple times a week. Yeah. Be My Eyes is obviously great, but requires you both to talk to a human and there's a little bit of delay. Obviously you have to, to connect to somebody, talk to them in the process, Seeing AI is Microsoft's, it's the equivalent of kind of OCR, optical character recognition. But it does even more than that in that, as I mentioned, like, if I want to make a burrito, right, I can go into the fridge and find that burrito, but like, how do I know how long to cook it? I can go into seeing AI and scan it by its barcode. And it will look up the instructions on how I can cook that burrito and just tell me, oh, it's 90 seconds in the microwave.

Eric Cross (21:13):

The part of the app, one of the features that excites me the most, and kind of the where can we go with this technology, is the scene feature where you take a photo and it identifies what's in the picture with amazing accuracy.

Joe McCormick (21:25):

Yeah. It's, it's beneficial. I think the other thing that's interesting, it's kind of same technology, but an extension of that, is for things like, let's say you're posting on Facebook, can you just post a picture, or on Instagram, and there's no caption. It's like for someone who visually impaired is that's meaningless, right? Like, well, what did you post a picture of? And so built in to some of these platforms now, and basically all these platforms just like put a caption, describe, put in what's called alt text, alternative text, where it describes it to someone who's visually impaired with like, image of a baby or image of a mountain. But now that software can do that for you. And it's like, well, yeah, maybe I don't know exactly where they are, but it's like, oh, they posted a picture of a mountain. They're probably someone who's traveling.

Eric Cross (22:03):

And for folks listening. So the apps that we're talking about are Be My Eyes, that's the one we talked about where it pairs folks up. But then the other one we're talking about, which you can run by yourself, is Microsoft Seeing AI.

Joe McCormick (22:14):

There's a whole bunch of other apps in this space too. Right? We've, we've named two of them. There's a whole bunch. There's one called Blind Square, there's one I use called Via Opt to Nav, which is a navigation app. And for someone who sighted, it sounds basic, right? Like, oh, you bust Google apps, but for the visually impaired, like that's, that's not easy to know where you are, especially in a city where it's, or there could be three streets all within that a hundred feet, that tells you to turn for it. So it's like, which one is it? And these apps now, the step beyond these other tools, will give you more information you can use to figure out where you are.

Eric Cross (22:44):

I have one question. Is there any tech that's out, that's either in this embryonic stage or ready to be launched, that that excites you?

Joe McCormick (22:52):

Yeah. I mean, for me, I think the obvious one is self-driving cars. I think it's gonna be a long time before the government would allow a vision impaired person to get behind the wheel of a self-driving car. But for me, that one was always super interesting.

Eric Cross (23:04):

When I get to meet folks like you, I think about, through the lens of my students, many of whom will be the first generation to graduate college and things like that. Is there something that you would encourage someone to focus on? Like for instance, my students code and scratch, and some of them are

interested in Python. If you could give advice to like your younger self, like seventh grade, like to develop a skill, is there like a route or something to explore that you would, you know, if you had like a nephew or somebody who's like, I wanna do what you do, like, what would you tell them to like start exploring?

Joe McCormick (23:29):

I mean, I think both are awesome. Like scratch, was the first thing they teach in the intro CS course at Harvard. Right? Like that's how they weed out the students at first, it's like, if you don't like Scratch, you're not gonna like actually writing the code. So, I think Scratch is great. Python's great. Computer science is super lucrative. I don't see a world where it's not super lucrative in the future still. Like, we are still at a huge world where there are way more job opportunities than there are people to fill them. It is something though that I wouldn't say is for everybody. Don't force it because there's an eventual path to money there because I think, obviously like that's not gonna be happiness at the end of the day. I think especially as a seventh grader, it's gonna feel, if you're just like forced to do this thing, and it's not interesting to you, that's probably gonna repel you and push you away from that thing forever. Where it's like, yeah, maybe seventh grade, isn't the right time. Maybe you try again in ninth grade, you try again, 11th grade. And I didn't write a line of code before 10th grade of high school, and it was totally fine, I was super, super successful. And the code I was writing in 10th grade and high school was not anywhere near good codes. I really didn't write much code until sophomore in college.

Eric Cross (24:32):

What you said is very validating because from my perspective, it's wanting to create opportunities for students to practice skills or be exposed to things that could be useful later. You know, so kind of like you want to give them, I guess, breadth, especially at the younger age you wanna give them like access and exposure to as much as possible and go, hey, these are all different things. And so Scratch and Python are things that I expose my students to, and, and I appreciate you saying that those are good ones, because then I feel like I'm at least choosing the right technologies to let them try out. In addition to all the other things that we do.

Joe McCormick (25:03):

But I think with all this stuff too, it's like finding activities that are interesting to them within those frameworks. Like, I was writing the Python code that I did last year. As a seventh grader, I'd have no interest. It wouldn't make any sense. Like, it's, it's not interesting to me, but if I'm using Python to build something that I could actually use as a seventh grader, then it's gonna be much more interesting. My first Scratch program I ever wrote was air hockey. I was 18 years old and it was fun. But like the first Python code I wrote, as a senior in college, was doing AI as machine learning to figure out Netflix ratings of movies. Super interesting as a 20-year-old, but as a seventh grader, could not care less about that. But with all these tools, you can use them in many different ways.

Joe McCormick (25:43):

So trying to find the way that you take that tool and it best connects with the seventh grade minds. And I think kids are just much more tech-friendly now, where like you could use Python to build an Instagram clone or something. So then it gets more interesting, because they can connect with it. But for me as a seventh grader, when tech was not as big a thing, like, I don't know what I would've been able to build that would've been as interesting to me. I think games would've been it, and trying to build something

that I could play with. But for me, I see satisfaction on a day-to-day basis when I see people using what I've built. And I think even that as a kid, I had a similar satisfaction of like, when people get joy out of what you are doing or, again that's kind of that shared community of like, oh, this is fun. That will be interesting. So kids being able to build games that their other friends could use, I feel like is probably gonna make that feel rewarding and keep that like cycle of satisfaction going for years to come,

Eric Cross (26:30):

No, you nailed it. They, they start off by animating their name. And thankfully Google has a whole curriculum called CS first where it's all kind of like canned lessons. So teachers who aren't computer science teachers have no background can take this, there's videos, multiple languages, and they can animate their name, they can build a video game, they can tell a story and then they learn step by step, how to use all of the different tools and Scratch to kind of make what they're trying to do. And then I have the students beta test, and this week we brought in some robots and they're coding these robots that have these ultrasonic sensors and all these different things on them. We just started that. But you're absolutely right, the embedding it in a real context, that's engaging and interesting as opposed to like learning it in the abstract. Like, why am I doing this? It's huge.

Joe McCormick (27:17):

Yeah. I think the robots is a big thing. I think there's something about switching from the technical world to the real world that like, even today, as an adult, I get more, I mean, obviously I write software every single day, but when the software starts to do stuff that pings outside of itself, or like if the software sends me an email, it's so much more interesting, cause it now is like switched mediums or something. And I know in college, I got to do a class where we built a smart light switch where you could text and it would turn the lights on. And it's like the actual code required there is not that complex, but the fact that it now gets into the real physical world and I could control the light in my room was just like mind-blowing to me and excitement.

Eric Cross (27:54):

That's awesome here. I could tell that you're passionate about it and that you're one of those people who got into it because of just a genuine interest and love for it. So, your story and your perspective and your outlook on the life is just incredibly inspiring and empowering. I know as I was listening to you and just thinking about how you persevered through things and it really just, also this heart of an athlete, like overcoming adversity, I appreciate you sharing your story. Stories like this help empower teachers to help their students have better access, to help their students have an example of someone who was able to just start knocking down walls, being someone who kind of created a pathway for yourself to be able to succeed. And I just wanna thank you for being here.

Joe McCormick (28:41):

Thank you. Thanks for having me.

Eric Cross (28:44):

Thanks so much for joining me and Joe today. And now we want to hear more about you. If you have any great lessons or ways to keep student engagement high, please email us@stemamplify.com. That's STEM amplify.com and make sure to click, subscribe wherever you listen to podcast until next time.