

The ShermCast: Doing the Impossible with WHOOP S5E3 - Transcript

*In this week's episode, we got the awesome opportunity to talk to Senior Director of Software Engineering at WHOOP, Mark Flores. We talked about WHOOP technology, the new WHOOP 4.0 and Body-Any Wear collection, as well as WHOOP's future plans. Mark shared why he loves WHOOP and what prospective students can do to make their co-op and job applications stand out.*

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*Image description: The ShermCast written in bold black and red letters with matching colors on a grey color block background. A large old fashion microphone image with protruding lightning bolts representing sound. Text that reads "The Entrepreneurship Podcast with Sam Yip and Joe Blanchet".*

**Joe:** Welcome back to episode 3 of the ShermCast! On today's episode, we had the opportunity to talk with Mark Flores, a senior director of software at WHOOP. He was awesome and provided a lot of super great insight into what it's like working at WHOOP and everything they have planned for the future. For those of you who don't know, WHOOP is a fitness based wearable designed to track your activity strain, your recovery scores and help you to unlock human performance. We had a lot of fun talking about WHOOP, what it's like working at WHOOP and the engineering behind their sleep tracking technology. We're super excited to get this episode out to you guys, and we hope you enjoy it as much as we did.

**Sam:** I think that was one of my favorite episodes ever. It was seriously such a cool experience to be able to talk to Mark and I was genuinely thinking about investing in getting a WHOOP. But keep on listening to find out why WHOOP is the most valuable stand-alone Human Performance company and Wearables Company in the world.

If you're new to the ShermCast, we are a podcast dedicated to uncovering the meaning of Entrepreneurship within the Northeastern community and the Greater Boston area. We'll highlight topics like product development, sustainability, and overall what it takes to be an entrepreneur. If you've listened to the Shermcast before, we are really excited to be kicking off and we can't wait to share all the really cool things we have planned, make sure you hit that subscribe button and head over to the Sherman Center website for all of our transcripts, event, and weekly newsletters, now onto today's episode.

**Sam:** Another episode of the ShermCast! I'm super excited for today's episode. I think it's one of our coolest episodes. It's really such a cool opportunity to be able to have WHOOP on to the ShermCast, but I really don't think that anybody's more excited than Joe.

**Joe:** Yeah Sam, that's true. I've been a huge fan of WHOOP for a really long time. I've been on WHOOP for about a year now, and it is so exciting to have a team member on the ShermCast. So, Mark is the Senior Director of Software Engineering at WHOOP. Welcome to the ShermCast Mark, we're happy to have you, but I'll let you introduce yourself.

**Mark:** Hi, Sam and Joe. My name is Mark Flores. I'm a Senior Director of Software here at WHOOP, and I'm really excited to talk to Northeastern. We have a really great relationship with Northeastern and any way we can help and showcase what WHOOP is about we're really all game for.

**Joe:** Thank you Mark and thank you to WHOOP as well, so what we're all wondering and I'm sure the audiences as well, is who, who are you? How did you get started at WHOOP? What did you do before WHOOP and what does your job entail?

**Mark:** Oh great. Yeah, so I started out at, before WHOOP, I actually was at Microsoft for nine years before I started at WHOOP. I spent time in the Seattle area, 7 years in the Seattle area and then two years starting up a new team for Microsoft in Vancouver, and those times were really special and then I decided to move to Boston to be with my wife. Now I was really lucky and proud to work for a company that is in the health space because that's something that's very close to my own personal goals. So as Senior Director of Software, I am responsible for enabling several different teams. These teams are product teams, and they are a cohort of groups that includes iOS, Android and back-end developers, as well as web developers. These teams are really critical for generating value, continued value for our members.

**Sam:** Yeah, that's awesome. I remember going through your LinkedIn and I saw that you worked previously at Microsoft, but you've been working at WHOOP for almost five years now, right?

**Mark:** Yes, I've been working at WHOOP for almost 5 years and I've seen this company growth from about 40ish people, there were about 10ish engineers at that time, and now we've exploded in terms of growth and this, I can just look around in the office here and there's just a lot of excitement, a lot of new faces and I'm really excited to really take WHOOP to the next level.

**Sam:** Wow, so you guys, you're currently in the office, in WHOOP headquarters I guess, right in Boston.

**Mark:** Yes, so WHOOP's headquartered in the Fenway area. We can actually see Fenway Park from our windows. And so that's a nice little perk that we have of ours. It does get a little bit distracting once there's baseball games, there's a lot of traffic but there's a lot of excitement. Sometimes I even go down and I get a sausage just to kind of feel the vibes.

**Sam:** That's awesome! Yeah, for our listeners, Northeastern is right by Fenway Park as well so we're pretty close to WHOOP. Before we get into all things WHOOP. So, I wanted to ask you, what does entrepreneurship mean to you? Maybe as somebody who works for WHOOP or personally or for whatever reason.

**Mark:** Sure. So, entrepreneurship, what that means to me is, and I'm gonna really shorten this and then I'll explain what it means. But what it means is effectively to me, is creating something out of nothing. I really hold that cause usually creating something of value typically comes out of like nowhere, right? And that's kind of like unexpected and a lot of entrepreneurs these days, at least what I view, kind of an extract some type of value based off of an idea for their, their target audience or members. That's, that's what I really feel entrepreneurship is about. And one really interesting thing too is I think traditionally entrepreneurship, you think of like someone who's like fundraising and convincing others, especially on their own cause they only have their own idea and then they generate like a business, right? But I don't think it has to be like that. I can give you a raw example here at WHOOP, where I've been working on something that's called, WHOOP Live. And it's been really, really exciting. This is where we can showcase real-time heart rate strain and calories on TV during live events. And this is something that's based off of a vision that our CMO provided to us, to me in particular. I really grabbed onto this vision, I said "I know we can make that happen" and I knew it could happen

because I could put together the pieces, especially from the engineering side to eventually get our data effectively on TV and get audiences really really engaged with the biometrics of those players and athletes. And so what's really unique about here is, I actually didn't have as much support at the beginning, right? I actually didn't have any resources, right? So how do you get resources, right? It takes a very strong vision and convincing others and recruiting others to come on board and enjoying the cause and that's really, really important for entrepreneurs. You need to have, you need to paint a certain vision so people can come on board. That's really, really important. I'm really proud to say that today, right? We have WHOOP Live working for golf and we have it working for NASCAR as well. So you can, if you tune into some of those sports you'll see it. And that's, that's a passion of work that people thought was impossible and with some key engineers and a lot of collaboration with marketing and also product. We were able to showcase this year.

**Joe:** Mark, that's really cool that you were the one working on that. I know, I'm in Boston, I'm a little out of my element, but I'm a big Yankees fan and I was watching a Yankees game, I think last week and I saw WHOOP Live come up on the screen, and I was like, "Woah, that is so cool. That like, I'm wearing a WHOOP, and here's this data of a professional athlete, broadcasted on my screen." I also like your, your definition of what entrepreneurship means to you because you know growing up it's pushed a lot that entrepreneurship means creating a business, but I definitely resonate with your definition and I think it's being a go-getter and taking initiative and creating something out of nothing. Like you said.

**Mark:** Exactly. It really is about taking initiative right and having the drive and there's going to be points when you have this like really perfect vision in your head and you're going to have speed bumps along the way. Sometimes it takes some couple steps back and then, you have to keep marching forward because you have the strong belief that it is going to succeed. I've always thought that especially with WHOOP Live that it was inevitable, that this type of data was going to be on TV, and so the real question was going to be, who's going to do it first and I wanted WHOOP to be the first.

**Joe:** Well you guys definitely have made that a reality. We've talked a lot about some things that you've been working on at WHOOP and as somebody who has been on WHOOP and is really familiar with WHOOP. I know a lot about how their systems work and what the technology means to me. But how would you describe WHOOP to someone new, someone who is unfamiliar with the product.

**Mark:** Sure, so WHOOP is a 24/7 wearable. Typically, it's on the wrist. You can also wear it on the bicep. With our next generation which is 4.0, you can actually wear it on various parts of your body, but effectively this wearable collects biometric data that serves up eventually a strain and recovery score. These scores are then leveraged to figure out how you should train for the day, right? And this is very important because we provide insights based off that data that we provide you.

**Joe:** Mark, how do you think WHOOP has been most impactful in your life?

**Mark:** Yeah, so this is probably a little bit personal. But we're all friends here, so when I first came to WHOOP, I thought it was very different. I used to wear other wearable products and I just took them off, right? And what WHOOP was really different was having like behavior change. Okay. So, again, very personal, but we're friends and one thing that I noticed in my data was, I was a red every Saturday morning. Okay, for folks that don't know what red means. I mean, a red recovery score and that means like you're not primed to really like exceed that day and train that day. And then unfortunately, for me, on Saturdays, I really like to do yoga. I also like to weight lift and so I didn't know I was not performing at my optimal levels. So back to you Sam and Joe. If I'm waking up red or very poorly every Saturday morning. What do you think is going on?

**Joe:** Were you going out on Friday nights?

**Mark:** Yes, so I was going to go out on Friday nights, going way too hard, right? Drinking way too much, which by the way alcohol has a huge effect on your recovery score. And I didn't know I was doing this right, but based off the patterns and what was the data and the insights that was providing. You can clearly see in my data on the next month because I recognized this, that I actually started waking up green and yellow because I knew not to go too hard on Friday nights, right? So then I can actually achieve my goals which is to be really good at yoga and weight lifting on Saturday.

**Joe:** Right yeah, even as a student, those things get taken into consideration. So when I wake up on the weekends, I have a lot of homework to get done that day. And I also like to go to the gym, but I need to make sure that all gears are running smoothly. So that I can get everything that I need to get done. But hearing that insight from you is awesome, Mark. Personally I find that my sleep and my recovery is the thing that has also been transformed.

**Mark:** I love hearing those types of stories. We have a lot of different stories here at WHOOP. So if you want to hear more of them, I can definitely speak to them.

**Joe:** Yes, definitely. You mentioned that you've worn other wearables and you've since moved on from those. But what do you think makes WHOOP special over those other technologies?

**Mark:** Yeah, so what makes WHOOP special is our ability to help change behavior, and improve health, which is a really, the hardest thing to do in the space. A lot of wearables these days, they just provide you data and they're like, they imply like for you to figure it out, right? And so we take it a next step further, which is we actually provide you insights, so you can actually make the changes in order to hit your goals. So we've developed a coaching system that works with the underlying layers of technology. That's all built in house and that's all proprietary. And I'm really excited to say that we've actually planned out like even the next steps. The next, next steps for WHOOP and so currently we are in the pull position and we must continue to be in the pull position because we understand that there's other players that are coming behind us. It's inevitable that they're going to start working on behavior change. But I'm really excited to say which I can't talk about kind of the next steps we have in plans.

**Joe:** Mark, we'll keep our eyes out for those next steps coming soon.

**Mark:** Yes, stay tuned. It's really exciting. I'm really pumped up, honestly. Unfortunately I can't share those, but if you're a WHOOP user you're going to be a very very proud member. It's really important to also think about this, our business is built on top of a subscription business. And every month, each member has to make, essentially a decision, whether they should continue their membership or not. And so, we need to generate value for our members each month. And so that really pushes our company, especially our software team to continuously deliver. And I really like this atmosphere and it's really important rather than let's say the alternative is providing a one-time cost product, and that's it. Right, it's like, but this is something that's recurring, right? And we have to, it a really pushes our company to the next level and keeps us honest, honestly.

**Joe:** Right, I'd have to agree and I think that that kind of mentality perfectly mirrors what WHOOP is trying to advocate amongst its users to push their physical and mental capabilities to that next level.

**Mark:** Yes. Absolutely.

**Sam:** Mark, I love the different points that you brought up, you said specifically that WHOOP is made all in house, which I love that you said that because not only is WHOOP in Boston, and Boston founded. It makes it so different than other, you know, brands that people sometimes compared WHOOP to, whether that's Fitbit or Apple watch. But as somebody who, you know, personally I'm not a WHOOP user but maybe by the end of this episode, you'll convince me to become a WHOOP user. I have an Apple Watch, but Apple watches are on a different market. Then, you know, WHOOP like you were saying. WHOOP has so many different things to offer and it answers so many of the questions that people are actually asking, like are 8 hours actually enough sleep, like maybe, maybe not, it just depends on your body. And that's how, that's what WHOOP's doing, answering all the questions that people have versus, you know, a FitBit or an Apple Watch which is giving you the time or you know, showing what notifications you have. You know, it's on a lower level of fitness, than WHOOP is, like Joe was saying that he loves fitness and that's why WHOOP is, you know, perfect for him because it tells him everything that he wants to know.

**Mark:** Yeah. Exactly Sam. You bring up a great interesting point, right. With, what we're really focused on is health and for anybody that's been working on with hardware, especially, right? There's a lot of trade-offs that you have to make. If you try to jam more and more features into the hardware products, there's going to be trade-offs. Alright, so with other devices and wearables, maybe you can speak to it and take calls or take notifications. And we've made the conscious effort to not do those things cause those are not directly impactful of what we feel to health and having behavior change. And so by taking that away, right, we can really focus on the health aspects, and making our sensors top of class. And really, really focus on behavior change rather than having the trade off "Well, we also want notifications. We also perhaps want to take calls and maybe an all-in-one device. Now, what you learn is now that eats up some of the battery and maybe now the sensor has to be off." What's really unique about WHOOP is that we're always on, that's actually one of our motto's, especially early on days at WHOOP, we're always on, sensors always on, we wanna collect 24/7 hours a day, right. So if you take a look at some of the other wearables and you flip it over, it's not collecting, unless you're lucky, it's probably the lights are not on. Because they're trying to conserve battery, right, for other things. The other bells and whistles that it has. So what's, again for WHOOP we're always on like we're focused on health.

**Joe:** That's some great insight Mark and you talked about how the 4.0 was recently released and I'd love to hear from your standpoint how you were able to include five sensors into the smaller device. Can you talk about these sensors and how the decision was made to incorporate these sensors? And what trade-offs might have been made to include the extra technology.

**Mark:** Sure, so there's definitely more sensors as part of the 4.0, the sensors now contain 5 LED's, three green, one red, and one infrared for photodiodes, which also includes advanced algorithms to provide more accurate heart rate. This is the next step for our sensor coming from 3.0. One really exciting sensor here is definitely the infrared, which is used to really help out collect data for measuring SPO2, which is oxygen levels. So that's something that's very, really important to us, especially as we determine health for the individual. We actually provide this as a part of the health monitor, which is a new feature that we've provided for 4.0. Another sensor that's included is skin temperature, so this is something that is also new to WHOOP, where we can provide skin temperature based off of like, how, how well, or what is your environment like when you're sleeping, right? So typically, and there's data to back this up, you typically want cooler environments and to have a much better quality sleep. If your, you probably can imagine, I know sometimes here in the Boston area where maybe you don't have air conditioning, that you're kinda just sweating in bed. If you have a WHOOP on, to collect that data you can probably see that's actually negatively affecting your sleep and in terms of trade off in terms of the sensors, it really goes back to what we really want to focus on in terms of health and of course there's much more sensors we could add-on but it's really about really trying different types of configurations and considering, like battery life as one of that's really, really important. So there's certain key elements that we kind of say

would really needs to have strong battery life, right. And so, based off that, if we have this other sensor that is on all the time, how is that going to decrease the battery life? That's one key aspect of determine where like, if a sensor should be in or out.

**Sam:** Earlier, I asked Joe to show me his WHOOP, since I'm not a WHOOP user and he was explaining like, you know, this is what the app looks like. This is you know how to use it, on how it goes on. And like we were saying earlier about how Apple Watches and Fitbits are so different. And I was looking at the WHOOP and I was like, "Wow, there's, like it seems impossible to me that you can fit all of this information, all of the stats, you know, into this one little sensor, you know, or three little sensors that it is" and it's kind of baffling how WHOOP has been able to, you know, constantly improve that and you were saying even earlier that, what's coming, next is even greater. And so, that's kind of you know on the scale of like, "Wow, like, the impossible is actually possible."

**Mark:** Yes. So it takes a lot of talent and open minds first, I think that's kind of where it starts and I mean we have an amazing hardware team that includes firmware, electrical, mechanical, on top of that we also have an amazing signal processing team. And so they all come together and collaborate to determine what is best the configuration to put into the 4.0. And so, it does take a lot of iterations and prototypes to determine this and also a lot of testing, right? So we have a wonderful WHOOP labs team that test out different types of prototypes, prototypes in terms of hardware, but also like, where it can be on the body and one of the, one of the really cool parts of a, I'm a software engineer so I have a computer science background, but I get to see what's going on at the hardware land. One of the co-founder, co-founders is Aurelian, his name is Aurelian and he goes back in his like machine shop and I can see him tinkering away at different like prototypes and he has different builds, of course it starts with CAD, right, and then he uses and tinkers away like different types of configurations for the hardware. And it first starts with a shell, and it's like "Hey, this is what we want to work with." and then, we determine okay, like now we're gonna figure out like what parts can we put in? And what's really important here to, especially with hardware is not only trying to figure out like what sensors are the best but what is also like, what's cost-effective, right? So if we get something super expensive, right, as a sensor, that's not going to be cost-effective for a business and so you have to take that into consideration because if you if you put something really really expensive in there, right, that might have to change the cost of the product and we have to factor that in, right? And so that's another type of constraint that I would kind of call out here, which is not only battery life is very important, but also the bomb or the bill of materials to actually acquire the parts that we need to build the 4.0.

**Joe:** That's really interesting. When you look at all those different constraints and what goes into the product that consumers don't see, but you touched on WHOOP labs a little bit and as a software engineer, you know, we are the Sherman Center for engineering entrepreneurship. I would like to hear your insight to how you...

**Mark:** Yeah so our WHOOP labs team is an amazing crew. They're really, really like, I love working with them. In fact, I'm actually doing a study for them right now. I'm wearing WHOOP boxers or underwear, where you can actually put the sensor into it. So I really really want to help them out cause it is the future of wearable tech and again, we're in the pull position so we need to continue to be in the pull position. But WHOOP labs they try different types of many different configurations and they determine based off of the signal that is coming off of the device as well as in conjunction with data science, as well as the teams that they work with, they get volunteers technically starts with employees, but then if you're a WHOOP user, there's possibilities where you can actually come into our labs and you can help us out trying different like different types of wearable technologies or placements on the body as well as different prototypes.

**Joe:** I've actually gone into labs and I've done a handful of different studies.

**Mark:** Oh fantastic, some of them are pretty tough, especially if you're not used to it. So like, I'm a, I do yoga and weight lifting. So those are my things. And so when WHOOP labs says "Hey, you gotta go run on a treadmill for 10 minutes", you know I used to be good at that, and so I'm sure for runners here, you're probably rolling your eyes but for me, I'm like "Oh, that's gonna be tough." But it's really good cause, I like to use WHOOP labs as kind of a health check, to see where I'm at and how much I'm struggling. But it's really good cause you get to be part of the process of building a product and so especially like the next generations. And so you're really helping out, coming into WHOOP labs and we really really appreciate it.

**Sam:** You touched on this earlier when you were saying, you know, your your role in your job as a senior director, but I was wondering, you know what the structure kind of WHOOP looks like, you know, in terms of you mentioned, briefly your teams and kind of the people that you are overseeing, you know, does that include, I know on your engineering WHOOP website, you have like engineering principles as well. You guys have different, like, leaders, contributors, you know, how does that relate to, you know, how WHOOP is run, or how, you know, you run your department?

**Mark:** Yeah, sure. So the software department has three different tracks in terms of development and growth, we have the individual contributor path, we have the tactical path and then we also the strategic path, right? So this gives the ability for our software engineers to choose one or maybe like bounce between each of these paths if they want to try it out and our individual contributor path, those are the folks that are really like super solid in terms of coding and architecture and they really want to be heads down and focusing. They can't be completely heads, they still have to work and collaborate with others, right? Then we have the tactic path, also that includes for example, tech lead, right? This is like a one step towards perhaps managing others and achieving success through others. That's very important to understand. Then we have the strategic path, which is like more towards like people management, recruiting, also just general strategic direction for the software team. For example like hiring decisions, things like that. And so we want to make it clear that for each of these paths, each of the levels we have, if you, if you had to kind of put it onto a grid, the columns are like, individual contributor, tactical, and also strategic. Each of the rows corresponds to the salary band. All right. So if you are a senior developer, you're going to be making the same salary, pay range as someone who's a tech lead or someone who is that let's say maybe go to the next level like someone who's like a group lead, so that's really like important for us that in order to advance your career you do not have to be a manager, you do not have to do that. You can still achieve compensation goals, going down an individual contributor path. A lot of traditional companies like you have to become a manager and management is like not really for everyone. We also have something called acting tech lead. You know, this is for aspiring tech leads and this is something where you can try it out, where you can try achieving success through others. And, and after some time, maybe six months, if it's something that you really like enjoy and you can, you can actually become a tech lead, but if you feel like, "hey, like, this is actually a lot of like, it's very demanding" and it is very demanding. Then you can go back to individual contributor and it's not a failure, right? Is it something that we want to provide as a sample or taste, for those who want to try out. And then if they back out which again, I actually have respect for that, perhaps in the future they can try again. That serves like another discussion. We want to make sure that there's different paths for people and make sure we even it out. And there's not a sense that you have to become a manager and want to level up.

**Sam:** No, that's a really helpful point. All of those, you know, giving us some background on the different teams you have for people, for students at Northeastern, we have a lot of co-op people that work at WHOOP, and that maybe end up full-time getting a position at WHOOP and I know on your website is also says that your teams are focused on being product forward, not as focused as like chasing the latest technology. Yet WHOOP is constantly unmatched against any

other, you know, wearable and it also says that WHOOP is the first wearable to be used at a stage 3 clinical trial for covid-19, which is amazing and a huge milestone among all of your other milestones. And I, I remember reading it and it said that you guys got there because you guys wanted to understand the problem that the world was facing rather than doing it from the other way around. And you guys said, it said on the website, you know how technology could enable the solution rather than prioritizing technology and searching for the problems that you guys could solve.

**Mark:** Correct, I'm really excited about our stage 3 like clinical trial for a WHOOP, I was actually a part of that and I flew out to help out with that. It definitely was like, very trying times, I mean we're still living in it, but it's really unique about how our products, which is in the health space is actually enabling others to really like focus on their health and they can provide value towards our society, right? And so one thing that we did that was really, really like remarkable and this is the credits to the data science team and also the coaching teams here at WHOOP, was we were able to quickly pivot and add respiratory rate to our apps, right? We, we had the data to actually like measure that and the data science team worked very very quickly in order to generate that number and the coaching team did a fantastic job implementing that on the UI side. And it's really, really heartfelt to really help out health in society. That's actually why I'm here at, WHOOP. It gets me up in the morning and there's not a lot of places where I feel, at least personally, like I can work at that I am really having an impact towards like the greater good.

**Joe:** You know Mark at Northeastern we have this Co-op program and we dedicate a lot of co-ops to WHOOP. But this program is designed to help students figure out what it is that they want to do and what it is that they don't want to do. And what kind of working environment that they want to be in and so Sam and myself are on that track to figure out what it is that we're passionate about and what gets us up in the morning. So it's really cool to see that you've found that and that you're working in an industry that you're passionate about and able to contribute to, I do want to transition a little bit and talk about the last few weeks that WHOOP has had. It's been a pretty big few weeks, including closing the series F funding at two hundred million dollars, acquiring PUSH and then launching the WHOOP 4.0, but I'd love to start with the series F funding. Can you explain a little bit about that is and how you'll move forward from this?

**Mark:** Yeah. Absolutely, so series F funding was led by SoftBank Vision fund 2 and we're going to be using these funds to do several different key things. So the first one is to invest in research and development, to build the future of wearable technology. So there is a lot of like upfront costs in words like, try different things out especially with prototypes, right? So this is something that's really important as we expand in the wearable space. Then we're going to create enhancements across the sweets of product software and analytics, right? So we're doubling down in these areas, and again this goes back to really providing continuous value for our members, right since we are subscription company. Then we want to leverage this fund to enter new markets through strategic international expansion. So at the moment we are in countries that are in the EU, of course we're in the US and Canada and Australia, but we want to expand further and so this takes investment especially from logistics standpoint as well as a marketing standpoint cause the different like terminology has to be changed. Then we want acquire leading technology companies to evolve the membership offering. So exactly what you said, Joe, the acquisition of PUSH. This is really exciting. If you read like reddit, they're really excited about it too cause if you look into the PUSH product, I'm not going to go into like real deep details cause I'd be giving a lot of things away but you can see what they're up to and we want to incorporate their technology and products into ours. And that's going to be really, really key for our growth. Then we want to expand hiring, right? Especially for the, the best-in-class global towns across engineering, data science and analytics as well as other teams, right? We can use the funds in order to attract talent, right? That's one really important area cause without people we wouldn't be able to have the great success that we have now. And finally want to play a larger role in professional sports and extend WHOOP live, something that is near and dear to my heart cause I get to see it grow from a basically a baby, we wanna grow this to a greater audience and taking fan and athlete engagement to new levels, especially biometric data

visualizations. That's really about getting people like really pumped up when they see WHOOP live on TV and let's say you see someone's heart rates and it's like through the roof and like that really gets you up and going and just it really improves the experience when you're watching sports. And so I'm really excited to say that we're going to keep expanding in that area and I'm actually like helping out with that like right after this podcast.

**Joe:** That's awesome. And now building off of that and WHOOP live broadcasting with professional sports, you know, WHOOP has a deal with the PGA, CrossFit, they're a partner with Crossfit too and even having NFL athletes like Patrick Mahomes. So I'm excited to see that grow within professional sports, but I got to ask as a college student. Is there room for expansion and colleges as well with college athletes?

**Mark:** That's a very teasing question. I can say that we're open to new opportunities. Of course, it needs to balance like the business costs around it. And there is also an angle where like, there's privacy concerns. This is a completely greenfield space. That's why it's so exciting. And so, we're paving the way for the industry about how to show biometric data on TV. And so there's a lot of unknowns and so everything's on the table. And right now we're figuring out like, what are what, what, what are some strategic bets that we can make at the moment for the, for the best like return on our investment. So stay tuned to possibility.

**Joe:** Definitely will do. But how do you, how do you take those different standards into consideration? Going into a launch with the 4.0.

**Mark:** Yeah, so there's a lot of factors that come into consideration for the 4.0 launch. It is a huge collaboration across several different departments. So not only software, hardware, data science signal processing, there's also non-engineering fields, such as marketing, finance, logistics or supply chain, there's also operations, right? So, very key players and the heads of the groups we all come together, especially with a common goal in mind which is a successful launch. We all come together and discuss different pros and cons and trade-offs about how to launch 4.0 and have a really positive attitude towards it is really, really important to come all together and launch 4.0.

**Sam:** Going back to the new launch of 4.0 and Bodywear, you know, what kinds of things for you guys are you guys putting into it? Like what does a launch day look like for you?

**Mark:** Oh yes, launch day is something very very special. And I tell my engineering team like this is a day that you're not going to ever forget. Cause I was there also for that 3.0 launch and also 2.0 and it's again like a massive collaborative effort. And so what we do is we have the engineering team come together and we all pile into one of these meeting rooms that we have and we watch live altogether. The actual launch events and we watch like all our systems, especially on the software side to make sure everything is as stable as it can be. And we coordinate and we go back and forth with marketing especially when things are about to get said or done. And of course, even before then we have a lot of planning that goes a long way, we have a checklist of things that need to happen and the good part about this is we did this several weeks in advance and so as an exercise alright, so we're looking for opportunities to see is there something that as an engineer at heart, is there an opportunity to maybe launch something as a soft launch or behind a feature flag, or it's not discoverable in a normal fashion? And then we can ideally on the software side, hit a button and unveil it, right? Of course, that's optimal and sometimes you can't do that, and so you have to actually deploy during like this small window, of course that's very nerve-wracking but we have a lot of checks in place to give us signals of whether like things are going well or they're going poorly. And so again, it's a massive collaborative effort and it requires a lot of communication. A lot of transparency about what is going on and again it really goes back to the

ultimate goal, everybody wants a successful launch, alright and so if everybody snaps towards that goal then everyone is much more collaborative.

**Joe:** It sounds like going into launch day you guys pretty much had everything ready to go. And you knew that everything was going to run smoothly.

**Mark:** Yeah, I mean there's also improvements that we can make and learn along the way. I think a better visualization of this is like imagine like a NASA space shuttle launch. We have screens all over the place and like everybody's like celebrating, I don't know if you've seen those videos of NASA, it's kinda similar to that and then at the end of the day, everybody got together all the employees and we had a celebration, so that was wonderful and again like it's unforgettable. It's really invaluable experience to watch something that massive and it is and our co-ops also from Northeastern got to experience that that's something that they'll carry on wherever they go in their careers, right? They know how to do it now. That's, that's very, very important.

**Joe:** Did you have your fingers crossed the whole time making sure that there are no bumps in the road?

**Mark:** I had my fingers crossed and also my toes crossed. There's a lot of crossing cause there's a lot on the line and so of course you can test your system as much as possible. But it really is on game day, you really have to be ready. I didn't look or ask the people what their recovery scores were, I think maybe as a coach, you could do that, but it would be interesting to see what employee data, of course with privacy in mind if they're opting into that to see like what is the correlation of recovery scores on launch day? Going up to launch day and then after, it'd be very fascinating to see that.

**Joe:** Did you have a high strain that day?

**Mark:** I did have a high strain that day cause I was running around. I think we could've had a smoother launch, it was a very successful launch, but it required like "oh there's something that was developing. I need to go talk to marketing and run over there." So we had the right messaging, right? So yes, my strain was higher that day.

**Sam:** It was clear that, your launch was clearly very successful. And I know, you know, not launch is going to be perfect. I think even having a launch that is imperfect is, what makes it so great and interesting, maybe not for your strain levels and your stress levels, but, you know, overall as a, as a company and as a team having, you know, that kind of experience with each other is awesome. I also want to talk about, we mentioned sensors and how, you know, there are more in the 4.0 but also the 4.0 is 33% smaller than a 3.0 and yet they still have a stronger battery. Joe was showing me earlier and he was telling me like "My WHOOP can last me 5 days without charging." And I was like, oh, well, my watch dies like in a day or in some times more than that", you know, it's kind of unreal how that is even a possibility and I know your CEO, Will Ahmad posted, a video of how small it was and I was watching and I was like, that's kind of mind-boggling how something, you know, so small can have so much information about your body and when it needs them and what's going on. And he also said like the initials of all the engineers that worked on it, you know, on the WHOOP 4.0 which was so cool and awesome and an amazing experience for all the engineers and then his caption was "don't bother copying we'll win" and he was saying that specifically to Amazon, which I thought was so funny. And, you know, it's just like an unreal kind of concept to comprehend. You know, how did I just wanted to maybe get some small part of this, but as a software engineer, you know, how did you guys manage to achieve that? Why was it such a priority to make it smaller, if it was already, you know, pretty small.

**Mark:** Yeah, it was a priority to make it smaller because it's always been part of our company's vision to make wearable technology invisible and cool on the body, whereas other wearable products are typically like getting bigger and bigger.

We're going in a different direction, where we wanna get smaller and smaller. So it's always been our goal to get shorter in length and also thinner as best as we can. Again it goes down to trade-offs, right? So can a sensor fit in there if it keeps getting smaller and smaller? Does the market provide cost-effective sensors to put in there that are actually effective, right? So if we put something that is smaller than, is that gonna actually still provide an accurate signal, so there's a lot of things that have to take place in order to consider. That's why prototyping is so important and it really goes back to the hardware team. They've done a fantastic job and we have some hardware co-ops that helped out too. And so they have, they're just incredibly talented and they work extremely hard. When it comes with a lot of creativity about "Ok, can we get the millimeter here and a millimeter there?" And like as a software engineer, right, so I'm on the outside of hardware, when I hear the hardware teams start talking about those things it is mind-boggling, right? So even a millimeter makes a difference, whether you can put like maybe another capacitor in there or I took electrical engineering a long time ago, it's definitely not my forte. I'm definitely more on the computer science side. And so that, I just have a huge respect to what that hardware team is doing. And the great thing too is the hardware team has a huge respect for what the software team is doing too. Every team really really respects the different talents that we have here at WHOOP.

**Joe:** Yeah, it's so clear that like the whole team works together to make this a reality and that team is changing the world, no doubt about it. But back to you, Mark. What is your proudest achievement working for a WHOOP? Whether you personally or just being a part of that bigger team.

**Mark:** Yeah, my proudest moment at WHOOP. I'm really big into developing people and one of my proudest moments at WHOOP was when I promoted one of my engineers to Senior and I, I distinctly recall that I got the approval to go ahead and promote this person late on a Friday and so I had a decision in mind. Where do I wait till Monday to, like, give it to this person and I was like, "No, I'm going to do it right now. So let me just pull her out to the side and let's have a chat like immediately" because I knew that was going to be an amazing moment because I've seen this person grow from just entry-level Junior and now she's all the way to Senior level in a very short time span. And that's very, very well deserved. And this was definitely one of my proudest moments, it was a little bit selfish because I really wanted to like end the week with like, yes, I promoted her, and I also knew it was going to make her weekend amazing too. So that's probably one of my proudest moments. There's a lot of other proud moments that I have here at WHOOP and compared to like my previous life, it's just the difference is like, those types of moments are much more like reoccurring and that is the result of how fast we move, how quickly we move, there's much more opportunities at WHOOP because of the pace of developments, right? So we move at an uncomfortable pace of development and this really, really pushes people. And you find new areas to improve very, very rapidly. And I can tell you that I've learned at least twice the speed here at minimum and there's people here too that I've completely excelled at like their growth and what they thought they could achieve, right. We keep pushing folks to find the next levels and find new areas of growth. And in this case, right, whatever I threw at this person, they took it to heart and they could contact switch a lot, which not a lot of people can do that and there's just a lot of achievements. So it was a no-brainer that we needed to promote her and that was, I was really really proud that I got that approved and got it to her right before the weekend.

**Joe:** On a previous episode we talked with the Sherman Center Director, Ted Johnson about servant leadership and how moments like you said and developing individuals are so much more important than the final product. Because like you said those things, they happen over and over again and yeah, WHOOP has special athletes like Eli Manning and Gabby Thomas and Michael Phelps, but you only sign those athletes one time. People are going to grow and develop and excel over and over and over again. And that all comes down to WHOOP and unlocking Human Performance.

**Mark:** Yeah, absolutely. So one thing that I'm looking to continue here, especially on the software team at WHOOP is to uncap growth. So, there's been points in my career where I felt that it was very limiting, where I felt like there were glass ceilings that were kinda like blockers towards my growth. And carrying that forward, what I am looking to build here on the software team is to allow, to enable people to effectively just unlock themselves. Where I basically call that, like cracking them open and if I can make them achieve beyond what they thought their potential was, that is really important for our company, right? Cause then they can excel and grow and achieve some type of business impact in some other area or in my general area that's going to help the business and help our company's growth. And that's priority one.

**Sam:** And this all goes back to, you know, even your earlier definition of what entrepreneurship means to you and how you have loved working at WHOOP because of this amazing experience and almost like how humbling and your own definition value of success has changed. And we were talking earlier about how WHOOP is only going to get better from here and although I know you can't share that much information, you know, what are some of WHOOP's future goals, you mentioned expanding and hiring more, but other than that are there other things WHOOP is working towards?

**Mark:** Yeah so WHOOP, our future goals is to continue doubling down on what we're really good at which is exhibiting and showcasing behavior change. We want our members to achieve their goals, right? And in order to do that, we need to provide data in such a way that they can understand. And so we have really good metrics for that with this recovery and strain and also sleep scores, but we can go way way beyond that as well. For the data junkies we can provide as much data as possible. But that doesn't work for everyone. Right? Some people need a little bit more coaching. So we're going to be doubling down, especially in the, in the coaching area, and that's something that I'm really excited about. And there's going to be much more that's going to be around in that area. And the sensor's going to get smarter and smarter, our app is gonna get smarter and smarter, our data is gonna to get smarter and smarter. Our hardware is going to get smaller and smaller so that eventually it becomes cool and invisible. And so that's the direction in the future of our company.

**Joe:** Mark, I don't know about you. I feel cool wearing WHOOP every day. I think, I think that they've gotten there and I don't know how much cooler it can get, but I'm sure all you guys have plans for that.

**Mark:** Yeah, WHOOP will definitely get cooler. I mean another angle to WHOOP is apparel and with especially with our anywear technology, right? So you can personalize your band. This is kind of like the cool part so you can express yourself with different types of bands, right? So whether it's for a cause or maybe like a different type of color scheme, you can accessorize, and that's something that that's important to us, right? Expression of oneself.

**Joe:** Yeah, I have a couple bands. I'm wearing the all black one today, but it's cool when I can match up my bands with my outfits, even if my friends tease me a little bit about it.

**Mark:** Exactly. I mean even if they're teasing you about it, they're still looking at it. What is that?

**Joe:** Exactly, that's exposure, that's what that is.

**Mark:** Yes it is. And everyone one of members who wear our bands, right. They're also a very important part of the community, right, so that each of these individuals or members, you can talk to your friends about WHOOP and how it's impacted your life. Right? So it's important, that we educate and keep growing that way organically.

**Joe:** I think that growth is showing and will continue to show. We've been talking a lot here and we've gotten a lot of great info from you, Mark and really great insights before our college audience here and for myself personally, honestly, big fan of WHOOP, really big into the health and fitness space. What advice do you have for inspiring college students who are hoping to work for WHOOP one day?

**Mark:** Yeah, so college students who are looking to work at WHOOP is, I actually have a blog post on this. So I know we have engineering principles, but I also have a blog post, called, "How to Stand out and Ace the interview". I really highly recommend reading that cause not only does that provide you insight of how to like get into the door at WHOOP, but you can leverage that information for wherever you end up if it's with some other company, right? So there's a lot of parallels, especially when you're looking for a position. But what I would say in particular with WHOOP is definitely play to your strengths, right? So if you are a computer science major and you're applying to like an electrical position, you probably should be applying to like software gigs first, right? So get your foot in the door with your, the strongest position or the strongest kind of like portrayal of yourself and showcase your skills, get through the interview and once you get in here then do an amazing job of what is expected of you and perhaps even go beyond expectations and then from there build your own internal network. Something that I speak to as one of my learning modules, if you were to come on board as a full-timer or a co-op, and this is internal networking and then, then let's say that you actually have a really deep passion in electrical engineering. Like you can walk over to electrical engineers and say "Hey, what's up? Like what are you working on?" Hopefully it's not too bothering to them, right? Hopefully you have a good relationship with them and it's not too surprising, but you get to learn. So one really cool thing is, especially when WHOOP was a lot smaller, I've been always exposed to just computer science and like programming and software. But I've learned a lot of other departments and how marketing thinks and how finance thinks and how a supply chain thinks. And in fact, I didn't even know like what supply chain was about until I came to WHOOP, I always heard about it, but it's very, very fascinating. So if you're a college student and you really really want to apply to WHOOP, you can apply on WHOOP.com/careers. Make sure your resume really, really stands out, leverage the blog post I mentioned. If you have a connection, maybe someone who has worked here at WHOOP before or you can introduce yourself, you can work that angle and really come in with a high intensity, but also high humility, right? So if someone comes in and looks like fairly arrogant and just doesn't seem like they take feedback well, that's going to be like spot out during the interviews and probably not receiving an offer. So that's one angle, you can learn much more about what's important to WHOOP and our core values on our website and really do your research about what we're about to come in prepared.

**Joe:** Thanks for that Mark. I actually read through your blog post right before coming over here. I was snooping around on your LinkedIn page and saw it and I was like "Oh, I could use this." And it was really insightful. So we'll be sure to post a link to that in the description for this episode.

**Mark:** Fantastic, great!

**Sam:** And I know, all that feedback for college students is going to be really helpful, just how well you've described the WHOOP team and how amazing it is to work there, I know everybody's going to want to work there now, but we really appreciate the time that you took to talk to us. WE love what WHOOP stands for, your goals are really, you know, line up with what we are thinking about here at The Sherman Center and at the ShermCast and even at Northeastern and we really love and appreciate the work that you're personally doing in your role at WHOOP. And I really personally learned so much about not just about WHOOP but also realizing that engineering really has no limits and WHOOP is a great example of how anything is possible. And I know the WHOOP 4.0 just launched, but I'm looking forward to hearing and seeing about what everything WHOOP has to offer and what, how it can get any better.

**Mark:** Yes, I'm really excited about the future too and I do want to stree one thing, WHOOP absolutely loves Northeastern. A lot of our, we have a lot of Alums that come from Northeastern, in fact our director of supply chain used to be a co-op, at Northeastern, I think two or three years ago. I still remember him as a co-op and now he's a director cause this guy is, like, absolutely amazing at what he does. So we, we absolutely love Northeastern and we love staying in contact and coordinating with students and also professors. I am giving a talk to, I think they're very soon, to Northeastern freshman, soon. So stay tuned for that. And we're going to talk about WHOOP and things and give some interview tips and things like that. So any type of collaboration, we are definitely up for.

**Joe:** Awesome. I'm sure all of our Northeastern student listeners are going to be applying for co-ops for the, the upcoming semesters. Mark, do you have anything that you would like to plug before we wrap up? Where can they find you? Where can they find WHOOP?

**Mark:** Yes, absolutely. If you're interested in WHOOP and learning more or learning about our positions, you can reach out at my email address flores@whoop.com or you can apply on WHOOP.com/careers. These are great ways to apply or you can network through. I think that's really, really an important key to build your network, both externally and internally, those are very keys to your success. I do want to say one more thing, which is I'm really proud to work for a company that is improving health in society. That's very important to me. And I know I know I'm very, very lucky to have that and wake up each morning thinking about that.

**Joe:** Thank you so much Mark.

**Mark:** Yeah, thank you for having me on this podcast. And if you need any help or anything like that, please reach out. I really appreciate the time Sam and Joe.

**Joe:** Thank you guys so much for listening to today's episode. And thank you to Mark for taking the time to come out and talk to us on the ShermCast. A big shout-out to Alex Jacobs for making this happen and a huge overall thank you to WHOOP. Make sure you follow the Sherman Center on Instagram, Facebook and LinkedIn @nushermancenter and follow WHOOP on all their social medias @WHOOP. If you want to learn more, check out their website WHOOP.com. And personally, I highly recommend checking out the locker for company updates and cool content as well as engineering blog posts, we'll throw everything in the description down below. WHOOP also has their own podcast hosted by CEO Will Ahmed, available on all streaming platforms. Head over to the Sherman Center website to read our newsletter, and check-out events, workshops and the transcript for today's episode. We'll be back in two weeks with another episode. So we'll see you next time on the ShermCast.