

## **Episode 40 – Sumit Chanda: How can we prepare for the next pandemic?**

Lauren ([00:06](#)):

Greetings listeners, and welcome back to another episode of Science Changing Life. I'm your guest host Lauren Fish, and today we'll be talking about everything from pandemic preparedness to drug discovery. Joining us is Sumit Chanda in infectious disease expert and immunologists who played a pivotal role in uncovering new treatments at the start of the Covid-19 pandemic. We start off today hearing about why Sumit decided to pursue a career in science despite going against his parents' advice.

Sumit ([00:33](#)):

So my parents were both scientists, so they immigrated from India. The one piece of advice they had for me is don't go into science <laugh>. So you betrayed their kids. Yes. I think you know, in a way it was a little bit rebellion, but, you know, I started doing internships in labs, you know, in, in college and then over the summer, and I started really liking it. Right. I actually, you know, I mean, I like my science courses, but I really like being in the lab. And then what actually clinched it for me is coming to San Diego. I had an internship at the Saul Institute for a year, so it was in between undergrad and grad, and it was really to see, Hey, could I do this for a living? Is this something that I wanted to do day in and day out? So

Lauren ([01:19](#)):

Why did your parents not want you to pursue a career in science then?

Sumit ([01:23](#)):

Probably for the same reason that everyone else is complaining about. Right. It's, you know, and, and especially then the opportunities for industry wasn't there. Yeah. Right. And academics is hard. It's highly competitive. I think they just wanted me to be a doctor and have a stable salary and Yeah. And, you know, I mean, I was kind of dabbling with pre-med, but the opportunity in science to not only kind of make discoveries, but make discoveries that impact human health and broad swaths of human health. Mm-hmm. <affirmative>. Right. Not just the, the patients that you see, but really kind of move the needle on cures and treatments for people that 10,000 or 50,000 or a hundred thousand. Right. People can be affected. So

Lauren ([02:04](#)):

Is that that passion for wanting to help the broader population, is that eventually what led you to study immunology and virology

Sumit ([02:13](#)):

It was also when I was at the Salk Institute, that was what I was doing. We were looking at viruses and, and gene therapy and, and HIV, so I kind of got the bug for that at Stanford and my graduate work, we did a lot of technology development. Right. And, and so this was Silicon Valley during the first.com boom, and I really saw the ability of kind of new ideas and new technologies to be transformed into really impacting the world. Things that happen there in the nineties and until now changed the world. Right. You know, it was Florence in the time of the Renaissance mm-hmm. <affirmative>, and you, you really saw the ability to sh have discovery and innovation impact civilization broadly. Right. Right. And that's really kind of the, the synthesis of that learning experience, that kind of transformative experience.

(03:05):

And my passion for virology and immunology was started kind of early, led me back down to San Diego and where I started at GNF, which is Novartis mm-hmm. <affirmative>, which was at the time run by Pete Schultz. Oh. so, you know, we go back, it all comes full it all back. We go way back. I've known Pete for 20 years. Oh, wow. just, you know, tremendous admiration for him as a leader. Mm-hmm. <affirmative> and as a scientist. But that's really where we started. It was right after the human genome was sequenced, and Novartis wanted us to build technologies to be really able to mine the genome to come up with next generation of therapies, right? Mm-hmm. <affirmative>. And, and so my passion was infectious disease. I was working on HIV and influenza and other things there, but we'd also partnered to do metabolic diseases like diabetes or cancer or so on, because these technologies were relatively universal.

(03:59):

And we still do that. Right. We do have, you know, our lab is really driven by technologies. I'm kind of, you know, a technology geek, and anytime I see anything kind of shiny and new out there, I'm like, oh, we should do that. Right. <laugh>, bring that in. Yeah. Bring it on. And, you know, my, my postdocs are, I know they're all rolling their eyes, right. When, but, you know, I mean, this is really, I think that for me, that's what drives innovation, right? Either inventing or adapting new technologies, implying it to problems that have been previously intractable,

Lauren (04:32):

Right? Mm-hmm. <affirmative>. And I think that definitely goes back to your, your overall mission with your work here is that you want to make a big impact. You want to bring that innovation. And even you talking about Silicon Valley kind of as that Florence during the Renaissance era, it's like you're bringing in all of that innovation in

Sumit (04:46):

That area. Right. And, and, and, you know, I mean, one of the things in the lab and, and probably just your grant of many people in the lab, I, I don't want to do things that someone else would be doing in six months or a year mm-hmm. <affirmative> or even five years, right. we want to do things that, you know, if we weren't here, it wouldn't get done in five years or 10 years. Right? I mean, that, those are the kind of big shots we like to take. And, you know, part of that is there's a lot of failure involved, right? Mm-hmm. <affirmative>, when you're doing high risk activities, by definition, you're gonna fail more than you succeed. But when you do succeed, it really changes things, right? We should be asking very hard questions that if we are able to answer them, have the ability to change the world.

Lauren (05:27):

Absolutely. And I mean, science is so inherently complicated, and you have to have that curiosity driving you to uncover things. Everything from new mechanisms to new treatments, new technologies. You really kind of do need that full picture.

Sumit (05:41):

Yeah. I always joke, right? We don't enter this profession for the fame or the money, right? It's about the passion, right? Mm-hmm. <affirmative>, it's about really going after and doing something that you love. I hope

Lauren (05:52):

Your parents are proud of you for pursuing this passion then at this point, <laugh> Yes. That it's not just an act of rebellion. So what led you eventually to Scripps too, then, you know, obviously you've, you've known Pete for a long time

Sumit (06:05):

Yes.

Lauren (06:06):

And, and your involvement Yeah. With Calibr as well. Yeah.

Sumit (06:08):

So I had been working with the folks at Calibr, I actually a few folks at Scripps for a while now. So in between Novartis and Scripps, I was at Sanford Burnham, right across the street, and, you know, we were doing a lot of drug discovery. We were doing a lot of virology and a lot of immunology. I'd set up some collaborations, but it was really the pandemic that solidified that the opportunities of what they were doing in drug discovery at Calibr and virology and immunology at Scripps really aligned much more to what I wanted to do. Right. And I think for many of us, the pandemic really kind of solidified that, Hey, this is not longer a hypothetical. Right? Right. When we're not ready for a pandemic, a million Americans die, and this is something that we can't let happen again.

(07:03):

and all of us starting from the scientists to the politicians, to the medical infrastructure, all of us need to be better prepared for the next pandemic. And for me, the place to be able to do that is at Scripps. Unequivocally, the virology expertise, the immunology expertise, the chemical biology expertise, the structure biology expertise, and the drug discovery expertise at Calibr is, I mean, we like to say it's the best in academics. I think they can go toe to toe with any drug discovery outfit that I've seen. Okay. These folks, these guys and gals are the best in the business at what they do. And I've worked with a number of multinational pharmaceutical companies, and these folks can go toe to toe with them on, on any day of the

Lauren (07:52):

Week. Yeah. I mean, I think that's a true testament, especially since you've been on the industry side. You've been on the academia side, that you can vouch for the quality of the people. It's incredible. Incredible.

Sumit (08:00):

Yeah. And I, you know, I, I, I mean, people don't realize how lucky we are to have this caliber of folks, and no pun,

Lauren (08:08):

<laugh>, I was gonna say, was that

Sumit (08:11):

<laugh>, most of pharma's drug discovery projects come from academics. Okay. But only a select few of them do. And some of that's serendipity. Some of that is, you know, things that kind of everybody focuses on, but there's a gap between the discovery that academics make and the therapeutic innovation that's required to save lives. And that gap is there because most academics, almost all academics have never been in pharma. And the types of activities that you need to do to take your discovery and get it to a point where it will excite somebody in drug discovery to say, Hey, I want to invest some of my resources in pursuing this. Most academics don't do mm-hmm. <affirmative>, and they're not particularly sexy type of activities. Right. They don't get you into the New York Times or a science paper, whatever it is, your kind of scientific ambitions are mm-hmm. <affirmative>. But I feel like because we know what those are, that we have an obligation to be able to do that. Right. To be able to take our discoveries and move them into a place where I could walk back to Novartis or to Merck or to Gilead and say, Hey, look, we have something interesting for you. Mm-hmm. <affirmative>, you really want to take a look. And yes, we've checked all the boxes that you like to see.

Lauren (09:36):

Right. This is

Sumit (09:36):

Ready. Yeah. This is ready for you. And, and you know, I mean, I, I, you know, we're good at preclinical. Those guys are the best in the world at taking drugs and moving 'em into, you know, a clinical space, right? Mm-hmm. <affirmative>. And so we, we wanna partner with them right. At some point, but we want to partner with them on things that are innovative that not everybody else is doing. But I think that's really the sweet spot for academic drug discovery mm-hmm. <affirmative> is to really transition our discoveries into therapeutic innovation. And I think, you know, Scripps has gotta be second to none in the world, in, in, in terms of being able to

Lauren (10:12):

Do that well, especially having Yeah. The drug discovery entity, you know, under its own roof, and being able to really just translate immediately into

Sumit (10:19):

That. Absolutely. And, and again, I can't overemphasize enough, right, the, what the structural biology group brings, what the, the chemistry groups bring. I mean, again, you know, Nobel Prize this year in chemistry, right? I mean, it's almost becoming cliché that someone at Scripps one Nobel Prize. But this is, you know, I mean, this is the kind of, it's happening. This is the way it's happening, right? This is the kind of innovation that we're surrounded by and allows us to stand on the shoulder of giants, right. To really bring innovation to the therapeutic space Yeah.

Lauren (10:48):

And push the needle. Yes. And I think I've just heard time and time again through talking to various scientists at grips how collaborative it is here, and you're saying, you know, all these different scientists coming together and working on these really difficult issues and the necessity of that, just because to solve these huge scientific or medical problems you require that multifacetedness.

Sumit (11:07):

Right. And, and, and, you know, it's not just collaborative in the space of the virologists and immunologists collaborate and the, the chemical bi mm-hmm. <affirmative>, I mean, there is like, it's everywhere. Yeah. It's everywhere. Right. I mean, in most places that I see, right, there are, there are just these silos and that yes, they'll collaborate, but only if you're like one degree away from what I'm doing. But what I've found is, you know, I've gone in, talked to folks and they're like, oh, yeah, this is great. Let's do

Lauren ([11:33](#)):

It. And they love just having these conversations. They have these open conversations asking questions. Exactly. Very kind of conversational way and that experience.

Sumit ([11:39](#)):

Yeah. No, exactly. And then they're just extraordinarily open to just trying new things. And you know, I think that having this kind of environment where you can get the best people in the world at what they do, but also working with the other best people in the world, right? Yeah. Because innovation really happens kind of at that transition zone. Mm-hmm. <affirmative> to me mm-hmm. <affirmative>, you can synthesize two things. My favorite metaphor is always the iPhone. Every piece of the iPhone existed, the MP3 player, cell phones, all of that existed before Steve Jobs say it, Hey, let's just condense jobs. Let's just put this into one thing that you can stick in your pocket <laugh>. But that, that synthesis changed the world. Mm-hmm. <affirmative> right in, in a way that, you know, I mean, you can go to any corner of the world now. I mean, I travel a lot and there are, everyone has a smartphone. Right? I think that that's the kind of synthesis that Scripps really fosters here is that, you know, bringing in different aspects of chemistry and biology to solve problems that were previously intractable

Lauren ([12:43](#)):

In the earliest days of the pandemic, Sumit played a significant role in tracking down existing medicines that could help treat Covid. 19. He dives into how he and his immunology colleagues formed a Covid 19 dream team of sorts, and all of the hoops they jumped through during those first few months of 2020.

Sumit ([13:00](#)):

Yeah. So early on, I had a postdoc in the lab. his name is Z Yang. He now runs a lab back in China. But he was in the lab and he had gone home for the winter break. And, you know, he sends me a text and he says, look, pneumonia of unknown ideology coming out in Uey province you know, we've looked to China usually for kind of flu mm-hmm. <affirmative> right. Flu spillovers. but usually when there's, you know, when it's, when it's bacterial, people can diagnose it. Right. and, and say, okay, it's bacterial. You know, it's always concerning when there's something causing pneumonia that you don't know what it is. Right. And then about a week later, I get a text that's two words, novel coronavirus. And I was like, you know, come home. We have work to do. Absolutely.

([13:52](#)):

Right. And, you know, anybody who was paying attention, novel Coronavirus novel in influenza virus should have been the top of your pandemic bingo card for 20 years. Right. And at that point, I think people were thinking, okay, well, it could turn out to be sars mm-hmm. <affirmative> where, or Mers where it just burned itself out. It wasn't as infectious. It wasn't, yeah. It wasn't as infectious. It didn't, you know, but our stance was, look, at least the numbers in China suggest that there is going to be a, a high level of deaths mm-hmm. <affirmative> and illnesses that are associated with this. So even if there's not a contagion, if there's not kind of an internet international pandemic, we need to start

working on this as quickly as possible. Yeah. Severe. And so, you know, we got together, a friend of mine colleague that I've been working with on Virology influenza guy, he's AFO Garcia Astra.

[\(14:48\)](#):

He actually resurrected the 1918 influenza virus. Oh. Oh, wow. And so we always kid with them like, why would you do a thing like that, <laugh>? but I mean, there are great reasons to do it. Right. We know a lot more about that virus now. Absolutely. So I was like, you know, look, we should start working on this. And he's like, yeah, of course. The problem was at the time, we couldn't get the virus out of China. And so what we needed to do is start working with a lab in China so we could start looking for drugs. And so a colleague of mine set up a collaboration with the University of Hong Kong, and this was with one of the investigators that identified the original sars. and so they had a lot of experience in, in working with Coronaviruses, and they had SARS-CoV-2 from patients in Hong Kong mm-hmm. <affirmative>

[\(15:34\)](#):

That were, they were working in with the lab. And I also called up my good friend, Arnab Chatterjee at Calibr. They have this unbelievable collection of about 13,000 known drugs. so this is called a reframe collection. Mm-hmm. <affirmative> it wasn't purpose-built for the pandemic, but it came in, it came very good use. Right. And so, our thinking was, look, this is an emerging endemic infection with pandemic potential. We don't have time. I mean, usually it takes 10 years to make a drug. We've accelerated things to two, which is insane. Which is insane. and, and which really shows that if we put our minds to it, we could probably move things more quickly. But, you know, at the time, our best hope was really to find a drug that was already known to be safe in humans that we could administer as quickly as possible, quickly.

[\(16:26\)](#):

Right. And so, this is why we wanted to sift through these 13,000 drugs that Calibr had made. So all drugs that have been in humans, not just FDA approved I think they spent something like \$20 million of investment from bill and Millida Gates Foundation mm-hmm. <affirmative> to build this. And, and so we said, okay, well, we want to screen these drugs Okay. And see if we can find something that has some activity. So the plan was Laura Weave, who's now at Calibr, but was working in my lab at the time, she was gonna pack a suitcase and go to Hong Kong Wow. And show them how to do this. Right? Mm-hmm. <affirmative>, and, you know, this is what's called a BSL three biosafety level three. So, you know, it's the whole space suit thing. So a lot of precautions. Yeah. She was trained on how to do that.

[\(17:11\)](#):

So that's why we were sending her over. And then around, I think early February was when the travel ban hit. Right. So she could leave, but she couldn't come back. She could not come back. Yeah. And she's like, I don't want to go. And I'm like, I don't blame you. And so we improvised. So we mailed everything over, of course, the package got lost. Right. And everything's, you know, everything's on dry ice. And, you know, the world wasn't such good, you know, point my lab manager at the time, Paul de, you know, he was on the phone with the shipping company going, you gotta put it here. You, I, my God, we didn't even know if it was gonna get there. Finally, we had a call from Hong Kong saying it showed up and it was full of dry ice. So everything made it there.

[\(17:57\)](#):

Amazing. best case scenario, <laugh>. Yeah. I know. It was, you know, I mean, it, it, I think it went through like two places that it wasn't supposed to be <laugh>, and then someone finally got it, you know, and, you know, we are impressing upon them that, Hey, this is for the pandemic and da da da. This is critical. This is critical. And, you know, I think somebody someplace said, all right, you know, I'm gonna, I'm gonna take this and make sure it gets to where it needs to go. And then what Laura would

do, what they did on, on the Hong Kong side, is they got a burner iPhone and stuck it in the BSL three. Cuz what goes into the BSL three doesn't come out unless it's, it's basically autoclave. Mm-hmm. <affirmative>. So basically they took an iPhone that they were gonna leave in there forever, cuz you couldn't bring it back out.

(18:39):

Right. And she got on the Chinese equivalent of WhatsApp, which is called WeChat would get up in the middle of the night and just talk them through how to set up the robot Wow. And how to do the assay and do, and this was probably like two to three weeks of her getting up in the middle of the night. Oh my gosh. And then she would come in during the day and do her work. <laugh> so sleepy. Yeah. And I, I mean, this was, you know, hats off to these folks. Right. I mean, you know, I was in there for emotional support, but Laura Riva, Laura Martins and Yon, you know, the entire world has shut down around them. Right. And they were in there kind of day in, day out, 15 hour days. So we were able to teach them how to screen, and they were able to get the 13,000 compounds assessed.

(19:35):

And by that time, it was March. And we had an isolate from Washington that we could access here. Okay. So we got in the lab here. So then we started working with that started around, and then we published Remes. Avir was one of the drugs that we found, but that had already kind of taken off, but it was good to see. And then we had published at least 20 other drugs that could be potentially used for, for SARS COV two. And then, you know, we went on to show that in, you know, in Hampshire's it works and, and so on. And then, you know, we, we try to move into clinical trials, fortunately for the world, unfortunately for us, these drugs like remdesivir and paxlovid were then coming in and getting approved. So kind of the need for these drugs mm-hmm. <affirmative> kind of were, were dropping. Right. Right. And so we started pivoting to trying to understand the virus better. And so really on the tail end of the pandemic, I mean, we kept doing some drug discovery with with Calibr, but we pivoted to trying to understand the virus, the immunological response to the virus, and, and what can we do to not only understand this virus better, but kind of the next

Lauren (20:47):

Yeah. Whatever, whatever comes to next. Right, right. Absolutely. Yeah. Everyone, you know, has stories around the beginning of the pandemic, but the fact that you in December, 2019 had this experience months before Right. The rest of the world did. Right. And you know how to kind of already had two months to mentally consider what was happening and contemplate. It's crazy. Yeah. How do we need to better prepare ourselves? What do we need to do? I'm sure that's a lengthy, exhaustive list. But at that high level, I

Sumit (21:12):

Mean, I think we need to start, we have, after nine 11, we had a Department of Homeland Security that coordinated all of this. Right. That was, you know, and, and, and it's not a, just a domestic issue. Right. It is an international issue.

Lauren (21:25):

Yeah. It's a huge, it's a global public health issue.

Sumit (21:27):

Yes. It's a global public health issue. We still need to coordinate with the other countries, especially the countries that see the higher proportion of zoonotic transmission to get early warning signs to stockpile, but also to have the infrastructure to respond mm-hmm. <affirmative> Right. Immediately. Immediately. Right. We, we didn't have a unified plan. It was, you know, the states can do whatever they want. Well, you know, a virus doesn't know what a state boundary looks like. no. Right. No. It's, it's the most insane

Lauren (21:59):

Policy. It is ridiculous. Yeah. I would say that time to time again. Yeah. If that was all going on.

Sumit (22:03):

And, and, and, and I think that when we say that we're on war footing, we need to go on war footing. Mm-hmm. <affirmative>, our infrastructure was pu pressure tested to the point of colla mm-hmm. <affirmative>, I mean, near collapse. And I think that because, you know, we shouldn't take the fact that it didn't happen as an indication that it's not gonna happen. Right. But that we have to, you know, reinforce our institutions, our infrastructure. I mean, our, our, our medical system is, is so fractured and balkanized. Right. I mean, those points where the hospitals can talk with each other and health agencies can, can share data and all, all of this stuff needs to be put into place now mm-hmm. <affirmative>. But it'll be, you know, immensely useful for our pandemic, but it'll pay dividends for a lot of, and healthcare other. Well, yeah. But, you know, it requires boldness of action. Right. And it requires leadership and it requires the general populace to say, Hey we demand that this doesn't happen again. Right. What are you gonna do about it? Mm-hmm.

Lauren (23:04):

<affirmative>, and I like what you said too about this is a top down issue and then also a bottom up issue. It really just needs to be this full concerted effort to handle the situation and Right. What did we learn from the past almost three years now? And how can we actually translate that into the future? Yeah,

Sumit (23:23):

Absolutely.

Lauren (23:24):

So I know that you're in the lab and you love being in the lab, but what are some of the, your hobbies and interests when you do manage to make it outside?

Sumit (23:34):

Yeah. So you know, I try to take advantage of Southern California as as much as possible. you know, hiking you know, either right here on Tory Pine,

Lauren (23:45):

I know Torey Pines is so beautiful

Sumit (23:46):

After work. I just went on, on Sunday just hiking around. you know, go, go up to the, the desert out in Joshua Tree. It's a little bit too crowded now, so I'm hoping people



Lauren (23:58):

Forget about it.

Sumit (23:59):

Forget about it. Post pandemic. a friend of mine owns a cabin up in Idyllwild so,

Lauren (24:04):

Oh, I do. Yeah. I feel like Idyllwild is a secret escape. It is that here that no one really talks about, about, and I wanna keep it

Sumit (24:10):

That way. Yeah. But it's a world away, right? Mm-hmm. <affirmative>, you know, and you can, in the winter, you can go up and get snow. Fantastic hiking but really just chance to disconnect. I play soccer once or twice a week just like being outside and, you know, in San Diego you can play year round mm-hmm. <affirmative> which is fantastic. Last thing is scuba diving. Oh, okay. So my son actually really wanted to go learn scuba diving, and I just fell in love with it. Right? Mm-hmm. <affirmative>, it's just one of those things where you can't really think about anything else when you're doing it. Right. Right. First thing, you're paying attention to your safety and your buddy's safety, and then you're enjoying the beauty. And then beyond that, you can totally, and absolutely unplug.

Lauren (24:54):

Yeah.

Sumit (24:55):

Disconnect. Right. Just disconnect. You just can't afford to think about every anything else. Right. And then, and it's, and so that's, you know, that, that's one of my, you're more recent hobby. You've been doing it for about 10 years now. Oh, wow. and so

Lauren (25:08):

Yeah. I, the thought of scuba diving is incredibly intriguing to me. However, even though my last name is fish, that's always been kind of terrifying. Yes. To me, just, I don't like to know what I'm necessarily swimming with, even though I love being in the ocean and everything. It's

Sumit (25:21):

Actually, you know, when you get down there, it's more calming than,

Lauren (25:26):

Than you might think, than

Sumit (25:27):

You might think. I mean, I've been in a school of maybe three, 400 fish and they let me swim with them. Right. It was like everywhere. That's so cool. And they were just, I was just one of them. They were behind me, above me, on top of me, below me, and, you know, and once they realized I wasn't a threat, I was just kind of swimming around

Lauren (25:44):

Them. That's amazing. What an amazing way to disconnect too. Yeah. Just surrounded by this beauty and Yeah. Okay, last question. Yes. If you could give one piece of advice to an up and coming scientist, what would that be and why?

Sumit (25:58):

Perseverance. Right? Mm-hmm. <affirmative>. I think that's, that's the key here, right? and, you know, it's, it's a tough gauntlet to run, right? and, and I, I ran it, right? I mean, you know, you get outta college, your friends are getting jobs, right? you get outta grad school, your friends are, you know, now own a house and Right. And, you know, I mean, it is a lot of training for really not a lot of financial security. And you get to a point where you're just like, oh, there's a pot of gold over here. I'm just gonna get off the treadmill and, and, and jump on it, right? Mm-hmm. <affirmative>. But if you are really passionate about it, right? And I think most people, again, get into science, you know, it's not for the fam money, it's, it's because of the capacity,

Lauren (26:44):

That curiosity, that

Sumit (26:44):

Possible curious, right. Stick with it. Right. you know, I think that the rewards will exceed the pain. And, you know, there is, and there's a lot of uncertainty. There's a lot of pain. But I found that, and, and, and, and more and more, right? I think graduate students are coming up, up against this question, right? Mm-hmm. <affirmative>, you know, is it really worth the sacrifice? Right. And, you know, I I would say that look, if you are passionate about it, if this is what you love it is worth the sacrifice. Mm-hmm. <affirmative>, right? It is really worth persisting, and don't be kind of tempted by short term gain because your ability to make an impact longer term right. Is just immeasurable. I view it as very few of us in, in really the history of civilization are given the opportunity to change the world. Mm-hmm. <affirmative>,

(27:37):

Right? And, you know, if you're doing a PhD or you're doing a postdoc, you are really are given that opportunity, right? You are given the tools to really make an impact, not just the people around you, but a across the across the globe and across civilization. Not everyone will do it. This is, you know, I mean, this is, this is kind of just part of doing things that are, that are risky and, and so on. And so, you know, you can get your reward in kind of doing the daily science, the daily discovery, but just remember you have these, these, this gift mm-hmm. <affirmative> this tool, and, and very few people have that, right? And so if you really have the passion to do it, really make the most of it. Right. Don't be discouraged at, you know, you will fail. And, you know, and, and I always say, if you're not failing enough, you're not doing anything important.

(28:30):

Mm-hmm. <affirmative>, right? Right. I think that you have to fail a lot, and you have, but that's, that's part of it. But that's part of making that impact. And I think that eventually what I found is that the good people, the smart people, and the people who work hard rise to the top. Mm-hmm. <affirmative>, right? it's a hard road. I'm not gonna say it's not, but if you do have the passion and the drive, I really want you to keep being persistent and really dogging your way through it. Mm-hmm. <affirmative>, and, and look, we all went through that. It's tough, right? Your stuff, especially, you know here at Scripps, you

know, you know, maybe you have a kid and maybe, you know you know, all your friends are buying, you know, million dollar houses and things. It's, it's hard, right? Mm-hmm. <affirmative>, it's hard, but it's, it's temporary, right? And I can tell you now that when I talk to my other friends who have jobs that made money, and they look at me and they're like, ah, we're trying to figure out how to retire, right? And I'm like, I don't want to retire. You

Lauren ([29:29](#)):

Don't want to. And I think that's, I don't want's the most incredible thing that you don't want that every day that

Sumit ([29:33](#)):

I, I really, I went to my financial advisor, like, where do you, when do you, where I retire? You know, and the, and the numbers like set at 65. I'm like, I don't know if they let me work till 75 <laugh>. The guy was looking at me like I had four heads. They're like, wait, y'all wanna keep, keep

Lauren ([29:48](#)):

Working? That's so amazing though. Oh, I mean, the, that's irreplaceable, right? Yeah. Like what you were saying, the fact that you have this curiosity driving your life, right? Not necessarily, you know, a quest for a bigger house or, you know, some other ceaseless things.

Sumit ([30:00](#)):

And, and look, every day I'm lucky to be given this opportunity, right? I mean, I don't think that I deserve it. <laugh>, there are a hundred people like me that are as smart as me and work as hard as me. But, you know, I, I feel like I've been really fortunate, right? To be given the opportunity that I have been given. Right. You know, I mean, I'm literally a first generation American mm-hmm. <affirmative> my parents came here with very little money, and I think this is one of those only in America stories, right? Mm-hmm. <affirmative> that, you know, within one generation, I have the opportunities that I've been given, right. And to change the world Yeah. And to, to have that. And, and I feel like, look, yeah. I do have, I feel like I have a debt to society, but you know, I don't, it's not a debt if you, if you love, love doing it. This is why I think I'm just, just fortunate, right? Mm-hmm. <affirmative> and I, I really can't put it in any other way. Right. It's just, you know, well,

Lauren ([30:54](#)):

Not gratitude speaks volumes as well. And I'm sure your parents are very proud of you now for pursuing a career.

Sumit ([31:01](#)):

Yeah. I think yeah. No, I, I think that you know, I think it all worked out at the end.

Lauren ([31:07](#)):

If you're not failing enough, you're not doing anything important. A piece of wisdom that I think we could all benefit from. Many thanks to Sumit for joining us today and sharing his experiences as part of the Covid 19 dream team and beyond. Be sure to take a look at the show notes for more information on Sumit's research and some of the other cool content we produce here at Scripps Research. A big thank you to tuning in today, and we look forward to having you next time.

