

# WE ARE ETH – Episode 11

## With Patrick Anquetil, Founder and CEO, Portal Instruments, Inc.

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[00:00:00] **Patrick Anquetil:** ETH had actually two wonderful programs. One of them was a similar series about venture capital, where they brought the best venture capitalists and the best entrepreneurs to lecture. And what I really found appealing with ETH is the combination of theory and and practice as well. And I think if you don't really integrate the practical aspect, it's difficult just to learn a profession or learn on a subject.

[00:00:25] **Susan Kish:** In this episode, I'm talking to ETH alumnus, CEO and co-founder of Portal Instruments, Patrick Anquetil, who dials in from Brookline, Massachusetts, which is just next to where I am, which is in Newton, Massachusetts. I'm Susan Kish, host of the We are ETH podcast, telling the story of the alumni and friends of the ETH, the Swiss Federal Institute of Technology in Zurich. ETH regularly ranks amongst the top universities in the world with cutting edge research science and people. The people who were there, the people who are there, and the people who will be there. These are their stories.

[00:01:11] Patrick, welcome.

[00:01:13] **Patrick Anquetil:** Thank you, Susan. And, and it's great, uh, to know that we are neighbors actually. So I live in Brookline, which is the other, uh, suburbs, I guess, uh, next to Newton.

[00:01:22] **Susan Kish:** Exactly, exactly. And delighted to have you as a guest today. So, Patrick, if I understand, you grew up in Paris within sight of the Eiffel Tower, and somehow you decided to go to the ETH, which must have been considered quite unpatriotic at the time.

[00:01:39] **Patrick Anquetil:** The Eiffel Tower story is true and, uh, it's amazing from a kitchen window. We had, uh, we could see actually a sliver of the, uh, the Eiffel Tower. It always got, uh, foreign guests actually, uh, amazed. You'd wash the dishes and you'd see the Eiffel Tower. I mean, this is stuff of legends I guess.

[00:01:55] My, my mom actually is German, uh, from Düsseldorf. And so I always had a much broader, um, sort of horizon than just France. And in fact, you know, uh, throughout my studies uh, I not only went to ETH in Switzerland. I also went to

University of Tokyo, uh, in Japan. And now, I'm in the US and I became a US citizen. So I think, I think I already had that as a nucleus.

[00:02:19] And then when I was looking for universities, um, I, I was very keen to look beyond France. I actually didn't like this notion that learning was all theoretical. Um, and I think in France we're very good at training, uh, mathematicians, physicists, but the practicality and, and I guess engineers as well, but all the learning is actually done via theory, not with practice.

[00:02:42] And what I really found appealing, uh, with ETH um, is the combination of, uh, theory and, and practice as well. And, and I thought, you know, everything's an apprenticeship at the end of the day. And, and I think if you don't really integrate the practical aspect, it's difficult just to learn a profession or learn and on a subject.

[00:03:01] So that was kind of the gist of it. And then actually I came to, to visit ETH, and then it was love at first sight. It was like, no doubt, this is where I belonged. I mean, come on, this is, this is such a beautiful setting. I think what really impressed me is how the Swiss people really have invested a tremendous amount of, of capital, um, and, and resources into those university.

[00:03:22] And I think universities as a whole, I mean, not just ETH, and you just knew right from the start that this was a place where stuff happens when you could actually learn a tremendous amount. Uh, and also the environment. I mean, it's Zurich, it's great. I mean, it's a small city, relatively speaking compared to Paris, so it has almost like the crucible of, of things that you'd want, uh, as a, as a student.

[00:03:43] **Susan Kish:** So there's a wonderful quote from you about entering the Hauptgebäude, the main building, and say it was like a cathedral.

[00:03:50] **Patrick Anquetil:** Oh yeah. A hundred percent. I mean, it's a cathedral dedicated to furthering the knowledge of humankind. Right. Training the next generation and so on. Yeah. I guess I actually can't believe it or not, I actually get goose goosebumps, uh, thinking about it. It's, it's, it really has this, this, um, this feeling. I mean, it's actual design is cut into the arcades and, and so on. The arches, sorry, that cupola.

[00:04:13] **Susan Kish:** Yep, that's right. Very, very cool. And so when you were at the ETH, you studied mechanical engineering, correct? Did I understand that correctly?

[00:04:21] **Patrick Anquetil:** Yes, that's right. Yep.

[00:04:22] **Susan Kish:** And then you decided to go overseas, or what caused you to actually move to the US and go to MIT?

[00:04:30] **Patrick Anquetil:** I was very fortunate in that ETH had, uh, very close connection with, with multiple universities, including University of Tokyo, which as you know, is the, the top university in Japan.

[00:04:41] And during my time in Tokyo, I really kind of grew into loving research. And again, this, this idea of building and being in charge of an idea, a vision, and then executing on it. When I finished my master thesis, I really was faced well, okay, well what's next? It would've been sort of a logical step to stay actually in Zurich.

[00:05:02] I also saw, well, gee and I, I wanna continue to kind of expand the horizon and MIT was kind of the next thing to do. MIT and ETH are really sister schools. Their founding is only a couple of years apart. Um, MIT, you could say, is the same as ETH. It's (motto is) "mens et manus", you know, "mind and hand".

[00:05:23] **Susan Kish:** That's a great expression.

[00:05:25] **Patrick Anquetil:** And, and so that appealed to me. And I think also ironically, I wouldn't have been able to actually do MIT without ETH. So all of it actually made a lot of sense. And, and of course when I came to the US I thought, um, I love the entrepreneurial environment, and I thought it was a very logical next step for me, uh, for me too.

[00:05:42] **Susan Kish:** So Patrick, growing up in Paris, and as you said, given the predilection of many of the large French academic institutions towards the theoretical end versus the practical end, why were you excited about being an entrepreneur? I mean, did you know any entrepreneurs? Was this something you thought you would want to be when you were a little kid?

[00:06:03] **Patrick Anquetil:** Yes. So I, I was always fascinated by, um, again, around this notion of people who had actually built companies and kind of grew them to become products that we use. Um, when I was at ETH, I came across a, I think this was a Forbes article about Nike, the founder, uh, of Nike. And I thought, gee, I mean, this is unbelievable.

[00:06:26] How is this even possible that someone said that, that one individual, one individual or one team could actually start that? And so I was very fascinated by that. I did not know that it could be me. And I think what's interesting, when I came to MIT, it was right at the height of the dot-com bubble. I started in January of 1999.

[00:06:45] **Susan Kish:** Oh, that's, that's really the height.

[00:06:48] **Patrick Anquetil:** It, it was, it was like the height, I mean. There was this company called Akamai. I don't think the general public really knows about them. But they were like the, the poster child, you know, of, of what was possible, you know, three students and an MIT professor basically started it, uh, I think on the date went public I think the stock showed up by like, you know, 500% or, I mean like an insane amount. So, and everyone at the time was starting companies and suddenly you

were like, well gee, you know, if, if he can do it or if, if she can do it, well, gee, I could do it.

[00:07:17] **Susan Kish:** Do you think you would've had the same path if you had stayed in Zurich or stayed in Europe? In other words, was it the fact that you were overseas and you had, you know, you were sort of, an immigrant isn't probably the right expression, but you were, you weren't at home. There wasn't a safety net.

[00:07:34] **Patrick Anquetil:** Most definitely, because already by year two or year three, I guess, of my studies, I already was interested actually in how companies were started.

[00:07:42] I already had started in parallel. ETH had actually two wonderful programs. One of them was a seminar series about venture capital, where they brought the best venture capitalists, uh, and the best entrepreneurs to lecture. Um, and it was even in good ETH fashion, you had the full lecture set was a, was in a binder, and anyone who signed up for that lecture series had the binder. And I still have it actually, by the way. In parallel there also was the second thing, the second initiative was a, um, there were business plan guidance and competition that had started, I think McKinsey, the consulting company was involved at the time. So all of this was, I was already kind of embedded. So I think, anyway, it, it would've happened I think as well. Yep.

[00:08:28] **Susan Kish:** Fantastic. Your current company, Portal, is your third company, if I've understood correctly? That's correct, yes. Can you tell us a little bit about your path and how did you make the switch from mechanical engineering to a company that makes what looks to me like the thing that Star Trek, Dr. Bones used when he would, anyway, you'll explain it much better, but tell us about your first company. I think it's, it was called Aretais.

[00:08:53] **Patrick Anquetil:** That's right. Aretais was a company where our goal was to measure blood glucose in, uh, in diabetic patients and, and using, uh, some new form of laser spectroscopy. Perhaps you and the audience, maybe, uh, familiar with, uh, so-called Raman spectroscopy.

[00:09:12] I

[00:09:12] **Susan Kish:** have no idea what that is.

[00:09:13] **Patrick Anquetil:** You have no idea. Okay. Okay. Alright. So imagine you, there's one form of spectroscopy, which means like the, uh, you know, the, the study of light and how you can basically tease out, uh, some molecular entity basically.

[00:09:23] But just looking at the, the reflection of light from that molecular entity. Imagine if there was the most precise measurement and we made it basically a thousand times better. Uh, and so that's kind of was the premise of the company.

Uh, it was some amazing physics out of Texas A&M that we licensed out. Then the second company, uh, SynapDX was also a medical diagnostics company.

[00:10:00] **Patrick Anquetil:** So this was a blood draw where we basically were attempting to measure autism from measuring the expression of genes in blood. So the, the term of art here is differential RNA expression analysis. In other words, imagine that, uh, the RNA, which is the expression of genes gives you an indication of the state of the body. And what we did, this was way before this was called AI, but this is kind of some form of AI. Uh, actually, in fact, at the time, the largest autism diagnostic study ever done.

[00:10:35] So 800, uh, incoming patients, full prospective study, 20 sites across the US and Canada. And we basically from there, could derive uh, controls from the cases, and then in one set we could kind of say, okay, these are the controls and, and the cases, let's then apply it to the next set and see if the algorithm is able to basically parse out the two populations.

[00:11:00] So it was some also very cool technology. This came out of Children's Hospital in Boston, but interestingly, nature did not agree with our hypothesis. And actually the test was actually way, way more complex and difficult, uh, to tease out information. Uh, and in the end actually that company actually didn't work out.

[00:11:18] And even though we had like the best science, the best team, I was actually the junior person actually on, on that team. Uh, we had the legend of diagnostics, perhaps you know, him, uh, Stan Lapidus. We had the best investors we had, we had Bain, General Catalyst. We also had Google Ventures. I mean, come on.

[00:11:35] But in the end it's still, it's nature was not in agreement with us, I suppose. And uh, and that was it.

[00:11:41] **Susan Kish:** So what did you learn from one company that you had a successful sale and one company that didn't quite work out? What did you take away from that? It didn't discourage you enough, never to start it again.

[00:11:52] **Patrick Anquetil:** That's true. And what's amazing is that the level of enthusiasm that you have in the beginning is always super strong, and you just don't know. I think that's true for any venture, and I think it is good to be a little bit naive, you know, and look at the glass always, you know, uh, half full instead of, instead of half empty.

[00:12:10] Uh, and I think that's maybe if you look across entrepreneurs, that's probably the characteristics that you would see is that they are naive or that they always look at the glasses half full. No, I think they're, they are overwhelmingly enthusiastic. Right. And may not know what, what I mean with naiveté is that they, they just don't know how hard it actually is going to be.

[00:12:29] It takes more money. It takes more time. I was on a call last night with one of my good friend who's running a, um, uh, also a medical device company and, and she was telling me, yeah, you know, if the company hasn't had three to five near death experiences, then this is, this is not a real company.

[00:12:49] **Susan Kish:** That's a great expression. I'll have to remember that one. A great test rather. So tell us about Portal and that cool Star Trek device that you, um, that I saw in the video.

[00:13:02] **Patrick Anquetil:** Sure, sure. So, so at portal what, what we were asking ourselves was what's the one device that everyone has been in contact with and that truly could be updated.

[00:13:12] And that's the needle syringe. Right? Needle Syringe actually ironically, was invented concurrently by a French and a Scottish actually, uh, inventors. They, they both worked separately actually, uh, about 150 years. That design, which is, you know, a pointy object that's hollow and a container or vessel that has a plunger that you push, I mean, that design pretty much hasn't changed for the past 150 years.

[00:13:38] **Susan Kish:** I've never thought of it that way.

[00:13:39] **Patrick Anquetil:** Right. I mean, it's the same thing. I mean now it's, it's disposable, it's transparent, you know, it's, uh, it's maybe a bit safer because you, you get either a needle shield or you get the needle to retract, but it's still the same thing.

[00:13:51] We were running actually lately, uh, a survey. For vaccination actually. Cause the vaccination has been such a hot topic in the US and across the world. In, in a Covid context, we run a sample of 400 participants in the US. We asked them, did you vaccinate for covid? 70% say yes, 30% said no. From the 30% group we asked, okay, well if there was a needle free option, would you have done it? And to our surprise, 45% said, yes, of course I would've done it. So I was actually very shocked by that because I start with, get the needle phobic people, you know, 5 to 10% of the population, but 45% is almost half of the population that's unvaccinated.

[00:14:34] So, so it's, it really highlights, it's beyond you know, political, let's say, or ignorance if I may say so as well and, and I think there's a true opportunity there that we have to, to really do good in, in society. And so that was the premise basically of, of starting the companies. And so we looked at multiple ways to do this.

[00:14:53] We looked at like, uh, like a little part, for example, that you could put onto your uh, onto yourself that would sort of, you know

[00:14:59] **Susan Kish:** Oh, like a patch?

[00:15:00] **Patrick Anquetil:** Yeah, exactly. That would gently insert, uh, a cannula and, and so on. And then we zeroed in on so-called jet injection technology, where you compress the drug, you form a very fine jet with the drug, uh, you know, through, um, a small nozzle that jets can be much smaller than a needle because think of it as a virtual needle and if it travels, fast, it can actually pierce the skin and gently deliver the the drug.

[00:15:26] **Susan Kish:** Oh, that's wild.

[00:15:26] **Patrick Anquetil:** And so we came across this MIT technology that enabled you to actually create the jet, but also control it at the same time. So using a computer system and a, uh, and sort of a so-called electric actuator, we are able to actually modulate the injection depths and the injection volume.

[00:15:44] And so really take the Star Trek vision that basically we actually took as inspiration. The, the one that you described. And

[00:15:50] **Susan Kish:** Did you really?

[00:15:51] **Patrick Anquetil:** Oh yeah, a hundred percent.

[00:15:51] **Susan Kish:** Oh, that's cool.

[00:15:52] **Patrick Anquetil:** Yeah, of course, of course. We were all Trekkies at MIT. That's what we do, you know? Yes. And, and actually, ironically, there are, two medical devices in Star Trek. There's a tricorder that can diagnose any ailment and the hypospray that can inject any medicine actually.

[00:16:06] **Susan Kish:** So this is the real life hypospray.

[00:16:08] **Patrick Anquetil:** This is the real life hypospray. Yes. In many ways. Yes. And uh, yeah, when, when you come next time, you know, I, I'll show it to you. I mean, it is, we we're getting so much, first of all, feedback, not only from patients, but actually, I mean, we get emails from patients every day, but the best feedback we get is actually from physicians.

[00:16:25] **Susan Kish:** Really?

[00:16:25] **Patrick Anquetil:** Yeah. Physicians really hate needles. Because for them, I think it's, it's really an issue of safety in the workplace. They probably all know colleagues who have gotten injured, you know, from a needle stick across the world.

[00:16:43] You've got, every year there's true statistics, you've got 2 million, uh, healthcare professionals, so nurses and physician who actually get a needle stick. I

mean, it's crazy. These are trained professionals where they know what they're doing. They know the, the danger, the consequences of a needle stick.

[00:17:01] But yet we still get 2 million healthcare professionals getting a needle stick injury every year. So needles are great because they are effective and they're low cost, but they're also dangerous as well. And let's known to dispose of them is a whole saga that I think as more and more drugs become injectables, then this is a big problem that we have and that we need to solve.

[00:17:20] And so that's what we aim to solve. And if you came to our office, uh, today, you would see on the wall "Our mission is a needle free world". And, and that's kind of how we direct the company and how we, uh, we kind of get the whole company to, to rally behind that.

[00:17:33] **Susan Kish:** Fantastic. So I'm gonna ask you some questions just to, to close our conversation.

[00:17:38] When you were growing up in Paris with that little view of the Eiffel Tower in the kitchen, what did you want to be? What did you aspire to when you grew up?

[00:17:49] **Patrick Anquetil:** I had two, uh, visions. I think one, of course I wanted to be an astronaut and I had always, I had imagined myself on top of the rocket and sort of going to space. I'm a huge fan of Elon Musk actually for, because of what he's done with SpaceX, cuz it is I mean, stuff of legends. The second thing I wanted, uh, imagine myself was designing airplanes. Uh, I've always been fascinated with flying and really, uh, and interesting that that actually was never happened, but it's still there in terms of, uh, of, of guiding me as well.

[00:18:24] **Susan Kish:** Well, you know, it sounds like you've still got a third phase to your career, right? If you had an academic career, an entrepreneurial career, you know, there is a third part to that.

[00:18:32] **Patrick Anquetil:** That's true. That's true.

[00:18:33] **Susan Kish:** Second question. What is your favorite place in Zurich? Where do you like to go?

[00:18:37] **Patrick Anquetil:** Oh, I'll tell you. Yeah, yeah, yeah. I mean, I, I never said that to anyone, but I, I'll tell it to you, Susan. Uh, so I lived near the ETH, uh, campus, and I always liked to go down uh, that one passageway that goes, that's in between ETH and, uh, University of Zurich, that goes down to the Limmat which is the, the river.

[00:18:57] **Susan Kish:** The stairway.

[00:18:57] **Patrick Anquetil:** The stairway, yeah. And then from there, you go down, uh, you go through the Niederdorf, uh, across I think the Limmatbrücke then you take



a left. And then on the other side of the bank, of the river, towards the lake, there's a little passageway, uh, with little arch, with little archers and so on. That leads you all the way down to basically the lake.

[00:19:17] Yeah. And then you can actually cross the, the river the other way. And actually do a form of esplanade and then go back. And still to this day I, I love to do that.

[00:19:28] **Susan Kish:** Fantastic. Patrick, thank you so much for your time and this was a great conversation. Really appreciated it.

[00:19:34] **Patrick Anquetil:** Likewise, Susan. Great questions. Loved the conversation too.

[00:19:40] **Susan Kish:** I'm Susan Kish, host of the We Are ETH series. Please subscribe to this podcast and join us wherever you listen and give us a good rating on Spotify or Apple if you enjoyed today's conversation. I'd like to thank our producers at the ETH Circle and Ellie Media, and most of all, to thank you, our listeners for joining.