Episode 52 | Chris Bhatla Pt. 1

Sarah Smith 0:13

Hello and welcome to Discover Stories on Re-Imagine Radio. I'm Sarah Smith, a student intern at the Vancouver Adapted Music Society and your host of the podcast today, joining me is Chris Bhaltla, engineer, med school student and volunteer with Tetra Society. Just before diving into our conversation, it's important that we take a moment to acknowledge the land on which we're fortunate to host this podcast. This this is the unceded and ancestral territory of the Musqueam, Squamish and Tsleil-Waututh Nations and it has been stewarded by them since time immemorial. Vancouver is located on territory that was never ceded or given up to the crown by these peoples. The term unceded acknowledges the dispossession of the land and the inherent rights that the Musqueam, Squamish and Tsleil-Waututh hold to the territory. The term serves as a reminder that these people have never left their territories and will always retain their jurisdiction and relationships with the land. Chris Bhatla, welcome to Discover Stories.

Chris Bhatla 1:25

Thanks, Sarah, thanks for having me on.

Sarah Smith 1:27

Yeah, you're welcome. Happy to have you here. Just to start things off. Could you tell us a bit about you and some of your interests?

Chris Bhatla 1:35

For sure. So I'm a third year medical student at the University of British Columbia, but I previously studied engineering and worked as an engineer in training for a couple of years, which was around when I got involved with Tetra Society. Outside of that, I'm pretty into outdoor activities. I'm actually living in Vernon at the moment, so there's lots of hiking and now skiing is just starting up. So those are some of the things that I like to do when I get the time.

Sarah Smith 2:06

Awesome, very cool. And I imagine, yeah, like you said, the engineering background probably helps with some of the Tetra work that you do. And we'll get into that a little bit later. So how long have you been volunteering with Tetra?

Chris Bhatla 2:19

So, I first started volunteering with them back in 2018 although I did do a little bit, actually, they first got involved with Tetra Society in a school project, and that's how I really like to learn about them. And that was probably back in 2015, or so. So I've kind of been doing things throughout the years, and then now these days, after COVID, I haven't been quite as involved, especially being back in school, but, yeah, it's been, I guess, a number of years then.

Sarah Smith 2:51

Yeah, very cool. That is quite a while. So, it must be somewhat familiar, well more than somewhat familiar, but you've been involved for quite a while. That's awesome. And you touched on this a little bit. You mentioned a school project, but I was wondering how you came to be involved with Tetra and maybe you could talk a little bit about that project.

Chris Bhatla 3:08

Yeah. So that first project was for my third-year mechanical engineering design course. So this is a course where everyone in the class was paired into some groups, and then we all worked on the same project, but each group took their different approach to solving the same problem. And so what the way it worked is, then we were partnered with Tetra Society, and they were looking to make some improvements to an existing sailboat that they have. It's called the Martin 16, I believe. And it's this really cool sailboat that's designed specifically to be highly adaptive and being able to be used in many different configurations, as well as being fairly stable and really difficult to capsize. And so there were some things that they were hoping to improve on, because it this was a sailboat that had already been in use for a number of years, and they had figured out some things that worked but could be better. And so they had asked for the engineering students to come up with their own ideas on what could be done to improve this. So my group, we took a few different approaches at looking at improving the joystick control system. So for someone who wouldn't be able to operate the sails in the traditional fashion, but was able to operate a joystick, then they were able to actually go out on the sailboat. And usually they'd be out in Jericho Beach in Vancouver, and they could essentially go sailing just by controlling it with a joystick and perhaps having some help for a few other aspects, if needed, but otherwise fairly independently. And then for people who weren't able to use the joystick, there was another system which uses what we call sip and puff. So for someone who isn't able to move their arms, but is able to breathe in and out and have some force that they kind of blow on this essentially, almost like a straw that allows them to then control the boat in a similar way to the joystick. And so essentially, there were some things that could have been improved with both of those systems, mainly things around just issues that would cause them to not work properly in the salty, corrosive environment of being out on

the water. So we came up with some new designs. And then, as it being, since it was a like a project, course, we kind of went through, created all of our documentation, detailed drawings, all of that engineering stuff, and then each group then had this big, giant package that went back to Tetra Society at the end, which I'm sure was a lot to go through, because there was probably 100 of us in the class, so there were probably 15 or 20 teams. And so then from there, they were kind of able to take whatever suggestions they wanted and implement some changes to the sailboat. So that was, that was really cool. And I really enjoyed doing that project. And that was kind of my first taste of what Tetra Society does, because I'd never known about them before. And then when I finished my degree and started working, one of my co-workers was actually also involved in volunteering for Tetra Society. So that's where I learned about really what the other things that they do are, and the kind of work that he did with them, which was taking on a bunch of different projects and working on those as part of the group of volunteers from Tetra Society. So through him, I got connected and then started doing a few projects of my own with lots of help from the other volunteers.

Sarah Smith 7:04

Wow, that is really, really cool. The sailboat project, I'm just fascinated by the blowing in the straw technology, to be able to operate a sailboat that way. That's really, really neat. Sounds like a really cool introduction to Tetra as well, that you're able to continue that afterwards. And that actually leads into my next question, which is sort of, what's your why for volunteering with Tetra like, why did you decide to continue after school and then throughout the last five or six years, I think it was that you said you've been involved?

Chris Bhatla 7:36

Yeah, it's a bunch of different reasons. One of them was that I wanted to get some practice just building things, using my hands, and getting better at that kind of designing and building that I learned a little bit in engineering, but still had a ton to learn, obviously, and Tetra Society was a really good way to do that, because each project is so unique and interesting that it's really fun to work on, and also the people that you work with make it really special as well. That was the other part that I really enjoyed about volunteering with Tetra Society is you get matched with someone that has a project request, essentially, and you go meet with them one-on-one and learn about what they're hoping to get and essentially, really work collaboratively together towards a solution. So for most projects, I'd meet with the client who wanted something created for them multiple times throughout and often iterating a little bit what the final device was going to be in order to make sure that it was going to meet their needs best. And so I really love that collaborative process, and also just getting to know people from all sorts of various backgrounds. And everyone I

worked with was just like, just a pleasure to work with, and really great to get to know and get made that quite enjoyable.

Sarah Smith 9:04

That's awesome. Very cool. Sounds like that connection piece was sort of important to you as well. And yeah, it's neat that each, like you said, each project, is going to be really different depending on the person's needs and whatever sort of barrier they're trying to overcome. So it's really cool that each is so unique and a fun challenge. And so I imagine then talking a little bit about your sort of process working on these projects, it sounds like when you're talking about the iteration, a bit of back and forth and collaboration, is there anything else that sort of you could say about the process of developing a device or apparatus, I guess. And when you're working on a project?

Chris Bhatla 9:44

Yeah. And I'm sure every volunteer has their own way of tackling problems, and it also really depends on the project, because sometimes someone will have a very specific idea of what they want, and they say, like, "I need you to build this for me, I know exactly what it is, it's just I need someone that has the skills to create it." Versus other times, it'll be more of like a very broad like, "I would like to, for example, be able to play an instrument that right now I'm not, I don't have the ability to support it properly, or to reach different parts that I need to, and I just need you to help me with that." And so then it's a different process, because then I would need to come up with more, you know, ideas of what we could do in order to achieve that goal, rather than with some of those cases where there's a much more definitive idea of what that product's already going to look like. So for the ones that was that didn't entail a little bit more planning and coming up with different ideas, I would often start by just meeting with the client and trying to gain the best understanding I could of what they were hoping to do, and then trying to figure out if I'm able to achieve that, because sometimes what someone's hoping to do isn't necessarily something that I can do to myself, and maybe I need to bring some help along, or maybe it's something that, in some cases just isn't really feasible, but we can maybe do something a little bit different that still meets the right eventual needs. And so from there, I kind of try to come up with some just general concept sketches, things like that, of what the device could be. Come back and talk about those. And then once we've sort of settled on an idea more closely of what the project will be, then I'd get into a little bit more detailed design. So that's kind of like now looking at what materials am I going to be using if I need to actually create components, like in a machine shop situation, which I didn't really have so much access to, but there's some volunteers in Tetra Society who have a whole garage full of equipment. So then in those cases, I'd start working with them and create designs and get into that

really detailed component of it. But then at the same time, I didn't want to start going too far without again, coming back and meeting with the client multiple times, because it's easy to just get carried away and then build this whole thing and then present it, and then realize that it's actually not quite the right thing. And so that's why I mentioned before, being kind of iterative, of creating an initial device, but often it would be kind of rudimentary to start, and just like, almost like a scaffold of what the final thing is going to look like, and then build up from there, and then eventually, once the final thing is ready then and kind of pass it off. And obviously, if there are issues that come up down the line, then I'd meet back up again and potentially make changes. But if everything was good then, then they would just take that and go from there.

Sarah Smith 12:56

Very cool, very cool. I love to that you mentioned sort of different volunteers, having different resources, like a garage full of tools, for example, and as a volunteer, being able to tap into those, and sort of having a network of folks with different capabilities on the volunteer side, that's really neat.

Chris Bhatla 13:15

Yeah, it was really helpful for me as someone living in a tiny apartment, versus there's, there are quite a few volunteers who are now sort of retired and had that flexibility to kind of have me come meet with them, and even though it was a bit of a commute, often out to wherever they were, like, for example, in the North Shore, Coming from Downtown Vancouver, but they were just so happy to have me come and basically help me on these projects, which were someone that I just been starting out. Getting that help from these really experienced folks was great.

Sarah Smith 13:54

Yeah, that sounds really cool. Yeah, collaborative both with the client who you're creating the device for, and then collaborative amongst the volunteers as well.