

S2E2: Bridge Team - Transcript

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You're listening to the official podcast of the Engineering Students Society of Lakehead University. We're here to facilitate engineering-themed conversations outside of the classroom and connect you to other students, faculty, and alumni. Thanks for tuning in!

So, for the past 21 years, Lakehead University has been regularly represented by a team of civil engineering students at the American Society of Civil Engineering, and American Institute of Steel Construction's Students Steel Bridge Competition. This year, Matthew Scott, Felix LaSalle, Damian Grayda, Philip Duke, and Paul Graham placed first in the regional competition and 11th overall, in the national finals, which was the top rank out of Canadian universities that participated. We invited several team members to share their experiences competing. So today we have Damian, Matthew, Paul and Felix with us. That's very exciting. So my first question is, your bridge plays second and lightness and cost estimation in the national finals. So, did your results fall in line with your expectations and your perception of the bridge's, and the team's, strengths and weaknesses?

Damien

I could start it off there. Yeah, sure. From what I remember at Nationals, not only us, but every, every university noticed an increase in their numbers. And we think that one of the contributors to that was the fact that we were building and testing on on turf, like in their big stadium, and so there was a lot of movement on the plywood sheets that we had our bridge setup on. So when we were actually doing the load testing, there's just a little bit of compression beneath the actual surface that went on. So most likely, it was in line with what we were expecting a little bit worse than some of the testing we did in the lab, but still solid results.

Paul

I think the fact that we were one of, like second lightest too, we placed a lot of our design on making the bridge as light as possible, where versus a lot of teams based off of like constructability and their deflection, versus we tried to balance the ball, but lightness was kind of our main focus, too. So I think that kind of lined up with the fact that a lot of the bridges were heavier than ours, it wasn't necessarily something that a lot of the other teams focused on.

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The competition has a hefty rulebook, and with changes occurring every year, there was a lot of disqualifications. So were you worried about that? And how did you deal with that?





Matthew

Well, we we actually caught a mistake that we'd overseen on one of our connections, which would have actually disqualified us as well. So we were able to fix that over an evening, a long evening. And after we fixed that, we were feeling really good, we'd gone over the rules a ton for especially the connection rule. And when we went to competition, we, when we were talking to other teams, especially teams that were disqualified, some of them even admitted that they didn't really didn't even read over some of the rules. So that's not our problem that they don't read. But that definitely gave us an advantage of that we knew we weren't gonna get disqualified. And we were kind of nervous, though still from reading how many disqualifications there were from other competitions. But once we got there and got through and the judges were like, Hey, you're a okay, then we were pretty happy. Pretty good.

Felix

I got one thing to add on that. Those connection rules we had, like, there's competitions that have happened in other regions about five days before ours, and that's when we saw how many disqualifications there were, so we had a very thorough read over rules and what people were considering as stuff that would get disqualified or not. And then that's when we caught that one mistake that would have for sure disqualified us. But a couple long nights before the first regional competition, we fixed that up. Yeah, I'm sure that we were good.

Paul

The mistake that we caught, we caught it at like 9pm on Monday night, and we left for the competition Thursday at three in the morning. So we didn't give ourselves a lot of time to catch it. So like it was a late night, Monday and Tuesday. And that ended like we wouldn't have caught that without those other teams competing the week before. So that was, I know, from my point of view, that was a big stress. And like, even as we were building it, we caught ourselves on a few other violations or our advisor caught us on a few other violations that we didn't even think of at the time. So it's definitely easy to miss things when there's such a broad spectrum of rules.

Damien

Funny enough, we found out about the other teams disqualifying on a Reddit post. Oh, it was or it was their lab, like Corey Hubbard or or lab instructor and lab advisor. He was the one who brought it up to us. He said he was doing some digging and found some teams talking on Reddit saying how almost, if not the whole region got disqualified for connection rules. So that's very daunting. We've like I said, we fixed it. So there was we got to a point where there was only so much more we could do where we had to be okay with just going to the competition is still a little nerve wracking. And then once we want to regional



competition, you think that, you know, you've done it once now you just need to do it again with other other schools. But one of the things that they stressed that the competition is that, you know, when you go to the national competition, I think it was the day before judging at Nationals, they said, you know, whatever past that the regional competition isn't necessarily going to fly here. You know, the judges are going to adhere to the rules exactly as they're written. And, and if something got missed at the regional competition in your favor. Well, unfortunately, that's not the case here. So there's still there's still a little bit of tension going for the nationals because you could still disqualify. Bridges failed at Nationals where they were passing at regionals.

Matthew

yeah, there was not every. Not every mistake was a disqualification, though. So I think that for us, I think we only had one disqualification mistake, the rest, were just going to be like, time or weight penalties. But it's important to address every mistake, of course, but the disqualification one was the huge one.

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Yeah. Okay. Well, we'll move on to the next question. So the team spent 1500 hours on the bridge. So what did you enjoy about that very long process?

Damien

The team bonding was good. I'd say. Like, Prior to forming the team, the only person that I really knew was Matt Scott, we came from the same college. So you know, I met Paul, I'd met Felix I had met Philip. And there was a lot that, you know, it's it's a lot of hardship, and a lot of struggle, a lot of long hours, and blood, sweat, literal tears. So you get to know each other when you know, every now and then I'm not gonna say that there weren't disagreements. But, you know, there was lots of times where, you know, I wouldn't have made such good friends, if not for the bridge teams.

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And that's a really critical part of engineering to learn how to work together in such stressful circumstances.

Matthew

Yeah, well, the nice thing was that a lot of us became really close, like, right away, like at the beginning of the fall semester, we were like hanging out and sort of doing design work and all that stuff with each other. So so, you know, stuff that you can do, but still chat, as well. And so I think one of the reasons that we were able to do so well is because, like, Damian said, there were, you know, disagreements on things, of course, but if you get along with people right away, well, then it's like, you know, that relationship is valuable to you. So you'll, you



know, you're not going to try and make things harder than it is for disagreements, but a lot everything, or most things were able to be sorted out really well. So

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Oh, you guys feel lucky? Yeah. Yeah, that's okay. So What didn't you like about the process on the bat now?

Matthew

The trauma unfolds.

Felix

The, I mean, I'll start off with the lead to pain management was a bit of an issue. It's very difficult to predict how much time something is going to take when you haven't done it before. And when it came to our manufacturing side of things, everything took about twice as long as we thought it would. So it was just significantly more work than expected. And if you thought a job would take four hours while actually took eight hours. So it's just like, probably one of the most difficult thing to manage was or time.

Matthew

Yeah, and sort of governing tasks, I guess was a little bit as well, where, like, the communication was really good. But there were some times where things were said, but of one person and things might not get done as fast as one person had in their head, or whatever. And so, you know, but that's, you know, civil engineering, jobs, anything like that, it's always going to be, you're gonna run into things that make time management and scheduling a bit of a issue. So nothing new.

Paul

Another thing was like we spent 1500 hours on it, we easily could have spent a lot more time like there was a lot of things on our bridge that were not perfect, and not necessarily as nice as we would have liked them to have been. The three coats of paint at the end hid a lot of that. There was a lot though, that I think if we'd had the extra time, we would've loved to, but it's just not possible with carrying a workload during school and trying to get that. So that was one of the things I found frustrating was like trying to move on when something's not necessarily as perfect as you'd like it to be like, it'll get the job done. It's, you would like it to be better, though, and you just have to make that kind of compromise of, it'll get the job done versus you know, I need to sleep for more than four hours tonight.

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Yes, yeah.



Matthew

Yeah, the one thing about that, though, is when we got to competition, even though like Paul said, and I totally agree with this, like, there definitely could have been things on our bridge that were maybe spent a little bit more time on to make just that much better, but going to competition and seeing, like some of the other bridges that were actually manufactured by students, because some of them outsourced their manufacturing. And of course, those are going to look amazing. But we were actually, I think, in my opinion, anyway, one of the better looking bridges, especially with manufacturing, paint did hide a lot of it. But you know, the fact that we painted it for regionals, which there was a lot of teams who didn't actually, like that gave us a big boost and like, your aesthetics, you know, you're making how pretty it looks. But yeah, so.

Damien

yeah, could you imagine we might not have won aesthetics at a regional competition, if we decided not to paint it? It was like, a last minute decision, because we had to not only make the corrections on the connections, we were having that conversation of okay, for spending the time to fix the connections. Or like, is it still worth painting because we're driving with this thing in the car, and if we don't paint it like this very seconds, then paint fumes are going to be not good for the drive. So it was actually Matt and Phil, who? I think you guys stayed at the school until, like, two 3am painting the thing?

Matthew

Yeah, we yeah, we did do that. I came. I also had to, because we ran out of paint. That's right. So I had to come at like seven in the morning. And, yeah, grab a key and then start painting. And yeah, two and a half hours later. I mean, thank God, we got it, because that was literally I think the morning before the day we were leaving, so it was just in the nick of time.

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Yep. That's dedication.

Any more? Talk on this last question? No. Okay, we'll move on. So building the bridge sounds super exciting. Not each team had their own little area in this big field house and team members ran back and forth from the materials section on either side of the working zone, to the bridge site, moving parts and like drilling things together, to assemble the bridge as fast as possible. And in the national competition assembly times ranged from 3.8 minutes to almost an hour. How did it feel to work under pressure in those close conditions?

Felix

I guess I'll start. point out the obvious, I guess the luckily is our national competition. It was our best time. So we got lucky with all the practice we did.



And to add on that we were practicing. So we practice for regionals easily swamped the competition with our times for regionals. And when it came to Nationals, we were all in separate areas, and I know for me If I didn't have any practice whatsoever with the team building this thing until the national competition itself when I got to see the guys again. So we practice twice, I think, the morning of the competition starting. And the day before we were practicing, we managed to break our bridge, in practice at the competition in the Airbnb parking lot. So we had like, well done nuts. And we're using drills and stuff. And then eventually the couple of our nuts broke off with the drills. So we had to go find a shop that was nearby in the states and rent out a grinder for exactly like 10 minutes, just to get the two nuts off the steel and then we can put a new note on.

Matthew

Thank God, they were open on a weekend. Yeah. Oh, yeah.

Felix

So by a time Paul had figured out the paperwork on this one to get the like, just to get us the grinder, because apparently you have issues with postal codes. We didn't have an American Postal Code, we couldn't rent it, yada yada yada. The guy gave us the grinder. We got it done in the back of the parking lot, and gave back the grinder later, right when he was done his paperwork. So that was was it was a quick one. But it was a good story. I'll pass it on to the next guy here.

Paul

I think the the practicing helped a lot. So like we set up the entire build area, we taped it out on the floor of the basement below Agora. And we would practice there late at night like we were there a few nights we were there till like two in the morning practicing building the bridge to try to refine our techniques. So it wasn't just a panic, it was like you knew exactly what you're doing and what you're supposed to. And I think that that helped us a lot. Like, we also set up our Airbnb places so that we had somewhere to practice like at Nationals, we knew we needed Felix to practice because he hadn't done it and we hadn't done it with him two months. So we picked an Airbnb that had a big enough driveway to build the bridge. And at regionals, we practice in a park attached to a fire station beside our Airbnb. So we put a lot of time into the practice. And I think that it took some of the nerves off, but even at Nationals, it was so stressful, just like when you line up to go, you're like, hey, this is the last chance we got to do this. There's still a lot of stress to it.

Matthew

Yeah, and so one of the things though, is we for regionals, we built differently, we had manual ratchets. And so when Felix talks about, he only got to practice with us a few times. When we made the switch from regionals to Nationals, we got power ratchets, so that we could just put in bolster up much faster, which, like one



of the things we were told was kind of stay away from power tools by other teams, but no other team had had this connection rule. So these power tools actually were one of the reasons we were able to shave off like a few minutes from our best build time with manual ratchets. And but yeah, so we had, like Paul said a ton of practice with the manual ratchets. And one of the things for me that helped the nerves was that for a few of our practices, we actually had some members of the 2023 Bridge team come and watch us. And even though we know those guys, you still don't want to like screw up and so it's still kinda like, you know, your heart beating pretty fast but it's good to kind of simulates the actual experience but once you start building it's like you don't even hear any outside noise you're just go go go and it was pretty good.

Damien

Yeah, at our regional competition we actually we got quite a bit of a crowd that was watching us because we were one of the last teams to go and you know, being the only Canadian school at the at the regional competition and we had talked to a lot of the schools as well so you know, making those connections made them want to see what our bridge was like in construction. So as Matt said, when we went to when we went to go construct the thing at regionals you kind of zone it all out and it's just it's all adrenaline for me it's it was pure adrenaline and that I ran right past one of the construction lines that we weren't supposed to cross so you know, wagered a little bit of a penalty there my my apologies there gents, two cents to speedy. But I don't know it's it's you have to look at it differently between regionals and nationals to because regionals you don't really know what you're going up against. And then only until you're done regionals. Do you have a sense of like, what nationals might look like? So at a regional competition, I think there was only one or two teams that were looking to be faster than us.

Felix

Yeah, they were, like seven or nine minutes.

Damien

Yeah, I think one of them was UC was around seven minutes. And then Platteville, if I'm not mistaken, was around 10 minutes, something like that. But you know, unfortunately, they both got disqualified at the regional competition. And then we get to Nationals. And you know, like I said, it's just, you just do it again, and you do it as best as you can. And then you'll start to see that as people compete, because there's like 35 schools, so I think we only went about halfway through the competition, as people are competing, you're seeing their times and their builds, and you're starting to hear through the grapevine that like people are building these things in three minutes. So it's certainly like, you have to try to not let it get to you because there's nothing that you could do at that point with that information to get anywhere near those times.



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Exactly. Mindset is important, right?

Felix

Yeah. That's the one comment I had was like, regional competition, the the average time was probably around like 15 minutes or so, and then the good times were around 10. When we came to national competition, all of a sudden, the average time was around nine or 10 minutes, and then the fastest times were like you said, around three minutes. So it was just like, no matter how fast we could have ever practiced, like as much as we could have ever practice here. There's no way we could have gone anywhere close to that time, just because the bridge design wasn't optimized at that point.

Damien

The whole bridge would have had to change. Yeah, yeah.

Felix

So it's just some people thought had some great ideas, and it worked out pretty good. That's nice to see.

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If any future bridge teams are going to practice in the basement of the Agora, or I want to be there that sounds super fun.

Matthew

Oh, yeah. I'm sure if you go there by the end of it. Yeah. Like, when did we start?

Damien

Towards March, we taped off the like the basement and agora, so if you go to like the Starbucks and head down those stairs, right beside it, you'll probably still see tape on the floor.

Matthew

Yes. From ours. If the tapes there, you know, people are going to be practicing also. Sorry, 2023, for a potential audience.

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Yeah. Okay. So I know your TIG welder broke during the initial building phase. And I'm sure there were other challenges that you have faced during the project. So how did you overcome that was?

Felix



I mean, you just kind of power through it. If you fall behind you fall behind, there's nothing you can do about it. Get more tools do what you can around it. Carry on. Yeah.

Matthew

Oh yeah, Paul could probably speak more on this because Paul had a huge hand in acquiring and sorting out funding. One of the things that was awesome, though, is that if we got a TIG welder that could not only do steel, but aluminum, and because it could do aluminum, the actual faculty was willing to donate some money to us to get it, because then graduate students would be able to use it because they also work with aluminum.

Paul

So I think in terms of like the TIG welder breaking, that was like a big setback, because we planned to do a lot of practice over reading week. So that just took a lot of extra time, from my point of view, because I priced out a whole bunch of different options, looked at a bunch of different things. And then a lot of that, though, came down to the help from our faculty as well. Like, if it wasn't for the one lab tech, Morgan Ellis, he did a bunch of research on his own about TIG welders that we got and what would work. Cory did the same thing. And then our faculty advisor, Dr. Gong, got it pushed through incredibly fast, because we had, it was like within a week of me submitting the one that we wanted, and that Corey agreed with and everyone agreed with, it was like within a week, we had it purchased and it showed up like three days later. So it's just the fact of how fast we got it. That was a big thing there. I think in terms of things going wrong, there's a lot of things that went wrong, like one of them was, we plan to do a bunch of manufacturing over reading week. And so there were only three of us available. And so there's Matt and Damian, and then me, and then both my roommates got COVID back to back. So then I couldn't go in. And then as soon as I got out of COVID, they Matt and Damian got COVID. So then there was just a whole period where no one could get anything done, because we have a buddy system in the lab. So coming over that one there was just a lot of extra time had to be put in after the fact and kind of tried to find extra periods where we originally hadn't planned to work on the bridge to start working on it. So it was just, you know, setting your expectations of how much time can we do it and we'll know if I slack on something else, will it get done so It was a big thing about time management just whenever something went wrong. Yeah.

Damien

I think kind of just to wrap that up, you know, they could pretty much touched on the major obstacles that we had. But it's no different than being at the competition and finding out that people are building faster than you, it's just, you gotta control what you can control. And so, you know, if something broke on us, it's like the TIG welder, then we still have the MIG welder, or if something broke on our bridge,



and we don't really have the luxury of time to sit there and wallow. So it's just it's kind of, okay, this isn't gonna work. So you got to figure something else out. We lost all this time. And now all that means is like, for the rest of the week, we're staying in the lab until 3am for like three days straight. So

Matthew

One of the things about that, yeah, one of the big things about that, though, like, at least for me, I thought, I mean, even though problems suck, and you know, having to figure them out sometimes is pretty brutal. But it's a really good real world experience for when things go wrong. And to come together and develop, like, what the best solution might be. I mean, that's like super valuable experiences that you can get doing this where in other classwork, it's not quite as extensive as it is with this bridge project. So I really enjoyed to get that experience.

Damien

Yeah, definitely very, very applicable to real world.

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So to kind of build on that, do you think that your experiences, building the bridge and constructing the bridge and ship being on the team helps you get where you are right now, your jobs and wherever you've ended up?

Felix

Absolutely. looks fantastic on a resume. As Matt was saying, you get experience that you're otherwise going to get with school, which is like project management, if you will, or like real world problems, application, stuff actually breaks, you get a much better perspective for the field that we're in especially, which is mostly related to construction, which is exactly what kind of project we just did. It's very associated to the real world. And I found it very helpful, like a lot of businesses I talked to are very interested about the steel bridge, and they did look for it on resumes.

Paul

And yeah, I, I agree, I definitely, I mean by work was one of the team sponsors, so they were definitely into it. That made a big difference. And it makes you there's a lot of things that we draw on paper that make sense on paper, and when we went to actually build them, they were not practical whatsoever. So I think looking at things from that point of view, getting that experience was great about how just because something looks like it'll work on paper doesn't mean it's actually going to work that way when you have to come build it. So that's a really applicable thing. I think for whatever civil field you go into, whether it's municipal, or structural, or any of that it's what you design actually has to work. So that was a big learning thing that I took out of it.



Matthew

Yeah, I actually am still in school, I'm finishing up my MBA as well. So I will be graduating this, like at the end of the school year, fingers crossed. And so what one thing though, that's actually pretty crazy, as this bridge competition is sort of open, like, I've already been offered some jobs, unfortunately, had to turn them down, because I still have a year of school left. So you know, I wasn't able to accept anything where they wanted me right then in there, but doing this and having that on the resume, like Felix said, it's a very recognizable thing. And not just in Ontario, but even in Manitoba, where I'm from Winnipeg, there's still companies and people there that even graduated from Lakehead. So they know all about that and it goes around so it's nice to have in the back pocket, that's for sure, for having that on the resume, when it comes time to look for jobs.

Damien

Yeah, in my perspective, it definitely, at least from my standpoint, the bridge team alumni has a long history. And so we even consulted with bridge team members from like 2010, 2011, 2015. One of the opportunities that I was pursuing after graduation was actually from one of the team captains from a previous team so inherently it creates a lot of opportunities to network. And then as we discussed earlier, it's like that. If it isn't already apparent by it being on the resume, it's you certainly have the skills from the competition to kind of backup the fact that like you were part of this competition and, you know, if someone wants to poke that bear and see if it's not just something that's line a text on your resume to fill the space, it's you can you can actually show them that these are the skills that you took away from the competition. And this is kind of what sets you apart.

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Yes, certainly. So, for my last question, well, second last: in the regional finals, you mentioned before you were the only Canadian team out of the 14 that competed, so did you notice any differences? Were you intimidated at all?

Felix

When we started the regionals, we were nervous, obviously going in where they go with the big American school to get a lot more money doing these things and whatever the big clubs of people and then the first day of the competition it's aesthetics judging so you just build out your bridge and then you walk around and you can go check out all the other bridges. And as soon as that started, we felt significantly more confident because we've seen how unprepared most of these bridges were and how they weren't diligent with the rules and we could tell right away a lot of these we're gonna get disqualified for various reasons. Even looking at our professor Dr. Gong going around, he just made us laugh going around and he would like lean over stuff and go in other people's bridges, take a picture, be super awkward in their face about it, and then walk away not say a word. Then he



would walk over and say "we're in good shape", so it just made us made us laugh there. But yeah, as soon as we saw the other competition, we felt significantly more confident.

Paul

Yeah, I agree. And I think having Cory and Dr. Gong there, they were a huge confidence booster me like looking around like, there was a lot of things that you could see that were little things that were wrong that were going to affect the team but they were so confident in us like Dr. Gong, from that morning of aesthetics, he's like, "you guys got this", and his confidence going in just wore off on all of us. And I think we knew what we were there to compete and it wasn't it wasn't as intimidating being against all these other big universities like there was a lot of big names from the past to compete with like U of Platteville was always known to be a competitor, but their team was super nice and good to us. So it wasn't as intimidating seeing those and especially with the confidence of our advisors going in.

Matthew

Yeah, also, being the only Canadian team there. I mean, it's, it was kind of for me anyway, it wasn't super daunting because you had an easy opener with people like you had a Canadian Maple Leaf on our shirts and so heck, sometimes it wasn't even us always going to talk to people, people would come to us and hey, you're the Canadian team. And so it was really easy for us to talk to people, which was awesome. And everyone at the bridge competition like even though like both regional and national, everyone was so nice and like everyone was asking questions about stuff on our bridge why we chose to do it this way. And people were giving useful tips. We got one of the ways we built our bridge differently from the regionals to Nationals was another team. I think it was Platteville. They did this swivel manoeuvre to get it across. And we're like, Well, you know, I think we could do that with our bridge and like at some time, and so I feel I think was someone from Platteville who told us to, like we should look into power ratchets.

Damien

Yeah, I was talking to someone from Platteville. And they specifically recommended a model of ratchet that they would suggest using.

Matthew

Yeah, so it was a little intimidating like right at the very beginning but you quickly got superduper comfortable with everyone. And like Felix said, with Dr. Gong, looking around and giving us you know, some structural analysis tips and all that and him being so confident, and same with Corey, so confident in us. It was like you almost had to stay humble because we hadn't won yet.



Damien

Yeah, that was one of the big things was Matt and Paul kind of said about being only Canadians in the American competition as well. It's kind of surprising for me it was just, I guess this is this was unfair to say but everyone was so nice to us. You know, you kind of go there just with with a little bit of a protective barrier just to make sure that you know, your ego is intact by the time you leave, but everyone was nice and complimentary of the bridge, giving us tips, freely talking about the competition and what they're noticing. So it definitely was a sigh of relief when we realised that you could just kind of take a step back, relax and actually have a bit of fun at this competition because at the end of the day, I think that was probably one of my biggest takeaways is the fact that we just got to travel and meet all these people and go for go for drinks after the competition. However I went meet up with some of the other schools so definitely good experience there.

Matthew

Yeah, there's a lot of people that a lot of us are still connected with to go down in the States and talk to like, just how awesome people were. So after the competition, especially going out to grab some drinks and like talking about the competition with other teams and whatnot. You know, it just made the experience just so amazing.

Damien

I guess on on a little bit more of like the competition side of it, though. One of the things that Lakehead has a leg up on is, you know, we're doing this entire project, whether it's the actual design and construction, securing funds from sponsorships, all the the back end stuff that you wouldn't think about that goes into building this bridge - five of us did that all versus, you know, almost every other school, including our fellow Canadian team, UBC, they run it as a club where they will have executive teams and people who like are committing themselves to be there but at the end of the day, you still have so many hands touching this project. And it comes down to sometimes people step on each other's toes, or people don't get around to doing the things that they've committed to doing. So we definitely had an advantage being able to understand how everyone works together for the entire year and a half that we get spent.

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It's good to hear that there's an advantage to these design courses being integrated into the curriculum, and I loved hearing about how it was a great opportunity to network as well. So I think this is my last question. Do you have any advice for future students interested in being on the bridge team?

Felix



Advice for future students? I don't know, they gotta they really have to understand how big of a commitment the steel bridge team is like right off the start like it looks fun. You know, I'm gonna learn this, it's like no, it's like a second job. You know, while you're in school. It is a full time commitment, especially the second semester was just their building. So that's, that's the biggest advice I can give them there. There's tons of technical things you could get into at that point, but that that's networking with past bridges. You know, I'm sure that next year's bridge team will have connections with Matt and Damien and me and Paul as well. They're all friends with those guys. So it's easy to network.

Paul

I'd say one of the biggest things is like like Felix said, it is a massive five commitment. There's like, you know, we were at the school like seven days a week and Felix was there for like a month straight. He was there like 28 days out of 30. And so it's it is a massive commitment. It's bigger than any other commitment that you'll do in university. It's It's important though to like make sure you're still having fun and enjoying it like there was a lot of things like you know, we had a lot of great times building that bridge and enjoying that. So, you know, it's a big time commitment. You know, you you want to take a lot of pride in it. You got to make sure you enjoy it, though to when you're done with the competitions and doing those things. So don't know it's a big commitment. It's a lot of fun, and it'll be a great experience and you'll learn way more than you think you would. Yeah, and don't touch things after you have them because I burned my hands so many times. You'd think I learned? Never did so.

Damien

Paul, like literally stains that lab with his blood. It's like it's there.

Paul

I don't know what you're talking about. That was a light graze. No bandage required.

Damien

Yeah, sure.

Matthew

No, accident report so it never happened. Yeah, it was like, sort of to go with the time. It sounds daunting, but if you really prepare yourself well, and you know that there's a lot of time and you schedule yourself to have that time. Then, like Paul said, it is really fun to do like you get along with your teammates because no one's yelling at each other because we're behind schedule on things. I'm sure that'll happen. That happens pretty much on any project. But if you set yourself up and already know that you're going to have to set this much time aside for this then if you're good at time management, then you really shouldn't have a huge,



huge deal. But yeah, you got to work at it. I mean, even if you want to be on this team, like this team, this project we actually started in the summer. So this was basically a full year where we were practicing with S-FRAME. Just because, in Finite Element Methods, we touched on it a little bit but only in 2D. So we never really made like these massive structures. You know, like this bridge is 22 feet or ours was just over 20 feet, but still you have a 20 foot bridge in S-FRAME in 3D, so you got it's really important to get that practice in so that you're not you know you're using your time wisely because you've already used the summer when you really can't do anything else. And if you want to get on it, you got to hop on it quick like you got to talk to Dr. Gong, probably like in the fall semester of third year because it's such a popular thing that a lot of people want it and it's so it's hard to get but the more on top of it you are the more likely you're you'll be able to be on it.

Damien

Well we formed the team in January and so we I would say we kind of got a little lucky because, you know, at the time COVID was still kind of full swing. Previous bridge competitions had either been canceled. Or they didn't build a physical bridge. And so what it came down to is like there wasn't really a lot of advertising that went on about this project, unless you heard about it prior to coming to Lakehead so for, you know, Matt and I, Lakehead did a little presentation at at our college. And so when we went to that presentation, that's one of the things that we talked about is Lakehead's involvement with the steel bridge team. And, you know, had I not seen that presentation, I probably wouldn't have caught on to the fact that that's a possibility for me until it was too late until the team was formed already. So like right now the 2023 team has already been formed. So for future students: Yeah. It's it's a big time commitment. And that's what I like about these opportunities like you I really appreciate you having us on this podcast here. And we've definitely had a lot more media and communications go out about our bridge. So I hope people aren't too tired about seeing it and you know, countless like had emails and whatnot. But at the end of the day what I really love about it is that it creates more awareness of this competition for students who might want to, maybe first year students. For example, I had first year students come into the lab and and see us working and now it's something that they can think about doing in their fourth year. So just prepare, prepare early if it's something that you think you can commit to do, you know, unfortunately, you have to do the legwork. It's it might not be presented right in front of you on a silver platter. You got to figure out who to talk to . Most likely Dr. Gong is the current advisor of the program talks to the lab tech, Corey Hubbard, Morgan Ellis, you know, there's a lot of people that are involved about it. Talk to the talk to the current and past bridge team members as well like us are the 2023 team.

Matthew



Yeah, if you show initiative and talk to other teams then you can sort of like not really there's no inside scoop, but you're already showing initiative and that you really want to be a part of this team.

Paul

I think it's funny that Damien mentioned that he saw the presentation when it came to his college because I saw the Lakehead steel bridge team advertised on the second day of summer transition. And I saw the video and I'm like, "Man, I want to do that". And two years later, I did it because I did it over three years. So like it's just about knowing about it. So I think that the fact of this year got so much publicity is really good in terms of more students being aware that this even happens and just how far ahead you have to start the project.

Felix

One thing to add on to that, yes. Like I like just because everyone went through how they heard about it. I got involved with CSCE in my second year. I started going around that and there's a lot of overlap between CSCE and the steel bridge teams. So it is a nice way to get more information on it. There is quite a bit of overlap there and connections with older students. You can't overemphasize how important it is in your school years to get to know some older students who've got resources and have been through exactly what you're going to be going through the year. So, bit of advice there.

Matthew

Really good point though, that Felix brought up his get involved in CSCE because everyone on our team was on CSCE except for me. During the NBA I just didn't have the time to take on that extra thing. But even the 2023 team: they've got, I think three like half of them are also on CSCE. So if you really want to do this, like get involved with CSCE.

Damien

I think that's just a good piece of advice in general just involved whether it's CSCE or ESS. All of us were had very close ties to executive ESS members in our final year. You know, I got to go to a virtual conference for the PEO that they're actually doing right now. I think it's in Carlton. Yeah. So, you just have to get involved and guess to take it one step further, the more you get involved, the more opportunities you have. Yeah, it doesn't even stop at bridge. Right. Like one of the things that yeah, like, one of the things that Lakehead I know is thinking about doing is expanding its competition presence. When we go to this competition, it's not just a steel bridge that's happening. There's Concrete Canoe competitions, they're surveying competitions, concrete cornhole, so there's so many things that the students can do. It might just take a little bit of extra elbow grease on the students' end to try to get the get Lakehead to, you know, really put their foot in to all these others extracurriculars.



Matthew

You got to have people that are willing and wanting to do this in order for that to happen.

Damien

It's also a little bit hard because you know, Lakehead is a big feeder school for the transition program, so a lot of the student populations, they only come in in their third and fourth year and they're already so swamped with makeups and trying to graduate in the timeline that they set for this. So for like the people who are from Thunder Bay who go through in four years, you know, it's good.

VP Publications

Okay, well, thank you all so much for coming and talking with me. I really appreciate it. I'm sure future students who are interested in this steel bridge competition will very much appreciate it. I had a blast talking to you guys. I hope you did too. We hope to hear amazing things from you all.

Damien

I mean, Matt and I were always saying we want to be on the podcast, right?

Matthew

Oh yeah.

VP Publications

I'm glad I could make that happen.

Well have a great night, and keep in touch.

Paul

Awesome.

Matthew

Thank you very much. Thank you.

Damien

Feel free to reach out.

VP Publications

We hope you enjoyed this episode of the Lakehead ESS's podcast. Visit ess.lusu.ca to learn more about the society, and remember to follow us on social media to stay up to date on our events! See you next time!

