Transcript

(Intro Music)

Ally

Welcome to the Digital Creator Podcast, the show where we spotlight students working on cool digital projects. I'm Ally, a consultant at the Digital Knowledge Center where we empower students to be digital creators. Today's guest joined forces with the university's physics and geography departments to craft a working flume using the materials at the DKC!

Boone

My name is Boone Fleenor. My pronouns are he /him. I'm a math and physics double major graduating 2026.

Ally

Awesome. OK. So, could you just describe for us a little bit what your project is that you're doing with your fellowship and kind of how you decided that that's something that you wanted to do?

Boone

Yeah. So, I started doing research with the physics department my freshman, the second semester of my freshman year. It was a project that was. Was. Initiated, I guess by the geography department, so. They had a flume, which is what my project is on. A flume is basically. A rectangular channel that holds water so water can pass through the channel. And. I think like physics and mathematicians use it a little bit differently than geographers do, so they use it to like test erosion of like certain certain like particles and minerals against others. So, like you can set objects. In this channel of water, and it's all controlled by a pump. So, it's like a water cycle. So, they approached me. Well, I guess my my department chair. And then he reached out to me because I kind of want to do like engineering and this really at the core is an engineering project. So I spent some time doing the like studying fluid dynamics, because this is a fluid dynamics project and and then

when it caught time to build it was just really complicated. You know, I feel like managing something like that. But. Trying to get like all these moving pieces together because I wasn't just doing it by myself, I was doing it with the other, the two professors, so a geography professor and a physics professor. And it just progressed really slow, like a lot slower I think than than we wanted. So, Professor Callaway was like I had a class with her this semester and she was like. Maybe you should reach out to the DKC about doing. Just doing like building a flume basically on your own since you know I think like when I was introduced to the project they had plans and they they wanted to do it this way. They just didn't have time to do it. So, I think part of the DKC project was like do it my way and and give me. Kind of like the lead role in the whole project, you know.

Ally

Yeah.

Boone

I think it's very, very valuable. It teaches you how to like. Meet deadlines down top of things you know.

Ally

Yeah. Awesome. So. So, can you walk us through this a little bit like the process you went through like while trying to build it or like any challenges that you kind of had to pivot or like overcome while you were working on it?

Boone

Yeah. So I think that. So I started this project a year and a half ago and it just got built. So like, I think that's the number one challenge and lesson about any kind of project, whether that's a digital project or a physical project. But just a project in general is just, you know, they they take a lot, a lot longer. And you think and like you know, we started this project and we were like at the end of the semester, we'll have a flume and there was 3 semesters ago, you know, and now we're just finishing it so.

Ally

Yeah.

Boone

I kind of did the DKC project in tandem with my research for physics, so I was building 2 films basically at the same. So there's there's like multiple I think. Difficulties slash complications when you're trying to work as a team with a group of people that don't all

have the same expertise. So like, I'm working with a couple geography department members and then a physics department professor. And you know, we're trying to talk about. Why a certain specification on the project works better than another and you know. What? What makes sense to me doesn't always make sense to whoever in the jerky department, because like mathematically, that's kind of like. That's what I'm trained to do is to analyze. And you know, I think that it's hard. It's always hard when you're trying to explain something to someone who. Is like not as familiar with that I guess and I have to remind myself that like that's not that's not their fault. They're just they understand things about the flume that I don't. And you know, I think whenever you're working as part of a team where everyone's got a little bit different knowledge, that's always a problem. And just like learning that. Things, inevitably, are going to take a lot longer than. Then you want them to and a lot of. That's like out of your control. So like, we have to wait for a long time to get like materials because like, that's just something that you don't, you don't really account for that all the time. You're like, oh, well, I buy them and then I'll have them. But that's not how it works.

Ally

Right. Right.

Boone

So. So and so like right now the DKC has a 3D printer that's out and that aligns to 3D print. Things have gotten a lot longer so.

Ally

Yeah. Yeah, especially at the end of end of the semester, like everything has been booked out for like a couple of weeks now with final projects. I think as more teachers start to kind of integrate the 3D printer into their classes like we just get busier and busier. And yeah, having the one machine out is like definitely not ideal.

Boone

Yeah, yeah. So just trying to. Like you know, there are some things that I like to 3D print, but you know, you just can't control. That right, so.

Ally

Yeah. And with materials too, like what we need to fix the 3D printers coming from Prague, so like it's going to take longer than you think it is. I mean, I remember when they said like, oh, yeah, like we're missing, like this thing to fix it. I was like, ohh so. Like. In. A week we'll have it. No, it's been, you know, it's been much longer.

Boone

Hmm.

Ally

Than a week.

Boone

But so it's just stuff like that. Definitely. I think that, but that's part of the reason that it's so valuable to do things like this is because, you know, I think a lot of people are like. Oh, like I want to work in engineering or something and they don't ever get the experience of what it's like to to run a project. So like even the DKC I had to do like every, like, biweekly blogs and that's just something that, like, you hear about it and you're like, OK, but then when you have to remember.

Ally

Right.

Boone

To do it.

Ally

MHM.

Boone

And also like you get busy, but like they're deadlines. You have to meet and I think that like, that's something that gets overlooked with being an engineer being, you know, anyone who who runs a team and manages a project and you're just like. It's not like. Everything else is going to stop while you're doing your project, you know? So like on top of whatever other school work I had, like, I still have to meet deadlines, you know? And it's not like hard deadlines. They're flexible, but it's also, you know, it's your job. So.

Ally

Right. Yeah, I think that that's such an important thing to learn before you enter the professional world too is like. How to kind of navigate that and like balance the like project management aspect with the actual like making up the project for you with like designing creating the flume like did you find one more difficult or do you find that they became more difficult as you like got further in with both of them.

Boone

So. I would say because of the simplicity of the design, the design was not too hard. I think that like I spent a lot of time learning about, like what was best, and maybe that was it was the most time consuming part. But you know I I think like I would use. Fusion 360 or on shape which are just 2-3 design like CAD softwares. And the the that part was easy because it's not. It's just a box really that's hollow. So it's like that parts not too bad, but I think probably building it. But just because like. When you're cutting these things, so like we ordered a big sheet of plexiglass and I cut the pieces out of the big sheet and like it should, you just have to be really careful because you're trying to hold water and like water doesn't like to be, doesn't like to be nice.

Ally

Right.

Boone

So water gets everywhere and like I think that was what the hardest part was like. Just like you know, that's that's plexiglass sheets aren't. Aren't cheap, so like you really only have one chance to do it. And like you just. Have to. You have to hope that like. It's gonna hold water. Yeah. So it's a little bit stressful and to that to me is. The hardest part.

Ally

Yeah, cause also there's not a lot of room for like trial and error when you only have like a limited.

Boone

Exactly.

Ally

Amount of resources there.

Boone

And I think that that was another lesson that you learn with project management is like you're given a budget and like you don't always have room to mess up in your budget. So like. Taking the proper precautions prior to doing anything that's like final. Is always really important.

Ally

So you've kind of touched on this a little bit already, but is there like one either like overarching thing or you can go more specific, whichever you know, whichever one you want to do, but just something that you've like learned during this process that you know for a fact is like going to impact you with like future projects. I know you mentioned like time management.

Boone

So definitely like time management, I mean that always. I think that everyone could use a little bit more time management. Just because in general it's just really hard to balance your time and just being effective at it is really helpful. But to be honest, probably patients like I think that. I get so excited to do something like that's all I want to do. But then, like, we're waiting for materials and then when you finally cut it and you stay up till like midnight, like 3 days in a row and then you're like, oh, I actually don't want to work. On it anymore. Yeah. So like just be patient, you know, like work on it have like a set amount of days set time that you're going to work on it every day? Instead of doing like all 12 hours that I do in one day. So like I think that's something that like.

Ally

Right.

Boone

I could have done better. Was just like being more patient and letting the work come. Because I I. I think I forced a lot of it and that kind of burns you out after a little bit. So especially when I've got 2 projects that are pretty similar. And. After a while you can only look at like a Plexiglas box for for too long before you just get bored. But yeah, I would just say being patient and.

Ally

Yeah.

Boone

Not trying to not trying to force or rush things because if it's something you're you're truly passionate about like. That time. That you schedule for yourself like every day or every other day, will be something you can look forward to instead of like working so hard for three days and just never wanting to touch it again.

Ally

Yeah you know I think projects like this too are like a good opportunity to kind of learn about like yourself and like how to not lose motivation.

Boone

Yeah.

Ally

Because I think like before you do like such a big project, you're thinking like ohh well, I'm passionate about it. I'll just be able to kind of like, you know, do it really fast and then I'll have it and it'll be done. But obviously like that's not necessarily the truth and. Yeah, I've. I've definitely, like, learned that over doing projects myself was like, what does it take for me to, like, stay motivated in this project? Like all the way like, until it's complete.

Boone

I think like I had. Part of like the thing that I struggled with like. Was. I'd work on it for three days and then we'd have to take a week off as we wait on like some materials or something to come in and then you just never want to look at it. Again, because you're like. Yeah, I mean part of it's like I think built up frustration that like you know. That you get, you get into a rhythm and then you have to stop or just like. Things aren't working cause inevitably like it's not going to work all the time like you wanted to. Yeah, so there's that. But I think that like just. Relaxing a little bit more with it, but I would say in general I have a tendency to I get really excited about things and then I'll do it all the time for like. A while and then I'll be like, well, I don't want to do this. Anymore.

Ally

Yeah.

Boone

And I think that this project helped me be committed because like you start something and like you tell people you're going to do it. And then so like that is enough motivation, I think for me to be like, I need to keep doing it. Because I said I would.

Ally

Yeah, the whole, like, stop, start of it, I think can be so discouraging.

Boone

Yeah.

Ally

What for you has been like the most rewarding aspect of working on this.

Boone

Honestly probably like. So we had Research and Creativity Day two days ago. Basically what that is. If you don't know, it's just a research symposium presentation. So it's like a poster session. So I made a poster and just like kind of outlining the research I did and the two projects that I did with the DKC and with the. Geography Department. So like I just wanted to present something. And kind of let people know and I think one of the cool things that I don't think I saw until today was. Like. The one so the flume I'm building with the DKC is is going to live in Jepsen and like we're. We're going to be doing research on that that opens up like a whole new branch of research for the physics department to do, and I think that like, what I didn't realize when I started this project was I'm in a way helping the physics department. And I don't think I realized that until. This presentation, but there were people that were like, ohh, so like what are what are going to be the applications of it. And I was like Oh well, you know, people are going to be able to work with it. Yeah. Like I think that that to me is like a really cool part about what I'm doing is it's almost like leaving. You know a lasting impression on a program like I'm super thankful for the Physics program here and like it's cool that like, that's a way I can give back without really even meaning to, you know, that's not really why I started doing it. But I think that that wasn't something I initially thought of, but. I think that is probably the most rewarding is is knowing that like this might help somebody else.

Ally

Kind of getting to see like the unintentional impact of of what you've done. That's so cool.

Boone

Yeah, definitely. Yeah. So, because I, you know that's not really what I was thinking about. When I did it. But. You know, hopefully. There are people who are able to benefit from it because I'd be super sick.

Ally

Yeah, that's so cool. And that that kind of a legacy too is great because like, you could come back in a couple of years and like, yeah, maybe someone's done something completely different with it, you know?

Boone

Yeah, yeah. I mean, definitely like, I don't know, just because I think like if maybe if we already had a flu like. I wouldn't have had this project and I would have done something with the flume like something really cool and I think that. I'd love to see. If I come back, when I come back later. That there are people that are are are using it and like doing research with it.

Ally

So to close out our conversation here, would you recommend people doing a fellowship with the DKC?

Boone

Yeah, definitely. I think that like hands down, it's been like one of the most valuable experiences that I've done, one that UMW. I'm not just saying that because I'm on the podcast.

Ally

But we appreciate it.

Boone

Like like I ain't seriously teaches you how to how to be so I mean, not everyone's a scientist. So I get that. But I think at some in some form of. Like everyone has some form of project management in their life, like whether you're working. At like a accounting firm or you're an engineer or you're working in a research lab or, you know, you write articles for a newspaper you're working with the team and you're meeting deadlines. And on top of that, you're going to have a lot of other stuff like you're going to be an adult. So I think that getting into something that shows you what it's like to to run a, to run a project and be part of a team like that was another thing like. I had to work with Shannon and Cartland frequently and they were part of my team and I had to communicate with them and. Like. I think that's something that like is taken for granted a lot and I think that, you know, I definitely try and tell people in the physics department like you should get on this because it's a great way to get your foot into the door of is this, what is this something that's interesting to me, like running a project, building things. And I think like, the resources that. The DKC has is really helpful like. As far as learning how to use a 3D printer like, I had no idea until this semester and I didn't really know how to use any of the AutoCAD systems either and they taught me how to use the software and stuff. So I think that it's it's been a great experience and like valuable, not just fun, but like something that's like really valuable and will help me be. Like

a better scientist, a better student. And I think that that's like probably the most important thing. It's like it wasn't just something that was fun. It's something that had, like, enrichment. It was just a really cool experience, so I definitely recommend it.

Ally

Well, thank you for coming in and talking to me today. I loved getting to know more about your project.

Boone

Yeah. Thanks for having me.

Ally

And good luck going forward.

(Outro Music)

This has been the Digital Creative podcast. You can find a transcript of our conversation and more about this project below. His podcast was produced and edited by Me, Ally Hamilton, with help from the resources of the Digital Knowledge Center. Are you interested in becoming a digital creator? Do you have a cool project you want to share? Go to dkc.uw.edu for information on how to get started. Thank you for listening.

(Outro Music continues)