

## Rene Nichols Practicum Pods Transcript

Hoang-Vi Vu 1:30

Okay, I'm gonna get started. Hello, everyone. Welcome to Episode Four of the global disease biology practicum pods. In this podcast series, we will be talking practicum projects with current and former gdb students. All students in the major are required to complete a practicum project before graduation. This project involves students finding a faculty mentor, conducting research under the mentors guidance and turning their research experiences into a publishable scientific manuscript. Tune in to practicum pause to learn more about research mentors and then GB practicum experience.

Hoang-Vi Vu 2:33

Welcome to the pod. I'm your host gdb pure advisor hv. Today I am joined on the show by the lovely Renee Nichols. Renee is currently a third year gdb student with a minor in public health. Hi, Renee, how are you doing? It's so great to have you on the pod today. Hi, tree. Thank you for having me. Before we start to do tell me a little bit more about yourself.

Rene 2:59

Sure. So I'm a third year COBOL to CS biology major. And I'm planning on mining and public health. In the future, I hope to go to medical school and eventually work in rural communities. Yeah, I'm pretty passionate about rural health care, particularly just because like, of where I grew up. And I'm also really interested in research. So I hope to pursue that in the future as well.

Hoang-Vi Vu 3:32

That's really awesome. And I'm glad that you're in this major that lets you be able to pursue research. And speaking of can you tell us a little bit more about what topic your practicum project is, and specifically why this topic interests you?

Rene 3:50

Yeah, so my practicum project, I'm still in the planning phases of it, but it will focus on the microbiota gut brain axis and pediatric inflammatory bowel disease. So the microbiota gut brain axis is a term that's used to describe this the bi directional communication pathways between the gut and the brain. And children with IBD are more likely to develop comorbidities such as anxiety and depression, more so than people who develop IPT in adulthood. And that's partially because early adolescence is a really important time for the development of communication pathways between the gut and the brain. So exposure to inflammation early on disrupt microbiota, gut brain signaling and the to anxiety and depression later on in life. So my project will be focusing on using a mouse model pediatric IBD. And looking at potential ways To restore these impairments to signaling pathways and potentially prevent long term behavioral impairments. Why this topic is interested to interesting to me. I before I didn't really know like much about the gut microbiome at all, I kind of knew about antibiotics and how that could cause dysbiosis in the gut and lead to really bad health outcomes. But I didn't really know that the gut has a huge plays a huge role in our brain, and particularly our behavior. It was just really fascinating to me. And I really want to learn about these communication pathways and how they can influence health.

Hoang-Vi Vu 5:51

Wow, that's so interesting. And before we started this recording, I remember you telling me that you took gdb or are taking gdb 103, which talks a lot about gut microbiome health. And I feel like that's probably pretty related to the research that you're doing. So far.

Rene 6:10

Yes, it is. Like, I think it's providing me the basics about the gut microbiome, since I'm more so like focusing on the signaling pathways in my lab in the lab. I feel like learning the basics is really helping me like understand those signaling pathways more like in that class, it seems like it's focusing on the microbiome. Yeah. And, yeah, it's it's been really, like, fascinating so far. And I hope that it helps me become a better researcher and helps with a practicum project.

Hoang-Vi Vu 6:50

That's awesome. So how did you find your practicum mentor, and, like, what resources helped you the most when you were looking for the faculty member?

Rene 7:03

Yeah, I actually found my, my practicum mentor, during the gdb, 90 course, my freshman year, she was a guest speaker, and she was talking about her research. And it was just so fascinating to me, and about a topic that I had no idea like really existed. So I talked to her after class about potential opportunities in her lab. And she told me to contact her later on in the quarter. So I could potentially start volunteering in the fall quarter of my sophomore year. So I sent an email out before summer and got in contact with her and coordinated to meet with a lab manager about starting area. And it was Yeah, that was that was how I met her. It was like a pretty. I'm really grateful for the gdb 90 class, because I feel like there were so many guest speakers that were, like researching really fascinating topics. And they all seemed really, like open to having undergrads in their labs. And I think that a lot of them have, like, expressed that. They wanted to help like, people with their practicum projects. So I'm, I feel like that was like a really wonderful resource for me.

Hoang-Vi Vu 8:38

It seems like I think gdb 90, definitely gives you this resource that gdb students need in order to access these mentors or potential mentor. So I really glad that you took full advantage of that course. And that's awesome that you found your practicum mentor through there. That's really great. So currently, right now in the face of COVID. What type of research do you engage in? And is it virtual in person, more observational or experimental data analysis? What does a typical day doing research look like for you?

Rene 9:19

And so I feel like I'm pretty lucky in the fact that I was kind of trained before COVID like the quarantining and everything began to do a like part of like to do like research that was kind of not in a sense, like it could be done like in an area where there isn't that many people. So usually for the lab that I volunteer at, they start people off with like genotyping and PCR and

basic lab techniques. But for me, the lab manager was working on histology. So working with tissues. So I kind of learned how to work with tissues first and specialized in histology really early on. And the histology work is done in like a room with no one else in it. So I was able to come back fall quarter, and do research in the lab. So I feel really grateful that I, I have the opportunity to come back to lab and I was trained in this stuff. As far as how my typical shift looks like, it kind of depends on the day, because I focus on like four main things, which is embedding tissues, cutting tissues, staining tissues, and imaging tissues. So I work with like a lot of tissue, but on a cutting day, or like I start off with embedding. So I'll like fix the tissue, in paraffin. So it can be cut later on. And I just have to make sure that it's like oriented properly. And then like, the next day that I come in, will usually be at cutting day raw, cut the tissue and make sure that it's like, properly cut for imaging, and it doesn't have any tears in it. And then on staining days, I stained the tissue. And then on imaging days, I'll like look at the tissue and then microscope and take images. So that's usually what my typical shifts look like. It's kind of like, sequenced where it's embedding, cutting, staining, imaging repeat.

Hoang-Vi Vu 11:39

How many hours would you say a typical research shift would be during the week or during one shift that you go into?

Rene 11:50

Yeah, typical shift for me is around five hours. So I usually start at nine and end up to and sometimes I'll stay over depending on the day, I don't really like to leave the lab without like finishing what I started. So I usually end up doing overtime, I guess. But usually I'm in the lab 10 hours a week. And this summer, it's kind of going to be different, because I'm going to start my practicum project. And once I start my practicum project, I feel like it's gonna be a lot more than 10 hours.

Hoang-Vi Vu 12:33

Do you use a certain type of software for data analysis? Or how do you collect the data that you are looking at? through your youth?

Rene 12:46

Good question. I actually haven't like, worked with the software yet. Because like I said, I was kind of I'm kind of just like cutting staining tissue and like imaging it. Yeah, not make sense. Exactly like how I'm going to be analyzing that data yet. So I know there is one thing that I used a long time ago, I honestly forgot the name of it. But it was like to measure the length of like this, the Crips in the intestines, but I don't I don't really remember Exactly.

Yeah, yeah, no worries here. Since you are still at the beginning stages, and not quite yet you're like research got or practicum gathering stage or writing it up yet, then that's something that you'll probably look at later on. And we can revisit that in the future once you're done writing it up. And we can do a follow up to this episode afterwards and see what you've discovered from your practicum project. But that's really awesome. That's so cool. How hands on this research that you're doing is currently and also like how, how many useful skills you are learning in the

lab. My next question to you is, what is your relationship with your mentor? Like? Do you meet with them regularly, like each shift that you are in the lab? Or do you work more closely with the PI or graduate student?

Yeah, um, so I usually work with the lab manager just for like day to day tasks when I'm in the lab, but um, I feel like I do contact like my mentor. regularly. She's pretty hands on. At first when I was being trained. I would meet with her like every quarter. Just to like check to see how I'm doing and what I wanted to do in the future and everything. But I was mostly being trained by the lab manager, and then I feel like my communication with my mentor got, like, a lot more frequent. When I became more involved with projects. I feel like when I became more involved with projects, I was not only like talking to her, I was talking to like a lot of the graduate students as well, on top of that, to kind of like coordinate my work with their work. And recently, I actually applied for a grant for the summer. And during that time, I was like, pretty much in contact with my mentor almost every day. So yeah, I feel like she's, she's a pretty hands on person. And she's also really nice and communicated from like, the start, that she like, wanted me to shrink encouraged me to communicate with her and other people in the lab, if I have any questions or concerns, so I always felt like I could go to her or anyone in the lab, if I needed help.

Hoang-Vi Vu 16:08

It's really awesome. I'm really glad to hear that the lab that you're in really fosters this environment of inclusivity. And I think that's definitely something that students want to look for when they're looking for a potential gdb practicum mentor. That's so great to hear. And also another question for you is what skills do you think you acquire during your research experiment, experience that might be useful in your future? And the skills don't necessarily have to be hard skills or wet lab skills, also, other skills that you've learned along the way?

Rene 16:45

Yeah, I think one of like, the biggest skills that I've learned is to kind of be like, okay, with failing a lot, because I feel like, a lot of the times like, I have to do something wrong in order to do it like right the next time. So like, especially with histology, everything's kind of sequential. So if I mess up on something early on, I'm definitely going to see it later on. So I'll see those like, mistakes that I made early on and be like, oh, shoot next time, I should do this instead. And then I won't see that problem later on i'm like, Yay. But I first had to, like, mess up to know that I was doing something wrong in the first place. And on top of that, I think with histology, in particular, I've my troubleshooting skills have grown a lot. Yeah, there's a lot of things that can go wrong with histology on a day to day basis. Like, if I'm cutting tissue in the room temperature isn't right, it's gonna like mess with the tissue. So I have to, like come up with like, these different ways to make it work either like by making it colder or like heating it up or cutting it a certain way. So I think like, my troubleshooting skills, and my problem solving skills have grown significantly from my research experience.

Hoang-Vi Vu 18:19

That's so awesome to hear. I feel like that that's not something that you get to experience every day in lab set are generally taught in school. I feel like for those classes, you have a very set

instructions that you follow. So this is very cool to hear. I know a lot of our students are pre health or pre med. And I think you mentioned that you were pre med and I was wondering, like what other activities you are involved in on campus besides research that you do as well, that foster your interest towards this career in healthcare?

Rene 19:11

Yeah, um, so I think I'm in like, several different extracurricular activities. I just got accepted into one of the student run clinics really excited. I feel like yeah, I'm really excited to work with like, people in the community. And the clinic that I'm going to be working with is particularly like looking at rural health care. So I, I feel like I have a lot to learn from community members. So I'm really excited to see where that's going to go. I'm also This club called princess pals, and we get princesses and go to like hospitals and shelters to visit children. I just really love kind of being engaged with the community in any way possible. And even when like when I'm at home, the hospital that I volunteered at in high school I, I still am in communications with them. And the area that I grew up in doesn't really have that many, like accesses to, like, health programs. So this one program that I was able to get into, and I feel like changed my, like, really like kickstarted my like love for medicine and my love for the community too. So I feel like kind of giving back to that now like this summer, I'm going to be like a camp counselor kind of thing like head into, like who I really excited for that. Because like I was in the shoes at one point. And they I know like a lot of them really want to go into like the healthcare field. So I'm really excited to help them in any way I can. So I think like, for people that are interested in the pre health field, feel there's really no like, right or wrong way to be involved with things. If it's something that like you're passionate about, and interested in. I feel like you should follow it. And yeah, overall, I can do it.

Hoang-Vi Vu 21:50

Thank you. Yeah, that's really great advice for a lot of students. I think everyone needs those words of encouragement at the end of the day. And it sounds like you are doing so many great things. So that's so awesome to hear. I also hope but I think we discussed this before we started recording, but I hope you're also taking breaks and taking care of yourself. Seems like you have quite a busy schedule.

I just wanted to say thank you so much, Renee for chatting with us about your gdb practicum experience. Our students are so excited to hear about these projects, and learn how to approach research in a large university setting. You can visit gdb that [Uc davis.edu](http://Uc.davis.edu) to access the rest of the podcast in this series or find us on Spotify. If you like listening to practice on pause and have suggestions for future topics for the pod, please let the gdb advising staff know [gdb-advise@ucdavis.edu](mailto:gdb-advise@ucdavis.edu) Thanks everyone and have a great week.

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