

**Episode 8 – MIT Lincoln Laboratory DC0708  
Podcast Transcript**

- Susannah Howe: Welcome to the Design Clinic Download. In this podcast, we dig into the experiences of Design Clinic teams and classmates through the years. I'm your host, Susannah Howe, from the Picker Engineering Program at Smith College.
- This episode features three alums from the class of 2008, Indira Deonandan, Nora Paul-Schultz, and Katie Travis. Their Design Clinic project with MIT Lincoln Laboratory was on the design of a low power, low-cost bioaerosol collector.
- I'm delighted to be here with all of you today. Thank you so much for coming and sharing your time. I thought we might just start by having you each introduce yourself and say who you are and what you're doing right now in terms of a job. Katie, why don't we start with you?
- Katie Travis: Hi, I'm so excited to be here. My name is Katie Travis. I'm a research scientist at NASA Langley Research Center in Hampton, Virginia, and I work with air quality data trying to improve our understanding of what creates ozone and particulate pollution in cities around the world.
- Susannah Howe: Excellent. Thanks for your important work. Indira, how about you?
- Indira Deonandan: Sure. Also, just like Katie, very excited to be here. My name is Indira Deonandan. I am currently vice president of Customer Success for a tech company that's based out of Texas and also Norway and I basically manage the teams that work with our customers to help them implement our technology. Our technology really focuses on taking data and making it useful, so data coming from very different assets in the industrial operations space.
- Susannah Howe: Great, thanks. And Nora, how about you?
- Nora Paul-Schultz: I'm also excited to be here. My name is Nora Paul-Schultz and I'm a high school physics and engineering teacher in the Boston Public School. I teach physics and AP physics and a senior engineering course very similar to Design Clinic where students are working on full year design projects.
- Susannah Howe: Very neat. Great, so quite a wide range of careers that you're doing now, and we'll talk in a moment about how you've gotten there. But let's go back to when you were all together at Smith in 2007-2008, and talk about your Design Clinic project. Maybe you can share with me what did you work on then? What was the project and who was it for and what did you do?
- Nora Paul-Schultz: We built a bioaerosol collector. So bioaerosols are viruses and bacteria and fungi and pollen that are in the air, and we worked for MIT Lincoln Labs who were working on creating a series of sensors that could be deployed that were low-cost and low-power so that they could be out in the field. The particular

concern in 2008 was around anthrax, so specifically if someone were to release anthrax in a city, could this know that there had been anthrax released?

Susannah Howe: Now knowing what it is that you did in this project, what were your expectations coming into Design Clinic and how did that match the reality of your experience?

Katie Travis: Going into Design Clinic, definitely the first thing I thought of was being scared at how overwhelming the amount of work seemed to be. Once we got started on it, taking it step by step once we got through, it was incredible how much we accomplished. But yeah, I just remember being scared. The reality was that it was an incredible process to go through. You accomplished something really big at the end, but through small steps. I think that was a great lesson to learn.

Susannah Howe: Indira, were you also scared coming in? Overwhelmed?

Indira Deonandan: I was very excited going into Design Clinic because when you're a first year and then you go into sophomore and junior year, you see all these years of students who are working through their Design Clinic projects and it always seemed really cool, they always seemed to have so much fun just working together. It felt really intense at the same time, so I really loved the energy that you would feel because we were all stuck in what we were just talking about, the little green box, that's where we were.

I will say that once I got into Design Clinic, I realized that it's a lot of work. It's not just about the fun factor. You definitely do a lot of bonding with your team and other teams as well. Yeah, I was very excited going into it. Then, of course, it hits you and then you go through the ebbs and flows, you ride the wave and then when you finally get to the end, when you do your final presentation, it feels like just a sense of relief that you've made it that far, but you also feel really accomplished. As I reflect, that's what I think about.

Nora Paul-Schultz: I think I was just excited to work on a real problem and a real project more than anything.

Susannah Howe: Great. It's been almost 15 years since you graduated, and I know you've had really interesting journeys along the way. I'm curious to know what has been your path from where you started when you graduated to now. Nora, why don't you start us off and tell us how you ended up being a high school teacher?

Nora Paul-Schultz: I think probably my path was maybe more straightforward than most. I knew leaving Smith that I wanted to end up as a high school teacher, but I did not want to go straight into teaching high school. For three years, I worked at a place called Nature's Classroom, which was an environmental education organization and we worked with late elementary school and middle school classes, bringing them out in the woods, doing team building things, doing

hands-on classes and that was a lot of fun. It was definitely probably the most fun job I'll ever have, but it was very seasonal and was not a long-term job.

After three years, I went to grad school for a year to become a teacher and did my student teaching. Then I got a job in Chelsea Public Schools, which is a city right outside of Boston, and then after two years, I was let go from that job and I got a job in Boston Public Schools and I've been at the same school, the O'Bryant School of Math and Science for nine years now teaching. It's my ninth year, yeah.

Susannah Howe: That's great. That's a long time. That's exciting.

Nora Paul-Schultz: Yeah.

Susannah Howe: All right. Katie, how about you? How did your path go?

Katie Travis: Thanks to classes that I took at Smith, I decided that I really loved air quality and air pollution just really struck me as the issue I wanted to work. So I went and did environmental consulting for three years in California where they have a lot of air pollution and worked on understanding the environmental impact of construction projects and doing environmental impact reports. But having done research in undergrad, a variety of research projects, I had always thought I might want to go to grad school. I ended up at the consulting company working on sort of a research project peripherally, which really cemented my desire to go to grad school to do research into air pollution. I went and did that, which took six years during which I got to be part of a campaign to take air quality data in the Southeast United States in partnership with NASA.

That got me connected with folks who went out into the world and sought out places that needed data to help them understand what was going on in terms of their air pollution and got me connected with a person at NASA Langley where I am now, who invited me after grad school to come and work with him on building these field campaigns, to take data in various parts of the world and then also continuing my work on interpreting that data, doing some modeling of that data to try to understand what it tells us about air pollution, and so that's what I do now. I suppose I've taken a path straight from Smith, always following my, I guess, passion of understanding air pollution, but went into industry for a little while, then went to grad school and academia and now work for the government.

Susannah Howe: Excellent. Great. All right. Indira, I know you've had an interesting path as well, starting with grad school and then going beyond. Lots of different things.

Indira Deonandan: Yes. I figured you were just saving the most confusing for last. I actually specialized in aerospace engineering at Smith, so that's what I did my electives in. Went on to MIT where I did a master's in Aerospace Engineering. Quickly realized there is no way that I was going to be somebody who codes and so on,

even though I did some really cool projects there. Tagged on technology and policy so I did a dual master's there. The reason I tagged on technology and policy was I was more interested in the application of the technology and I think that was embedded in me through Smith and all of the way that the liberal arts version of engineering works. Then, of course, graduated in like 2010, 2011 around there and that was at the height of the financial crisis so it was very difficult to find jobs and as an international student, it was even more difficult for me because I needed sponsorship. I luckily was able to get a job in finance so I worked in finance for a couple of years, just working on the IT side of the house.

But I feel like I spent most of the time in finance, don't tell my past bosses this, but I kept looking for other jobs because I knew that's not where I wanted to be. But I was able to get a project management position for a tech company in Cambridge, Massachusetts. That's where I started really using a lot of the project management skills I think that we learned through school, how to problem solve and so on and so forth. I was there for about five years and then I moved on to another tech company, which was in the low-code space, which was all about trying to really ease the pressures of development and the cost of development that companies are going through when they're trying to build applications. I got more into the business side of technology and really growing on that management track. I was there for about four years, grew my role there significantly, worked with some very key customers, landed large deals in the multimillions for that company.

Then, one of my past coworkers moved over to the current one that I'm in. He said, "Hey, we need a head of Customer Success for North America," and so he asked me to join. It's a lot of the same skillsets that you're applying because basically companies that work on a subscription, they want to drive that revenue as much as possible with their customers and that's what my team does.

Susannah Howe: Great. All right, so quite a range of paths, quite a range of different things. Some of them have some connections to bioaerosol and the kind of work that you did in Design Clinic. Katie, I think yours is probably the most closely related. Nora, you said you're teaching a class, it's a little bit like Design Clinic now, but I guess I'm curious, what are the skills that you learned in Design Clinic that you've used most since graduating? What do you think has transferred from that experience to your life after Smith?

Indira Deonandan: For me, the biggest one is the structured problem solving that you get with Design Clinic. The way how you set up a problem, figuring out what the goals are, what exactly it is that you're trying to achieve, coming up with a plan and then executing on that plan and then afterwards having to report on what you've executed. I feel like this is what I do every single day in my job. The other skillset that I think was also very helpful for me is recognizing where people's strengths are.

- Katie Travis: It's so interesting actually because I have been doing independent research ever since I left consulting and only now I'm getting into more team building activities and currently, we are trying to build a collaboration with another government agency and there's all kinds of drama and interpersonal situations there, and so it might be that in the coming year for the first time, I'm going back to some of this stuff that we did in Design Clinic.
- Actually I was chatting with Indira before and I think an important part of Design Clinic that was immediately useful for me was actually the professional development tools that you taught us. I mean, I negotiated for a higher salary and moving expenses straight out of Smith because I don't remember exactly what statistics we were given about women who don't negotiate or something. I just feel like a lot of that gave me confidence in starting my career and navigating how to start a career. Indira and I were also talking earlier about how great the presentation skills that we learned in Design Clinic are and I've used them constantly. Probably we all have.
- Nora Paul-Schultz: Having a really clear sense of all the different components of a design project has been really important in teaching this class I'm currently teaching. Just a lot of the project management skills has been really helpful for teaching. I think a lot of times what I do is say, "Okay, what are you doing here? How are you going to get this done?" Just being able to think through what it takes to do a project I think is really transferrable to lots of different parts of my life.
- Susannah Howe: Thanks. I know it's been a long time, but would you say you had a memorable or impactful experience for Design Clinic? What are some of your memories that have stuck with you over all this time?
- Indira Deonandan: It's not always rainbows or unicorns when you're on a team and we all know that. I do remember there was a time when we were at odds with each other. We could not move forward. We were really just stuck. Then, I don't know, this person got this one angry and I cannot even remember what it was. But basically, I locked us in one of the engineering rooms in the green box and I said, "We are not leaving here until we figure this out." I think that was a real bonding moment for all of us and I think it's a very real depiction of what happens on teams, right? You can absolutely disagree and unless you're willing to all come together and solve it, you won't move forward.
- Susannah Howe: With the benefit of hindsight, how do you see Design Clinic fitting into your overall engineering experience at Smith?
- Katie Travis: The confidence-building part of Design Clinic was really what brought it all together for me. I can't imagine doing a major where you just take your last class and then say goodbye without pulling it together in some way to make you feel like you were ready, not necessarily technically, but ready to go tackle the next problem in the real world. Since I haven't engineered anything since I went into science, I don't know if I ever went through the design process again in that

way, but I had the confidence that I could go figure out how to do the next thing, step by step, whatever it was.

Indira Deonandan: I think it really gives a good culmination to that Smith engineering experience from all the theoretical classes that you've gone through, you kind of bring it together and make it actually practical and apply it to a real-world problem with a customer.

Susannah Howe: What advice would you have for future design students to make the most of their experience?

Nora Paul-Schultz: I think enjoy your group. I feel like we did a really good job of both working hard together and having fun together.

Katie Travis: We were really lucky that we had the tools to bring us together when we were about to fall apart. I mean, we put a lot of work into making ourselves a good team. It wasn't easy all the time.

Susannah Howe: It's interesting you say that because I don't remember ever having to mediate a conflict with your team. It just always seemed like you really were working well together, so it's interesting to hear that behind the scenes, you were putting in that extra work to make the team really work well.

Indira Deonandan: I think there was also some element of competition across the teams. You can't get away from it where it's like, "Oh, what is that team going to produce? What does their presentation look like?" To be quite frank, today, I have no idea what the other teams created. I don't know what their presentations look like. I don't remember any of that stuff. All I know is these three people, I know that we worked really well together. We worked our butts off to produce something good and that's what really mattered at the end of the day. If I think more critically on myself, I would do less comparison to other teams and more just focused on enjoying what I'm actually doing and using ourselves as benchmarks.

Katie Travis: Since I started off saying that I was scared going into Design Clinic, I would say that my regrets from Smith are not doing more things that I thought were scary because those are the things I wish I had done that would've helped me more if I had done them. Just going into the scary thing step by step, you go through Design Clinic is so valuable.

Susannah Howe: Yeah, that's excellent advice. Is there anything else that you want to share? Any other pieces of advice or other words that you haven't had a chance to mention yet?

Nora Paul-Schultz: When I was a student, I was very unsure many times if I wanted to stay in engineering because I knew I didn't want to become an engineer. I am so glad that I did because I think it gave me a different way of thinking that I wouldn't have gotten from another major. I have thought a lot of times about how that

way of thinking has helped me in groups where everyone has come from more kind of social science background. It has given me problem-solving skills and project management skills that have been really valuable. A lot of that came from Design Clinic and some of it came from the engineering program in general.

Indira Deonandan: Being a woman at Smith and being an engineering, when you hear some of the horror stories that other people talk about when they come from other programs about how they were never heard in class or they had to shout so much more loudly. We were always empowered to speak up. Coming into Smith, yes, I spoke, but I was not eloquent. To be in a position where I'm constantly working with executives of customers is insane and I know Smith put me on a path to get there.

There's a lot of other things that you get from your Smith experience, being surrounded by very powerful women who are going to become even more powerful later on, so holding onto those connections is really, really key and trusting your voice. You have a powerful voice at the table and when other people are saying, "Hey, I feel like I'm not being heard," you're in a position where you can actually advise them and how to be more heard and stand out more in your career. I've got to say, Smith empowered me to do that. Not just Design Clinic, not just engineering, but in general. That I won't trade for anything.

Susannah Howe: Thank you so much for your time and for your advice and hearing your thoughts. It's been really fun to reconnect after all these years and I appreciate you coming and sharing with us.

Indira Deonandan: Take care. bye-bye.

Susannah Howe: All right, thanks, guys.

Nora Paul-Schultz: Thank you.

Katie Travis: Thank you.

Susannah Howe: Bye.