



@STEMculture

STEMculturepodcast.com

Transcript for Episode 01: Origins and Welcome to the Dark Side

Released December 17, 2018

All 0:17

Welcome to STEM culture/podcast...

Dani 0:19

Oh I fucked up! [laughter]

Zach 0:22

Alright, we have an intro

Dani 0:24

Guys it's really warm in here!

Dani 0:26

Welcome to STEMculture podcast. And today we're going to be talking about our origin story.

Zach 0:31

This episode goes out to all the Uncle Ben's who had to die to teach us that with great power comes great responsibility.

Dani 0:37

In particular we're going to start with how we actually came up with this podcast and I'm going to pass it to Brooke to get started on that.

Brooke 0:45

Well, I think I had been kind of pestering Keighley about starting a podcast because she's really interested in science communication. And I listened to podcasts like crazy because I have a long commute into school and back home and I really think that other people wanted to hear about some of our crazy stories that we were talking about. We had a fantastic professor come to visit us at our university and we were just talking about how some of these topics were really important and why

nobody's talking about it publicly. And Will was saying, "You know, I really want to get something out there about doing imposter syndrome," and I yelled, "Podcast!" Then we just started talking about more ideas about the podcast, and it started the ball rolling. And here we are today.

Keighley 1:47

Yeah, and I happened to be giving a talk on STEM communication with the help of Zach. And I was explaining, "Hey, like, we're going to do this podcast." And he's like, "Actually, I had an idea for a similar thing!" And so it turns out, both of us were kind of running these concurrent ideas. And so I'm like, well, we're meeting on Friday. Come hang out with us at an hour that is far too early for your schedule. But please be there and then the five of us crammed into Dani's tiny office space and we... birthed STEMculture podcast!

Zach 2:21

Birtherd, is not the terminology

Keighley 2:24

we brain birthed, yes we did

Will 2:26

I like that. That's a new term now.

Keighley 2:27

Yes. Brain birthing.

Brooke 2:29

Yes, I like this.

Zach 2:30

It's our brain child, we brain-birtherd it

Keighley 2:32

It is! Brain child is a thing!

Will 2:34

yeah. But it was a very organic thing, I think. And we had some encouragement from outside from a person who was just generally very encouraging. And that was the the amazing professor that Brooke mentioned earlier. But, you know, then I think we all sort of the more we talked about, realized we really have a lot to say, and, and I think we're a great working group who complement each other in a lot of ways, and I'm really excited to be here.

Dani 3:02

So now that we've discussed how the podcast came into being, brain birthing, gross,

Will 3:08

it's not gross

Don't shame brain birthing.

Dani 3:14

So now that we've discussed that we wanted to go around and actually talk about each of our own stories, you know, how we got to where we are today, what are some of the things that we'll be talking about on the podcast, and etc. So we're going to start with Will.

Will 3:28

Hi, I'm Will, I am originally from the northeast of the US and I guess I come from a family of STEM minded people, both my parents and a number of my extended relatives are all involved in STEM in some way or another. And I guess between, you know, family conversations and stuff like that, I think I always knew that science was really going to be a good track for me. And so I ended up getting two bachelor's degrees followed by a master's degree but the master's degree was unplanned. So I'm currently working on my PhD after an unplanned masters. I have a pretty long windy road. And so you'll probably be hearing about different parts of that experience, in future episodes. You might hear me chiming in on the topics of imposter syndrome. What do you do when your plans don't work out, Title IX issues, something I like to call Caveat Mentor, by which I mean, be careful who you choose as your mentor. But you could flip that around too. What it's like to be a somewhat non traditional student, and also nutrition and exercise... and heavy metal

Dani 4:58

and heavy metal. Alright, so I'm next. I'm Dani. I am from California originally. And my mom is probably the reason I got into STEM. She had all these books in the house growing up: "Elephant Memories," anything by Jane Goodall. And I read them voraciously. And that got me really interested in animals. And that's why I'm an animal physiologist today. And the kinds of things I have experience with that I will likely be discussing on the podcast are things like Title IX, graduate student efficiency, how to establish an online presence, dealing with bureaucracy, the good and the bad. And I also like to bake and cook and lift heavy things off of the floor and put them back down again, aka powerlifting. I'm also active in a women in science and engineering group. They're kind of nationwide and actually outside of the nation as well. And I do science outreach within our community here with almost everyone in this room. So I started looking for ways to be more efficient as a scientist and a graduate student. So through that process, I actually added a page to my own website on how to promote graduate student success. And I didn't do that to break myself down to make myself work more and work more hours. But I wanted to get in more work in the same hours of the day without breaking down. And that's really an idea I got from "Everything Hertz Podcast," and that morphed into a desire to have a department specific graduate student society. With- that I started with another graduate student, that everyone in this room- Again, almost everyone in this room is involved with

Zach 6:56

that would be me.

Dani 6:59

And so that's really led to this amazing group of close knit people that really care for each other and want to see each other succeed. And I think that's another way that we actually lead into this podcast because I have personally never felt so supported before. And I want other people to hear that.

Keighley 7:17

My name is Keighley and I originally hail from the great state of Wisconsin, which is funny because a lot of people don't actually know where that is, they think it's just part of this ambiguous state called the Midwest. So that was a really fun thing leaving there and coming here. But I am currently in my third year of a PhD. I skipped doing a masters. I graduated in 2016 from University of Wisconsin and came here really about three months later. So that was a big change for me doing that. But I knew I wanted to be doing research pretty much from the time that I was in high school. So I've always had really supportive parents that have allowed me to look into whatever I thought was interesting. And for a long time, I thought I was going to be a writer or a teacher or something really creative and more English-y. But then I read an article that my AP Biology instructor gave me on epigenetics and I fell in love. I thought it is the future of science and, you know, at 16 years old, you know everything about the future of the world. And so I told every single science recruiter at every university I applied to, I want to study epigenetics, what kind of research can you get me into that's going to let me do that. And the university I went to pretty much had a genetics degree, and that's how I got involved. But now that I'm here, and in studying breast cancer research, my love of science has shifted quite considerably outside of epigenetics and breast cancer and molecular biology. And I really feel incredibly passionate about talking about my research now. So just as Dani mentioned, I'm incredibly involved with outreach organizations and promoting science communication in my department, between the people that I work with, and even, you know, within my family who are not necessarily as science literate as everybody I spend most of my time with. So it's been a really fun adventure, working towards learning how to become a science communicator, and also trying to finish this PhD along the way. I am pretty good at organizing things. So time management is my forte. Everybody in this room has told me affectionately several times that I organize in my sleep, which I absolutely love, because I think I do, sometimes. I am pretty good at starting new things, specifically projects outside of my research, I was definitely part of a lot of the things that Dani talked about helping them get off the ground. And, you know, I love being part of this podcast and getting it off off the ground. Yeah, so that's, that's me.

Brooke 10:00

My name is Brooke and I am a second year here at this university. And I, I am very much a non traditional student. And I think that's a big part of what I will bring from my perspective to this podcast. I am older, I have a family. I have two kids, my oldest son is 19, my youngest is 12. And both are at very different stages and going in very different paths on their life. And so that is a huge focus for me, because my family is really where I spend all of my time outside of the school. But I also got to where I'm at in a very different path than I think everybody else has. I had a career prior, I was in the dental field, and I always knew that I would change paths, but I really didn't find what my passion was, or I guess, figure out what my passion was until I was in my 30s and it hit me that I read everything science, anything I can get my hands on science wise. And I realized, okay, that's obviously more than just a hobby, I need to actually go forward and do it. So I started out my next school career in a community college and then transferred into a larger university and I ended up doing forensic anthropology. I love everything forensics. And like Keighley, I love everything epigenetics, but mainly I love DNA methylation.

I think it's just fascinating. And so those two things led me into getting my PhD in biology and epigenetics and studying methylation. But along the way, I've had to kind of face, on my, as Will said, long, winding road, I've had to face some pretty difficult things that have come up with family, with school. And so my areas of expertise, as Keighley likes to put it is navigating Title IX, navigating life with a family, being a non traditional student, and forensic podcasts. So anything forensic podcast cast wise, I'm pretty obsessed with.

Zach 12:48

That leaves me I'm Zach. I'm a four and a half year old grad student. I have no sweet origin story like these guys. I chose my undergraduate degrees, which were chemistry and computer science, based off of a TV show.

Keighley 13:01

Yay!

Zach 13:02

So I watched a lot of NCIS when I was in high school. And that included McGee and Abby so I really like the analytical aspect of it in a computer science end of it. And so I was like "eh, I'll spend money on that!" And so yeah, I got a dual degree in chemistry and computer science with it, and focus in network security, which I don't do much anymore. So yeah, I just got a weird look from one of the other- So yeah, I love not doing that anymore. So I actually started graduate school a while ago. And I really chose this university because of the equipment available as well as the research topic, which I found was gross and interesting, all at the same time. And so there's really not like, no one's convinced me, my family doesn't even know what I do on a daily basis. They just know that I'm trying to graduate. And that's pretty much all I've got. Most of my research or most of my free time is spent doing Dungeons and Dragons and other nerdy things, when I have free time, and making other podcasts. I kind of focus on STEM professional development. And so that's kind of my position within the university here. And I'm looking at kind of hosting webs or seminars that get other students active to proceed through their degree, but also to look towards the future of what are you going to do when you graduate: industry, government, academia and the like of that, because you have a lot of options when it comes to STEM.

Dani 14:28

And what are you interested in academia or industry?

Zach 14:30

I'm interested in industry and government. So I've- my research is essentially environmental forensics. And so I like to apply that as well.

Will 14:40

What about you, Dani, what are you interested in doing after this?

Dani 14:43

Oh, I want to be a faculty member and mentor my own graduate students. But in this room, we have two people very set on the academia side, and then two people very set on the kind of what we'll call I guess Alt Ac, but wanting to go into industry, at least as far as we know, right now.

Keighley 15:03
Then there's me!

Dani 15:04
And then Keighley who is interested in going into science communication, I just I'm not, I'm never sure how to

Keighley 15:08
It's its own field. So technically, science communication is considered a field just like industry or academia, but it comprises a lot of things like working in policy or writing or running outreach groups. And I'm interested in doing all of those because I'm indecisive. And so why not choose everything -

Zach 15:26
For a planner you're sure lost sometimes.

Keighley 15:30
Alright, so we really hope that there's people out there who can identify with at least pieces of at least one of our stories and that if there's not, you reach out to us and we are able to represent all the stories out there. But that being said, how are we going to represent all these stories and all these things we want to talk to you about? Alrighty, let's talk logistics for a minute so y'all know you can expect from us.

Brooke 15:53
STEMculture episodes will be uploaded every two weeks, where two to three of us will be designated hosts. At least one will have expertise in the episode subject matter and the other will have varying levels of lesser knowledge of the topic. The goal is to share diverse experiences and perspectives. Ultimately building a conversation with lots of learning and insight. We normally won't have more than three graduate students on the podcast because it gets kind of cray putting that many voices

Zach 16:22
STEMculture will be organized around themes such as imposter syndrome, teaching, finances, and more. Each theme will be broken into bites, like bite sized episodes, that tackle a small piece of each major theme. In those we will cover topics like how to hit the ground running as a new graduate student, tips for writing, building a network, finding good collaborators, when and why you might report to Title IX, and much more. We will also be interleaving a secondary series called "in STEM" in which we highlight and collect stories from people in STEM, like people of color, women, and people with learning differences. one episode of "in STEM" will follow the conclusion of each theme.

Will 16:54
We will provide show notes for every episode on our website, so that you'll be able to follow up with the topics that we cover. We also want to look out for our listeners who are deaf and hard of hearing, so

that they're able to engage with our material as well. And so to accommodate those people, we're going to create transcripts that will be synced with the episodes on YouTube. If you know of any other ways that we can make accommodations for our diverse audience, please let us know.

Dani 17:21

This episode kicks off both our podcast as well as our first major theme, which samples three broad areas of graduate school. So we'll discuss life as a graduate student, building relationships with your graduate peers, and navigating the higher ups in your program. The first episode is called "Welcome to the Dark Side," and focuses on what it means to be a STEM grad student and what is, and how we perceive, graduate culture.

Zach 17:44

So let's go ahead and get started then. What does it mean to be a grad student? To me, it means that you are tired 80% of the time but the caffeine and the drive to research keeps you awake at night. I have night sweats and night terrors where I wake up and the lab's on fire because I'm not in the lab.

Keighley 18:00

Has that just started since-

Zach 18:01

No, it's been happening for three years.

Keighley 18:02

So like from day one-

Zach 18:04

We should probably not include this - go to grad school!

Keighley 18:08

I think that's really fair, I actually had to go see counseling for my first semester because I would wake up in the middle of the night audibly teaching lecture

Zach 18:17

Done that too

Keighley 18:17

Which was a new thing for me, because I had never really spoken full sentences in my sleep before, or sat bolt upright. It was creepy.

Will 18:27

Yeah, I've taken care of a number of organisms since I started here. And I've definitely, I think because of that, and all the different things that you have to keep track of, walked out of work, and just been really anxious, because I'm sure I forgot something, even though I, you know, definitely turned the lights off, definitely watered the plants. I feel like grad student is grad students almost have to develop some kind

of system of organization to keep track of all the stuff that you have to do. And if you don't, it's like torture.

Zach 19:05

I agree with that.

Brooke 19:06

And kind of building off of that, I think graduate school for me is not just about learning the topic that I'm studying, but learning the language of professionalism in within STEM climate, you know, it's definitely a juggling act, learning how to be professional in this field, because an undergrad, you know, you don't necessarily have this strong professional presence that you have to be, but graduate school, you really are learning, learning that language.

Dani 19:42

When I was an undergrad, I was really excited to be a graduate student, I saw that I had perceived that they had a lot of freedom, that they actually got to research, something they were very interested in, they got to get closer to their career. And so when I think about graduate student, I think of someone who's a trainee, like, they don't need to know everything, but they're going to get deep into this new subject, and, or maybe not new subject and learn something new and amazing and cool. And it's really the beginning of your career. And what I'm hearing, I think from a lot of us is, is more what I associate it with grad student culture right now, I think where it comes with the stress and, you know, having stress dreams, I've been having a few of those lately. So I think I, when I think of grad student have, you know, mostly positive connotations with that. But when I think about the culture that kind of surrounds that right now, I feel very stressed.

Keighley 20:38

Yeah, I mean, there's a lot of intake of responsibility. And with that, you get quite a bit more power in terms of controlling the direction of, I mean, everything from the direction of your research. But even I think about the differences in the class style. Like as a graduate student, your classes look a lot of times a lot different, like, it's a lot more discussion based, the opportunity for you to grow and have- take things in your own direction with the guidance of a professor exactly what Dani was saying, you know, we are training, you know, how to do these things. But we're not expected to be told everything anymore, we're expected to be guides of our own research directions, have our own academic interests, and, you know, even have our own personal interests, where it is kind of up to us to make time and space for the things that we feel are important.

Will 21:28

Yeah, I think I think that's one of the big struggles that a lot of grad students go through, is that there's no roadmap because your degree is supposed to be original. And so some people sort of get in and do some of the basic things that are obvious, like, figure out how to manage their time, and some stuff, some other stuff that might be less obvious. But then ultimately, what you're doing is something that no one can tell you the next step for, and that's really foreign to a lot of people, it certainly was, for me.

Dani 22:00

It's scary. Mm hmm. So we'll get on to kind of the next guiding question of the discussion: what is graduate student culture. So when I was thinking about this, it's this idea that we have to work ourselves to death, if we're not working towards something, we're failing, if we're not doing science, and we're trying to do something else, like, have a life or take care of ourselves, that we're not doing what we're supposed to be doing and our advisors are going to be disappointed in us. And I personally really want to push back against this, because it's clearly very damaging to graduate students.

Will 22:35

So the other side of that, I think, and the more positive one, is that because we're in this unusual situation, where the parts of normal life sort of become secondary to, to your science, to your research and also because a lot of other people- sort of hard to explain exactly what we're spending all our time doing, and why we're stressed out all the time. And, you know, sometimes why we can't come home for Christmas, or something like that, I think we develop a really strong bond with the people that we go to graduate school with. And so I think also, when I think of graduate school, or graduate culture, I think of that, that we're also creating the culture from the inside. Because the people that we we work with, and we go through grad- graduate school with become almost like a second family for us.

Keighley 23:34

That's one of the notes that I definitely had is when I thought of graduate student culture, I thought about the interactions of people, and how I interact with people in my lab. And, you know, being the graduate student, I work next to day in and day out, and my mentor, but also people in my hallway, and those other graduate students in my department, and then the graduate students in my building, and the faculty members that come in and out, and like all of these little interactions, and the ways in which we hold ourselves in different environments, all kind of contribute to this idea of the culture that is built, you know, so opening up the conversations with your grad student peers, saying, "Hey, I'm really tired, I'm really having a hard time" and being, you know, loved and respected and cared for by them, because they have been in that boat before, promotes a really positive culture. But, you know, sometimes having those conversations with your mentor can be supported. And sometimes that's great. And sometimes, you know, it's not as well received. And that can be really damaging, even if it does come from your peers, you know, your peers, like, "Well, yeah, I've been there," and then you guys just kind of move away, I've luckily never experienced that conversation. But I'm also surrounded by really lovely people. But I can understand how those little conversations really do build into this big perception of Boat A, where everybody's stressed and freaking out, and Boat B where it's okay.

Zach 24:55

I agree with you, and particularly about how we're kind of constantly expanding our colleagues and our kind of our bubble of influence. You start with your lab mates that exceeds- or expands to your hallway. And then it goes to the wing and the building and then to conferences even. And you have this whole network of people who should hopefully be supporting each other. And that's what we're trying to encourage with this podcast is, yeah, for the first time- I've never addressed that I've had those dreams of constantly thinking the labs on fire. But now that I know everyone else does it, I'm gonna take that a little better. Eh. It's normal.

Will 25:29

You're definitely not alone.

Zach 25:30

Yeah, no one's alone on that one. And so the community around this is a very tight knit one. And that's something you should embrace. And another topic of conversation of that is, if you find that the group you're in is not tight knit enough, you might have to consider changes with that.

Brooke 25:45

Yeah, I would have to agree, you know, I think it was really uplifting for me to come to a program that everyone was just as nerdy as I was, you know, I think that's really that was a new experience for me. And so I am lucky enough to be in a lab to be in a hallway to be in a program where everyone is very nurturing. And we're all focused on the relationships that we have. Whereas, you know, I've heard a lot of topic and chatter outside of our program, that this isn't always the case that we are really, really lucky to have this tight knit family bond. But these are the relationships that you're going to take with you and have the rest of your career, you know, and I just feel really, really lucky to know that I'm going to have these relationships years and years to come. So this is, this is important to me.

Dani 26:46

And I think, too, the other part about graduate student culture is that it's possible to change it. And so when I came here to our program, there wasn't much of a culture, we were all doing our own things. And it wasn't for lack of wanting, but we didn't know each other wanted to improve the culture and be more tight knit until we started to talk together and talk with each other and share our aspirations for what we wanted life to be like now and the future. So we'll have an episode in the future about how how we've specifically worked on improving our graduate student culture, both in the small, smol?, in a smol way within our department, but also at our graduate school in general.

Will 27:34

And also we're planning an episode, I think, probably the next episode, where we'll talk about how the interpersonal relationships that the interactions that you have with other graduate students can go well, not so well, and maybe what you can do to make them go better.

Keighley 27:52

Okay, so we just talked about grad culture. And a lot of times that can really impact other parts of your being. So how does your identity change as you progress to grad school. So for me, I really thought of myself as like the smart kid and a scientist. And that was what I had built myself up to be through the four years of high school and the four years of undergrad. And coming here that was immediately shattered. And the kind of smart that I had learned to be, was not very helpful anymore. And so my self worth shattered alongside my ways of proceeding and expressing my intelligence. And so I had to really learn how to rebuild that. And for me, that was, was incredibly tough. And also then realizing that my definition of wanting to be a scientist was different than what I thought it was, and what I had spent all this time building. And so really being okay with that, and I don't necessarily know that I can say that I am at this point, but it's a work in progress for me. And so having my identity really just be torn from me, and then sitting kind of in this empty space of, I don't know, what am I doing, I'm in this environment where I barely know anybody. So this happen pretty early in my grad career, but then

talking to people and realizing, oh, there's this other thing that I'm really good at, and really passionate about and it's okay, that it sits alongside my other responsibilities. And it can't, you know, I'm not a place where I can let science communication be the only thing I do, you know, I am a researcher still, and I still do love doing it. But it's not something that fulfills me in the same way. And so having a long, hard look at how that shapes my identity, and how being a scientist is no longer the person who sits in the lab every single day. And allowing that to expand has been really tough, and it's a work in progress. But for me, that's, that's a big identity change that I went through.

Dani 29:55

To suffer in a new way.

Keighley 30:15

But you did, you earned this new hat

Zach 30:23

I earned that new hat. Yes. And then after that, you're given many other hats. So for most of us, we're all lab instructors or teachers, right? In at least in our case, in the lab, we've gone from maybe safety coordinators for some of us, I know, I'm responsible for the safety in my lab and in my teaching lab. You've got from undergraduate to researcher, and some of us did research and undergrad, but it's stepped up a whole nother level now where you're responsible for maybe taking care of animals, which you can't see, I pointed at Will, but I did-

Will 30:43

I take care of plants,

Zach 30:49

Plants, animals, organisms, yes. Sorry I forget you have-

Will 30:58

Plants are better

Keighley 30:58

Mice are hard.

Zach 31:00

Mice struggle. Taking care of million dollar instruments that you're constantly terrified you're going to break because, yeah, constantly terrified, it's going to break. I also like to think of it, we're also mentors. So I don't, most of us probably have undergraduates even work in our lab, as well, and so you've transitioned. And on top of that, we're sometimes senior students. So we have to train those beneath us on how to do the general practices of our lab. And so you have to wear constantly changing hat every hour. While also managing your sanity at the same time.

Will 31:31

So yeah, I think I'd like to chime in and sort of backup Keighley a little bit. And it's slightly different way. I think I mentioned before that I sorta always had an idea that I wanted to be in STEM or some kind of STEM professional. And so I've always sort of gone after science pretty hard. And I think that, just like Keighley had mentioned that I held sort of being a scientist as an abstract part of my identity. And not just being a scientist, but being good at science and even being better than other people at science being smarter than people as sort of something that I took pride in. And then I got to grad school. And I realized that I'm really not smarter than any of these people that I'm around. And so that was a little bit of a bitter pill to swallow at first, you know, when you go from being in an environment where people are at all different levels of sort of commitment to to science, and being a deep thinking, rigorous person to an environment where everybody has committed at least two years or more, sometimes seven, nine, lots and lots of years of their lives, to being a thinker, to being somebody who investigates scientific problems for real. And I didn't really understand what that was gonna be like, even though I had done research before. And so I had to sort of take that humble pill, so to speak. But then once I did, and sort of saw past the ego there, I realized that that I was surrounded by more like minded people to myself than I ever had been before in my life. So I sort of actually felt like, I fit in more than any other time in my life there. There's room for people like me in grad school. And that was really special for me.

Brooke 33:47

I kind of have the polar opposite experience. I mean, not that I don't feel like I fit in, I feel like I fit in. But for me, I, I never thought I was smart enough, you know. And so I never thought that I would actually be in graduate school at any part prior to now. And so to make it here into a graduate program, I completely identify with this imposter syndrome. Like, I don't belong here. And it really, I think Dani's been really, really important in telling me every day "you're doing good, you belong here."

Dani 34:29

You do. I was about to like, scream at you when you said that, like you belong here, girl. You're where you're supposed to be.

Brooke 34:35

So I think that's been a way that Dani is really helped me see, okay, everybody has these feelings of like, they don't belong, but I at no point felt like I was smarter than anyone. I think I had the completely opposite feeling like everybody else's so much smarter than I am. So I still know nothing.

Keighley 35:00

But we all know a lot.

Zach 35:02

I was gonna ask then, what- at what point do you consider yourself scientists?

Dani 35:08

Oooh, that's a good question.

Zach 35:09

Like what, at what point in your degree? Or did you consider yourself a scientist in undergrad or like, to me, it was like, when I had a publication, I've contributed to peer reviewed journalism. Therefore, I'm a scientist. But I did that in undergrad. But then now I come back and be like, I should really write more and try a little harder.

Keighley 35:28

I think it's as soon as I was in charge of people who were younger than me, which is hard to do at my age.

Dani 35:35

Keighley's 24.

Keighley 35:37

Yeah. And so having a class of students and having- I was handed an undergrad really quickly after I started and kind of having someone to be mentoring made me feel like, okay, I am actually doing science, I am thinking about science, and that I have to deliver my thinking to another person who is not my mentor. Because I felt like I could throw anything at my mentor and be like, is this science I don't know. But like, I had to say to this person who I was, you know, helping, I am doing science, I'm going to teach you how to do science. Therefore, I am a scientist. And I was fortunate that that happened really early. But again, it solidified a part of me that had I to grapple with.

Dani 36:19

You know, for me, I think the moment was when I started telling my advisor- well I would sit down with him, and I'd say, "Okay, well, what should I do next?" And the switch happened when I would start going up to him being like, "Well, this is my plan. I'm going to tell you my plan and you let me know if there's any part of my plan you think I should adjust, but this is what I'm doing." And so when I started taking that personal responsibility for my science and my ideas, that's when I really started unashamedly thinking of myself as a science scientist.

Keighley 36:46

Anybody else with a perspective?

Will 36:48

Yeah, I think I started thinking of myself as a scientist before I really was one. But there was a part of me, I think, that knew that it was, it was hubris. That it was, that it was an act of excessive pride. And that, you know, once I got here and started doing things like the other folks have been mentioning, then I understood how little I knew before that, and then I started to feel like a scientist.

Brooke 37:19

I had- so it comes in waves for me. Um, I guess I don't forefront think of myself as a scientist- except for in small moments where it hits me, like when I was starting to extract DNA the other day, and had a pipette in my hand like, wow, I'm really doing this. You know, so it comes in waves for me as as that like, definition of what a scientist is.

Keighley 37:49

Does anybody get those moments when you're like, alone in the lab, especially at odd hours. So, like, I've been finding myself in lab really late lately, and just standing in that space, and realizing this is my job. This is where, like, I go to every day, and I get to touch these things. And I get to be part of this process. Like, then we have those feelings. So just like completely being overwhelmed, but like in the most like fulfilling way, even if you can feel like your complete failure, like nothing's working. But oh, my god, you're part of it.

Brooke 38:19

Yeah, I think that really explains a lot better than what I just said like, I'm really doing this, yeah,

Zach 38:27

I have the power.

Dani 38:31

So for me, I feel like every day I'm here in my PhD, or let's say, every week, I'm here on my PhD working towards this goal of finishing up, I just feel like I'm becoming more and more like myself, because I really do want this to be my job. I want to be a faculty member where I am doing research part time, but I'm also mentoring students, undergrads and graduate students in particular, towards being whoever they want to be, whether that's an academia or some other route, which nowadays is almost always this other route of going into industry or science communication, or some other alternate-, some alternate to academia. So for me, my identity changes really just been feeling more like me, and more like the me I want to be every day. So just as a different perspective.

Keighley 39:24

Actually really great transition to the question I was going to ask. And I think I would be remiss to not bring this up. So people probably don't know the age range that we have in this room. And I don't think it's something that's necessarily the most important part of who we are. But it does affect how we are moving through grad school. So I'll just start. So I'm probably the youngest person in this room at 24, again, went straight from undergrad to here. So I started at 21. And when Dani was saying, how she really started to feel like herself, I really like that, you know, that, I identify, identify with that quite a bit because I feel like I've become a real person, not necessarily because I'm doing science, but because through the experience of being a graduate student, I've been forced to stand on my own two feet. And, you know, really personally removing myself from the lab and just experiencing who I am. And, you know, like being thousands of miles away from my parents, and, you know, having to pay my taxes on my own without help, you know, and figuring out health insurance and the sounds really silly. But for somebody who's my age, this isn't necessarily something I had to think about. Because I'm a student still, and being a student and having that mentality has always been this really safe space where I'm like, what's fine, I'm just gonna hide and academia and never grow up. And I'm going to Peter Pan my way forever. And it's kind of been this very slow realization that, okay, no, you are doing this, you are surviving, you are thriving. You are making these decisions. Guys, I bought a car and I paid it off. And that's never something I thought I would do-

Zach 41:01

Today, right?

Keighley 41:01

Yeah

Zach 41:01

Congratulations!

Keighley 41:02

By the time that I was, you know, 24. And so having these little victories that are so separate from grad school, but realizing that this experience has been really what's afforded me that acknowledgement, and like being around people who uplift me and allow me to grow... I, I can't really explain enough about how that has shaped who I am as a person, because it's let me decide who I am as a person.

Zach 41:27

I'm 26. So I'm probably the middle of all of us here. I'm just right above Keighley. I started I think, 22. I don't remember. It's been a while. But yeah, 22/21 as well. We don't- in my field, we don't really get master's degrees. And so it's like, shove you through it.

Dani 41:44

Yeah. And I'm 31 and I did a Master's. Then after my master's I took three years. Well, I didn't take three years. But I couldn't get into a PhD program for three years. So I had three years to fill with weird other jobs. Like I worked in a publishing company that specifically published books on positive reinforcement to train your animals, in particular, your pets to do weird shit so my dog can play dead pretty good. That's all I've used it for. And I worked at a government agency trying to help them write this document that just was not going to happen. So I stayed there for a year. And then my last job was actually adjuncting in California at a community college as well as a four year university for a year, which was incredibly valuable, and taught me a lot of things, but also incredibly hard. So yeah.

Will 42:45

I'm 34. I started grad school a little bit later than a lot of people do. How old was I - 27, I think, 28 when I started grad school. And that was because after I got my first bachelor's degree, I discovered along the way that there was a whole nother field that I was interested in, which is Computer Science and Mathematics. I started out with Biology. And so I did two back to back bachelors degrees, which is pretty unusual. And then, and then I took a year because I screwed up and missed the recruiting cycle for grad school.

Dani 43:33

It's hard to keep track of though.

Will 43:34

Yeah, well, especially-

Dani 43:36

Speaking of things people don't tell you, right.

Will 43:39

My second bachelor's degree was three years. And so I had to, like cut through a lot of red tape with requirements and transferring classes and stuff like that. And I had three years of super full schedules. So that last year was just like... so anyway, I also took a year and I ended up working with an NPO in the city that I'm from doing tutoring and SAT prep and after school programs, with an educational focus for kids and low income area high schools and middle schools. So then I started my grad school life.

Brooke 44:23

I'm 39. So I think I-

Keighley 44:23

You win!

Brooke 44:27

I win! I win it all! I just came straight from undergrad into a PhD program. And,

Keighley 44:39

Yeah, but when did you start that?

Brooke 44:41

So I started my undergrad when I was 33. So when my youngest son was old enough to go to school full time, I decided to go back to school full time, too.

Keighley 44:56

Like mother, like son.

Brooke 44:57

Yeah, yeah. And so that was really interesting. Because at the time, my husband was working overseas. And so it was like, single mom and going to school. And it was pretty overwhelming, but also very exciting. And yeah, I mean, I'm very happy to be here. And I kind of feel like I have to pinch myself all the time about the fact that I'm in graduate school, doing something that I absolutely love, because I did not love my first career. And so when you spend that much time doing something that you don't love to do, when you finally are able to do something that you're really passionate about, it just feels very surreal.

Will 45:43

So we've talked about what it means to be a grad student, and what grad culture is, and how we've changed since we became graduate students, but how to grad students in grad culture fit into STEM and science as a whole. And so my thoughts on this are, first of all, that we make a lot of the actual work happen in a direct sense. So we're hands on in the lab or writing code that we work out with our advisors. And sometimes we're a part of a bigger project. But most of the time, the grad students are the people who are doing the actual work. But that all happens in the context of a long tradition that includes great minds, and great mentors. And then also people like technical editors, and bureaucrats,

and all of these, many thousands of people make up the academy and peer reviewed journals and conferences, and then the sub disciplines that make up science itself. And so the rules that are most of the time unwritten, that sort of make all of these interwoven systems run, are what we mean by STEM culture, and in a very personal way, STEM culture starts with grad students and grad culture, because we're coming into this world and, and learning how to work within it and make it work. And then we go on to be a part of all those different systems that we were talk- that I was talking about.

Dani 47:19

Yeah, and especially if, like, Will and I are interested in academia and pursuing that kind of thing. When you become a mentor, you're really the mentor that you have experienced from your mentor, if that makes sense. I'm not sure if I said that right-

Will 47:36

Yeah, right. And I said,

Keighley 47:39

You're a product of your people,

Dani 47:39

Yes, yeah, your product of who taught you. So if you can bring forth what you have experienced in your graduate school experience, especially, hopefully it was good, then we can continue to improve the culture down the line,

Will 47:55

Right, yeah, I was trying to put a good a positive spin on what STEM culture is. But the fact is, as many of the people in this recording booth,

Zach 48:05

that's not what we call it

Keighley 48:09

this little tiny box

Dani 48:11

fart studio,

Will 48:15

A lot of us can attest to the fact that mentors are not always great. And those experiences may give us the opportunity, because we're self reflective and we have this great community, to grow and hopefully improve STEM culture. But certain people who, who experienced those things, they might carry that right on to the next generation. And so I think that's one of the things that we hope we can really inform. Because we see things that other people don't.

Keighley 48:46

And also seeing things is, you know, almost all of the innovation and creativity and progress comes from grad students, because A, we don't know any better a lot of the time, we're like, well, this seems like the way to do it. So why aren't we doing it that way and be people are trained to think a certain way, that's how they're going to continue thinking. And the grad students who don't really know how to think yet are kind of trying to come up with all these alternate solutions. So in terms of just progressing the field of STEM and having breakthroughs, grad students probably are a huge part of that because we are supplying a lot of innovation and creativity to that. And so by opening up grad culture, to be supportive and encouraging of alternate ideas, you allow the overall STEM community to be open and creative and grow.

Zach 49:34

Thank you so much for listening. We're excited to embark on this journey with you. Next time, we'll be talking about graduate interactions, how to work with people in your lab, in your department, and what to do if you hit roadblocks.

Keighley 49:44

You can find us on Twitter at STEMculture, one word. And our website is [www dot stem culture podcast dot com](http://www.stemculturepodcast.com). We'd love to hear from you. What topics do you want us to dive into? Email us at [stem culture podcast at gmail. com](mailto:stemculturepodcast@gmail.com). If you like what we're doing, please rate us on iTunes. It helps more people find us and that lets us help more grad students. If you'd like to support us find our Patreon on our website.

Dani 50:08

This has been the STEMculture podcast. Thank you all for tuning in. And we want to especially thank everyone on Twitter for their amazing input and outpouring of support.

Will 50:17

These conversations have already begun to impact the way we think about this podcast and our plans for its future. We want to continue hearing from you.

Brooke 50:25

Until next time, don't forget to consensually hug a grad student or at least buy them a coffee

Zach 50:32

if you're not part of the solution then you're part of the precipitate

Keighley 50:35

which is good because hashtag STEM culture making changes part of the problem you're not part of the solution.

Dani 50:40

What-

Brooke 50:41

What-

