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Transcript for “inSTEM” series, Episode 08: Family in STEM

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All 0:00

[Intro music]

All 0:17

Welcome to STEMculture/podcast!

Dani 0:19

oh i fucked up! [laughter]

Zach 0:23

Alright, we have an intro

Dani 0:25

you guys, it's really warm in here

Will 0:28

welcome to STEMculture podcast. Today we're talking about something different than usual,

considering some extreme circumstances and unfortunately, Dani and I have had to seize creative control of STEMculture podcast. We felt this necessary considering the state of the world right now. It's very early in the morning, we forced Kaylee to help us organize the coup. And we're here to bring our graduate student demands to you. Demand number one:

All 1:01

APRIL FOOLS!!! [laughs and giggles]

Dani 1:09

Alright.

Today you have Dani,

Will 1:13

Will

Keighley 1:13

and Keighley

Dani 1:14

on this inSTEM episode where we are going to talk about conversations with our families about our PhD work in life.

Keighley 1:20

This episode goes out to all the grad students who don't know how to even begin explaining their research in grad school to their families, you aren't alone.

Will 1:29

First we'll introduce the questions we intended to ask our families. Then we'll hear snippets from each of our families and react to those conversations.

Keighley 1:39

We began this experiment following conversations between us about how it would be interesting to do an episode featuring our families, and how they view our careers. We set up a plan and went forth sure that it was going to yield fantastic audio.

Dani 1:53

We had a set of questions to ask each of our families they were: one, if you had to describe what I do what my life looks like, what would you say? What do you think I do every day at my university? What do you think my life is like as a graduate student? Two, Can you describe or explain my research back to me? Three, what questions do you still have about my life as a grad student? Are there any you've been nervous to ask me? Four, as a parent or sibling or etc? What are your biggest concerns for my future? What don't you worry about?

Will 2:29

But as it goes with families, the conversations didn't go exactly how we expected.

Keighley 2:35

And as we discussed what came of our family dialogues, we realized that were there were still some parallels to our conversations. First, though, we want to give you some background on our families and the audio we will be sharing. I spoke to my parents and my grandparents after dinner during Christmas break. Between the four of them, they cast a really wide net of understanding and familiarity with STEM.

Will 2:58

I did interviews with my mom and dad separately. My mom is a medical doctor and my dad is an academic scientist.

Dani 3:06

And I interviewed my brother, he's three years older than me, and we used to other pick on each other mercilessly when we were growing up, and my brother Alan is a mechanic and welder and all around MacGyver. As you can hear our families are all different. And they come to these conversations from very different places. This means that the conversation derailed for everyone in different places, or in the case of Will, it didn't really derail at all.

Will 3:31

Both of my parents actually had pretty accurate and nuanced ideas about what my PhD research is on, they sort of hit the nail on the head.

But they're both also aware that they don't know the whole story. Their background and their attitude towards science, have set them up to understand just how complicated the process of getting a PhD really is.

And similar. Similarly, when it came to the spirit effects of my day to day life, they both got the spirit of the PhD student life. But even they don't really know the specifics of what I do day to day. And this may not be a fair expectation for parents. When you have a complicated profession, this is sort of just a quagmire of our modern life, probably. In the following interviews, Mom and Dad describe my research to me. And then they tell me what they think my daily life looks like.

The Interview with my dad took place at a bar [laughs] Please forgive the background noise.

Can you explain my research back to me?

Bonnie 4:49

Are you trying to embarrass me here?

Will 4:52

No,

Bonnie 4:52

no, I do. well, your research has evolved to That's true. So when you started off in graduate school, you were focusing in a certain area, and then that evolved. And where you've left me behind is the science has become has developed, beyond anything that I have ever been exposed to.

So you talk about genetic research. And I understand genetics from the standpoint of of medical school, and, and human genetics. And that's that's about as far as my so you have explained to me as best you can about the the scientific model, the model that you are using to investigate the the question that you're trying to answer.

And so you're using a plant model, and you're designing a, an experiment, which utilizes the plant physiology to answer a certain question, and then the genetics of that plant and similar plants to I think to illuminate the the nature of the evolution of the the physiology that you're looking at.

Will 6:29

Yeah, I mean, that's I think that's actually a pretty good encapsulation of what my ideal career would look like.

So when you imagine a day in my life, what does that look like?

Bonnie 6:51

When I think of what you're doing, I think of you working very hard [laughs] doing research, and I get all this information and creating an experiment, that the concept and I didn't do this myself. So I can't claim first hand knowledge. But the idea of creating a study or creating an experiment, the coming up with a hypothesis to answer a question, I think, is is a wonderful way to live a life.

Will 7:38

Yeah, so you think you could explain my research today?

Bill 7:46

You mean, in a way that would that you would not laugh at?

Will 7:51

i won't laugh at it.. I mean, I think yeah

Bill 7:52

Yeah, I think you're studying the way that different genetic, genotypes of plants and things like plants and the fungi or something, how they, how they spread on a continents and across the planet, in different eras of weather and geography and different physical, external conditions, and what causes one type to dominate over another? And how that influences the overall evolution of them and maybe the planets.

Will 8:37

Yeah, yeh. That's very pretty right on.

Bill 8:38

Okay, well, that's means you explain this to me pretty well, because I didn't know very much about it. And I see that you wanted me to describe when I think your life looks like, right now,

Will 8:54

yeah. What do you think I do day to day?

Bill 8:57

Well, since you're pretty heavily involved in your thesis research right now, I would probably wager to say that you're pretty preoccupied with it at this point, and probably wake up thinking about it, and probably rarely not think about what your work is doing, and where it's going. I think that's, I think it's a good thing.

Now, if you told me that that's true, then I would say I think you're probably on the right track towards finishing your degree. It's kind of a rite of passage, I think, to take ownership when you take ownership of your research problem. And I remember years before I had a PhD, people would tell me that when you do a thesis, when you do a PhD, you become the world's expert on one thing, right?

And I think that's kind of true, really, I mean, because you, you leave no stone unturned, you, you, you have to understand how your model works, how your code works, what are your, what's your analytical approximations are, what the weaknesses are the existing studies, studies haven't been done yet what studies you are doing and what gap they're gonna fill in? And then you have to do them and do them right. And understand them, express them to other people. And it's kind of all consuming, I would say.

Keighley 10:26

Your mom sounds really lovely. She reminds me a lot of my mom, actually.

Dani 10:33

That's really amazing how, how, right, they seem to get your, your research topic.

Will 10:40

Yeah, well, one of the things that later we got to is that, you know, we talk a lot about my research. And before I was doing research, you know, we talked a lot about science. I mean, my dad being a scientist, you know, I grew up hearing about his research. And so now sort of the tables have turned a little bit. But it's a process that we were already sort of used to engaging in together.

Keighley 11:14

Were you surprised at how on the nose they got it? Or was that kind of like, Yeah, no, I expect you guys know, at at this level?

Will 11:22

No, yeah, I sort of didn't remember describing my research and sort in that level of detail to them. But maybe that's just because it's sort of like a natural mode of interaction for us. And I guess I either they did their own reading, or I did a really good job, because they each of them really nailed a, at least a sort of compartment of my research in terms of like, why I'm doing it. Which is, I mean, yeah, I was pretty surprised by that.

Dani 11:57

And what about their description of what your day to day life with was like, did that feel like pretty on the nose?

Will 12:02

Yeah, it did. You know, I think when we, when we were posing that question, and you guys can correct me if I'm wrong, but I think that we were thinking more in terms of like the, you know, the routine, what do you do, when you get up in the morning, when you go to work? What are you doing when you're at work?

And I don't, I, you know, my dad may have some concept of at least the modeling part. And they've both done some lab work, but but it seemed to me that they probably don't have a specific detailed idea about what I do day to day.

Keighley 12:38

Yeah, it definitely came across as more like, hypothetical or like, theoretical, like, what are you doing in the big scheme of things, which I think like, it's super interesting to hear, because I feel like that reflects who you are more of a person like you strike me as more of like, the theoretical thinking in the big picture kind of way. So it's very indicative, that your family would be describing your life in the similar way, like compared to how my family described, my day to day was a lot more like, well, you go to work, and then you do this. And then you do this, and then you do this. So it was really interesting to hear. And I think reflective of like, you know, family life.

Dani 13:22

My brother whose name is Allan, he has ADHD, which is Attention Deficit hyperactive disorder. And you will hear this in the recording because he gets off track really easily. So what you're going to hear is me trying to pull back his frankly, amazing questions, to try and answer questions he's asked me before. And then he asks another question. And honestly, it's hilarious how off track, we get to the point, by the end of the actual interview, the whole thing was like an hour long. We start talking about griffins. But it's, it's tangential. But it's because he's asked so many different questions. That's, that's, that's where we ended up

Keighley 14:02

Whales to griffins man!

Dani 14:06

So I'm here with my brother, Allan. And I'm Dani. Allan is three years older than me. And we're having this conversation over winter break, and trying to figure out what he knows about what I do.

Allan 14:22

So um, what I know is that, like, you study wax plugs that come out of cetaceans or marine mammals. Yeah. And I believe you use and like, so these wax plugs grow kind of like rings on a tree with the age of the animal. And you're able to do a chemical analysis of the individual layers to get data about the like salinity level of the ocean at a particular period in time. And like how many times like this particular animals is potentially giving birth, along with like, you know, it's age,

and like, you have the potential with like, a large enough sample size to take this model of the ocean, so to speak far enough back and like, kind of be able to have a better understanding of where the oceans health, so to say is going in the future.

Dani 15:18

So you did amazing. The only thing, I don't think at this moment, we're able to tell the salinity of the ocean. And

Allan 15:26

that was just, I picked that because like, the ocean is salty. And I use that word like I'm sure I can use like, you are able to like pull out like you know carbon content or like any like, like really specific things like that, like, you have like, oh, like in 1987, the ocean had like point oh, 3% carbon, or something along those lines.

Dani 15:50

So what we can do, and like I said, he did a really great job. So what we can do is we can look at stress hormones and sex hormones, one of those being progesterone, which can tell us about pregnancies and these animals. Yeah, so so hormones, also stable isotopes. And that can tell us about the diet of these and but

Allan 16:09

like so like carbon 14 has a very specific rate at which it decays and like, forget where I was going with that train of thought so.

Dani 16:16

Okay, that's all right.

But yeah the two stable isotopes, most often used for this kind of research is carbon and nitrogen, and how they vary with each other. But that's not my research. That's my friend Farzaneh's research. That that is something we can do that again, Farzaneh.

Allan 16:32

Okay, what? What's the origin?

Dani 16:34

She's from Iran.

Allan 16:36

Yeah, it's just a name I've never heard before. So

Dani 16:39

yeah, well, it's really cute because she has a brother and a sister and all their names start with an F. Okay. And her mom's name also starts with an F

Allan 16:47

so there's a there's a naming scheme.

Dani 16:51

Yeah. So what I'll do now is I'll explain my research from from my perspective, but like I said, you did you did a really great job.

Allan 16:56

May I ask you a question or two? Yeah. So um,

Dani 17:00

you have fuzz on your face.

Allan 17:01

I'm sure I do. I have lots of hairy...it might be toothpaste,

Dani 17:07

Okay. I think its gone now [laughs]

Allan 17:08

okay. Um, so I'm your, how far back? What's the oldest? sample, like the oldest state for one of your samples are the ear plugs? Right? And how far back continuously does your sample set go? And like, Are there gaps in it?

Dani 17:28

Yeah. Okay.

Allan 17:29

I imagine.

Dani 17:30

Yeah. So, right. Now we have analyzed more than 30 earplugs from

Allan 17:40

now this is, now each animal has to earplugs though. Right. So these are earplugs from separate animals, right? Yes.

Dani 17:47

That's right. Yeah. So so there's the capacity for these animals to have an earplug and each year, but a lot of the times, when whalers back in the day would collect these earplugs, if they got one they were done.

Allan 18:01

so what would the whalers use the earplugs for?

Dani 18:06



Okay, so. Okay, let me answer your first question first, and then and then we can kind of go back through the whole history of it.

Will 18:20

Wow. So Allan, it seems like a really enthusiastic and creative person.

Keighley 18:28

Yeah. Yes.

Will 18:30

He is. I mean, really, you know, his enthusiasm for your research comes through clearly to me.

Keighley 18:39

I was so impressed with cetaceans. Yeah. Even when I talked about your research, way more than I probably talked about my own. And I don't even use the word cetacean. I'm like, she works at whales and their pregnancy.

Not as good, which is so awesome that like, you know, it's always really impressive and family can, can use the jargon that we throw around.

Dani 19:02

Yeah. And it was from, and he told me this later in the interview, like, the, the way he knew all of that was from one conversation we had, like, a year ago, where he'd asked me a question about like, could I use whale earplugs from, like Japan? And I had to tell him, Well, no, we can't, because there's ethical concerns, because Japan is whaling outside of the global moratorium that started in the 1980s. So ethically, we really shouldn't use those earplugs. And he remembered all of that, just from that conversation where I told him about my research, I was really impressed.

Will 19:40

Yeah, there was, I mean, a lot of detail there. And, you know, he was thinking about, you know, what some of the potential outcomes and impacts of your ability to access this record?

Dani 19:57

Yeah. Yeah. I was like, do you want to defend my thesis for me? Because you do a great job.

Will 20:03

Yeah, that was really cool.

Keighley 20:04

Yeah. And but I could totally hear what you're talking about when you're like, and then he asked a question, and you go to answer it, you just give them a little bit of information. He's like, Well, I know, I have more ideas. I mean, that's just like, that's so cool to be that engaged with what you're talking about that he wants to just consistently know more. Plus, like, you guys have an awesome relationship as siblings.

Will 20:26

did that. How did that make you feel when Allan was, was so intensely interested in your work?

Dani 20:33

Oh, amazing, for sure. And he was asking such amazing questions like they were, they were all pertinent. And, like, work, were questions I had definite answers to because I do this research. And I just really wanted to answer all of them. And then he would ask another question. So this the whole interview, I think I said, this already lasted an hour. And at one point, I was like, stop asking questions, I'm going to go back and answer the 10 questions, I remember you asking, and just like, hold it inside, if you can, because I know you want these answers. And I'll try and keep them short. And then I was able to jump back five, and then he couldn't handle it anymore. And he asked me more questions. But that is really stupendous. Because I never had a conversation with like that with anyone about my research, where he was just so excited to learn more that he like, literally couldn't hold it in.

Keighley 21:37

First will hear my grandfather, Mom and Dad talking about the stresses and strains of a graduate student and their advice for how to keep them all in check.

Bud 21:46

Well, I think there are goals that Keighley has probably put on yourself and others have placed upon her whether she likes him or not. But there's there has to be certain things that she needs to achieve in order to continue on and in this role as his her in her research. And the role the road to the PhD,

I would think it seems like it's a terribly confusing, and at the same time, maybe exciting because when you think that it some point in time, there may be something that she could discover or her team could discover that nobody's known about or could help advance something that somebody doesn't know about. So like I say, it's probably exciting and complicated at the same time.

Michelle 22:39

I think in that academic environment, as a graduate student, there's probably a tremendous amount of pressure to produce papers to be published. Just because in order to get funding, you have to be well known. And so if you're not doing work, that's not being published, that's not being.. what's word I'm looking for here, people... passed out to other ...distributed out to other people, then you're you're not really doing work that's being validated outside of your little bubble.

And so I think that's probably a big part of it. And so obviously, that is a trickle down into what your research is doing and what your research is producing. And, you know, I really feel though, like some of the extraneous stuff that you do with regard to teaching and even your own classwork, I sometimes feel is like a secondary thing to, to that, that it's not that your education in the lab is probably paramount to your education outside of the lab.

Keighley 23:57

Yeah, I mean, you guys can probably tell that I talked my parents quite a bit about the role of publishing and how much that influences my success as a student and how much that plays into our field. Right, definitely think you're nailing it that my role is to be a graduate student. And that is to be a researcher, predominantly, it is education is something that's supposed to supplement my dominant work in the lab, supposed to help me be a better researcher, but not necessarily, as a student anymore. We're getting grades as your top priority.

Ric 24:29

So you know, as you roll into the new year, it's probably a good time to pause and reflect on the balance that you're striking in your life. Things come up that you're interested in doing, and you pursue them, always with a goal of where you want to go. But I think sometimes things get a little out of balance, like your mother was saying.

And these sorts of transitional periods going into the new year, it's a great time to stop and ask yourself, what's the most important thing I should be doing? What should I be spending eighty percent my time on? I'm not neglecting the things are going to help further the career that you want to create for yourself down the road. But first and foremost, if you don't take care of the basic things, the first things, that other stuff will matter, because you won't have a degree behind you.

Will 25:23

Um, yeah, like you were saying earlier, it seems like you're

so who did we hear from specifically there?

Keighley 25:31

My grandfather was first and then my mom and my dad is at the end.

Will 25:34

Okay. So two generations of perspective. And they they both seem keyed in on the the logistics, the say, Yeah, I guess the logistics that you have to deal with? You were you're, you have to balance research and and classes. And if you're concerned with publishing, then classes are the more important one. And they said

Dani 26:06

you mean research is the more important one.

Will 26:09

What did I say? You say

Dani 26:10

classes are more important? Yeah.

Will 26:11

No, I didn't say that. [laughs]

That's really, really interesting that they that they seem to, to really get from you or, or because they're paying attention to the wider conversation, some of the details of that.

Keighley 26:27

Yeah, I mean, I'm very fortunate to be able to, like talk to my parents and my grandparents fairly regularly. And they want to know these things that makes it really easy to tell them because they're asking these kinds of questions like, what do you actually do?

Dani 26:42

Yeah, and I definitely thought it was very interesting to hear perspectives from three different family members of two different generations. And like, yell it clearly talked about papers and, and maybe why you don't like why classes in grad school aren't necessarily the main thing you focus on? Yeah, so it was really interesting to hear

Will 27:03

it, but they, like they really hit on two things that are sort of like, you know, things that haunt the nightmares of scientists. Right. So your grandfather talked about the, you know, how complicated it is, but how excited is at the same time that they're sort of no guarantees. But the the stakes are really high, you could, you know, make a real impact on the whole world. And then your mom talked about publishing, which is definitely something that that we think about a lot.

Keighley 27:39

It's a nice segue into our next series.

Will 27:42

Right? Yeah, look forward to how to publish from stem culture podcast.

Keighley 27:51

So the other line of thought, which was honestly a lot harder for me to hear was my family's concerns about me completing my degree, quote, unquote, on time, and the impact of my degree following graduation, this audio starts with my grandmother, and also has both of my parents.

Carolyn 28:11

I somebody, I'm just worried about where you're going to go with this, and that you would spend all this time in in education. And I've heard you say some things before, that didn't sound like they would be financially beneficial to you for all the years that you've put in going to school that that you would come out making. But which I would hope after all this, that you would be making a very substantial income. I mean, it because you have such a great knowledge of what you do.

Is that something when you're doing all this research, and you say, That's probably not something you're going to continue to do? It's like, really, she spent all this time doing research? And then after five years, are you are you going to just let that go? To go? a whole different direction?

Keighley 29:05

Yeah. So I think one of the things that's really important, that I learned during graduate school is not just, oh, I'm learning a lot about breast cancer, that's, frankly, not the most important thing that I'm doing. It's learning how to become a scientist, right? So you use the tools. And moreover, I'm learning how to think through these problems. And it's getting those skills that I think are the most important thing that will be most transferable. And so when I say that I want to go into Sci Comm with my career goals is that there's no clear cut path.

That's, you know, scary, but it's also I get to have a bunch of adventures and I will ever get bored.

Michelle 29:46

To me, I just that's my probably my biggest concern is that you will be distracted by the next shiny object.

Ric 29:55

I've seen it kind of play out by saying Yes, a little bit to a lot of things. Because you don't want disappoint anybody, anything or forgo something that you find is interesting. artists. But the most successful path I've ever seen people on beyond is when they say yes to some things and completely notice something's not Yes, a little bit to a lot of things. That's a personal decision we all have to make. And if you can't make that you may not have the success in the timeframe that you're hoping for. But if you can turn that around, and say yes, yes, yes and no to these things, I think you'll probably move forward faster.

Dani 30:34

So that was really interesting, because I think what perhaps isn't clear to them is that in grad school, we already are a lot of different things. We are teachers, we are researchers, and we are scientists. And when it comes to those three things, we also have to be experts in a lot of different things as well. And especially if you don't want to go into academia. Yeah, you know, those three things aren't enough, you have to also learn how to be a professional and learn how to do a lot of other things that grad school doesn't necessarily prepare you for. And you have to go and seek out those opportunities or create them.

Will 31:16

Yeah, but one of the cool parts about grad school is that because of the freedom that we have, you do have oftentimes, and also because of the environment that we're in, you oftentimes have the opportunities to go and seek those, those moments of self enrichment in a way that probably you couldn't get in a lot of other places.

Keighley 31:42

Yeah,

Dani 31:43

sorry, I was going to respond to wills comment there. And that's one of the fun things about grad schools that if you're going to explore careers and other opportunities, now is the time. And even if it might feel like it's kind of maybe taking away from your research. In my opinion, we shouldn't only be

doing research in grad school, I mean, we're already forced to do classes forced, that gives me my perspective on classes.

Will 32:11

[leans in] We love class. [laughs]

Dani 32:15

But there's so many other things out there that you can do, and you get to know other people, and you know what they do, and it's this freedom to explore. And, and that's why I think a lot of the times I work more than a 40 Hour Work Week is because I am exploring a lot of other opportunities. But I don't think I'll have the opportunity to do that later on in my career.

Will 32:38

That it's not it's not exploration, like oh, or, you know, reading in textbooks or having people tell us about these things. We actually have opportunities to do them.

Keighley 32:50

Yeah, yeah, it's definitely and I think so they think they can like kind of realize that this is you have to prep yourself for when you're out of grad school to have like, a plan can't just like, be an ostrich with your head in the ground only doing graduate work and then like, emerge and be like, All right, now let's have a job. Obviously, there's to be some prep work to that. But so they have this idea, right? Like, this is audio I had to cut for time. But we talked about what is the average length of grad school, and I asked my family and they're like, Well, our only frame of references you so we're going to say five years, like, Okay, fair.

And I'm like, Well, you know, the national averages for biology is somewhere between six and six and a half years. And if you take even into consideration, programs that have a full year rotation, and like subtract that out, because that's like not time spent doing your, your degree. And that's still like between five and five and a half years. And so like I mentioned to them that because my research has been tricky to figure out, I might have to push back like a semester or so. And they immediately see that as like red flags, like okay, well, you have to stop doing all these other things.

Because your research is suffering, obviously, because you have to push back and I tried to explain like, No, no, like, that's not really the case. Because like, I am doing all these other things, because I actually have time because my research is going so terribly. Like I do have time for this. And I do make researcher priority, but they it took a long time. And then like dad actually in the conversation like Google, but the average time was, it was I actually had this on audio. So I'm going to save this forever. But he says I'm right. [Dani laughs]

yeah, you know, she's she's telling us how it is. And I'm like, yeah, you know, like, this is why we have these conversations with our families. Because they don't know all the time. And so they're running around with these preconceived notions of like, Oh my gosh, if you slide out a little bit, like that's the end of the world, or it means you're doing something wrong, or like, bless my grandmother, I love her so

dearly. But she thinks I'm going to make all this money. There's no way I'm going to make all this money. With my degree. Unfortunately, that is not how a PhD usually works.

Will 34:59

Well, actually, one of my comments about this was directly from my interview with my dad, and I can come back and we can actually listen to that audio if you guys want to. But I can tell you, what he said basically, is that once you've got your PhD, you will have lots of job opportunities, whether they're exactly the job opportunities that you thought you were going to have when you started out. Once you've got your PhD, you've got your working papers is how he puts it. It's sort of like the union card of yesteryear, unfortunately, I guess.

But no, I mean, you know, when I when I asked him, sort of if he was concerned for my future, he said that no, I'm not at all because and that's coming from a person who did this, but also has trained PhDs for 30 years and they all get jobs. Yeah, whether they get jobs in academia or at tech companies or, you know, doing Sci Comm. I mean, I think even now PhDs get jobs.

Keighley 36:13

I'm gonna play this for my family later.

Dani 36:17

Can you also give us just a brief background of your grandparents and your parents like work experience? Or? Because none of them have gone to grad school? Is that right?

Keighley 36:26

Well, then on has an MBA, okay, which she finished when she had me. So I clearly am the golden ticket. [laughs] but my dad worked for life insurance company doing information system security, so a lot of like tech stuff for 30 years. So he's got a pretty healthy understanding, he's actually helped me navigate a lot of like, interpersonal skills, because he developed a lot of those. And in tech, it was really interesting to hear his perspective. My mom ran an at home business for most of my my youths. And both of my grandparents. They neither of them actually went to college. But my grandfather worked in medical sales for his career. And my grandmother did a variety of things, usually at like school. So she worked as like a nurse type aid thing.

Dani 37:16

Yeah. Yeah. So from their perspective, it might be more like, Oh, well, you train for this job. And then you have this job, right? And then grad school is very much not that way. You we do we train ourselves, and we get trained in certain techniques. But the whole grad school experiences about like you were saying about training to be a scientist, which is really broad. And depending on what kind of scientists and kind of job you want, you might have different focuses. Yeah. Yeah. So I wasn't really thank you very much for sharing that with us. That was good.

Keighley 37:50

Thanks for listening.

Dani 37:53

One thing that was clear in all of our interviews is that our families really care deeply about us and want the best for us. We're all super lucky to have families like this. And that can make all the difference in the world, especially in graduate school, which can be incredibly demanding. And if you don't have a supportive family, you may have friends that you've chosen as your family that care about you deeply. If you want to hear more about friends and graduate school and building a support system, you can check out our episode two on grad interactions.

Will 38:24

So our experiment didn't go exactly as we planned, because families are probably more complicated than science. But the experiment was worthwhile, nonetheless. C'est le science (such is science).

[laughs]

So we heard that our families have different attitudes, and understandings of what we do. But more importantly, we heard about what our families really care about. They want to know: Are we happy? Are we taking care of? Do we have a secure future?

Thank you so much for listening. Next time we'll be talking about writing and science, where Zach, Dani and Keighley will be kicking off our third series on how to publish. They will be talking about how to do goodly at science writing.

Keighley 39:14

We are on Twitter, Instagram and Facebook as stem culture one word podcast visit our website at stem culture podcast com for show notes, references and information about our guests and contributors. Please leave us a review or five star rating an apple podcasts.

Dani 39:33

Until next time, don't forget to consensually hug a grad student or at least by them a coffee or London Fog tea latte lightly sweetened.

Allan 39:42

How big would a Griffin's wings need to be? Yeah, so like let's assume that a Griffin is the size of a lion.

Dani 39:48

Yeah, but has bones like a bird

Allan 39:50

Yes. But it's also evolved to..

Dani 39:54

I have an idea to see know how with birds. They look so fluffy. You think their bodies are actually way bigger? See how we look at a bird you're like oh, that bird like looks pretty big. But then when you actually look at the bones super tiny. So what if a Griffin what we're seeing of the Griffin



Allan 40:08

it's like fluff like a chinchilla?

Dani 40:10

It's like a fucking fluff ball of fluff.

Allan 40:14

So then like they're made to look bigger. So the more intimidating right

Dani 40:17

yeah. but if you actually touched one, you'd be like you're literally all fluff.

Transcribed by Will/<https://otter.ai>