# STUDENTS ASK THE QUESTIONS: Geology ADT With Student Host Sierra Ruiz & Professor of Geology & Earth Sciences Dr. Tania Anders Episode 155

# 00:00:00 **Sierra**

# I was never a STEM person in high school, didn't like it. And then I took oceanography, I took the oceanography lab, I took Marine biology. And thank you for motivating me to go that way because I am an English major and I still am.

# 

# 00:00:12 **Sierra**

# But the need to have both in that communication because I used to have them totally separate in my mind. And now, I run a Girls in STEM Club in Downey. Almost every meeting I'm drilling it into them, like "Don't forget to study, this or this too so that you're well-rounded. And that when you go into STEM, you'll have those soft skills."

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# 00:00:33 **Christina**

# Hi, I'm Christina Barsi.

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# 00:00:35 **Sun**

# And I'm Sun Ezzell, and you're listening to the Magic Mountie Podcast.

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# 00:00:39 **Christina**

# Our mission is to find ways to keep your ear to the ground, so to speak - by bringing to you the activities and events you may not have time to attend, the resources on campus you might want to know more about, the interesting things your colleagues are creating, and the many ways we can continue to better help and guide our students.

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# 00:00:56 **Sun**

# We bring to you the voices of Mt. SAC, from the classroom to completion.

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# 00:01:00 **Speaker 1**

# And I know I'm going to achieve my goals, and I know people here are going to help me to do it.

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# 00:01:05 **Speaker 2**

# She is a sociology major and she's transferring to Cal Poly, Pamona! Psychology major, English major ...

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# 00:01:10 **Sun**

# From transforming part-time into full-time-

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# 00:01:13 **Speaker 1**

# I really liked the time that we spend with Julie about how to write a CV and a cover letter.

# 

# 00:01:20 **Christina**

# Or just finding time to soak in the campus.

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# 00:01:23 **Speaker 1**

# To think of the natural environment around us as a library.

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# 00:01:26 **Christina**

# We want to keep you informed and connected to all things Mt. SAC. But most importantly, we want to keep you connected with each other. I'm Christina Barsi, Mt. SAC alumni, and producer of this podcast.

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# 00:01:37 **Sun**

# And I'm Sun Ezzell, Learning Assistance Faculty and Professional Learning Academy Coordinator.

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# 00:01:42 **Christina**

# And this is the Magic Mountie Podcast.

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# 00:01:47 **Christina**

# Today's episode is hosted by former Mt. SAC student Sierra Ruiz, who is a former student of her interviewee, Dr. Tania Anders, Professor of Geology and Earth Sciences. Our guest host, Sierra, graduated with her associates in English in January of 2021 and transferred to Cal State, Fullerton with one year left to finish her bachelor's in English degree.

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# 00:02:09 **Christina**

# You'll hear Sierra talk about her experience as the lead facilitator of the Girls in STEM Club for the Columbia Memorial Space Center. Also in this episode, Dr. Anders, will help you grasp how to choose a path you're passionate about, how cross disciplines can benefit each other, and the classes you might take while at Mt. SAC and beyond if you're thinking of exploring geology.

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# 00:02:35 **Sierra**

# Hello Mounties and listeners, we are talking to Dr. Tania Anders today. My name is Sierra Ruiz. I am an alumnus. I graduated from Mt. SAC about a year ago. Thank you, Dr. Anders for joining us. I really appreciate it. I love seeing your beautiful face even though they can't see you. I get that special privilege today.

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# 00:02:55 **Tania**

# You're so sweet. It's nice to be here.

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# 00:02:55 **Sierra**

# For our listeners today, I took Dr. Ander's oceanography class back in fall of 2019 and we reconnected recently so that she could talk to a Girls in STEM Club that I facilitate at a Space Museum. And so, she did me an awesome favor and because I know she loves education and I love education - but we really appreciate your dedication to education on all levels, informal and formal, and appreciate that you've come to this podcast to share some information.

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# 00:03:27 **Tania**

# Of course, I'm so happy to be here and it's so good to see you again. And it's really, really nice to be able to connect with former students and hear where your path has taken you since you graduated from Mt. SAC. So, I was really excited when you reached out again after your graduation to invite me to your STEM group. So, thanks for that.

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# 00:03:46 **Sierra**

# Thank you, because I still talk about you to my girls. So, just to get this started, can you give us a description of what your field is, like a general description so that people know why you're qualified and why you're talking to us?

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# 00:04:00 **Tania**

# Okay. So, I'm a geoscientist by training and I did get my education overseas because I'm from Germany originally. So, back then, the system there was a little different. So, I have a diploma which took me about six years to get, which would be comparable probably here to a bachelor's and then a master's because we did have to write a thesis and do field work and all of that.

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# 00:04:22 **Tania**

# And then I did another four years for my PhD. So, I did 10 years overall, education. My diploma was general geology and paleontology. The study of fossils is paleontology or ancient life. And then for my PhD, I specialized in Marine geosciences and specifically, climate change was the focus of my work.

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# 00:04:46 **Tania**

# But there's a lot of different areas, of course, a geoscientist can go into. I'd say the largest fields currently are probably environmental and government jobs. Those are probably two really big fields.

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# 00:05:00 **Sierra**

# So, just because you mentioned the jobs, do you prefer industry work or academia work? And I know industry's like working for private companies and stuff like that, but I think you've also done academic work and research, correct?

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# 00:05:13 **Tania**

# Yeah. So, I chose the path of more of academia. So, after I finished my PhD, I basically went straight into academia. I did have the opportunity to work while I was in college for a geoengineering company. And that's definitely one advice I would have for folks, is to seek out internships so that you can see, well, is this area for me or is this not what I wanted?

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# 00:05:41 **Tania**

# And so, for me, that decision became clear fairly early on that I don't want to work in the field of geoengineering, like working for a city and maybe say there was an old gas station somewhere, and the property wants to get sold and you have to take samples of the soil and there have to be an environmental cleanup, or sampling creeks and rivers because a pollutant spilled somewhere like a car accident on a freeway or something, and then the water got polluted in an area.

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# 00:06:10 **Tania**

# So, that's a really fun field for whoever would like to do that. But I could tell now this is not what I want to do. And I chose the path of research and love that. But I also, like you already mentioned love education. And so, I think life just happens kind of, and your path goes a certain way.

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# 00:06:30 **Tania**

# And I loved research a lot and I sometimes feel like, oh, I should do a little bit of that again on the side, because it also allows you to offer students research opportunities. But I love working with other people and love working with students. So, this for me, was a definitely a good career path.

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# 00:06:47 **Tania**

# You know, some people, for example, especially in like I would say mining and those kind of things, it's really, really good if you have industry experience first, and then if you want to go into academia, you can still do that.

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# 00:07:00 **Tania**

# So, for example, I used to teach for Texas A&M and we had an adjunct faculty, so a part-time faculty member who was a retired mining person, and he had lots of experience in mines and gold and all of that. And of course, he had lots and lots of amazing stories to tell the students then.

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# 00:07:17 **Tania**

# And so, I feel really, really lucky that I, through my time as a researcher have had over four months at sea on research vessels, so that ... I teach mostly oceanography, that I can certainly share a lot of experiences with my students. And so, I think it's really, really good to not just only have one path, but have seen various things.

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# 00:07:39 **Tania**

# And for my degree back in Germany, it was actually required before we graduated that we have a two-month internship also. So, I did mine at the Alfred Wegener Institute of Polar Research. So, I got to do a lot of lab work. So, that probably helped me decide, oh yeah, I really want to be a researcher and work on samples and so forth. But you could choose whatever internship you would like, but you just had to do two months. And I think that was actually pretty neat, that they had that requirement for graduation.

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# 00:08:10 **Sierra**

# So, what did you research there at the Wegener Institute?

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# 00:08:14 **Tania**

# Yeah, the Alfred Wegener Institute. I was basically part of somebody else's research project since I was still an undergraduate. And so, I was working on sediment core samples and doing like carbonate analysis and all kinds of stuff.

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# 00:08:29 **Tania**

# And then they were amazing, like because it was meant to be an internship and those are unpaid usually. Like when there were talks in the building, when they had other researchers come, then it's like, "Nope, go listen to this talk" or, "Hey, read this research paper and do that."

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# 00:08:42 **Tania**

# So, it was a real amazing experience. And through that, actually, I told them, oh, I would love to go on a research cruise sometime. And so, this is another advice: try to make connections with people. So, I did this internship and the person I worked with there, I told him I would love to go on a research cruise sometime instead of just only working on the samples that were already there.

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# 00:09:05 **Tania**

# And he contacted me before I even finished my diploma and said, "You know what? You can come on a research cruise as a helper on board to take samples two and a half weeks." And I got to fly to Iceland and get on a research cruise. And then I met people from various universities and talked to them. And that's how I went on that next path then.

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# 00:09:28 **Tania**

# So, when I finished my diploma and wanted to do my PhD, I contacted exactly those universities and talked to those professors, and then started my PhD there. So, it's really, whatever little decision you make, sometimes makes a huge difference on the path you continue to take at some point.

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# 00:09:46 **Sierra**

# I feel like when I took your class, we got like a little bit of research experience or at least having the fun out there in the field, and learning at the same time. The field trip that we went on too - I'm thinking of Pebble Beach, but it's Dana Point, right?

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# 00:10:01 **Tania**

# Dana Point, yeah.

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# 00:10:02 **Sierra**

# At Dana Point, do you think that that's at least like a little taste of research?

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# 00:10:09 **Tania**

# Absolutely, a tiny little taste. Like I try very hard when I take the students out there that they look at different types of sediments that you can find on the two different beaches there and compare them. I mean, that's what scientists do. You compare, contrast, and describe, and you can look at the water there, and do a measurement of what's the salinity and the tide pool organisms.

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# 00:10:33 **Tania**

# You know, with lab classes, you can do more than with electric classes - but with lab classes, I've done this, that ... we've put like grids over the tide pools and then you count how many critters are in each grid. And so, you absolutely ... it's meant to be there. I think geosciences are very visual and very hands-on. And so, I really love that about Mt. SAC, that in my department, we have a field trip requirement for all of our classes.

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# 00:10:59 **Tania**

# And so, some courses that are more learning field skills intensive, they even do overnight trips. And at some point, I'd like to do that for oceanography too, maybe for another level class than this one. But absolutely, I think it's a big, big part of the experience. And that's what you'll remember.

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# 00:11:19 **Tania**

# Like so, when I did my undergrad education, we had this little yellow card that needed to be filled by the time we were even allowed to apply for our graduation. We had to have, I think, 30 geology field trip days, I think 10 for paleontology and seven for mineralogy. And we had to have three mapping exercises.

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# 00:11:39 **Tania**

# And so, what do you remember? Like this is now, I hate to say it over 30 years ago, I think - that's what you remember. I mean, for our mineralogy field trip, we went into a salt mine. I was like 2000 meters below ground in salt mine. And it was so amazing.

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# 00:11:56 **Tania**

# So, remembering all those things or up we were and went to the Baltic coast and we were walking through the mud on the coast there, which has a huge title range. And I mean, I remember every field trip. And so, but do you remember every lecture? Not necessarily.

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# 00:12:13 **Tania**

# And so, I think the hands-on experience is so, so, so important. And it's the fun part too. Where it gets more informal. I always feel like on the field trips is when the students get to know me better and they usually open up more than they're often ... I almost always get the question like, "Well, what's life like in Germany, you're from Germany?" And it takes you aside from being just in the classroom and having a professor in the front.

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# 00:12:38 **Tania**

# So, there's so many benefits to this personal connection that you get on the field trips. But it's certainly also a taste of the work of geoscientists. A lot of geoscientists, they do work outdoors sometimes which is one of the reasons I got into the geosciences. I knew I don't want a desk job. I knew I wanted to travel, I knew I wanted to see the world. And I thought it'd be so much more fun to see the world through work rather than as a tourist.

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# 00:13:06 **Tania**

# And so, I mentioned earlier, Iceland. I've since been back for another research crew. So, I saw Greenland and Iceland, the Canary Islands, Norway - I don't know, like lots of countries where you say, "Oh, let me just go two days prior to the boat leaving and I can go a little hiking or see this or that."

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# 00:13:26 **Tania**

# And then of course, the experience on the ship itself is again, because it's hands-on, you remember all those things really well. So, that's definitely something that I enjoy. So, when people ask me like "What got you into the field? Why are you doing what you do?"

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# 00:13:42 **Tania**

# And I think one always wants to think about, well, what do I actually want my work to look like. I think I could be doing what I'm doing, also, if I'd chosen say chemistry or physics or biology. I always knew I like sciences, so I knew I was going to study science, but I could be a Marine researcher as a chemist because there's chemical oceanography or as a physicist.

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# 00:14:04 **Tania**

# And I could have been the same exact path, really. I could have been on research cruises, I could have then gone into academia. So, you see what I'm saying, you need to think about, well, what do you want your life to be like? Like I always knew I want to work with people, I knew I want to travel, I knew I don't want just a desk job. And so, I got all of that.

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# 00:14:25 **Sierra**

# You got the best of all worlds and a Montana Moment.

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# 00:14:30 **Tania**

# But I think that's something to think about. Like realistically, we also have to think about, well, do we want to have families one day? So, for me being in academia now, also offers that amazing opportunity as a mother of two children that I can choose to not teach in the summer. Of course, then you don't get a summer salary, but you can spread out the money over the years, not a big deal.

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# 00:14:52 **Tania**

# And then I can spend time with my children. It's how do you define quality of life for yourself, really. And everybody has to have their own goals there. Like young people often say, well, it's all about the money. I just want to go, I really want to make a lot of money. And I'm like, "Well, you'll probably revisit that because if you hate your work, then that's going to be hard to get up in the morning."

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# 00:15:13 **Tania**

# Like in my case, because I love my job, it's like if you sit until midnight grading papers, then it's like, yeah, whatever. If I didn't like my job, it'd be like, "Man, I really don't want to be doing this."

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# 00:15:24 **Sierra**

# Why am I doing this?

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# 00:15:25 **Tania**

# Yeah, exactly.

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# 00:15:27 **Sierra**

# And you mentioned that you could have gone into chemistry or biosciences. So, what made you settle on geosciences?

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# 00:15:36 **Tania**

# So, ironically enough, the way I made my decision was I knew like I mentioned, I wanted to do science, but then the second important thing to me was because my dad had been in the military, we moved a lot and I'd never really been settled anywhere for more than a year or so, and I wanted to have an opportunity to really get to know my grandparents better.

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# 00:15:58 **Tania**

# And they lived in Ailingen near Nuremberg, which is also the town where I happened to be born. And I'd only lived there one year of my life and always just go for family reunions, whatever, twice a year, visit the grandparents. So, I said I'm going to study in Ailingen. I'm going to do a science and I'm going to study in Ailingen and I'm going to live with my grandparents for the first year, and that's exactly what I did.

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# 00:16:20 **Tania**

# And I signed up for physics, and then I grabbed all the flyers from all the different other things and took them back, sat in my grandparents' living room and I read through the flyers. And the geology one just somehow was like, oh, this is awesome because you get to do physics, chemistry, math, zoology, botany, geography, like a little bit of all the sciences.

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# 00:16:45 **Tania**

# So, the next day, I went in and changed my major. So, for one day, I was a physics major and that's what it was. It's like, wow, you get a little bit of everything. And ironically enough, over the course of my studies, that was one thing that actually bothered me a little bit, because I felt like in physics and math, very often, you can set up an experiment and you can run a proof. And then at the end, that's what it is.

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# 00:17:13 **Tania**

# You have a definitive answer, and the geosciences, you kind of don't necessarily. You can interpret something one way and the next person another way. And sometimes that bothered me because I was like, "Oh, I want to know how is it exactly."

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# 00:17:28 **Tania**

# On the other hand, that's of course, the fun part about the geosciences, is that there's always something new to explore. And you try to do your best to get the best explanation. And it's kind of fun to engage with others who say "But I interpret it this way." And so, it has its pros and cons, maybe, that it's so incredibly diverse of a field, but that of course, gives you lots of opportunities.

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# 00:17:53 **Sierra**

# It makes you very well-rounded. You can do a lot and also, focus in on certain things and I really like that. So, because we have to talk a little bit about Mt. SAC; which pathways would you suggest in going into geosciences? I know you might say like, oh, I love oceanography because that's your department, you spent so much time building that up. But what pathway would you suggest?

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# 00:18:21 **Tania**

# If someone is interested in the geosciences, you would start out with a physical geology class, which is the class where you learn about rocks and minerals and earthquakes and volcanoes, kind of the big picture of our earth inside and out, how mountains form and plate tectonics and all that.

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# 00:18:36 **Tania**

# And I think because when we think about the educational system, K through 12, everybody gets a little bit of geosciences, interestingly enough, in like elementary school and in middle school. I know this for my children since I didn't go to school here - that's when they hear about Alfred Wegener and plate tectonics and all of that for the first time.

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# 00:18:55 **Tania**

# But then in high school, often the focus shifts towards, okay, here's bio, here's physics, here's chemistry, and maybe some schools offer environmental sciences. But that means really the last four formative years of the school experience, people don't hear too much about geology. So, I think that's why maybe a lot of people don't know well, what is it exactly?

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# 00:19:18 **Tania**

# So, that's why I suggest start with physical geology. The class that would follow is historical geology, which focuses on the history of our planet from the beginnings 4.6 billion years ago to today and what organisms evolved and went extinct, and all of those fun things. And those are the two main geology introductory-level courses that just about all community colleges offer.

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# 00:19:44 **Tania**

# I think Mt. SAC is exceptional in, first of all, we have a large department for a geoscience department at a community college. And many community colleges have one professor. We have ... I think we're five of us. And we offer such broad specialties in classes so that students can really see a lot of different things.

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# 00:20:06 **Tania**

# Like you mentioned, I teach the oceanography which a geoscientist could go into which like what I did. We also offer climate change classes, which I think that's definitely a field that's growing. I think also in terms of geoscience jobs, I think that they often call the geosciences, the science of the 21st century because we have to address all the issues with climate change that we've been handed now.

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# 00:20:30 **Tania**

# But we also have like natural disasters, we have field methods courses. You were mentioning the field earlier or just the geology of California so students can travel. Those are the ones that have lots of field trips. And so, that's where you can really get a taste for it. And I think that's also where they get hooked, is usually the field-based classes. Like field methods or geology of California.

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# 00:20:54 **Tania**

# So, we are really, really fortunate that we can offer that many classes to our students. So, I think Mt. SAC definitely allows folks to see, "Is this for me? Or is it not for me?" And then of course, you can get a transfer degree, which is amazing because then you move on to a four-year school for another two years. And I can say from my own personal experience now, because I have a son who graduated from high school in 2020, and obviously, our pandemic year.

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# 00:21:25 **Tania**

# So, even though he got into the UCEs, it was like, well, he's going to be at home. So, we had always thought maybe Mt. SAC is the right way to go. And it made it so much easier because he was at home anyway. And so, he did a year at Mt. SAC and, oh my gosh, saved me so much money. And he had some high school credit and took full load.

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# 00:21:45 **Tania**

# So, he basically transferred out within a year and is now a junior already. Within a year, he transferred out as a junior. He's not a geology major, but point being, it's amazing that you can get an amazing education at a two-year school and then transfer out and have just two years left to get a bachelor's. And I think that makes education just a tad more affordable for all of us.

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# 00:22:09 **Sierra**

# That's personally something I really miss now that I transferred. I saw this semester's parking pass for Fullerton and oh my gosh, it's more than my tuition was about. And it makes me want to cry a little looking at it. But since you mentioned transferring, we know that you worked both at a four-year and of course, at a community college, and it sounds like you do recommend transferring. But what schools would you recommend transferring to for the geosciences? Like do you have like your favorite?

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# 00:22:38 **Tania**

# So, first of all, I think there's more and more desire to create opportunities also for people who do not want to like go bachelor or master's or PhD even. So, we just started in our department a geotech program. So, that's brand new and which gives you a two-year degree then.

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# 00:23:04 **Tania**

# And so, for someone who says "I'm really not so academically inclined, I love being outdoors all the time, I don't mind taking samples for someone and then dropping them off in a lab and somebody else does the analysis or whatever" - there are opportunities with a two-year degree also. But overall, in general, bachelor's is definitely at the level to go for most if you look at and read up on it. It's like that's the minimum is usually a bachelor's.

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# 00:23:37 **Tania**

# The salaries for a bachelor's can be as low as 30 to 40,000 starting salaries. And when you have a master's, it just jumps up so much. It's 40 to 80,000. And so, I think that's something to keep in mind if you feel like this is my career, I like it. Adding another two years of education after the bachelor's will be a really good financial investment because your salary's going to go up so much more.

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# 00:24:13 **Tania**

# Going then to the PhD, that's really only required if you want to go into academia or some geo's engineering office as they like to have one PhD. So, their letterhead can say a PhD, but they'll hire maybe one of those. So, really PhD is for academia, salary difference between bachelors and master's quite substantial so it might be worth it.

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# 00:24:35 **Tania**

# One advice that my father had given me; he said, go as far as you can, right out of high school, as fast as you can while you have no financial obligations and while your brain is used to always just learning, learning, learning. And I'm still really grateful to him for that, because I graduated from high school, then did my undergrad, and then went straight to PhD.

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# 00:25:00 **Tania**

# So, I was 29 and I was done and I had my terminal degree and I had a bicycle the whole time. I mean, gosh, I had a dorm room, what expenses do you have? Food and your bike, whatever. And now, of course, it's completely different at this point. I'm a single parent of two children and I have a house mortgage and an end. I could not even see myself.

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# 00:25:26 **Tania**

# Now, I admire so much people who after 10 years working say, "Oh, now, I'm going to go back and get my master's." I really admire that. I don't know if I have the energy for that. So, I'm forever grateful to my dad that he said, "Do as much as you can right away."

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# 00:25:41 **Tania**

# But again, having said that, there's certainly jobs out there with a bachelor's. I had a friend once who was from Mississippi and used this really funny analogy. He said ... because he worked for the U.S. Geological Survey for a little bit, and he said, "If you're the one with a bachelor's, you're the one standing in the ditch," as he said, and this is his Mississippi example - "With the mosquitoes around you and the water snakes around you. And you're taking the samples that the person with the master's who's standing next to the ditch is telling you to take."

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# 00:26:18 **Sierra**

# Oh gosh, yeah.

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# 00:26:19 **Tania**

# And he said, "And the person with a PhD, he's sitting in an air-conditioned room and telling online on the phone, the master's to tell the person with a bachelor's, hey, have him take that sample.

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# 00:26:31 **Tania**

# So, in other words, the higher up your education level goes, the less maybe of the unpleasant work you do. But on the other hand, that's what some people want. I have a friend who has an amazing career with the U.S. Geological Survey, travels the world. I mean, he has a bachelor's and I mean, he's seen so much and he's written publications, so you can't generalize. But it's still interesting to think about it in that way. Like the higher up you go, the more pleasant potentially your job gets.

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# 00:27:05 **Sierra**

# I think that's true on most levels of any industry.

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# 00:27:09 **Tania**

# Exactly.

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# 00:27:10 **Sierra**

# So, you probably already knew I was going to go into this because I run my Girls in STEM Club, but I want you to talk a little bit about what is it like being a woman in the geosciences field, if that's okay with you.

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# 00:27:21 **Tania**

# Yeah, no, that's perfectly fine. So, I went to college in the eighties and nineties, and we were about 20% female students in my institution at the time in the geosciences. So, sometimes, it made it hard when you went on field trips. Like I said, we did lots of field trips and you're always camping and sometimes just out in the wild and it's like, ugh, I need to use the restroom and asking ... you always had to hope, let there be one other girl that's also on this field trip so she can stand-watch kind of thing.

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# 00:27:53 **Tania**

# So, that for one, so about 20%, and I'd say in the PhD was maybe similar numbers, maybe a few more females, actually, more than 20%. I've experienced twice in my life where I felt like now I'm definitely being treated differently as a female.

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# 00:28:10 **Tania**

# One was we had oral exit exams for our diploma back in Germany and the professor for one of those oral exit exams, he gave me a grade that I thought was not fair. And somebody said, "Oh, but you're a girl. For a girl, you got a really good grade with him." And I'm like, "What?" So, I was not pleased about that.

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# 00:28:31 **Tania**

# And I had a similar experience, also oral exit exams for my PhD, where somebody also said something like that, what was clearly, I thought discriminatory. I also feel like there's salary differences at some institutions, especially when you start somewhere where you have to negotiate a salary. I think that's something women have to learn to fight better for themselves. I think a lot of men end up with higher salaries than women. So, we need to take classes for that. We need to train ourselves like, no, this is how you fight for your rights.

# 

# 00:29:06 **Tania**

# And that's something I actually love about Mt. SAC, for example. They have a clear salary scale. It doesn't matter if you're male or female. It's like how many years of experience do you have? This is where we start you. So, that's why state jobs are good in that sense. But I definitely feel like women often undersell themselves and are maybe not taking quite as serious.

# 

# 00:29:28 **Tania**

# So, we still have a lot of work to do even these days. There's still work to be done, but we've come a long way, so that's good. But if you think back, like in the sixties, like Mary Tharp is someone I like to use as an example for my students. She was the first one who really mapped the ocean floors and had a beautiful map that was published in National Geographic in the seventies.

# 

# 00:29:51 **Tania**

# She wasn't even allowed on a research vessel because it was bad luck women to be on ships. She was not allowed to be first author on her publications. It was her colleague, the male colleague. And this is in the sixties and seventies. So, yeah, we've come a long way, but there's more to be done.

# 

# 00:30:07 **Sierra**

# There's more to do. So, is there any advice you would have to a student considering going into the geosciences?

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# 00:30:16 **Tania**

# My advice always for anyone is follow where your passion is because like I mentioned earlier, then you don't mind late hours. You don't mind whatever, highs and lows. You really, really need to go with your passion. And the geosciences offer so many different opportunities that it really would be wise to try to do internships to see what area of the geosciences do I like best. Talk to your professors, "What got you into this field? Are you happy with it? What are some advice you have?" So, it always helps to talk to professors.

# 

# 00:30:51 **Tania**

# Think about what it is you want your job to be like. Like I mentioned, some people, they just love nature so much. They're like, "Man, I want to do field work all the time." Well, then a government job with the U.S. Geological Survey may be perfect for you or with a national parks services.

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# 00:31:09 **Tania**

# If you like lab work, then you choose a different route. If you are really into the environment where, like I said, there's a lot of jobs, then you pursue that path. Working on all other skills that are soft skills, everybody these days, all employers are looking for people who can communicate, people who can work in a team. In the sciences, people who can work with data, who can visualize data, who have computer skills.

# 

# 00:31:41 **Tania**

# So, it doesn't matter if it's geosciences or any other science or whatever other field; those are skills that all employers are looking for these days. You know, everybody wants a team player, someone who can write a report.

# 

# 00:31:56 **Sierra**

# Yeah, the soft skills matter. They're everything these days no matter where you are. So, just a thank you from me to you. I credit you with getting me into STEM. I was never a STEM person in high school. Didn't like it. And then I took oceanography, I took the oceanography lab, I took Marine biology. It's what I really enjoy in the STEM field, so I want to thank you for that.

# 

# 00:32:18 **Sierra**

# And thank you for motivating me to go that way. And I remember ... I don't know if you remember back in 2019, we had a conversation about ... because I am an English major and I still am. But the need to have both in that communication, because I used to have them totally separate in my mind. And now, I run a Girls in STEM Club in Downey.

# 

# 00:32:42 **Tania**

# Exactly

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# 00:32:43 **Sierra**

# And it's so great to have those things intertwined. And I was drilling it into them when you were there, but almost every meeting I'm drilling it into them, like "Don't forget to study, this or this too so that you're well rounded and that when you go into STEM, you'll have those soft skills." So, just thank you.

# 

# 00:33:01 **Tania**

# Oh, well, you're so, so kind to say that. And for me, of course, those are the success stories that motivate me every day. It's just so beautiful to see the path of different students and sometimes, you don't even know what's going to make a difference. And I think that's always important to remember for all of us. Each conversation you have with your little group of girls there too, you are having an impact.

# 

# 00:33:27 **Tania**

# So, it's like, so paying it forward and I had a student once I'll never forget her. She had a very rough time at home and she told me once she actually kept a photo of me by her bed because I had gone through a divorce and I was a single parent and she was going through similar things and she's like, "If she can do it, I can do it."

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# 00:33:50 **Tania**

# And so, to just see that from one woman to another, you can be a motivator. It's just like that's so awesome. And I still ... and I've been at Mt. SAC for six years now. I was for 15 years at Texas A&M. I still have students from back then contact me and it's like, "Hey, can I put you down for letter of recommendation?" And it's like that's what's awesome about my job.

# 

# 00:34:14 **Tania**

# And so, again, thank you so much for taking the time to do this with me, and please keep in touch. Again, that's what-

# 

# 00:34:23 **Sierra**

# You can't get rid of me.

# 

# 00:34:23 **Christina**

# Transferring from Mt. SAC to university to earn your bachelor's degree has countless benefits and opens the door to many opportunities. Learn how to do so with an Associate's of Arts or Associate of Science transfer degree like we highlighted in this episode by using transfer resources such as the counseling department or the transfer center. Just go to mtsac.edu/counseling or mtsac.edu/transfer.

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# 00:34:29 **Christina**

# Thank you for listening to the Magic Mountie Podcast. And don't forget to share your favorite episodes.

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