

DELANEY SCHROEDER-ECHAVARRIA AND DR. CUTCHA RISLING BALDY

*"The thing that is missing, and has always been missing,
from Indian education is Indians."
– Vine Deloria Jr., 1991*

**This transcript represents a conversation between
Dr. Cutcha Risling Baldy and Delaney Schroeder-Echavarría.**

It was a cold and rainy day in Goudi'ni on March 4, 2024. It was a Monday, so people were coming back from the weekend and were moving slowly throughout the campus of Cal Poly Humboldt. Located on the Traditional unceded land of the Wiyot people, the university is small, but within its scope is the largest population of Indigenous scholars within the California State University system. On this day, I [Delaney] attended my decolonizing methodologies course, participated in a graduate council meeting, and interviewed one of our most esteemed Native scholars, Dr. Cutcha Risling Baldy. I have been fortunate enough to have Dr. Risling Baldy as one of my mentors and educators throughout my time as an undergraduate and now as a graduate student, and we have had many conversations about what it means to have Traditional Ecological Knowledge [TEK] as a foundation within our work. These conversations usually focus on the relationship between Indigenous peoples and knowledges and universities built on stolen Native land. The following interview is one of those conversations.

Delaney (D): *I think we should start with introductions. Can you introduce yourself the way that you feel comfortable?*

Dr. Risling Baldy (C): I'm Dr. Cutcha Risling Baldy. I am Hupa and an enrolled Hoopa Valley Tribal member, and I am an associate professor of Native American Studies at Cal Poly Humboldt.

D: *What has your experience been within STEM academia as an Indigenous person and as a Doctor of Native American Studies?*

C: I can start from being very, very young, in really thinking about the role that science and scientific inquiry has played throughout my life. I do think that Indigenous peoples have some different experiences within Western science from the time that we're very young, because we are often growing up in communities that have been studied, and we are often being approached or included in ongoing scientific research. We would always talk about how we could identify the scientists at places that we were at, and this is sort of extending STEM into what

happens with anthropology and ethnography. Growing up as a Traditional gatherer, I worked with a lot of my relatives on land restoration, and we thought about what it meant from the perspective of being an Indigenous person who's trying to do things with the world around us. I remember learning about environmentalism in school and what it meant to be an environmentalist, and I kept thinking, that's just how we live our lives. As a researcher, I was very invested in the sciences. I wanted to do work that I thought would be important to my community. In my mind, being able to scientifically prove things would help my community in the long term as we were trying to push what has been happening with our salmon and the lands we work with. I thought being a scientist was going to be the most helpful way for me to do those things. And I really wanted to be a doctor. I mean, I am a doctor, [laughs] but I originally wanted to be a medical doctor within my community. My grandfather when I was young was diagnosed with early-onset dementia which was caused by alcoholism and PTSD. He had been a

boxer when he was younger, and I thought that I was going to do work on the human brain. I really wanted to work with our elders, and looking back I was trying to look at how we medically intervene in trauma and what it looks like to address trauma issues from the medical standpoint. I was at Stanford University and immediately started with STEM classes, because I was always told that I had to major in a STEM field to go to medical school, so I majored in human biology. This was the only plan I could see and there is just so much value in the world associated with being a "scientist." People are more likely to trust in your words, right? And I had sort of grown up in this way, that if Western science proves something, that then becomes reality. So my experience in STEM as an undergraduate was...I think I would use the term of "dehumanizing" almost. I couldn't see a connection between what we were learning and what was going to become part of my work that I wanted to do in the future. It was very like "If you can't memorize these fifty things then you can't do anything," and I didn't come from a place where people were able to give me the tools to be able to say, "This is how you would memorize this." And for some reason, I had internalized that asking for help was a negative thing. I felt like everybody who was in STEM already knew what they were doing and I was the only person that didn't, which made me believe I didn't belong there, that the people who belonged there were the people who were having, in my mind, an easy time. I had a lot of really negative experiences; failing tests and classes. Then there was an incident where I had a TA who told me that I was obviously an affirmative action student and that I probably only got in because I was Native and that it was giving me a disadvantage because all these other kids were already there and I would be playing catch up. And that was a crazy moment now that I think back on it, because it really was just sort of like "you don't belong here" and then really feeling kind of pushed out. When people ask me to share my experience about STEM, I always say, "*I was pushed out of STEM. I wasn't invited.*" I ended up majoring in psychology. I guess if you buy what psychology is selling, you're thinking, well, that's still STEM, right? But you're also dealing with people and human beings. What I started to see is the

complexity of what needs to happen as you're thinking about what science is and what it means to do research in a scientific field. Especially if you're somebody who does any research with people but also with our more-than-human relatives (animals and plants). I still don't feel like I was ever invited back into the STEM fields. I kind of found my own way through graduate school and getting my PhD, but because I had this experience and I had done so much growing up, I became invested in how I could build a bridge between these multiple disciplines that I had studied. I always thought of myself in this way: "I'm in Native American Studies and I'm doing Native American Studies but am I thinking about what science could be." And what Native American Studies is saying is, we don't separate these disciplines, actually they're very intertwined. And you can't say to yourself, "I'm a scientist but not a humanist or I'm a scientist but I don't think about what that means for the more-than-human world." Because all those things matter to what you're trying to find out about the world. I read a book by Vine Deloria Jr. called *Red Earth, White Lies*, where he's talking about the myth of scientific fact. He's asking people to have critical conversations about what science is and what role it plays in trying to make us believe that there's an infallible group of people who have all the answers. He's a leading Native American Studies scholar, but he's also a religious scholar and theorist. And I think what he adds to this discussion is saying, "You're trying to separate spirituality and religion and culture for what you're doing as a scientist and that's not what real science is. That's not what we should be doing. That is making you think that there's some kind of infallibility that science can reach, where you don't question its findings and you don't question the methodologies, you just accept it because someone has proven it to be a fact." Those were the moments where I had critical conversations about the things that we were doing, and watching how uncomfortable that made a lot of the Western science professors and researchers. And then I thought maybe that's what I'm doing now. I can walk into a Western colonial institution and have that conversation because of the way I've been trained both at home and in educational settings.

D: We talk about the fact that Western scientists are now super interested in Traditional Ecological Knowledge and Indigenous science and they want to incorporate it into their research, in their classrooms, and I think a lot of the reason why they're doing that is because scientists are starting to realize that Western science is lacking in its interdisciplinary approaches. It wants to be its own thing, you know? As you were saying, I felt the same way growing up. I never felt like I was smart enough to engage in science. All the kids in class were really good in biology or chemistry. I always felt that they had a natural gift and I was just constantly struggling to get by. In reality, it's because it tries so hard to be only one thing, and if you try to approach it in any other way, it's considered wrong. But now that whole ideal is becoming so outdated—it always has been but I feel like now it's gotten even more to the forefront in people's minds. Now scientists are being asked by their students "What about Traditional Ecological Knowledge? And these Western scientists are saying, "I don't know." Well, maybe you spent so long focused on one kind of science, one way of looking at the world that now you're realizing you are falling behind in your thinking and your process. And you know, I think that that can lead to a lot of struggles for a lot of people.

C: I do think I've been having to work through this with myself, but also I think with students that I work with, figuring out how we can break down and decolonize. Frankly, this idea about science, how it was a natural part of life to be someone who is observational and experimental, and to think about how I see the world around me and then how do I apply that and then how do I test it and then how do I make sure it works. We do that in our everyday lives, and we have done that for countless generations. So this idea of this thing that you carry with you wherever you go, well, my grandma told me, "I do it this way because of these things," and then someone says, "Well, that's not a scientific fact." But I just want to tell them, "Well, that's the elitism of what it means to be a scientist." I would say that my grandmother and my great aunts were also scientists, because they would say, "I just figured out that if I put this thing closer to the fire, this thing happens better. But if I don't do that, then I don't get this kind of effect, you know?" And so I constantly push myself to not be caught up in this kind of elite conversation. It's not about this elite conversation.

It's about how we all come together. To come up with things that we want to test and what we want to see. What that means for the world functionally. And I think if science opens itself up to community-based work and how we learn from people, that's where you get the ideas of how you are going to build climate resiliency. How are you actually going to solve these big major problems that we're facing? How do you approach the ongoing issues? And if you invite more people to that conversation, you have more diversity of experience, and then I think you get better ideas.

D: Yeah, absolutely. And we talked about how you decided to move away from pursuing a doctoral degree in biology and becoming a neurobiologist. You kind of already touched on this but my second question is **what caused you to leave Western STEM in your educational pursuits?**

C: I think really it was finding out that there were people who really liked going to class and they really liked all the stuff we were reading. They were energized by the way they were learning, and I felt none of those things. So I wondered, is that because I'm not the right kind of person to be here? Or is it that I'm in the wrong sort of place with people? Do I need to switch? I took a social psychology class at the same time that I was doing all these STEM classes, and that was the part that I really liked. At one point, a woman approached me and told me that I was a really good writer. She said, "You should be writing. You've got an amazing voice and not everybody can do that." And I said, "No, I'm a scientist. I write lab reports. I'm not a writer." And she said, "No, you have a voice that you need to share." And she was trying to encourage me to take a writing class. And I remember telling her, "No, I'm going to be a doctor." And she said, "Well, you can be a doctor, but you should think about pursuing this." So I took a social psychology class and really liked it, and then I talked to an advisor and she told me, "Well, you know, a lot of people go to all their classes and they really like them. They like being here, and they think it's really exciting, and they have teachers that they get excited about and professors they want to work with." I had experienced none of that, and then she said, "Well, maybe you're in the wrong major." It was really hard to hear that, because in my mind what I was being told was

that I was not smart enough to be in this major. I've had to really rethink that, especially with students when I tell them, "No, it has nothing to do with 'I'm not smart enough.' You should major in the things that you love to be around and do." And it's ingrained in us to think about how it has to give you a job, or it has to have a straight path outward, or it has to be something that other people can understand. I always tell people, "You'll always be able to get a job. You'll always be able to do these things, but it is also important to be engaged, happy, and passionate about what you're doing." It took me a long time. After she told me, "Oh, other people like their classes," I realized that I had to figure out if I wanted this. And I think that's something I do want to tell people, that we need to be really open with students. There are so many ways to do this kind of work, to really be a scientist.

D: I feel like I was in similar shoes. My parents told me that if I didn't get a science degree, it'd be really hard for me to get a job; I was kind of scared into pursuing a degree in the hard sciences and I was encouraged to go into environmental law. I was taking those classes and I couldn't stand to be in them. I changed my major so many times, and while I was in community college, I took horticulture science as my biological science requirement, and I fell in love. Working with our plant relatives opened my mind and I wouldn't change anything. I'm really glad I ended up going down that road. I feel like we've touched on a lot of these things, but I want to ask, what barriers have you faced in your pursuits, and what barriers do you think youth are at risk of facing today?

C: I think a lot of the barriers when I was an undergraduate student were really around learning how to learn, but also being okay with the fact that sometimes it's not you, sometimes it's systemic. It's the systemic issues that were obviously present within the disciplines when I was a part of STEM disciplines. I didn't have the terminology or the words at the time, but now that I've done all this work, I think, what does it really mean? To encourage Indigenous students to participate in these STEM fields when there are still a lot of colonialistic things that happen there. I'm at a point in my career where I'm sitting down with people who keep asking the same question, "How do you decolonize? How do you decolonize STEM? What does it mean to decolonize my syllabus or decolonize this and

that?" I've been doing the work for a long time, and I tell them, "Okay, here are these things that I would suggest about what it means to think about reconfiguring STEM so that it isn't a practice that upholds settler colonialism, capitalism, and imperialism. Ask 'What are we actually trying to do here, what does that mean for us long term?'" And then I remember once when someone asked, "What do we do to decolonize STEM?" my answer was, "There's stuff we could do, but do we want to?" Is that where we want to spend our energy, helping Western STEM to be a slightly better version of itself? Maybe that's not the thing we should have been doing. Maybe there are other things that we should really spend our time on. Instead of trying to help them. Maybe we have to work in these spaces and not keep trying to say, we can be part of STEM too, because maybe that's not a thing we want to be a part of. Maybe there's something else we could do with our lives, and do we want to spend all that time trying to help the STEM fields to catch up?" I think about this a lot. When I was little, my great uncle was an educator his whole life, and he was one of the founders of Native American Studies at UC Davis. When I would hang out with him, he would constantly be doing work with academics, researchers, and scientists. I would watch him do that work and put his whole self into trying to help them to truly understand, "Sure you think you're asking this question, but actually that question is informed by these things and that has a lot to do with colonialism." So every time a scientist comes in and says, "What's the highest temperature that a salmon's eggs can survive?" My uncle's job then would be to come in and say, "Okay, you're asking that question, but the reason why these things have changed is colonialism. What you're actually measuring is the impact of colonialism on salmon." He would start talking about history, and they would get very uncomfortable, because they wanted to believe that they could go into an area of research or discipline where politics, history, and culture didn't matter, and in reality, it's all super political. Your findings, no matter what they are, are going to have political implications, and sometimes these implications matter to the very lives of the people that you're working with. You have a responsibility to that. My uncle would point these things out, and I would watch him struggle with this conversation when he

engaged with scientists. They would sometimes get really mad at him. I have since learned that it's part of what I call the settler stages of grief. They would just say, "I can't believe that you are telling me all this stuff and I didn't know this before." They sometimes got really sad, and they would reject outright the things that he was sharing with them and say, "We're not going to do that." And I have to think, how arrogant are you that you come into a space and say, "We need your help with whatever it is, but we're not going to do that because we don't like it." And so I sat with him one time and I asked, "Why do you work with these people?" And what he said to me, I'll never forget and I have shared it with many scientists and scientific audiences that I speak with. He told me, "Western science is very new to this place. This place where we came into being, this place where we have been for time immemorial, this place where we have been for countless generations that we have thousands upon thousands of years of knowledge about. We have so much knowledge about this place based on so many scientific experiments; imagine that you created a theory 10,000 years ago and you've been testing it ever since to see how it changes based on what's going on and the environment around you. This is your life. That's Indigenous peoples. We have a lot of really deep scientific knowledge. Western scientists are new here. Western science is like a toddler in the development of what it means to be a science." My uncle said that Western scientists are like toddlers. And so I always figured that our job is to be the elders of this place and to help them so they don't burn the house down. In his view, we're guiding them in the hopes that they grow up and they grow into themselves. We're helping them to grow up. Telling a Western scientist that he is like a toddler to Indigenous peoples is really funny, because they get it right away. I've heard so many Western science folks say, "I totally understand. Yes, we are. We are new here. We are figuring all this out for the first time. We are like toddlers." I told one group this story: imagine you're a mom and your two-and-a-half-year-old kid comes up to you and you say, "You see that stove? That stove is hot. Don't touch it." And they ignore you and they go up to the stove, and they're still going to try to touch it. Maybe they touch it and then they turn around and look at you

and they say, "Oh, it's hot." And you say, "I know it's hot." And they insist, "No, no, no, I discovered it was hot." [laughs] Western scientists come in and they do a bunch of experiments and then they go, "Hey, did you guys know trees talk to each other? Hey, did you guys know that birds are really smart?" We know that, but good job. We're surrounded by all these people going, "Hey, did you know that sage cleans the air and is good for you?" And then we say, "Yeah, we know that." And then they insist, "No, no, but we proved it. We proved it." And that's what my uncle was trying to tell me: don't ever believe the elitism. Understand your grounding and then say to yourself, "They're still learning." Our job is to make sure that we hold our ground. Time is such a relative thing, and what Native American Studies scholars talk about is the fact that Native American peoples in terms of their knowledge and their epistemological beliefs and their understandings about the world geologically, historically are very different in time than Western culture in this place. Our time is based on a minimum of 10,000 years. Western culture's time is based on a minimum of 500–600 years. These are very different amounts of time. This is a period where Western theory and Western thought are the dominant culture that is teaching and doing things in education, higher education systems. They're the dominant voices in what becomes expertise. That time of those voices being the primary voices might seem very long. Actually, it's pretty short. And we don't think of this as forever, this period of time where this is happening. We have to prep for the next period of time. I love that about Native people, you can come to them and say, "Take the dams down, but it'll take 150 years for the environment to be back to where it should be." And I'll say, "Yeah, take the dams down! Take them down today because then we can start our 150 years of progress, but we are ultimately thinking about 150 years from now." I really love knowing that we are going to be a participant in that, even though we won't be alive when it happens. We know we are participating in 150 years from now because of what we're doing right now. That's what Native people mean when they say you should be thinking about the next seven generations when you do something because you are participating in those next seven generations just by the

decisions and the things that you're doing now. Those things are long-term. I feel like Western science is always looking at things as short-term in a vacuum, not thinking about how it all adds up to something, and how that data should contribute to become a bigger discussion about what it all means. I would say to people, "I can tell you they did a Western scientific experiment to prove that trees talk to each other," but then the Indigenous peoples would say, "Yeah, they do, why do you think we talk to them? Why do you think that we do these things?" If I had just come into this space and said to you, "Did you know that Indigenous peoples know that trees talk to each other? And they're interconnected in these ways." Then you would say, "Oh, that's cute." [laughs] But if I say, "A new Western scientific study came out which proved that trees talk to each other," just watch as people are internally more comfortable with that statement and think, yeah, okay, now it must be true. As if it wasn't just as true three sentences ago when I said Indigenous peoples know that trees talk to each other. So why do we have to be reaffirmed by Western science? Why does Western science feel like it can't just take that knowledge as it is and then ask the next question. That's why I think we get this disconnect, because we're constantly proving things that we already know and then it doesn't move to the point of asking the next question. What's the next question after that? Now that we've proved that. Now we know that that's true, right? I think what happens is that the more you start to get into this idea of what you are able to prove, what you are showing, that always kind of re-proves things, and Indigenous peoples say, "Yeah, that's what we've been trying to help you to understand." You very quickly realize that after you get through that process, your position in the world becomes less. I've been able to prove this thing and now what am I responsible for, now that I know this? I think that those are the kinds of things I see Indigenous peoples continuously trying to do. What we have been able to do, and where TEK is really important to what STEM is moving towards, is to be able to solve some of the largest problems that we face as a world right now. It's really a philosophical, a community-based conversation that I think Indigenous peoples are having because we have gone through 10,000 years with these

questions and have come out the other side saying, "We're responsible for these things, which is why we have set up our culture and society to be responsible to the world around us. We have done enough scientific experimentation to figure out that's how you have to live your life." It becomes a philosophical, spiritual, cultural conversation that I think a lot of Western science is still very uncomfortable with.

*D: I absolutely agree. I took an environmental ethics class and a lot of the theories and the things that we talked about really change your way of thinking about the world. When you tell people, "No, that's not how it works, just because your knowledge works for you, doesn't mean it works for everybody. That's not how the world works." You point out the fallacies in a lot of people's ways of thinking, and even though people spend years in academia getting these degrees, you can shut them down really quickly with just a philosophical question, and it really bothers them. I've had many conversations with people like that. A friend of mine went to Berkeley, and I had a conversation with her about animal ethics that really upset her. I just always think that if you're not allowing yourself to look at the bigger picture and ask yourself these hard questions, you're really setting yourself up for failure in a lot of ways. Failure is not always bad. I think that what a lot of Western academics don't realize is that failure allows you to learn and humble yourself and take into account other knowledges and other ways of thinking about the world. That doesn't mean that you have just wasted your life getting this degree or something, but maybe it's okay to realize that there's failure in your positionality. There are flaws, and that doesn't mean that you're a bad person or that the world's going to crumble around you, or that your research methodologies are incorrect. I think that a lot of people take it really personally. As you mentioned earlier, though, it's not necessarily the people, it's the system. Maybe people need to start looking to the system as what has failed them and not necessarily the philosophical questions that are failing them. The big questions aren't failing. Maybe it's the institution that has failed. That leads to my next question which is **what do you believe we need to consider when exploring TEK and STEM?***

C: When people come to me, they'll say, "I really want to bring TEK into my work or I want to think about how I introduce and engage with TEK in STEM pedagogically," especially in the Western sciences. Now I'm starting to say to people, "That's great, are you able to also engage with what that means for upholding the sovereignty of Indigenous nations? Upholding the determination of Indigenous nations. How are you going to engage politically with tribal folks?" You don't get to come in and say, "I like your knowledge, but I don't want to have to politically engage with what that means for me and you." Because the thing about tribes is we are political status peoples. We are nations within this nation. There are over 500 nations within this nation. It is a political thing that you are engaging in by engaging in our knowledge. There was a period of time—and in fact, this still happens on occasion—when it was illegal to engage in TEK. Indigenous peoples were arrested for that. They were put in jail. They were having their children taken away from them. They could get charges that politically affected their entire lives. There have been instances where scientists have come in and really exploited tribal communities and created situations where tribal communities are faced with exploitation all the way down to their DNA, the very things that make them human beings. Experimentation was done on Indigenous women, experimentation was happening with Indigenous folks, and I think it is really important that if you want to engage with TEK, you also have to engage politically with what it means to protect, uphold, uplift. And if you're not willing to have that conversation, I would say, "Cool, you want to do TEK, are you ready to fight for Land Back?" And if people say, "I don't even know what that is," I say, "Well then don't engage with TEK until you've done the work to figure out where we're at politically and what we need and how you're going to engage with that." We don't need people to just come in and use our knowledge; we need people to understand that our knowledge is there because of the political engagement work that we did to avoid being erased and eradicated and dismantled by this colonial system. So you owe it to that knowledge, to us, to the future, that you also engage with this politically, because the settler state exists to this day to dismantle and disappear Indigenous peoples. If you're not willing to sign up for that part of

it, then you shouldn't concern yourself with TEK. The exploitation of knowledge should be at the forefront of anybody's mind as they're starting to think about what it means to engage with TEK. It's not a cute story. You hear people say, "Oh, isn't it nice that they have a way to make an offering to plants or to think about plants in this way." It's not a story, it's not like something that we can present and people want to do it too. It is the political thing that we had to do. I actually wrote an article a while ago, when I was in graduate school. Actually, it was the first article I ever published, "Why We Gather," and it's about bio-cultural sovereignty. Some students of one of my colleagues read it in their class, and they talked about coming into a space as a scholar and saying to people, "Sure, we can engage in Traditional Ecological Knowledge, and we can learn more from each other," but the scholar also needs to say, "What you're doing here needs to be about bio-cultural sovereignty." I want you to think about the fact that when we used to go gather, we could get arrested. So if we're sharing this knowledge with you, how are you going to make sure that they write a policy that does not leave us out of this conversation? How are you going to make sure we're in the room? How are you going to make sure that we're the ones who are leading the conversations? How are you going to make sure we get the money? Because so much of the money goes to Western science and Western scientists. How do you push back and say, "Why aren't Indigenous peoples leading these endeavors? How are you going to make sure that doesn't become an issue again?" We will constantly come up against these issues with colonial laws and policies and agencies. We have to prove that we're able to be there, even though we're the most sought after for the knowledge of what they're going to do there. You can ask people, "What does political engagement with sovereignty mean for you?" If they haven't done the work to actually politically engage in sovereignty, they need to take a Native American Studies class, read a book, go to the events. Figure out what's really going on with Indigenous peoples and then understand their connections to that. When I talk about engaging with TEK and STEM, I also talk about bio-cultural sovereignty. I talk about what it means to think politically about why it's acceptable for somebody who's in a STEM field to go out and gather marine resources or into the

forest and decide what a forest is supposed to look like. Indigenous people have been engaging in those places for a minimum 10,000 plus years, and they continue to do that even if they're not invited into those places. Why are they not the ones who are invited first? Where aren't they the first ones considered? Why aren't they the ones who are leading that initiative? Why aren't they the ones running the forest? Why don't they own that land? If you're not asking those questions, if you're not willing to have that conversation, if you're not willing to be the person who says, "I'm learning from TEK and I'm upholding biocultural sovereignty," then I don't think you know what you're truly signing up for.

D: When I attended the IAC [Intertribal Agriculture Council] Pacific Summit, I was able to attend a talk with the California Indian Museum Youth Ambassadors, and one of the first things that they talked about was how they and people that they know have been threatened at gunpoint for being on their lands and gathering, and how they were yelled at by just random people in the park or were being stopped by police. When they (non-Indigenous peoples) encounter Indigenous people and Indigenous perspectives they don't think critically about what the history of this land is and where we stand and what we're doing here and the fact that the Indigenous person is sitting in an illegally occupied space. I don't think people realize that we are still living in occupation. And I don't think that is a conversation that ever crosses the minds of non-Native people and people in academic spaces. I think that they also believe that you can own land and you can own relatives. You can own a tree. You can go to a nursery and buy one and just plant it wherever you want. It's violent, and I think there are a lot of people who from childhood to adulthood continue to think that they can just own wherever their feet are. That there's no knowledge and there were no people here and this was just empty wilderness, empty space to take. And it always bothers me because that's how I grew up. I grew up in these public schools and the sections on Indigenous people were two or three pages long, and that was it. That's the only thing non-Native people know. And then we spent weeks talking about George Washington or the Revolutionary War. I literally didn't have any knowledge about actual Indigenous people until I came to college. Until I started listening to the stories that my nana shared with me

*and I started learning about my family history. That really ties into Western STEM. We're constantly teaching people that this is knowledge. This is the only thing that matters. Sorry, I'm like going off on a tangent, [laughs] but I think about that a lot, and what you had to say really resonated with me and this leads into the next question, **what is your opinion surrounding the rise in TEK implementation by non-Indigenous agencies, such as the White House memorandum in 2021 and the utilization of TEK in higher education, specifically in the universities you have been a part of?***

C: Being a part of Cal Poly, I think it's much like anything that has to do with Western institutions. There's a lot of cost. There are often many benefits for the institution and the people who participate in the institution and there are a lot of costs for the Indigenous peoples who participate in this sort of integration. It's the job of the folks who want to embrace, envelop, and bring in TEK to empower Indigenous peoples to be the leaders and at the forefront of that. They can't embrace TEK and also remain the most powerful voices in those spaces. It's up to us to say, "How are you dismantling your role here and uplifting Indigenous voices in those spaces?" Because what you see is that our knowledge is a key component of what needs to happen next, and it needs to come from a perspective of humbleness instead of just extraction. We can see repeats of colonialist institutions extracting from Indigenous spaces and peoples and minds and bodies, and what we have now is a bunch of Indigenous folks who do not want to see that happen with TEK. I think it's the job of the non-Indigenous folks trying to do this work to be the first to say to themselves and then to everybody around them, "We will not repeat a process of extraction from these communities and these peoples, and instead we will dismantle this system and uplift those voices." I see it as a possibility, but what I'm also seeing is the work of constantly asking those questions and pointedly demonstrating that it's not just a matter of extracting knowledge and methodology. That has been left up to Indigenous voices. It's fallen to the Indigenous people who are in these spaces to constantly be the person who says, "But are you thinking about biocultural sovereignty? How are you working with Land Back? What does this mean for the

bottom line of our natural resources? What are we going to do with these resources that we're developing?" We should no longer be the ones to bring it up, because it's exhausting, it's difficult, it's disheartening, and it makes people hyperfocus on you because they think of you as the problem, when what they really want which is just free rein do whatever it is they'd like to do. The thoughtfulness by which you do that should also be a thoughtfulness for the fact that you should be the first person to ask the tough questions and slow down. People want there to be an easy solution that can be offered for all of these very complex, horrific problems that have been created by colonialism. And people think, okay, well, maybe TEK is an easy solution to that. I always say there's a lot of stuff we could do right now if people would just get out of the way. We could do cool stuff, and we could watch the world change. But they're asking us to solve super complex problems with an easy solution, and when it's not easy we say, "We should do this. But that's going to take this amount of time, and you'll also have to change all these laws to make that happen. You're going to have to do this, and also, we want all the land back." You know what I mean. [laughs] Then they say, "I don't want to do that. It's too complicated." They want an easy way out of this really complicated thing that they created. And now you're having people tell you, "We can bring TEK into our science. We can bring TEK into our department. We can teach you." It's just a repeat of the colonial extractive mentality. The thing that I really find interesting is that TEK is on the cusp of being this thing that everybody's really talking about. There have been some huge initiatives that have developed in the United States in the last few years, specifically naming TEK as key to some of the things that people are doing. But then you also watch as people are still arguing about whether or not Indigenous people should have full control over arresting people who commit crimes on their lands. There's a huge missing and murdered Indigenous people's issue, and we don't have the legal system to protect us when extractive industries are coming into our lands and taking everything that they can and destroying it and then thinking it'd be really great if they could have all of our knowledge too. But how can you expect us to take the time to do the work that you

need to do to truly learn from TEK if we are facing on a very fundamental level everyday threats to our bodies and our futures and our children? Threats to our very existence. And if you're not willing to say that that exists, if you're coming to me without that, then you're also repeating a historical pattern. A scientist saying, "I want to talk to you about all your plant knowledge. I don't want to acknowledge that you have lived through a genocide when I'm talking to you about this. I don't want to talk about what it means that you're talking to me. Or that your whole family was killed in a massacre just a few years ago." They're talking to people post-gold rush in California and asking them for plant knowledge. They're not writing about the fact that these people had to live through a genocide and are coming out the other side with knowledge and are still trying to protect their future generations. We are doing it for the future generations. I feel like no Indian people in all of history sat down with an anthropologist or scientist and shared some knowledge they had because they were hoping that the guy would get tenure. I don't think they cared if that guy got tenure. I think these were things they willing to engage with because they saw the importance of this knowledge holding on for another 150 years. What I always imagine about Native people navigating this genocide is what it took to be in the middle of genocide and to be able to say, "I have to remember these things and I will make sure that this gets written down or I tell somebody else or I pass that on in my family." The way that we pass on knowledge in these ways, I'm now finding to be such beautiful ways of us saying, "This is how important this is. We're going to make sure that it gets through even if nobody believes us and they won't accept it." We're passing this on. The things I learned growing up came to me from family members who would tell me, "This is a song my grandma used to sing," and then they'd sing it to me as a lullaby and then I'd find out later it's instructions for something that you're supposed to be able to make out of certain plants or ferns. You know what I mean? These are the kinds of things that they were doing. They're passing on knowledge because this has to hold on. We went through all of that. And we are still fighting to be able to just go into public parks and get things that we need for our culture

and regalia and futures. We still fight with people to just be able to use areas that are sacred to us. We still have to throw a big fit because they come in and just build these giant windmills on this ridge and completely destroy a sacred site. No biggie! We have to be the ones who come in and say, "A hundred years ago, you guys came in and you said, 'What's the big problem with blowing up mountains and pouring mercury into the water?' And it obviously is a big problem, and we don't want another big problem." Then people compare Indigenous peoples doing that political work to what they call Nimbyism [Not in My Backyard]. And then we get talked down to, and we wait for scientists to say what they're supposed to do. Then the state gets to make decisions about how our community lives. And unless the state sees what's truly at stake, then I can't see them engaging with TEK in a way that isn't just extractive. So I would say to people, "It's great that Joe Biden says you should consider TEK on the same level as you do Western science. That's great. I think that's important. That's an important statement." But that doesn't mean we're not in there every single time that they ask, "Does this thing from a museum belong to you?" It's always a fight. They never ask, "How can we participate in this process of uplifting you? And your voices and your futures?" It's the same thing with all these people wanting TEK in their classrooms. One time I had somebody get in touch with me and say, "I'm going to do TEK in my physics class. Can you send me what I need to know so I can teach TEK in my physics class? Just whatever I would need to read?" And I literally sat there and I was this close—I didn't do it, but I was this close—to writing back and saying, "Yeah, sure, here's some stuff. And can you send me the four or five readings I need to do so that I can teach physics in my Native American Studies class?" Because that would be just what the other person does, right? And then you watch as the person tells you, "Well, no, I can't just give you four things that you read and then you can teach physics" and then I want to say, "I can't give you four things that you read so that you can teach TEK." These are the kinds of conversations we need to have, a real humbleness to what it means to invite TEK into your spaces. This is why I think a lot of Indigenous peoples are really cautious about that. They

are very thoughtful about how they approach that and they are constantly asking really tough questions. It's not just because they're difficult. It's not just because they don't know what the benefits would be if all Western scientists started doing TEK. It's because of these ongoing issues. I think if scientists are really interested in how they can bring TEK into STEM fields, they have to start with, "What does that mean for me politically and the way that I am engaging with Indigenous sovereignty?"

*D: Yeah, the way that you describe that just makes me think of constantly living in survival mode, just trying to survive. I really liked that you mentioned humbleness. I always talk about humbleness when I talk to non-Indigenous people who want to work with Tribes or want to engage with TEK or want to take NAS classes or such. I say, "If you want to work with Native people, you better humble yourself, and when you walk into these spaces and realize that you don't know anything, maybe that's okay." It's all about just realizing that the knowledge that you have, you can't bring that knowledge into Native spaces and act like that's gospel and treat Indigenous knowledge as if it's beneath yours. I also want to hone in on the rush mentality you mentioned. You talk about California with the gold rush, the timber rush, the fish rush, and then with Dr. Reed's book [Dr. Kaitlin Reed, *Settler Cannabis*], the green rush, it kind of sounds like there is a TEK rush. A knowledge rush, wanting to extract from these communities. Continuously, over and over again. And it's just this horrible cycle that has continued for so long and has caused all of these people, yourself included, to be constantly living in survival mode. What can I protect? I have to protect my culture, my children, and my knowledge. I have to survive. I need to be able to have this place, to be on my land. I think about this rush mentality and how it's another face of colonization, another face of genocide. And I think that statement goes well into our next question about staying connected to traditions and culture while working within STEM. And so **how do you stay connected?***

C: I think the biggest way is just to be as active and involved in my community as I can. I take inspiration from the community work that I do, and I think about it from the perspective of what that means for the work I do in this STEM field or with my own research or when I am

working with STEM researchers. I'm very fortunate to live in my homelands and really be near my Tribe, but also near the Tribes that I'm ancestrally connected to and near the Tribes that I grew up with and around. There's something really important about the fact that there are Native peoples now who have been able to complete their degrees and become a part of these areas of research and are doing this work. There has to be a kind of understanding of being a Native person who's doing that work from their home. It is so important. And I don't know if I have not seen a lot of value that comes out of institutions and organizations that really say, "What else we have here is Indigenous peoples from this place who are doing this work." One, we have a long-term connection with this area and that gives us a sort of an affection for all the other things that you have to put up with when you are involved with institutions. But two, it also highlights an opportunity for an institution to think beyond, "We are hiring or engaging Indigenous peoples, so that we can up our diversity numbers." To say instead, "What does it mean to really support Indigenous peoples of the region that we occupy? To elevate them and actually really feel good about the work that they do. That's part of what we need to do. That's part of what has to happen because we illegally occupy these lands." We are part of this system. I'm fortunate to do work from home. I'm fortunate to be in my homelands doing this work. I think that I can't sever a connection because it's here. I'm from here. My grandmothers told us growing up, "This land made you. You are the soil. The water from this place runs through your veins. This is you." To know that and then to come here and be here, knowing that I want to do good work for my community. I also think that it's been really important to understand that I'm not a part of an institution to make the institution stronger and better. I'm not thinking about how we make this institution the best version of itself, just as I'm not thinking about how we make STEM the best version of itself. I think what I say to myself is, "How do I make sure that other people who are doing work like this are able to do this work and get out the other side, ready to do whatever the next thing is." If we do the process and we help do that work, we are dismantling colonial institutions. That's okay. And if in the

process we're doing that work, we are pushing against systems. That's okay. But if we're also doing the work simply because we have a love for our people, our communities, and our futures. That's okay. So I constantly remind myself that I'm not here to be a warrior for the institution and feeling a little bit like it's okay to be here and not be caught up in what's happening institutionally but instead thinking about my connections to my community. That's what matters the most. It gives me a good perspective, because you can get caught up in the everyday sort of bureaucracy of what it means to exist in a colonial institution. It's very easy to get caught up. I always say to people "Indigenous peoples, Indigenous disciplines, Indigenous points of view, TEK, none of those things were invited into the university. None of those things were invited to be a part of these disciplines. We demanded our way in. Students protested to make sure that these things were available. This was a movement to tell institutions that they have to change." When you are the uninvited guests in this ivory tower elite space, you are constantly navigating what it means to be in an institution that truly doesn't feel like you need to be there. It wouldn't be so sad if you were gone. "We let you in and now you keep asking for other stuff, and you keep expecting us to do things, and you keep coming into rooms and demanding Land Back. Why do you think you can do that?" They think we should be grateful that we just get to be a part of this elite institution. The beautiful thing that I keep reminding people is, remember that's not what your life is about. You're not that institution. You are part of a community and you're a people who have a history and a culture. You have survivance and you have resilience running every day through your body, alongside this water and this soil and these fish and these more-than-human relatives that have been a part of you and continue to be a part of you. You have something bigger than that. That means that you don't have to take seriously all that stuff that they are arguing and fighting and grasping over. I don't have to participate in that kind of culture, because I have this over here that reminds me that in the end that's what we're doing here. We're trying to make sure that we get through so that we can do the things that we need to do to really uplift our community. In the meantime, can we have

different conversations? Can we talk about land return and protecting the fish and better water? Let's do that too! And I think we should all work together to do that, versus working together to figure out who gets the most accolades or who's the favorite of some administration. Who's the best at the bureaucracy? That's where I think we get a disconnect. And that's what I think happened when I was an undergraduate. I could memorize fifty things about mitosis and meiosis. But I couldn't understand why we weren't having a conversation about what it meant to be doing that kind of scientific work and how we could ask questions that actually really pertain to the world that we're facing today. What does it mean in the long term and what kind of person are we going to be coming out the other side? I needed to see those types of larger connections. I think what Humboldt's doing that not a lot of universities are doing is they're having their STEM majors in their first year take Native American Studies classes. They're saying to STEM majors, "Alongside these first-year classes that you need to take so that you can be ready to do STEM, you need to take Native American Studies." That's amazing. That's also really key to helping students to understand what they're doing. In Native American Studies, they learn the connections between the critical approach to understanding the history of science and Indigenous knowledge and what that means politically. They start to get very invested in science. Science for them is an investment in things that they can do to truly affect the world around them. They see that they can actually be a functional participant in all of these things. That to me has been something that has really helped the University to increase its retention rates and really think about how to help students say to themselves, "Maybe I did bad on this multiple choice quiz that was given to me in my chemistry class, but I can see that at the end of this really tough work, I'm gonna start having conversations about what it means when I do this kind of work. There will be a space in which I understand those kinds of connections across disciplines." So back to me, I get the most excited about the work that we could do. But I also think it's still asking a lot of marginalized professors to be those voices. I do think that there should be a lot more of us if you're going to say, "I also want to

make it so all of our freshmen have to take science classes" at your school. Think about what that means politically in terms of the work and people needed to really help these students out. The fact that most of these departments that you would be engaging with, like Native American Studies, are some of the least-funded departments on the campus. They have the smallest budgets, with not a lot to work with. They are some of the first to have their courses cut; these are the kinds of things you're participating in an academic political process. So how are you an ally for these departments that you will be relying on to really push your curriculum? That's the question I keep asking: what does it mean for you to be a political actor and an ally to the work that we do?

D: We talk about it all the time. It's just a matter of putting your money where your mouth is. If you're going to tell these students that they have to take NAS classes, if you're going to continuously profit off of Indigenous labor—because they are making a profit by these students taking these classes—if you're going to continuously make a profit off of Native instructors and off of this knowledge, then how come that money is not being allocated properly? I have a lot of friends who work in the heavy STEM disciplines here on campus and a lot of those students are so overwhelmed. There are so many classes they have to take and a lot of them can't graduate on time because of all these classes they have to take. I think, well, maybe if you didn't burn these students out, they'd be more interested in taking these classes, like advanced NAS classes, because if you take a 100-level class, you're only going to be able to get a semester's worth of knowledge. I think the real questions that you need to ask yourself as a person in STEM come to you over time, over periods of taking these courses. I feel if I had engaged in just one NAS class, it wouldn't have offered the real in-depth knowledge that you need in order to seriously take into account what Native American Studies is, what TEK is. How cool it would be if there was an interdisciplinary STEM program, a major or a discipline where you are able to engage in this work and actually learn something? I feel that a lot of kids take these classes because they're supposed to, but they don't really want to or they don't really engage in the healthiest way, in a way that is actually an upliftment to Native communities. I feel that if we took a step back and said, "If you're interested in

NAS, you should take more NAS classes. You're an engineering major. You should do that!" We were talking about that earlier. I don't think Western STEM leaves enough room for learning other knowledges. They say, "Oh you won't have room in your schedule, or you won't have time for that, that's not important to your career." I think that's absolutely ridiculous. As we said earlier, if you are passionate about something, and it is an interesting topic to you, that should be something that an advisor encourages you to do. The whole 120-unit cap thing and all the requirements seem to be another way of saying that your interests and the classes that are important to you and the NAS classes are not as important as your requirements. It's really frustrating, because I think that people can really do some serious damage with that mentality of not allowing people to engage in what they want to learn and what they're passionate about. This is kind of a weird deviation from that, but this is more of a fun question for you, **who is an Indigenous scientist that has inspired you?**

C: I think first and foremost, my family members and elders and folks that I always worked with growing up, who really taught me about Indigenous science from the perspective that it's an everyday lived experience and knowledge. I don't think you could have told me when I was growing up that we were doing science, because I was in a Western education system. I was in elementary school. But I look back now and realize, I didn't know that people grew up and didn't know the names of ferns, the different things they could be used for. I didn't know that they didn't grow up with people who would tell you, "That's this kind of tree and the way you can tell that is by this kind of leaf." You know what I mean? I didn't know that, oh, these trees are related and the way you know that is this. I thought that's how people inhabited the world. So it was really interesting as I was getting older to figure out that not everybody knew that. I didn't know everybody didn't have a dad who just would go driving sometimes on the weekends and just be spotting plants. I was spotting things that we might be looking for later. He would say things to me like "I'm just seeing how the manzanitas are doing." And I would ask, "What do you mean? And he'd say, "You know, if it's doing well, if it's happy." I just thought that's how the world functioned. So now I look back thinking, they were scientists who were

teaching me about how you view the world as a scientist. And when you can see what's going on, you can look at the way these leaves are acting differently and know that it must have been because of this thing that happened. You look at the way this animal is acting, and you know it must be for this reason. You see the interconnections of the world around you. I'm grateful that you can be a kid in a Western education system. You can be in elementary school and junior high, and you can internalize very easily that Native teaching and knowledge is not necessary for your everyday life. It's very easy to think, I don't understand why my relatives are talking to me about this and to sort of throw yourself into the belief that somehow the Native people are not teaching right because they don't wear a lab coat and they didn't graduate from a university. I'm grateful to my relatives who worked with me even though I think there were times as a kid that I would just say things like, "Well this isn't important or nobody cares about this or why would I have to," even though as a young Indigenous kid in school, I was struggling from what I was being told and taught and then what was happening in my family. As if that wasn't just as much knowledge and just as important. I have my own daughter now and she's great. She's lived her whole life having to do the same kinds of things, because it's been very important to us to pass those things on. I think because I've been very open with my own experience, she's never been at the point where she has said to me, "Well this doesn't matter, this isn't important." But I remember that from when I was a kid and I'm very grateful that we have these people now who I would say are big-time scientists. They're people with so much knowledge that other people would come from miles around to learn from them. And they were willing to work with me as an ungrateful little kid who was just trying to figure out what that meant. They were very thoughtful about how they responded to me and would explain what they were talking about. And they never stopped! I would think, that's not important, because we don't need acorns anymore. But they would say, "No. It is important. And I'm going to keep telling you," and I love that about our elders. I do a lot of work on the revitalization of knowledges and practices, and I will tell you, it was because of the visionary practice by

which our elders—as our knowledge holders, as our scientists—were making decisions that they would pass all this knowledge on, even if it meant we told them they were being crazy or that there was something wrong with what they were teaching us. They were going to do it anyway. Now, I look back at these instances where they would come to our school assemblies and they would do presentations on things or they would come when we were hanging out and sit down and say, "Let me teach you about this thing." And the fact that it survived and got passed on, I'm so grateful for that. That's inspirational. That's an inspirational science. I have to make sure that this science carries on, no matter what. My great aunt, who I'm named after, she was a basket weaver, but what that really means is she was a deeply knowledgeable plant scientist. To be a basket weaver, you have to be a deeply knowledgeable plant scientist. What it also means is she was a fire scientist because she had to understand fire and she had to understand how fire worked for the things she was doing and how to enact it. She also had to understand patterns of fire, because you start to see massive forest fires in the regions that we would normally use for gathering what we would use for basket weaving. So if there is a large forest fire, we have to understand on a large scale what it means for these things. What does that mean we have to do if we want to restore the forest for the things that we're trying to use it for. But she was also a political activist and she was a political scientist. She was writing policy and she was going to testify before legislatures about what this meant as a deeply knowledgeable plant scientist. She did that up until the end of her life. And yet she also taught kids how to be basket weavers and she also did workshops. She also went to women's groups and talked about the importance of connection to culture and art to help you through some of the most difficult times of your life as a woman. She talked about what that meant for how we could empower ourselves so that we didn't have to be caught up in relationships that were bad for us or a political system that would only define us by who we were married to. She was a political activist and a political scientist. She was a psychologist and would say, "You have to think about these things in the context of what it means when you weave baskets." Now I'm able to put those kinds of words together as a

much older person. When I was a kid, I was fortunate enough that they would do it even if I couldn't understand all those connections. So I'm still very, very, very grateful. I think some of the Indigenous scientists are a little bit younger than me. Elders would say to me, "You're very young," [laughs] I don't think so, but some of the ones who are doing work now, the people who are coming up and have been doing both Native American Studies and science are some of the most amazing folks that I have seen and I'm very excited about these new voices. What I also think is really interesting about them is that they are very tied to community. They are really thinking about the role of community in the science that they want to do. They are willing to have those conversations right out loud and upfront. And I think that they've seen the benefit to their science, where their science is actually ahead of other people's approaches to things because they are thinking about it in this way. I really admire Jessica Hernandez's work, the work she's doing on Indigenous science. Melinda Adams, who does fire science and environmental science—I'm a really big fan of her upcoming work. It has been really clear to me that a lot of Indigenous scientists have the experience that they have been kind of pushed out or rejected from Western STEM, and then they turn and say, "What do I really want to do?" and in this way they've been able to then come back into STEM and make something out of that. I really admire that about them, but also the way that they are unapologetically demonstrating that it is important to have those interdisciplinary connections, that you really can't do science without them. And there are other Indigenous folks who are doing the work to engage with Western science and looking at it from the perspective of representation. Nicole Mann is a California Native who is a NASA astronaut. Just imagine what it takes to get all the way there and still to have messages and understanding of what it means to be a Native person in these places and to have those conversations and to understand what that means for her as a representation for folks. And then I think about the people who are doing work in our communities. I really admire Kim TallBear, who is a scientist and does a lot of work around genetics and DNA, deeply, deeply understanding Western science but also a Native Studies faculty. I think about what it means politically to navigate

academia and then engage TEK within STEM. When you see a Native scientist who is also still very active and a part of Native American Studies or Indigenous Studies, that to me is so important because they are functionally demonstrating that it's not either/or. It's also not that because I did this big science thing and I'm a scientist, I don't engage. That's where I engage. That's what's important to me. I think that Kim TallBear is a really great leading voice in this public discourse saying, "I'm a scientist and I'm also a Native Studies scholar and this is what that means for my science." And so I want to encourage people to do that too, because sometimes it feels like you either go into the STEM disciplines or you don't, and if you do, you have to say, "I'm in chemistry, I'm in physics," but you can't say, "I'm in Native American Studies, but I have my background in chemistry." People won't view it the same way. I actually think the scientists that I really admire are the people who were, "I do Native Studies and my background is in genetics." You know what I mean? Because that shows a foundational understanding of why Native Studies is such an important part of what you're doing and the work that you're doing.

D: Thank you for sharing that. My last question for you is what advice do you have for young Indigenous people pursuing a career in STEM?

C: I would say, find your people, find your voice. Learn what you can learn, but don't make it be anything that defines you as a person, because the thing that will truly define you is the work that you want to do and the things that you want to engage with, whether or not you can pass a 150-question multiple choice test on a chapter that you read about the way the eye functions. Not that that's a specific example from my life, but whatever, maybe it is. [laughs] But you know what I mean? That doesn't define you and if you don't do it the first time and you want to try again, do it the second time. But if you decide, "I can't learn this way. I have to learn a different way," then that's okay too. In the pockets of spaces of STEM that make sense to you, you will find a way to grasp the totality of what you're trying to learn in that instance. Sometimes it's just that somebody's not teaching you the right way. Sometimes it's that the material isn't written well. Sometimes it's that you're coming up against a social or

a political thing that you can't reconcile. "If I answer this question this way, then it's asking me to believe this, and I can't reconcile that. I don't actually think that that's the case." The best scientists are actually the ones who will ask those kinds of deep, meaningful questions and not the ones who just can pass a 150-question multiple choice test. So don't let that be the thing that selects you out. That's what I would say. The best scientists are the ones who will actually push for those kinds of discussions, versus "But I memorized 150 facts about the eye!" The other thing I'll say is to remind yourself to care for yourself within all of the things that you do. Understand that institutionally, a lot of things are happening politically, and sometimes what you're up against is structure—it's actually a function of the structure that you're a part of. It's not you. I also tell people—and this is just sort of my own way that I engage in life—don't take it so seriously that you can't see all the ways that you could just make fun of what's happening to you in these moments. The ridiculousness of colonial institutions is something that Native people figured out a long time ago. They really just sat back and said, "On top of everything, there's the violence and the genocide and the capitalism and the ignorance, and on top of all of that there's the ridiculousness of these institutions, and what they're trying to do here." Ridiculous. There was a period of time when there was a colonial belief that they could eradicate queerness in Native cultures. I always tell people, you can't eradicate queerness at all. Because no matter what it will always exist. So really your goal is to kill everybody, right? That's not a good plan. So try to see the ridiculousness, the ridiculousness of disciplines, the ridiculousness of their foundations of belief. They want to be elitist: "We have come to this conclusion and now we're the great knowledge holders," or whatever. But I think even Indigenous peoples will tell you that the only way to truly learn is through a positionality and humbleness all the time that you don't know. There's always something else to learn, and what you learn will always be changing based on where you're at. A lot of times if I was doing something as a young scientific person, I was doing an experiment, I was helping a professor. I would say to an elder, "I'm frustrated because I'm trying to do this thing with this data that I found, and it's not

coming out, and this is what's going on" and they would say, "Well, did you learn something?" and I would say, "I learned that everybody answered this question wrong." And then they'd say, "Why?" and I'd say, "I think I asked it wrong" and they'd say, "Well then, there you go. You learned something." It's about you, how you are going to learn and change and adapt. It's not about this grander knowledge that you could find, because it's always very individualistic and it changes depending on the weather or something. And Vine Deloria Jr., you know, says, "You can't create knowledge in a vacuum. Knowledge is informed by everything around you and it can change at any time so we're in a constant state of change in learning." And that's the best thing you can remind yourself of. It's ridiculous what's happening. The best thing you can do is say to yourself, "This is not what defines me. What defines me is my community, my people, my history, my family, the things outside of this institution." Don't let the institution define you. Don't let the institution define what you major in, what you study. Don't let the institution tell you that one thing is more valuable than another. Because you will find that in your life as you explore the things you want to do, the true value comes from those moments where you connect with yourself through that learning, and then what you want to do with that.

D: Wow. Thank you for that. I needed some of that wisdom, because you know it's hard, it's really hard to separate. We've talked about it. It's hard to realize that I am not this institution. I can't change what I can't change. And it's always good to get that wisdom, to get that Indigenous knowledge of just realizing that's not going to define you. I remember you telling me a few months ago that in 20 years I will laugh about all these problems that I'm having right now. [laughs] They're not going to define me. And I just have to keep telling myself that, and I think that a lot of Native youth could really use that wisdom. Change is nature and we can't let these institutional systems, these colonial systems, define what it means to be us and how we arrive here and what we do here. So I appreciate that wisdom. That was the last of the questions, is there anything else that you want to say?

C: I will say that Humboldt has done a lot to try and document the experiences of Indigenous students, especially

those in STEM. I think listening to their voices and responses is really important. One of the things that was really highlighted for me is that learning about Native peoples, the things that we're doing right now, the ways that we're engaging in knowledge building, the history, those moved-beyond moments—"I felt good about learning about that" to "That actually empowered me enough to stay in school, because I was learning about things that really demonstrated to me the empowerment of my cultural and social background." And this is why I think even as people are saying, "Well, there aren't very many Native kids in higher education." or "Native people are the least likely to graduate from high school in the United States, they're the least likely to go to college." Then I think, well, if you could demonstrate for them the importance of Native American Studies and Native Knowledges in their higher education, they would all start thinking, maybe I could go there and learn about this and do this. Right now what they're being told is that they don't have a place there. And if they do, they have to accept the institution's way of thinking. I think that representation matters, and that's what I would tell people who are wondering what can really help Native students to succeed in STEM. They talk about support programs, about how money is a big issue. They talk about housing, and about being able to feel safe where they're living. Then they talk about those moments when they finally were able to feel empowered by their education. People say, "Oh, you're coming to college and you have to major in one of the major disciplines in order to succeed." But if they started saying, "This is how we empower our Native American Studies Department and curriculum," more Native people would start to feel really invested in how they can participate in that higher education system. And I think it's the bare minimum that we have to do. Because you come in, you occupy all the land and build the stuff on it. But here we are, still here and you want to work with us, then how do you empower our young people to feel like they can also succeed in this institution? Bringing TEK in is not just about how all students will benefit from that, because they'll start to see connections to community and how they work, how they do their science. We should also make sure that we remember that Native students will

benefit from that. Maybe that's what we should be doing, because historically and temporarily speaking they are not benefiting from higher education. And a higher education institution should step back and say, "What is wrong, that of all the people, these folks are not benefiting from higher education? What do we have to do to invite them?" instead of getting to the point where again the Native students have to demand space at the institution.

D: Yeah. When we were talking earlier about being a champion for the university, I think about myself, and I think about the fact that I'm here because of people like you and people like Marlette in ITEPP [Marlette Grant- Jackson, Academic Advisor for the Indian Tribal & Educational Personnel Program (ITEPP), and local Yurok artist] and Marlene' [Marlene' Dusek, Traditional Land Steward, Payomkawichum, Kumeyaay and Cupa artist and scientist] and all of the Native people who have decided, "I'm going to be here, and I'm not going to let this institution define me." I think that what inspires a lot of Native youth to continue to be here is the fact that you and people like you are here and you're continuing that fight. And I always think about what will happen if I decide to go down this road of higher education and become a professor myself. The goal of becoming a professor is to continue to inspire Native youth like myself to be here. That's the most important thing to me, because I feel that if you were not here, then who would be? I know who would be here teaching NAS classes and I don't want to learn from those people. [laughs] I think that that's a lot of the reason why Native youth think that higher education isn't for them. I think about that and it makes me emotional, because I wouldn't be here if it weren't for you and if it weren't for the continual inspiration that you bring by just being here and not letting the system, not letting this institution, beat you down. I hope to not let it beat me down someday. [laughs] So I thank you for that. And I thank you for your last words.

C: Thank you, Delaney. I appreciate it. And I'm looking forward to what we come up with on the other side of this.



Dr. Cutcha Risling Baldy, Associate Professor of Native American Studies at Cal Poly Humboldt, researches Indigenous feminisms, California Indians, Environmental Justice, Indigenous Natural Resource Management, mental health

and cultural interventions, and decolonization. She is the Co-Director of the NAS Food Sovereignty Lab & Traditional Ecological Knowledges Institute and Co-Principal Investigator, National Science Foundation FIRE-PLAN grant, in collaboration with the Karuk Tribe. She is also one of the Guiding Leaders for the State of California Native American Studies Model Curriculum project.



Delaney Schroeder-Echavarria is a student at Cal Poly Humboldt with a major in environmental studies, and a minor in environmental policy. Delaney's particular areas of interest are Indigenous food sovereignty, food politics, Traditional Ecological Knowledges, and justice-oriented food systems.

food systems.