Introduction:
This is life invented. Invent the life you want to lead. Invent the life you want to lead. Be creative, be challenged, be the solution. Go Broncos.

Narrator:
Welcome to the Life Invented podcast presented by Santa Clara University. From campus life to what it means to learn in the Silicon Valley, we explore how to be a Global Citizen in an era of change. This is: Life Invented.

j:
Today, one of the most significant challenges on Earth, are how to change the trajectory of what the scientific community around the world has told us is happening to our climate and the dangerous effects we, along with our children, will experience in our lifetimes. What does the future hold for our planet?

Michelle Marvier, Professor of Environmental Science and Chonsa Schmidt, Environmental Science major join us here on Life Invented as we discuss the fate of our planet, humankind, and what students at Santa Clara University are doing about it.

Alright Chonsa, thanks again for joining us and now, please dish yo' deets.

Chonsa:
My name is Chonsa Schmidt, I am 21 from Honolulu, Hawaii. I am a junior, class of 2018, studying Environmental Science at Santa Clara University, with a minor in Public Health and Sustainability. I have been lucky enough to travel with Santa Clara and a lot with the environmental science program, so I've really kind of got this passion and itch to travel and see new places, try new things. As well as, I am very passionate about the U.S. food system and how it affects the areas around it, how it affects people. The inequality that comes from food that people don't always think about or realize.

j:
Alright Professor, same request of you. Please dish yo' deets.

Michelle:
My name is Michelle Marvier and I'm a professor here in Environmental Studies and Sciences. And I'm also an alum--I am a graduate of the Biology department in the class of 1990. I am passionate about mushrooms --I love mushrooms, I go mushroom hunting in the winter around here and the spring. And yes I eat them, but I know what I am doing, so don't try that at home.

j:
Nice! So our oceans are deeply polluted, our wildlife, much of it is at danger of going extinct in many cases. How will students of Environmental Studies as well as Environmental Science, save the world?

Michelle:
I've been trying to counter that doom and gloom narrative for a long time. I actually think there is a lot of hope for the future, there's a lot of great things that are happening and it's going to be a different world for sure. I mean, the human impact on the planet is undeniable, we're changing things, but it's not going to be apocalyptic, you know, there-- unless, it could be but let's hope that doesn't happen. But you know, in terms of environmental change, you know it's caused by people, but people are also the solution. And I think we need to make sure we give people hope and motivation and tools to go change things, and I think that there's a lot of hope for the future.

j:
What about from the student perspective?

Chonsa:
I have a lot of friends who are recent graduates that immediately went out and just started working for conservation research or companies as well as environmental education. It's really important teaching children about, not just about nature, but allowing them to go out into nature is great for their development and really gives them a respect and passion for nature from an early, early beginning. So, it's kind of nice to see some of my friends go out and get some of those environmental jobs.

j:
Awesome! And Michelle, so you developed a course called conservation science…

Michelle:
It's a class I've developed, it's a textbook I co-wrote with Peter Kareiva who was the chief scientist at the Nature Conservancy. And as we looked around at the world, we said, you know, it's not just biology--we actually know a lot of biology, that's not the limiting factor for saving these species. The limiting factor is getting people to change their behavior. People are the problem here, but they're also the solution, and so we got to figure out how to get people motivated and you know, psychology, communications, anthropology, economics, and really how do you factor in that human dimension to make conservation work.

j:
So is this really a kind of new or cutting edge approach and view to how to make conservation work?

Michelle:
It is! It's the only textbook of its kind and it's been adopted by universities all around the country and beyond.

j:

And what's different about your approach? Can you give us an example?

Michelle:
Well, you know you mentioned one of the approaches is in restoration ecology, people have been looking backward and saying 'Oh, we need to figure out what species were here before, you know Christopher Columbus', and then try and recreate that ecosystem as it used to be. And you know, the truth is that the climate has changed now, and it's not going back, so trying to restore an ecosystem that was here a couple hundred years ago isn't going to work in many places. So we do need to open our minds and embrace some things that make people very uncomfortable like maybe even non-native species that can provide some of those ecosystem services or they can provide habitat for some of our endangered species, why not?

j:
Which typically is kind of a big no-no?

Michelle:
It's a big taboo, yeah

j:
Like don't introduce something that was not there to begin with?

Michelle:
Right, so that's a pretty controversial thing in conservation to say, maybe we should actually look for technology solutions, you know, like genetically modified crops, to solve some of these environmental problems.

j:
Chonsa, we are here in the middle of Silicon Valley, one of the great innovation engines around the world. How is the technology sector responding to environmental issues and working on solutions?

Chonsa:
Our engineering department here at Santa Clara, one of their main focuses is sustainability. You know, engineers from Santa Clara aren't just going to build a dam, they're going to look at what is this dam going to do the river species, to the ecosystem around it, what's going to happen? That's one of the great parts of Santa Clara, but that's also very popular to find in the Silicon Valley. Apple just built a whole brand new campus, and it's supposed to be one of the greenest campuses slash buildings ever made. They built it with the intent of being environmentally friendly.

j:
Professor, do you ever observe clashes of approach? You know, between capitalism and conservation, here on campus as well as within the private industry?

Michelle:
Yeah, you know what there is definitely differences of opinion, there are other priorities that people have. And certainly, making money is a priority for a lot of our students too. They want to start companies or work at companies that are profitable and I think what we need to do is make sure that it's not a conflict between those two-- you know it can't be environment versus jobs, it can't be environment versus a growing economy. We got to figure out ways that you can get both. A lot of people think, you know, there is an inherent conflict there, it's one or the other, but I think in the Valley we are proving that's not true. That there are a lot of ways forward that are going to make our lives more decadent and you know nice and pleasant lives and they're also going to be better for the environment. It doesn't have to be a trade off there.

j:
The Bronco community is buzzing about the future of STEM or you know science, technology, engineering, and math center being built here on this campus. What can we expect with this big, new investment?

Michelle:
Sustainability will be on display in the building, I know there are plans for displays to show how much energy the building is using at various times and lots of, you know, information about the building's performance, that students can actually learn from the building. It will be like a living lab.

j:
We've heard that the building itself has a goal to bring different students studying different topics together in one place, and break down silos and encourage interaction. Why is this important?

Michelle:
Yeah, yeah I know when I was a student here, in the late 1980s, in the dark ages, I was a Biology major. And I knew engineers, but I never once saw their spaces where they worked. I never saw their projects. I didn't even really know what they did or what design thinking was, you know, it was really very siloed. And even as a professor here, you know until just recently, I had very little contact with engineers, even though we are working for the same kinds of goals. So I think it is really great that this STEM initiative, it's not just about a building, it's about breaking down those silos, and making sure that, you know, that if you're a civil engineer working on water resources, you should be talking to environmental scientists who are interested in water resources. You know, bringing people together around those key issues.

j:
What are some of the discussions that are going on about kind of, what seems to be an offense to conservation and protection of the environment?

Michelle:

Yeah, there's some disturbing stuff going on right now. The thing is that corporations and nonprofits and people realize we still need those environmental protections. So if the government isn't going to do it, there is going to have to be other people who step up in different ways, and I think that we're going to see a shift from government taking care of a lot of that work to nonprofits and you know, individuals organizing and making sure that information about corporations' carbon emissions get published on the web. You know, it's really easy for us to access that and compare and see that, so we have to daylight a lot of that information and get it out there for people because it looks like, at least for the short term, the government may be a little bit headstrong.

Chonsa:
As a student, it's pretty scary, especially because we're going to be graduating, or I will be graduating with this administration that doesn't support the environment and I'm worried about the job force. I'm worried about what are my employment opportunities? They're making huge budget cuts to the EPA and the EPA is one of the places I would love to work in the future. This is where it becomes so so important that people are being more politically active. They're going out and raising awareness. They are donating and raising funds. They are calling their representatives saying 'This matters to me. Don't let this happen.' As well as, again, it's going to fall a lot on the consumer. It's going to fall a lot on businesses to take the initiative, to say 'If the government is not going to do it, then I'm going to do it, in my own life because it is important to me and the government doesn't have to speak for me.' You know, I still hope to work for the National Park Service one day.

j:
Chonsa, I know that for you, your road was not a straight line A to B. And that you actually did not start of your freshman year as this major right?

Chonsa:
So I actually started off as a bioengineer. One of the best parts about Santa Clara is that you have plenty of time, a lot of room in your schedule to really try out different majors, minors, classes. I took a few courses in a bunch of different departments my first quarter sophomore year and one of my favorite professors that I've ever had ever, he completely changed my life and way of thought was an environmental thought professor. So, it was the way he taught. He first of all, would never just stand there. I don't think he could stand it, he was so excited to be there. He would just walk around the classroom, and your head always had to be on a swivel. I never, you know, was too tired for class. I never wanted to miss class because this was so exciting, you know, just to be there. And we would do different readings of different perspectives of why is the environment important, what counts as nature. We talked a little bit about conservation, and then we would come into class and instead of just discussing the reading further, he would rip the reading apart. And he would say, you know, he would go into who is the author? You know, what are the biases in this writing? You know, why was this published? We looked at an article from *The Economist* and we looked at, you know, what is the motivation that *The Economist* has of publishing this article? And so, it really taught me how to think critically

and how to have that doubt and curiousity to really dive further, to do more with my education. And I found that as I keep taking more and more and more science classes, that the professors are just that passionate. They love what they're researching, they love what they're teaching, and they are so so excited to share that.
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j:
Chonsa, having the opportunity to study in a brand new, innovative building will be a cool feature for Broncos in the future. But, what kind of studying takes place outside of the classroom today in the natural environment you're hoping to protect?

Chonsa:
So, we have a club on campus called 'Into the Wild' and every weekend they have backpacking trips, ski trips, white water rafting trips, or maybe just a simple day hike but they have a ton of different options for students to go out and explore not just California, but really all over the West Coast. And they have spring break trips as well. They are going to Utah again, they are going to Hawaii this spring break which is really exciting. They are giving students that opportunity to learn about nature, to explore it, just as we were talking before about how important that is. Being out there makes you realize that what is going on in the political system is maybe not all that important, you know, there are things that are going to be here so much longer than people ever will be. And even, people talk about all this gloom and doom, and we're going to ruin the environment and duh duh duh duh duh. The environment is resilient. And it comes back and it revives itself. And even if, the worst case scenario, we just destroy everything, we use up all the resources, humans can't live anymore, the Earth will still be here. And it will take a long time, but it will rejuvenate itself… Trees will come back, new species will evolve.

j:
So really it's just our fate we need to be worried about?

Chonsa:
Yeah.

j:
Nature will take care of itself, I guess.

j:
Michelle, how do you stay inspired after twenty years of focus on this topic?

Michelle:
So, last year on spring break, we took a class of about sixteen students and we headed on down to an uninhabited island off the coast of Baja. And we kayaked around it, stopping and camping on beaches. And what was so great about that experience was seeing the students

without cell phones, without any electronic leashes at all--none of us. What we had was our little journals to write poetry in and share at night and we did. And the conversations were so rich and the students were so excited about every little thing, I mean, it's almost like you have five year olds around you again, you know, they're running up screaming, 'What do you think this bone might come from.' You know, they're just so excited, 'What do you think about this shell has a hole in it? What do you think might have caused that?' And just that joy that is ignited when people get away from the office, the books, the cellphones, and really reconnect with each other and with nature--it's so beautiful.

j:
And it really does, as you mentioned where we started, also comes back to people, and how people are influenced by nature and what that means to our own interconnectedness once we realize how important and vital nature is for us.

Michelle:
Yeah, it brings out our better selves.

j:
Well ladies, thank you very much for your insight, your advice, and for what you do.

Michelle:
Thank you!

Chonsa:
Thank you!

j:
We'd like to end this episode of Life Invented with a quote from the intrepid adventure and environmentalist John Muir who said "There is a love of wild nature in everybody. An ancient mother love showing itself, whether recognized or no, and however covered by cares and duties."

Here's looking forward to seeing the next wave of environmental scientists make their mark and hopefully positively change the future of our planet.

Narrator:
You've just listened to the Life Invented podcast presented by Santa Clara University, and there's so much more to explore. Visit us at scu.edu/podcasts, and learn more about Santa Clara's commitment to innovative and inspiring opportunities.