

Rise, Teach, Learn - Episode 6

Sustainability and Ecological Justice

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We acknowledge and are mindful that CSU, Chico stands on lands that were originally occupied by the first people of this area, the Mechoopda. And we recognize their distinctive spiritual relationship with this land and the waters that run through campus. We are humbled that our campus resides upon sacred lands that once sustained the Mechoopda people for centuries.

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Welcome to the Rise, Teach, Learn podcast. I am Dr. Chiara Ferrari, Director of Faculty Development at Chico State. And we are happy to make this resource available to our campus community and beyond. The podcast is hosted by Dr. Jamie Linn Gunderson. And she will engage in timely conversations with faculty, staff, and students and give you a taste of the Chico experience. Subscribe to our podcast and explore the many resources available on our website. Thank you for listening.

00:59

Hello, and welcome to rise, teach, learn. I am your host, Jamie Gunderson. In our sixth episode entitled sustainability and ecological justice, we celebrate Earth Day by discussing practices and pedagogies that serve to bring awareness to issues of climate change.

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All right, I am here with Dr. Mark Stemen, a professor in geography and planning. And I'm also here with Cheri Chastain, the director of energy and sustainability. And I understand that Cheri and Mark go way back as Cheri is an alumni of Chico State and Mark served as her thesis advisor. And so I'm really excited for them to come on today and talk a lot about climate change and resilience, specifically how it aligns to our campus commitments and strategic priorities. So welcome, Mark, and Cheri.

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Thank you.

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Thank you. It's good to be here.

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All right. So the first thing I want to do is I want to open it up and talk about some of the climate commitments our campus has made. And specifically, we'll get into the strategic priority for resilience and sustainable systems. But before we do that, let's just break down that commitment. I know there's like two components to it. But Cheri, can you kind of walk us through those commitments?

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Sure, no problem. Our campus has made a Climate Commitment. And this is a presidential Climate Commitment. The commitment is, like you said, it's twofold. So one piece is this carbon part. And that is our goal around becoming a carbon neutral campus. And then the second piece is a resilience commitment. And that is committing ourselves to being resilient as the climate continues to change. So ensuring that we have the ability to adapt and flourish as we continue to be hit with climate driven events, which we have most intimately experienced in Northern California. So this commitment goes back many years. In fact, the first point Climate Commitment was made back in 2007. And President Hutchinson reaffirmed this commitment when she came to campus as our president. So again, the commitment is twofold. We need to achieve carbon neutrality, but we also need to remain resilient. And so when the university strategic plan was being developed a few years ago, there were three key priorities that emerged within the university strategic plan, diversity, equity and inclusion, civic and global engagement, and resilient and sustainable systems.

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And so I've been working on a resilient and sustainable systems priority for our campus, we've taken a three prong approach to this priority. So number one, we're going to focus on reducing our operational greenhouse gas emissions, we're going to target investment in infrastructure, electrifying our campus, drive down emissions as much as possible. second prong would be then to measure and quantify the amount of carbon that we're currently storing in our campus soils and vegetation, and then work on plans to optimize and improve our ability to pull carbon out of the atmosphere and store it and sequester it in our carbon and soils. But we're an institution of higher education. So we need to remain true to our educational mission. And that's where the third piece comes in, of our approach to this strategic priority. And that is addressing the education that Chico State students are receiving while at Chico State. So the goal here is to integrate climate changing resilience into every degree path on our campus. We want to get to the point that every Chico State student who's graduating from our campus has had exposure to climate change and resilience as part of their curriculum, and that they're leaving equipped to be productive contributors to reducing our environmental impact to contributors into solutions, right, the innovators, the creative folks, the communicators need everybody engaged in this climate issue? And so I partnered with Mark, to work on these workshops. So Mark, you want to talk about the workshops and our approach there?

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Yeah, I think Cheri makes a really important point. I mean, this is a two phased approach. And it's really important that we do reduce our carbon footprint in the community. But you know, our carbon footprint is, is fairly small considering the size of the university. But our educational footprint is huge, right? What do we surface area, the size of Ohio or something like that now. And so this is an important aspect that we really need to be getting climate changing and resiliency into the classes that we have. And so we had three, a series of three workshops that we did over the spring hour and half workshops, where we brought faculty together, we had a couple dozen faculty from across the university with a dozen different departments represented. And over this time, we really talked about what is it going to mean to integrate climate change and climate resilience, into coursework and into classes into degrees, and to all fields of study across the university. We introduced our student learning outcomes, and I don't want to take on too long, but they're really short, it just, you know, the idea that we have to address the roots of climate change, and where it's coming from, but also recognize that there's unequal impacts and

systematic injustice is brought on by climate change. And in that, then, you know, rather than just the doom and gloom, we need to also inspire our students to the urgency and the breadth of global activism to try to address this, and then get them to imagine and design solutions to the climate problem. So my biggest focus, so these are the kind of slows we the ideas that we introduced a faculty and then said, Okay, how would you get there? What are the things that you would do and so we shared a number of resources. As you've mentioned, we've bought the unlimited digital rights to a dozen books on climate change and resilience and put them available on FDEV website so that faculty can look and start to do their own education, you know, the difficulty and the unspoken in all of this is that, you know, we didn't take climate change and resilience in grad school, that wasn't one of the courses. And that wasn't one of the things that we're trained to. And so, but we were trained to be lifelong learners. And so giving faculty this opportunity to, to re-educate themselves and to, to level up to climate change and resilience in this aspect. So there's a bunch of books that we put out there.

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We also wanted to give them a teaching tool, because you know, we are a teaching University. And so we introduce them to the NXTerra site. NXTerra is a digital library resource guide that was put together by faculty, and others from the UC and the CSU, in what was known as a knowledge Action Network, a group of folks getting together. Climate change isn't just something we need to talk about, it's something we need to act on. And so this was a resource site where we got faculty with, I think there's over 25 different topic areas now, from, you know, climate justice, climate resilience to climate emotions, to cli-fi there's a whole area of literature now of climate fiction, and so all of these different places so that any faculty should be able to find themselves in their in their field on the NXTerra. We put together, it is such a big site that we put together a teaching guide for it. So that help faculty navigate the site to find out what they really need, be it syllabi, readings, assignments, videos, host of these things, or there's one section of the site that is just a running tally of that day's science. So if you want to know the latest science, it's a place to go. And so we put these all together and give faculty a chance to talk to each other and to work this through and to think about these types of things. And so we're excited in that sense of what we were able to put together, we had a final review session at the this way to sustainability conference, which we brought faculty together, to really, in some sense, set ourselves up for this faculty learning community that we want to have in the spring. And it seems like we've got quite a bit of enthusiasm and excitement around that. So we're looking forward to it. And it really fit that we kind of pulled this all together at the this way to sustainability conference, because so many of these ideas on this campus have come out of that conference. It was a conference put together by students in 2005. Because they really wanted to know what is this? I mean, if you've ever looked at the logo, it's a roadside, saying, you know, it's not the same road we're on, we have to go somewhere else. It's a change in direction. And I think we've seen a lot of that coming out of the conference. And we look forward to one of the things that came out of the workshop was that they really want to see the conference more integrated into their own coursework. So we're excited to do that as moving forward. So those are some of the things that we worked on and we'll continue to work on for the next year or so.

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How can faculty that are serving in different disciplines support these initiatives and commitments

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Well, one of the things I, we tried to get across in this is that climate change is actually going to affect all fields of study and all fields of study have something to contribute. There's a big problem, right? Your big issue right now problem with just the climate anxiety that our students are facing. And I think all of us as faculty have something to, to offer in that space. And I want to point out, there's a number of resources that we've assembled for that, because students are going through a lot right now and looking towards the future in that respect. So I think in that all people have, all faculty have an opportunity and a way to include these types of issues. But we are very specific. And if you go through the web, the NXTerra site, you will find things in education, you will find things in psychology, you will find things in art history, all of these fields that often people think I don't know what I would do, we have some suggestions for you. And our learning community really is going to be a learning community, because I think a lot of us haven't really had to deal with this before. And we want to make it something that we can all learn from each other and learn together. Sure.

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I wanted to add here that as part of this series, as part of building this community, we have started collecting video, almost testimonials, but video content from faculty on campus from a very diverse group of study. We have history, we have geography, we have civil engineering, we've got can't find my list, I'm not sure where it's agriculture, agriculture, we have a big list. And these faculty are sharing in just a short two to three minute video clip their experiences with integrating climate change and resilience into a specific course that they teach on campus. They talk about why they made the shift, they talk about some of the resources that helped them along the way. And they talk about some of the impacts that they've seen from their students as a result of making this change. They're providing resources, ideas, but also inspiration for faculty who may kind of struggle with how can I work this into my course or my field of study. We're hoping that this collection of videos which is growing almost daily at this point, and will continue to be posted on the faculty development website for folks to just enjoy as they need a little inspiration.

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I think these are really important aspects of it is just talking to teachers. I did my dissertation on agricultural history. And I learned that farmers only listen to farmers, they don't listen to government folk, right? It's very much the same way teachers listen to teachers. And so we really want to put this learning community together for teachers to teach other teachers, and to share our experiences and to share our designs and to share our failures and successes. And I think it's going to be a very rich experience in that way. We have gotten a lot of people who have wanted to share. And I think that's the most exciting and fun part about this is how many people are engaged to being a part of it. So we've assembled a lot of resources for faculty to be able to use in their classroom. But I think it's really important to recognize that the entire university is a classroom, we can use this campus as a living lab. I know a number of faculty have already done this. I don't want to take Cheri's thunder, I'll let Cheri explain this. But she has done a lot with faculty on the campus and a number of different projects. And it's really exciting aspect of what we're doing.

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Yeah, one of the exciting things for me, being a staff member on campus has been my ability to connect with faculty and utilize their courses and their students to achieve some of the operational goals and targets that we have for our campus. We did just adopt a climate action resilience plan, which we'll share a link for that but that's posted on the sustainability website. The plan outlines a ton of goals, ideas, projects, there's it's a large document, and there's a lot in there. There's also a lot of opportunity in there for us to utilize our campus in the learning and educational experience that our students are having while at Chico State. In the development of the plan, I was able to work with a couple of courses and a couple of faculty. And here's just a couple of examples of how we used our campus as a lab. These are just a few examples. There are dozens and dozens more. And I hope hundreds more moving into the future. But one example is I worked with Pablo Cornejo who is faculty in the civil engineering department, his course civil 302. His students study the lifecycle analysis of projects and processes. And so I went to Pablo and we introduce the campus greenhouse gas inventory. The students then came up with ideas for solutions on how to reduce our greenhouse gas emissions and they apply the life cycle analysis model to study some of those recommendations. So I was able to use those recommendations and some of the associated data to make recommendations for our campus. Like here's a, there's a student driven example of something that we can do to reduce our emissions. And so a lot of those ideas were included in our climate action resilience plan. In the fall of 2019, I don't know if anybody noticed, but we opened a pilot bypass on campus. So exciting for those of us who ride bikes,

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I actually noticed because I love to skateboard to work. So I was definitely using that.

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Whoa, yes, skateboards, walking, scooters, bikes, we need all of it. Well, we implemented the path as a pilot, and we did it on purpose, because we weren't sure what we needed to do permanently for the path. So when we opened it as a pilot, I was able to partner with LaDonna Knigge, who teaches geography 436, which is the transportation planning course, these students are learning transportation planning, they were able to study this pilot bike path and make recommendations on how we can make that path permanent, and make it better. So the students got their transportation planning experience, I then had a document that I could refer back to and say, these are what, this is what we should do to make the path permanent. This is how we can make it better. I use those recommendations, I apply for funds, again, from our university strategic plan, and it was funded, so we should begin construction in about a month. By the time folks are coming back on campus in the fall, we should have a permanent, wonderful bypass, again made possible by the recommendations of the students in the transportation planning course. You know, I ride my bike to campus every day. I know Mark does as well, Jamie on a skateboard. That's exciting. The path should be green, it should be very clearly delineated with lines and markings. Hopefully, it'll be a very safe and wonderful experience for all users whether you're walking or on a skateboard, or vice versa, or whatever. But it is very exciting. It's been a long time since bikes have been allowed in the core of the Chico State campus. In fact, 35 years. Very exciting.

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Another example of a course that I've partnered with is Cindy Daly, who teaches agriculture 432. And I'm working with Cindy and her students, they're developing a carbon farm plan for the university farm. So they're studying the carbon sequestration, existing and potential in campus soils of university farm, and then developing a plan to optimize and improve that. These are marketable skills that are in high demand, and our students are getting hands on experience in making these quantifications and recommendations for improvement. Garrett Liles is also faculty in the College of Agriculture. And I'm working with him on measuring the carbon sequestration potential for our campus proper. So he's working with some students to take soil samples, and he's analyzing those in the Rad Lab, which is through the center for Regenerative agriculture. And so, again, students are working in that lab, they're learning these lab skills, but they're contributing to a much larger campus driven goal. So for faculty out there who are interested in using our campus as a lab, I encourage you to take a read through the climate action and resilience plan. Like I said, there's a lot of goals, there's a lot of ideas in there, I'm sure that there's ways that we can partner with faculty from all different departments to move our campus forward and to continue to push ourselves in achieving some of these goals. So if there's something that sparks an interest in you, or some way that you would like to contribute to campus or use our campus as a lab, please get in touch with me. And I will figure out how we can make that come to life. And then that, you know, Mark has done a lot of work not just using our campus as a lab, but our community as a lab. And you know, he has a lot of those community partnerships. And while our campus does serve as a wonderful lab for us to really engage on some of these things, reaching out to our larger community, especially with how Chico is kind of located and situated in the heart of our community and has such a big impact on our community. Mark, I don't know if you wanted to talk about some of the community connections, you've been able to work into your forces.

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Well, yeah, and I think you know, to lead into it. I think one of the things that's really just so, so special about Cheri and refreshing is that she recognizes that we have expertise on the campus. It isn't something that we have to contract out for, but it's literally right here. And I think the community is also recognizing that and I've been able to work with the city of Chico, especially on its climate action work, using a class to do different things, be it a greenhouse gas assessment, or a climate vulnerability assessment or an extreme heat plan. These are all projects that have been able to work with the City Planning Department to take the expertise that we're developing on the campus, and then to share it across the campus for the better of the campus and the better the community. And it also makes better teaching and better learning. So it really is a win win win across the board. And I think that's in large part why we're so excited about this movement and going forward. So if faculty are looking for a place to start, I would encourage them to go ahead to the NXTerra site and visit my page on Cal adapt in the classroom. California has, it's a great place to be studying climate. And the California Energy Commission has partnered with the geospatial labs at UC Berkeley to take the global climate models and downscale them. So now you can forecast the climate to the level of zip code in California. And so we do that in my class. And I've done it as a class assignment all the way down to 10th graders in high school. And so it's a great one to just start there, model the climate, see what's going to happen, get your own skills up, it's pretty easy to do. And it's a great first step in ensuring the class I know that my students, I really enjoyed this one, I have them model their hometown, because they're more intuitive about the impacts and they get to talk about it with their parents, but it's an easy way to start. And so

something to be thinking about. It's also fairly well resourced on our pages, so that'd be a good one to start with.

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And there you have it, folks. Today we discussed practices and pedagogies that serve to bring awareness to issues of climate change. I encourage you to review these resources and embed them into your teaching and learning. For more information, including research, practices, and the Chico climate action and resilience plan, check out our FDEV teaching guide entitled teaching climate change. I'd like to thank Dr. Mark Stemen as well as Cheri Chastain for contributing to this episode. I'd also like to extend a special thank you to Quinn Winchell for our podcast music and to the vocal stylings of Dr. Browning Neddeau for the land acknowledgement. Join us for our next episode wherein we will explore teaching racial and social justice and learn more about creating brave learning spaces. Until then, we got this Wildcats!