Archaeology, Coastal Heritage, and Climate Adaptation with Isabel C. Rivera-Collazo

Jen Jordan: Welcome to Mi Camino, a series where we interview faculty and alumni on their paths through education and beyond. Today, we're joined by doctor Isabel Rivera-Collazo, an archaeology professor from the Department of Anthropology at UC San Diego. Her interdisciplinary research bridges the gap between academics and the cultural and experiential knowledge of her communities. Thank you so much for being here, Isabelle.

Isabel Rivera-Collazo: Thank you so much for having me. It's a pleasure.

Jen Jordan: When did you first discover your interest in archaeology?

Isabel Rivera-Collazo: When I started my studies, I did not know that archaeology even existed. I grew up in Puerto Rico. I was very interested on my own history, on my own background, on the history of my people. But I did not know there was such a thing as archaeology. However, as I started my undergrad studies, I took advantage of some traveling opportunities, and through that, I visited a country that has a lot of archaeological research. My first question as a student was, like, wait, do we have these in Puerto Rico as well? I came back to Puerto Rico, went to a museum, met an archaeologist, and I asked him directly, what can I do to study archaeology here? At that point, he said, I don't know, maybe anthropology.

I changed majors and haven't looked back since. I discovered my passion for archaeology by trying to find out my own roots on my land and our connection to the oceans and figuring it out along the way.

Jen Jordan: I'm really curious how you came to UC San Diego from Puerto Rico. What drew you here?

Isabel Rivera-Collazo: Yeah. After I graduated from my PhD, well, even before that, I've always been interested in understanding the relationship between people and the oceans. That has always been my goal, even in all the things that I've done throughout the different research projects that I have done, my graduate studies, I've always wanted to work in Puerto Rico for Puerto Rico, understanding the Caribbean. This is a region that is so important for understanding the world as it is today, and it is understudied, in particular by us, by Caribbean people, by local people that can convey their own histories. Once I graduated from my PhD, I went back to Puerto Rico, and I was hired as assistant professor at the University of Puerto Rico, Gio Pedras Campus.

At that opportunity, I started building my lab, the environmental archaeology lab. I started teaching underwater archaeology. I started setting up my own research. But there were multiple complications, administrative, bureaucratic, political complications that affect Puerto Rico as a country and the University of Puerto Rico in particular. That would have limited the scope of research. If I wanted to transform archaeological practice in the Caribbean and Puerto Rico, I needed to be able to do more than what the University of Puerto Rico could offer, although still supporting our students. At that point, UC San Diego began their search for joint hires, in particular, for understanding and protecting the planet and moving forward a strategic plan of the institution.

I applied to one of those positions seeking to combine anthropology and the oceans. I proposed to have a joint position between the Anthropology Department and Scripps Institution of Oceanography focused on understanding ecology, biology, and human adaptation to climate change. I was hired in the position. What brought me to UC San Diego was the opportunity to continue doing coating edge research, to have the type of research and goals that I have to support my community, to support Puerto Rican and Caribbean students, to move forward, high

quality research that is impactful at local, regional and global scales. UC San Diego offered me the opportunity to do that.

Once I moved here, I have been able to continue doing the type of research that has always been my goal, working in Puerto Rico, supporting my communities, and furthering the coating edge research of what it is to understand human relationship with the oceans or coastal and underwater areas.

Jen Jordan: I'm wondering how those specific fields work together when you talk about ecology and anthropology, how do they work together in your research to further your goals?

Isabel Rivera-Collazo: Yeah, it is integral because when we are thinking of understanding people and the oceans, humans are not detached from nature. People and nature are one thing. Through our behavior, we change nature, but also the things around us, the geology, the hydrology, the biotic, the plants, forests, it all influences the types of decisions that we can make. In order to really understand the patterns that we see in the archaeological record and how they change through time, we need to weave in other sciences. We need to have integrated interdisciplinary, transdisciplinary research, what has also been called convergent science. The ways in which sciences converge with one another.

In order to be able to understand what people did in the past, how the how the historical processes influence who we are today and the things that we do today, we need to have good understanding of the biology in the past, to have good understanding of sedimentology, how the Earth has changed, how the climate has changed, so we can then understand what people do and how they do it. It is particularly important in the present as we are facing new changes and challenges. Understanding the past is relevant to understand us in the present and face the challenges that we face in the future. It is all interwoven through the stage that is being a biotic being on a planet.

Jen Jordan: I'm thinking, too, about big changes that are happening to our climate. I'm thinking about Hurricane Maria and how that impacted the island. Can you talk a little bit about how your climate research changed or evolved after Hurricane Maria?

Isabel Rivera-Collazo: Yeah, Hurricane Maria was actually very significant in the evolution of the type of work that I do, and the urgency of the application of the research that we are doing and the impact that we are doing. Even when I was in Puerto Rico, my research program was centered on community engagement, citizen science, recognizing local knowledge, local tradition, histories that might not be written on the books. Part of my goals in my research was to find out how specifically that archaeological knowledge, that knowledge from the past can be useful in the present. Before Hurricane Maria, my work was very much theoretical. I could see changes, I could identify vulnerabilities in society. I could say, sea level has risen, it will rise.

These are the things that it will cause coastal erosion, growth of wetlands, coastal inundation, more precipitation. I could say those things. Actually, right after Hurricane Maria, we were publishing a paper about how cultural heritage is at risk of severe damage and destruction by climate change variables or changing climate variables. Among the things that we identified was that because of the political and economic situations of the island, there were very significant vulnerabilities that upon a high level catastrophic event, this would come to the fore, and people would be at high risk of severe damage. When Hurricane Maria happened, exactly what we wrote on that paper is what we could see.

That had me shift my program into how can I make my research even better? Where are the vulnerabilities? What are the elements in society that are the most relevant to work towards surviving climate change. That is what we have been doing since then. We have been working on engaging with community, learning better about their priorities, understanding better the theories behind disasters, what of climate change is what places us at risk, and then communicating that knowledge further, not just keeping it in society, but also communicating it further to communities and people that are actually at the forefront of climate change impacts.

Jen Jordan: You've touched on it a little bit, but I'm curious about your work with local communities. How specifically do you whether it's with your climate change research in looking at Hurricane Maria or in other ways, how specifically do you engage with those local communities?

Isabel Rivera-Collazo: I have to put a step back again and remind the audience that I am an archaeologist. I am working with the past. Something that is funny for me and for my students is that I got into archaeology thinking that I could avoid talking to people. Because my object of study is dead, so I don't need to talk to people. But immediately as I went back home, I was very quickly reminded that this is the heritage of living people. That the archaeology is not something that is in the past, detached, absent, but it is part of it our ancestors. It's part of who we are today. After Hurricane Maria, we went back to start working. I mean, we continued working throughout. My family is there. We were sending help, and I traveled as soon as it was possible.

I wanted to go and check the archaeological sites and check how our community members were, which sent water and food. But what I learned fast, the strongest lesson was how relevant that heritage is towards sustainability, towards helping communities maintain their identity as things change. I've been using my archaeological tools, my skills as an archaeologist, to bring back to explore who were those ancestors, to understand how people lived on this land and how people responded to past change and give that knowledge back to community. I have a very large research team, and we have been looking at plants. How did people use plants? How did different historical processes alter our forests? We have been looking at fish, how people on the landscape that we are investigating and studying, where did they go fish?

What species did they go for? How are those species today? Are these ecosystems healthy? Are they at risk? Can we maintain our traditional ways of food and subsistence that we can trace those routes of subsistence, particularly in fishing, all the way back to 6,000 years ago? We have really, really deep traditions. Historical processes of colonization of invasion have detached us from those histories and that knowledge, but we can't recover it through archaeology. One of the things that for us was very significant was that right after Hurricane Maria changes done to the landscape by the Army Corps of Engineers caused flooding in an area that normally doesn't float and that damaged some sand dune ridges.

We built we gathered some funding, and we built a group for sand dune restoration and partnered with protecting cultural heritage because the sand dune that was eroded had an archaeological site under it. We worked on restoring the sand dunes and protecting the heritage. That ended up creating a new grassroots organization because the people who we train now have created an organization. They are like local residents, and they focus on restoring sand dunes and sharing that knowledge centered on protecting our landscapes, our coastal ecosystems, and our heritage. Now, almost, like, I would say, like eight years after, We have continued doing the work through several of my students and myself, and we have connected with multiple grassroots organizations that similar to the one that we helped create are focused on helping restore and protect the ecosystems and the heritage.

We have created a new coalition, and they are leading the type of research that we are doing, the type of engagement, the type of protection of heritage that we are doing. We have been building partnerships with local residents, with, generational residents of the same locations. That are organized, that they know what they need to do, they understand their landscapes, and that we are supporting each other to be better and to do more for our land and our country and each other and our communities. Through all of that, heritage is central. We have been communicating, what we have learned from the archaeological research. From the archaeological research, for example, we documented the use of coral reefs in this archaeological site that has been used for a long time.

But the coral reefs tells us a story of the ecosystem just offshore. That knowledge was used to protect a coral reef and create a new marine protected area, and we are helping the community to create the management plans. There are multiple ways in which archaeology we don't just do archaeology. Yes, we do archaeology. But just as I was mentioning earlier, how important it is to bring multiple disciplines to understand people. There are multiple ways in which an activist

archaeology is responsible also for engaging in the realities of the present. We have been stepping up to the plate, making it up as we go, but trying our best.

Jen Jordan: It's definitely not the field that you thought you were going to be going into.

Isabel Rivera-Collazo: Absolutely not. I thought I was just going to be doing underwater archaeology, coastal archaeology, looking at some stuff and writing papers, but it's a lot more than that.

Jen Jordan: How does it feel to be bringing back this knowledge to the place where your family has had such strong ties and really making an impactful change on maintaining that tradition and maintaining the sustainability of the country?

Isabel Rivera-Collazo: It's not something that I expected to do. I did know that I wanted to work in Puerto Rico. I did not expect to be working in areas where I would be meeting my cousins or that I didn't know of, and family contacts that we just know each other because of the last names, but not necessarily had been to family meetings together. It was weird initially. Now, it feels like that's what we all should be doing. But it was weird initially because when I started my training, one of the things that academia teaches us is that we need to be detached, disconnected from our subject of study, that we cannot take it personal. But it's impossible to do this type of work without taking it personal. It is personal.

We are facing, we are trying to overcome challenges that have been imposed on us due to historical processes, and we need to be aware of them and work to make a better place. I'm very proud of the type of work that we have been able to do. It's not just me. It's to be supported and inspired, not by my students, by the community members that challenge us to be better, to do better, not stay with what we have been taught, they question the things that we assume. As a scientist, it could be scary to go to a place and have a community leader says, No, what you're saying is not true. Then it takes another level of stopping and asking, okay, what do I know? Where does it come from? Is there an space to that knowledge that I'm bringing not being true?

What do they know and how valid is that knowledge? Having that openness to learn from our community partners who are the experts on those places more than us. For me, it's been an honor to be able to receive the trust of the communities that we're working with. I did not grow up on those spaces. Yes, my cousins are still there, but it is not me personally. I don't want to say this is my past. I am supporting the resident communities who have been there all the time, who have not left, who it is their own personal, continuous occupation. I'm just learning and trying to do better so that we can do even more as we move forward and rewrite our histories.

Jen Jordan: As a professor, and as a PI, and someone who works with so many students, what do you hope that they gain from their work with you?

Isabel Rivera-Collazo: I want my students to be free to do the next level of science. I don't want my students to repeat things because that's how they have always been done. Something that I do tell them from the beginning is that science is what we practice. If we are the scientists, we are the ones who say, what science is, what academia is, how things are done. Because at the end, neither science nor academia has an agency on its own. It's moved and propelled by the people who inhabit those spaces. We need better people. If we say academia or science should do this, then that's what we should be doing and not wait for somebody else to do it and then follow. I want my students to feel leaders. I want my students to always be doing high quality best work, but at the same time, acknowledging that the power resides on the resident communities that we visit, that we partner with.

As a scientist, we do not have more power than the residents. If the communities say, no, you cannot do this, you have to say, okay, and move because it is not our call, and we are not going to impose that power. I want my students to learn humbleness, humility. I want my students to remember that we're always learning, and I want my students to make a change and to make a change and make a better world.

Jen Jordan: What advice would you have for a young student who maybe didn't even know that archaeology existed or what archaeology was? What would you tell them about your work or about really engaging with those local communities?

Isabel Rivera-Collazo: I would like to inspire young students that never saw themselves taking a space at the table of science. I would like them to know that they do have a space and that they are needed. First, second, our personal histories are important. A lot of our own personal backgrounds, especially when we are thinking of BIPOC or traditionally marginalized communities. Our voices are not there, but they are needed, and we need to make sure that we sit at the table, that we occupy those spaces so that we can make a change. It's hard, but it is important to find good mentors that would support us. I would a new student just starting the university, I would tell them, this would be, especially at an undergrad level, is the best time that you can have.

Take advantage of the fact that you are with top scientists, with top people, the people that are creating knowledge and absorb. Don't just take courses to have A. Absorb knowledge, make something different because it will transform who you are. It will make you a different person. Be brave to try things that you hadn't tried before and have all the experiences that you can have. Travel, take advantage of student exchange, learn more languages, expose yourself to things that you have not seen before, because the world is so rich and so diverse and there is so much to see and learn. As an archaeologist, when I tell people, oh, yeah, I'm an archaeology everyone is like, Oh, we go. That is so cool.

I always wanted to be an archaeologist. I never did it because X, Y, and Z reasons. You can do these types of things. Like even archaeology as a science is needed to move forward their disciplines, to challenge colonization, to challenge these courses. Students should be brave to try things, to learn things, and if I would not have traveled, I would not have discovered archaeology. I would not have been working in underwater archaeology or the type of things that I'm doing. It's important to talk to try more things, not stay at home doing homework, but be exposed to the knowledge, absorb, read and try new things. If you want to volunteer in labs and do things that will expose you to the things, maybe they will discover things that they don't like.

Like, my own children have tried things they might have thought they wanted to do one thing, and once they try it, it's like, No, that's not what I want to do. The more they try, the happier they're going to be. Once they decide what their career should be, that career should be something that they like so much that they would pay to do. Don't do something that just because it will move things forward. It will get food. Yes, that, but also do something that you're so passionate about that makes you happy to wake up in the morning and say, Oh, yeah, and they are paying me to do this. That's salary is importance, of course, and also happiness, so being happy in the process.

Jen Jordan: Well, thank you so much for joining us today, and we look forward to hearing more about your research.

Isabel Rivera-Collazo: Looking forward to it. Thank you so much for having me