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Seeking inspiration to change the future?

Consider the past

In October 2023, Arizona State University President's Professor Amber Wutich was named a 2023 MacArthur Fellow. The highly coveted fellowship, sometimes referred to as a "genius grant," is awarded to talented individuals who have shown exceptional originality in and dedication to their creative pursuits.

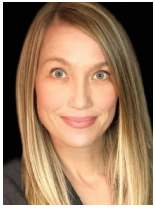
Wutich, who serves on the executive committee of the Arizona Water Innovation Initiative at ASU, said she plans to use the MacArthur stipend to strengthen her work in new water policy, infrastructure and innovations. In an article for ASU News, she said she has recently turned to an unlikely place for inspiration: the past.

"My work really is dedicated to understanding some of the darkest parts of the human experience," Wutich said in the article. "More recently, I have

started to go back in history and look at how humans have faced moments of extreme climate distress. There is suffering, yes. There is death. But it's also true that humans have historically faced these challenges with enormous innovation and transformations in our society. I'm hopeful that if we really do invest in social infrastructure, which is what gives rise to human innovation and ingenuity, great things could happen for humanity."

Wutich recently co-wrote an anthropology textbook, "The Human Story," alongside other ASU experts Kelly Knudson, Christopher Stojanowski, Alexandra Brewis and Cindi SturtzSreetharan.

In this discussion, Wutich, Knudson and Stojanowski share what we can learn from the past as we navigate a changing climate today.



Amber Wutich is an Arizona State University President’s Professor, director of the Center for Global Health and 2023 MacArthur Fellow. An expert on water insecurity, Wutich directs the Global Ethnohydrology Study, a cross-cultural study of water knowledge and management in more than 20 countries. Her two decades of community-based fieldwork explore how people respond, individually and collectively, to extremely water-scarce conditions.



Kelly Knudson is a professor in the School of Human Evolution and Social Change and the director of the Center for Bioarchaeological Research and the Archaeological Chemistry Laboratory at ASU, where she and her research team apply biogeochemistry to anthropological research questions. One of her archaeological research projects focuses on how people living in the Andes one thousand years ago responded to climate changes.



Christopher Stojanowski is a professor in the School of Human Evolution and Social Change and a bioarchaeologist who uses information from ancient sites to reconstruct the lives of past peoples, focusing on the Holocene skeletal record of the New World and Africa. He has written on community organization and ethnogenesis in the colonial Southeast, Archaic period mortuary rituals in North America, and Early and Middle Holocene lifestyles in the Sahara Desert.

How does looking into the past help us chart out the future, especially as it relates to operating during times of climate change?

Wutich: It’s important to look back and see examples of what humanity has done in the past and how people emerged from those times of change. For example, when humans became Homo sapiens as we know them, this was done at a moment of climate shift. Another major milestone in human development was the advent of agriculture, which was facilitated by and a response to a major climate shift. These enormous touch points in history have helped organize my thinking because we see patterns at a smaller scale and in individual societies that have been studied. My thinking has really been informed by conversations with archaeologists like Kelly and Chris.

Knudson: What’s really exciting to me about working with this particular group, and just thinking about archaeological approaches more generally, is that when we think about impacts and adaptations to climate changes, we usually think in terms of years or maybe a few generations. But, when you start to look at the archaeological record, you have this really deep time depth throughout the history of our species. I think it is really important to think about how humans have been impacted by climate and how they responded, because that can help guide how we respond to climate change in the future. Looking at our history gives us a really full picture and provides helpful examples of problems that have come back around and we face today.

Stojanowski: I would just add that once we start getting into the Homo sapiens record, it’s also useful to see challenges as being met in ways that may not necessarily be archaeologically visible. There are some instances in history that may appear as population “extinctions” – and I’m seeing this with the work I’m doing in the Sahara – where



there are specific archaeological sequences that have gaps that suggest that the people who were once in an area are not there anymore. This could be seen as a population extinction but, in fact, it probably reflects people responding to a situation by moving away, rather than just staying put and slowly suffering until that way of life isn't possible anymore. Instead, they adapted.

Wutich: I think looking back is also an important tool because it gives us context for timescales. There are quite strong arguments that the ways that we have lived for the past 50 years or even the past 150 years and the consumption patterns we've established will not be able to continue in the same way they have in the recent past. I think there is a very strong argument that our consumption patterns and lifestyles will have to end. The idea that we are going to go through periods of great difficulty is well supported. I think we can look to human history and see similar situations. Where I find looking at the human record quite inspiring is that

it directs us to the things that create meaning for humans and allows us to think more broadly and radically about what it is to live a good life. What is it to live a meaningful life, and how can we embrace those things in the context of times with extreme disruption? How have people protected those things while navigating times of change?

Knudson: I love that emphasis on what it is to lead a meaningful life and a good life. I think that's a very positive lens. And it's sometimes hard to get out of the archaeological past because of course, we can't talk to people who lived thousands of years ago about what gave them meaning. But I do think – and I tend to be a more optimistic person anyway – that when we look at the past, even if we can't always understand what was bringing people joy and meaning, we can get a good sense of how people overcame these challenges in a lot of different ways.

An example I would use that feels especially appropriate today is climate-driven migration. I finished a project in northern Chile and we



looked at this massive drought that occurred about a thousand years ago that spanned at least three generations. We had hypothesized that people had moved away and left the areas that were most impacted for areas that were less impacted. But we didn't see that at all. We found that people stayed in place. I can't help but wonder if part of what was giving the people a sense of meaning was living in these areas. The place itself had value and had a sense of home, and so they figured out different ways to live in a drier environment rather than moving to a place where they could continue the same farming strategies that had previously worked.

How might that idea of climate-driven migration, or lack thereof, apply to today's issues in the Southwest?

Knudson: The Southwest is a beautiful place to live, and I think we can very easily see that same emphasis on the value of a place that I saw in Chile.

Wutich: I think Arizona specifically is a good example of this past-educating-future approach. People may not physically migrate, but they can offset some of their risks by changing their exchange patterns. And that is something we've seen successfully done historically in the Southwest at certain times. We know it's possible because it's been done before.

But I'll also note that we are currently seeing an attempt in Arizona to bring a lot more population here, with the idea that it would grow the economy and shift exchange patterns in ways that would be advantageous to people that live here. That's quite an interesting and somewhat unique approach to climate change related pressures. Kelly and Chris, are there any analogs that you can think of in the archaeological record?

Knudson: What's interesting to me is I actually see the opposite. And some of the places I've worked were, pre-drought, more cosmopolitan. There are these massive trade networks where people were using llama caravans that would take maybe 40 or 50 days to go from one site to another and connect these really disparate areas where people were speaking different languages, wearing different clothes, using different kinds of objects and eating different foods, but they were all connected through these massive caravan networks.

But then after the drought, we see the emphasis change. It is not on this big cosmopolitan network bringing in resources from all over, but rather on that one particular place where everyone is focusing on the area directly around them. I think that's a lot different from what Amber was talking about in Arizona, but it also seems to be a valuable approach. I think that's one of the lessons from the past we can apply to the future: There are lots of different things that work. There's no one path forward.

Stojanowski: On that note of different things working and having multiple options, I'll bring up social groups and changing dynamics. These also contribute to people's actions, and we see that today and in our history. I'll bring up timescales: Sometimes the timescale for change is more than an individual lifespan. If the timeframes of change are more than one person's lifespan, then why would someone make difficult decisions that require present sacrifices for future benefits?

Wutich: I love that you mention this and I think this is where ideology is so important. People frequently make consumption or economic decisions that are outside of their immediate self interest for a range of reasons, sometimes for the well-being of future generations, but we also see people seeking prestige over other economic outcomes. People will be compelled to do the things that help them accrue prestige – like buying a diamond ring – whether or not they're rationally advantageous in the short term, right? This is one of the most important mechanisms, alongside in-group and out-group dynamics, that humans have to produce collective action that moves humanity along a new path.

How have things like policy and societal will helped with moving humanity forward? And what happens when those two things aren't aligned?

Wutich: We see that misalignment all the time in our history. I would argue, as a cultural anthropologist, that getting people to engage in collective action in ways that accumulate prestige has been a regrettably neglected strategy for environmental activists and sustainability advocates. For my reading of human history, there is nothing that compels human action more reliably than prestige.

Knudson: What I think is really interesting is how prestige over time changes. And that's what we're getting back to, the idea that you



Assistant Research Professor and Sustainability scientist Clint Penick leads a bio-inspired design session during a session at The Biomimicry Center. Photo by Deanna Dent/ASU Now

could change the world in a way that brings high prestige. What is advantageous to you as an individual in terms of your status and your prestige will also benefit future generations.

Getting back to the case I talked about earlier in northern Chile, what was prestigious during a time when the environment was very stable and relatively wet was a large exchange network and lots of interaction with people in lots of different places. We see people bringing in high prestige goods like gold artifacts or lapis lazuli from a particular mine or feathers from the Amazon. Those were the high prestige goods that were important at that time. But then, after the drought and as the climate was changing, what seems to have been important was not access to these high prestige goods.



Instead, it was staying in a much smaller area and focusing on your agricultural systems, your community, your village. You could argue that what was prestigious changed.

That gives me hope that we could change systems today in terms of what is considered high value, rather than something that's coming on a cargo ship from many thousands of miles away as being a high-value good to something that is produced locally in a way that's environmentally sustainable. I think we see that in smaller situations, but not on the grand scale that we would perhaps like to see now.

Wutich: This is where I see social infrastructure as an investment opportunity to move us to a more sustainable society.

What is social infrastructure, and how can investing in social infrastructure help us shape our futures?

Wutich: When I talk about social infrastructure, I mean social networks, cultural norms and informal economic mechanisms. Moving to a more sustainable society requires changes in the way that we value and assign prestige, more pro-social and cooperative behavior. Those are things that are largely governed by our social infrastructure, like the social networks we cooperate in, and the cultural norms that assign prestige and value and the economic behaviors that enable us to survive under climate stress.

That is why I think paying more attention to social infrastructure is an underexplored way to help propel us down a pathway towards sustainability. We can shift the ways that we find meaning and value in our lives in ways that are better aligned with sustainable futures. But looking back at our history to see if this is a viable plan that has worked for humanity – archaeologists, are you buying that argument?

Knudson: I buy that argument. I think humans are really, really good at solving problems and figuring out new solutions and working together to solve those problems. And we see that over and over again in the past, especially when we start to move away from models of societal collapse. More commonly, they're innovating. They're doing things differently. It's not that people are just magically all disappearing and poof, going away. They're just changing. And so when I think about it in those terms, I think, yes, absolutely. Humans have a remarkable capacity to figure these solutions out, especially if we think really broadly and very flexibly about what we can do in various situations and that there's no one size fits all solution for any of these problems in the present or in the past.

Stojanowski: On that note, I'm trying to think of when we have suffered through climate crises before, but the most recent global extinction event for humans is probably around

70,000 years ago. The theory is that 70,000 years ago there was a volcanic eruption that was a near-extinction-level event for humans. So, it's not like the entirety of the Holocene in the last 11,000 years has been one of near extinction for humans. And that is in spite of there being major climatic events that have happened. So we know there are local responses to those climatic events. I think the long-term view really does make you more optimistic.

Knudson: I was just going to say that sometimes when I talk about the past it feels really distant to people. How could we possibly live without computers, electricity and artificial intelligence? I think what's helpful for me is to remember that our brains really haven't changed. People have been experiencing innovation and technological change for millennia. The details are different, but the idea that humans as a species are innovating and changing things and learning how to do things is nothing new.

Wutich: The really important thing I would love people to get from hearing this conversation is the more you know about human history, the more continuity you see and the more hopeful you are forced to feel. And I am a person who regularly thinks that my job is putting my catastrophic thinking in service of humanity. But I'm also a scientist and a person who is trained to look at evidence, and when I look at the archaeological record and think about what the future holds for humanity, the evidence just relentlessly guides me to think about the promise of technological change and the human capacity for cooperative and pro-social problem solving. We have faced catastrophic moments in our species' history and we have overcome them. That's just a fact.

Kelly and Christopher, as archaeologists, you spend a lot of time thinking about the past. How do you feel about the future?

Knudson: One of the things that is helpful for me when I feel overwhelmed about the future and what will happen is to think about the situations, including extreme drought and climate change, that we have already overcome. For the people who lived through it, it probably felt like their world was changing. Some people lived in a time when the entire world as they knew it – or hundreds of hundreds of miles in any direction – was drier than it was in their grandparents' time. People have been where we are now, albeit on a smaller scale. The scale may be larger now, as we are seeing things like warming on a global scale, but what I feel is important is that we are not alone. People have felt what we are feeling now. I find that a reason for hope as well, that the challenges people have gone through in the past have probably felt just as terrifying as some of the challenges we're facing today.

Stojanowski: It's kind of like parenting, in a way. When you have a little kid you worry about little things like diaper rash. And then when you have a teenager, you still worry but you worry about different things, usually bigger things. The scale of the problems are increasing. And so I think that's the way it is with the human species. As we create problems, we also have more people to be able to find solutions to them. As people who also teach this material, we often think about learning outcomes and goals in our teaching. One of the high level ones for me is trying to create that connection to the past, because everyone is born into a world that's already existed for hundreds of thousands of years, with no real understanding of that. And it's surprising to me how often you encounter others, who aren't always working in the past, that don't really think about history, or have a very incomplete understanding of it. And so trying to flesh out that understanding creates more nuanced thinkers that are more connected in multiple ways.



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