

Dr. Kelly Turner and Dr. Ladd ...eme Heat End of Summer Episode

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SPEAKERS

Kelly Turner, Doug Parsons, Ladd Keith

Doug Parsons 00:00

Hi everyone this is America adapts the climate change podcast Hey Adapters, welcome back to another exciting episode. Joining me are extreme heat research experts Dr. Kelly Turner and Dr. Ladd Keith Kelly is an associate professor of urban planning at UCLA and lad is an assistant professor in the School of Landscape Architecture and Planning at the University of Arizona. Both have been on the podcast before and it's a treat to have them back. There has been a ton of coverage of extreme heat this summer. And I wanted to check in as the summer wraps up and see how the media did and what efforts are underway to address this increasingly dangerous climate impact. On that note, I'm in Tucson, Arizona, and it hit 111 degrees yesterday, a new September record. Oh boy. So we kick things off in this episode by learning how extreme heat disproportionately impacts marginalized communities. We also explore the evolving media coverage of extreme heat. The three of us break down the highs and lows of all the media coverage of this issue in this past summer. We also learn about Kelly's research on heats impact on California schools and what that means for both public health and student learning. We take a dive into federal approaches to heat management and learn about the glaring disparity in resources and attention allocated to extreme heat compared to other climate hazards and ponder the potential for FEMA to classify extreme heat as a disaster declaration. We also discuss the value of having a national adaptation plan for extreme heat planning. Finally, and yes, we go there, we get an update on the efforts to name heat waves. We highlight the pros and cons of this approach and discuss other options. It's a Gangbuster episode, and that's just a sampling of what we cover. Okay, let's join Kelly lad and catch up on all the latest in climate adaptation and extreme heat. Hey, adapters, welcome back to another exciting episode. Joining me is Dr. Kelly Turner, an associate professor of urban planning at UCLA and Dr. Ladd Keith and Assistant Professor in the School of Landscape Architecture and Planning at the University of Arizona. Hi, Kelly and Ladd, welcome back to the podcast.

Kelly Turner 02:08

Thanks so much for having us.

L Ladd Keith 02:09
Yeah, thanks for having us back on

D Doug Parsons 02:10
you guys. Are Now regulars, my heat regular people. So thanks for coming back on that said, this might be the first time someone's listening to you guys speak on the podcast. So we're gonna start off with you, Ladd. Give us a bit more background about what you do there at UA.

L Ladd Keith 02:25
Yeah, thanks, Doug. So I researched essentially heat policy planning and governance. And I come from an urban planning background. But at this point, my research and kind of practice area spans from cities to state to national government. And at this point, you've been kind of looking internationally at the United Nations and how, essentially, we can create a heat resilience world. Alright, Kelly, what about you?

K Kelly Turner 02:47
So at UCLA, I am Associate Director of the Luskin Center for Innovation, which is an Environmental Policy and Planning Research Center here. And I oversee our heat equity research portfolio where we do a lot of work on local planning with local community groups, we also do a lot of data science for sort of action oriented change around extreme heat, and also a lot of policy and planning work, we have a policy brief series that you can find on our website.

D Doug Parsons 03:13
So I'm doing this episode with YouTube, because I wanted to check in it's the end of the summer, it's post Labor Day, I wasn't covering extreme heat during the summer, when there was a lot of coverage. And we're gonna get into that in a little bit about the media coverage. But it would be great. And Kelly, let's just start with you. Let's ground our listeners with what really is extreme heat in the context of climate change. And I know that's really just a broad statement. But sometimes we believe they're like, Okay, it's just hotter. But what does it really mean extreme heat when we're talking about here in the context of climate adaptation? Yeah, well,

K Kelly Turner 03:43
every single year, we get to say the same thing. It's the hottest year on record again, right. And so that's one part of the problem is that cities are just going to be hotter, because the reality is that the climate is changing. Another part of the problem is that we build cities in ways that exacerbate heat. And so urban heat also contributes to the experience of heat and cities. And

then there's a third facet, which is a little bit less talked about, which is the experience of the heat on the ground by people in people's bodies. And that's a little bit more subjective. Depending on who you are, which neighborhood you live in, and what activities you engage in. During the day, I'd be remiss if I didn't say that was ultimately tied to sort of vulnerability and being part of marginalized groups.

D Doug Parsons 04:24

And Ladd. Do you want to add anything to that?

L Ladd Keith 04:26

Yeah, I think importantly, this year, we saw record breaking temperatures, as Kelly mentioned, kind of every year has broken records from previous years. But this year has certainly been a startling jump in those record breaking temperatures. A lot of that is, of course, due to the continual increases from climate change that we've seen over the last couple of decades. But then, of course, on top of that, we have the El Nino system right now, which is kind of fueling a little bit more of that heat than we would normally see in our climate system. And so I think that's really pushed the climate system to be much hotter this year, even than it would be normally with climate change. And that's really broken a lot of those temperatures and really made this summer kind of a startling example of the climate that we're moving into.

D Doug Parsons 05:05

Oh, there's that depressing meme that's going around it. Like someone will say, this is the hottest summer of your life, and it will be the coldest summer for the rest of your life. Just depresses me. It shows up in various forms. I'm like, oh, gosh, there's a certain truth to that isn't there? Alright guys, let's jump into media coverage. Before we get down into some of the policies and stuff and research that you guys are doing in lab, I'm going to start with you. There was a ton of media coverage in some ways, that's really good. It's creating some attention here some ways it's bad on how they do it. And at least let's starting off from the 30,000 foot level. And I always know it's summer because I start getting contacts from Ladd. We're like, Alright, I'm going on CNN this week, I'm going to AP news story. It's like alright, summer must start because they're finally reaching out to you again. So lag, get get us started. How did the media do?

L Ladd Keith 05:50

Yeah. So I think it's been interesting, because the last couple of years, of course, every year, there's been increasing media coverage on extreme heat. And I think this year, I saw a couple of trends. One, it was much more sophisticated than in the past, where it used to be just explain extreme heat to kind of whatever its impacts, why should we care about it. And this year, it was much more, you know, long form stories, diving into specific issues, which I think is a really positive thing. And so we're kind of moving past the fact that he does an issue and we should care about it. And moving into things like how does heat affect workers in their workplaces? That is heat effect mental illness, or those experiencing homeless, this and many

other kind of facets of it. So I think that's a positive sign. I've said this before on other media outlets, actually, but there was an over focus on the record breaking temperatures. And I think in some ways, it almost became a sports game, right? Where it was kind of like waiting for Phoenix to break another day of those 110 plus days in a row, right, you know, kind of Phoenix became the epicenter for a lot of that attention, which I think is not a good thing, because we want to show that he does affecting communities across the world, not just Phoenix, Arizona, right. And then also, I think the game of just watching those record breaking temperatures is a little bit dangerous, because we lose sight of the fact that chronic heat, or just normally above average heat that we're experiencing with climate change is also detrimental to communities across the world. So it's not just the record breaking temperatures, it's the generally higher temperatures than we've had before too.

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Doug Parsons 07:18

And Kelly, what about your thoughts at 30,000 foot level?

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Kelly Turner 07:20

Yeah, I couldn't agree more with what Ladd said a few years ago, we would get requests for just general information about the fact that it is hot outside this year, what we saw is a couple of trends, definitely looking more at what we call heat exposure settings. So the places like laptops and labor homes, schools, places where vulnerable people are being exposed to heat, also trying to understand heat as a more complex phenomenon, which I'm excited about, although there's still a lot of work to do there in terms of sort of literacy about heat as a complicated and multifaceted phenomenon. But I think most promising is that there's a lot of focus on solutions. And so I think that's really exciting to start seeing conversations about how we can address heat and fix problems related to heat happening in the media now.

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Doug Parsons 08:04

Yeah, I heard a lot from my East Coast friends and I'm in Tucson have for people don't know, and it gets pretty hot here. But it's not as hot as Phoenix, but they would hear the stories about Phoenix because it seemed like daily, Phoenix is in the news. And they're like people are getting burned. And quite frankly, Phoenix has been hot for a while. And it was a record breaking summer. But again, I think there was this over emphasis on it. But maybe this was anecdotal led, maybe you could speak to this. But the frustrating thing is when you see a lot of media coverage, and they'll show people at the beach cooling off. And I felt like I didn't see as much of that this year. Would you agree? I mean, that's kind of in my own anecdotal sort of observation.

L

Ladd Keith 08:38

Yeah, absolutely. That was one of my pet peeves in the past is a lot of the imagery that would accompany the stories was kind of from stock footage, you know, the headline would be deadly heatwave occurring. And then the stock footage kind of attached to that story with the children at the park or families at the beach, or people eating ice cream, which obviously doesn't match

the tone or doesn't match visually, what were the media is actually trying to convey with those stories. And so I think there's been a with the growth of sophistication on the coverage, a little bit of movement away from that. But it's still a few of those stories that kind of had the mismatched visuals with them for sure.

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Doug Parsons 09:10

Kellyanne made a point of just because I lateral starts, I'll see him showing up in the media at the beginning of summer, because they're just calling for that your expertise in it, this might be kind of hard for you, because you're based in LA, where the temperatures are quite moderate. But what can we do now until next summer, okay, you're not gonna hear from anybody? Hopefully you will. But like, what are the steps we can take? I know there's a lot of behind the scene policy movements, but what role could the media play to guess be more responsible? And when it's March in New England, they don't want to hear about preparing for extreme heat, but they really should. Right?

K

Kelly Turner 09:44

Well, actually, I would add that to my list of shifts that I've seen so even a place like LA that may be in the public imagination is considered this sort of historically Mediterranean climate, right coastal, it's actually quite hot here and there's a gradient if you live in the San Fernando Valley in Los Angeles, you are experiencing temperatures that could be 20 degrees higher than they are along the coastline and even inland in the Inland Empire. Right? It's extremely hot here. But even places like in New England or the Pacific Northwest, they're experiencing, you know, there's an emphasis on this delta heat, right. So it's not necessarily the 110 degree weather that they're getting in Phoenix, but, you know, 90 degrees when you're used to 75 degrees as sort of a temperature. And that's what your infrastructure is set up for it is a problem. So I think, again, what the media can do is to kind of unpack this focus on extreme heat. And I think that would have sort of two really important impacts. Moving away from extreme heat means recognizing that there are other aspects of the problem, it could just be extremely hot for the region that you are in, it could be that there is a chronically hot condition that needs to be managed in the city, but it also unlocks a different sort of policy doors. So if you're thinking about extreme heat, immediately, your mind goes to emergency management and emergency management is a huge part of policy for extreme heat. But it goes way beyond that into virtually every sector that affects the daily lives of people

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Doug Parsons 11:11

Ladd anything to add just sort of kind of wrapping up, like maybe how the media should handle this in the next eight to nine months.

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Ladd Keith 11:15

Yeah, so I think the media plays such an important role with us, because the public is more likely to hear from you know, news coverage about heat, either before it happens, or while it's happening than from our academic papers and kind of journal articles, right? So. So I think

partnering with the media is incredibly important to get that information out there. And I'll plug that through the global heat Health Information Network, we actually created a short guidance note for the media called reporting on heat waves and the health impacts of heat that goes through a couple of those practical recommendations. I think we've covered quite a few of them. But it's things like matching the imagery to the the actual story. I'm not focusing just on the extreme heat during the day, but also the nighttime temperatures. And many of the things we've been talking about through this discussion, one thing

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Kelly Turner 11:59

I'd like to see the media maybe stop doing is getting those little temperature sensors and clicking on them and pointing to different surfaces that's proved to be incredibly problematic, because it's just looking at the surfaces, right? So maybe if you're doing a story just on surface temperature in the media, that's a good strategy. But I think it leads to a lot of confusion about what we're actually talking about, which is usually not the surfaces, but air temperature or something else.

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Doug Parsons 12:21

Yeah, I've been seeing that was witnessed a couple those, it's cool to see. But yeah, in the context of telling a bigger story can complicate things. Alright, I'm gonna do a pivot here. And Kelly, I want to start with you. And you've been working on the impact of heat on schools, and what that might mean for student learning. Give us a general overview what's going on? I know your focus has been California. But what does that all mean?

K

Kelly Turner 12:41

Yeah, well, in California schools are some of the hottest places in the entire city. And this is by design. So we first started noticing this in our research group, we were doing some, you know, precursory, looking at satellite imagery to see where the hot and cool areas in different neighborhoods are. And we see these big red, like, it literally shows up as a big red spot in the middle of the city. And what that'll be is a bunch of asphalt, maybe artificial turf. And that's all looking really, really hot that again, this is our surface temperature. So we started mapping out schools throughout Los Angeles and placing elementary school locations, specifically onto the surface temperature maps. And we noticed that consistently, they tend to be in some of the hottest neighborhoods, but that's only part of the story. So when we go and we do audit to these schools, we do like shade mapping, what we noticed is that you have this design of single storey spread out buildings surrounded by asphalt and very few trees. And sometimes you have to go actually outside the jurisdiction, the periphery of the school to see any trees whatsoever. So there's basically no opportunity for shade for children. And this is built into some of our codes and our regulations. So for instance, in California in the 1970s, there was a measure that was passed in the name of equity, saying that children should have equitable access to play space. And what that meant is play space area should be a function of enrollment, because higher enrollments tend to be tended to be in some of the inner city and disadvantaged communities. But play was defined as basketball, handball, very asphalt oriented activities. So zoom forward now to today when we know that asphalt is exceptionally

hot and causing schools to be hotter than they maybe ought to be, you have baked into sort of the regulation, this idea that play is associated with asphalt and then more asphalt is associated with equity, which is really counterintuitive. From a heat equities perspective.

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Doug Parsons 14:37

You've given me some information here and tell me what these LCI heat policy briefs are.

K

Kelly Turner 14:41

Yeah, so we use something called the heat exposure settings framework. That means we break down heat into the places where people might be experiencing or vulnerable groups spend time being exposed to heat. So this could be the residential setting. This could be labor. This could be streetscapes bus stops. And the reason that we do this is because it's one thing to say that we need throughout the city more green infrastructure to cool it. Or we could say we need a better heat emergency response. But when you get into sort of the chronic day to day experience of heat, that's things like at let's stick with the schools example. For instance, schools need more shade structures. Well, why is it so hard to put up shade structures, then you have to start looking at the California Education Code, you have to look at the way that bonds are approved and how we prioritize bonded investments for for school infrastructure. And we even have to look at labor laws and how we can staff up schools to have you know, school nurses and that sort of thing. So by looking sector, by sector, we're more aligned with the ways that these different spaces are regulated in the first place. And we can start getting rid of things that are constraining a no nonsense action around heat, and we can start improving the way we prioritize and invest in heat and setting by setting

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Doug Parsons 15:55

and lab. I'm not sure if you get in as involved for the sort of little school issue here, you know, in Arizona, or even Tucson but my own observation. When I first moved here, I was just dazzled to see these giant solar arrays. And underneath them were the playgrounds with grass. And they did that at most schools. And was there an organized way here in Arizona to kind of help with a heat issue?

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Ladd Keith 16:15

Yeah, that's a good question that not necessarily organized by any central body. But certainly the schools have been adding additional shade structures. So whether they're shade sales or additional like forestry, like the tree canopy cover, or like you mentioned the solar panels.

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Doug Parsons 16:30

And Kelly, just as part of this, California, again, is taking the lead and lad correct me where I'm wrong. Maybe there's some other states but just living school yards act is part of this. And that seems like a terrible name. But what is that?

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Kelly Turner 16:43

Well, the living school yards, there's a number of these right this Okay, so the living school yards act that's at the national level. So this is a piece of federal level Street. Yeah. To provide grants to invest in schools throughout the nation. To do greening. We have sort of analog legislation that's been proposed, there's a greening school yards coalition that is run by the Trust for Public Land. And that while that's more broadly focused on school greening for a variety of purposes in California, that group has seen the entree point as extreme heat because that is such a salient issue here. But I would say one of the things that we're trying to emphasize is that addressing heat at schools isn't just about trees and green space, you can be just as hot standing on full sun exposed grass as you are when you're standing over asphalt. So we need to start thinking about shade infrastructure as all the green and engineered features that can provide shade, and like centering shade as the primary mechanism for cooling people because it is the most effective way to cool people outside in arid environments.

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Doug Parsons 17:47

I guess I just don't like to name that EC living schoolyards. Okay, lad, can you tell us a little bit about some of the heat standard they're trying to set for labor?

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Ladd Keith 17:56

Yeah. So currently, the Biden administration has put forth the effort to update the OSHA safety labor laws across the country, essentially, to highlight and better emphasize the heat safety portion of those labor laws. And that's currently going through review right now, unfortunately, the review process is very long, because it needs to have input from local communities, the states, the businesses that would actually be enforced upon, right. And so we're looking at a couple more years of kind of going through this process, there's been a bipartisan legislation proposed that would speed up that process or include, like additional standards on top of that. And so I think it'll be interesting to see which of those actually comes to fruition first. But if you look at the number of states that have their own separate heat safety labor laws, it's still very few. So I believe it's California, Oregon, Washington, Colorado, and Minnesota At the last count that have additional standards that are above and beyond what OSHA has national standards essentially requires them. And it's things like requiring additional shade at work out outdoor workspaces, making sure that indoor workers, whether they're in a restaurant, back room, or a warehouse are thermally safe, and that things are in place for mandatory breaks with water and shade. And then if someone actually does succumb to heat related illness, that there's a plan to transport that person to get medical services as quickly as possible.

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Doug Parsons 19:18

Okay, so with this help, and this was a kind of a big story that Texas was going through its own heatwave. And then the governor and I guess they literally passed some new rules that you couldn't take breaks during it for heat or the it wasn't required when you're out there working. Do I have that? Right? And with these OSHA rules, help in that situation? Yeah. So

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Ladd Keith 19:38

currently, it's a patchwork across the country, like I just mentioned, where some states have higher standards, and then other states do nothing further. What happened in Texas was, I believe one of the city's actually had higher standards at the city level. And what the Texas Legislature did was essentially saying that that's not a power that cities have is to regulate it further than what the state requires. And so I believe if that's currently in the court case, right now, we're there kind of battling over the outcome of that

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Doug Parsons 20:04

terriblest cities trying to create better standards and the state's like, nope, not so fast. So Kelly, let's we're gonna do this pivot again. And I want to talk about these chief heat officers, and they've had some cities have hired these folks, and that was signed in progress that they're prioritizing these things. What's going on there? What's the lay of the land with those positions?

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Kelly Turner 20:24

Yeah, well, there were sort of two approaches to having chief heat officers. One is the Arsht Rockefeller extreme heat resilience Alliance supported a network of these throughout the world. There's even a chief heat Officer of all the heat officers that they have supported. And then Phoenix, of course, had the first chief heat officer not called that, that it was publicly supported. And then Los Angeles. Now, we also have a chief heat officer that's publicly supported. And I think these are really important sort of near term solutions near to mid term solutions for creating networks to get resources, sort of collate and get everyone on the same page. But it's also something that not every community is going to be able to support our have. And so it's going to be important for communities to have resources available to invest in heat resilience, even if they can't afford a chief data officer,

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Doug Parsons 21:15

lad, I think there's enough of a track record with some of these, even though the positions haven't been around that long. But you think of like these companies, when they hire a sustainability person, and a lot of times that's that lone person doing that work, and it's not integrated so well. And they're not necessarily appreciated by the company that working with some of them they do well, they integrate well, what's the sense with these? Are they able to plug in to planning within a city relatively well? Are they there to write grants to help them do these things? How are they being effective?

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Ladd Keith 21:44

Yeah, so I think, again, we only have three cases in the United States, at least, to really draw from, but certainly in the communities that have those three Chief Data Officer type positions, they have drawn a lot more attention and awareness to the issue of heat, which I think is a really powerful thing. And then have connected historically, those departments and the siloed

kind of disciplines that don't work together, whether it's public health, emergency management, urban planning, kind of across the whole spectrum, right. And so, so I think the certainly for the three cases that we have, it appears to be working very well. But I'll echo what Kelly said that we also have 19,000 other communities of all sizes in the United States. And it's not practical to think that we'll have 90,000 Chief heat officers, right. And so I think if some larger well resourced cities, that may be a good solution. But we need other forms of governance structure, essentially, for those smaller communities to still be able to effectively organize and plan for heat and address and when it occurs, without having a single dedicated staff person to kind of be the focal point of that.

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Doug Parsons 22:42

Are we at the stage where we could actually make recommendations? Let's say there's a city that wants to be progressive, but do we really need to hire someone like this? Or they're like projected future temperatures, these communities are going to have higher temperatures, so it'd be useful for them to have or their basic metrics, you could give a city to help them make this decision? I mean, would that be the federal government organizing that it just seems like there's some boxes that could tick off to decide if they're gonna prioritize this? And Kelly, do you wanna take a stab at that?

K

Kelly Turner 23:11

Yeah, I think the federal government certainly has an extremely important role here in helping communities become more heat resilient. So I would say, sort of three things here, right now, it's important to remember that the governance and policy is at the very beginning stages, but it's kind of exciting, because for the first time, the federal government is guided by Justice 40. And so equity is going to be a central component of any investment. And so we're going to see a heat governance system being built from the ground up, and it's going to be centered on equity. Right now, we're sort of in this everybody's sort of trying to see where he fits in. Right. So we have things like the extreme heat emergency act right now that would allow FEMA to recognize extreme heat as a disaster categories. So that's one thing, there's another excess urban heat mitigation Act, which has popped up a few times, which would kind of deal with that those urban sources of heat, but I think where we're ultimately headed is towards some sort of federal legislation that would grant either an existing independent federal agency or you know, maybe establish a new one, probably not, but give authority to some federal agency to create some sort of robust governance framework. And we're not quite there yet. Perhaps right now, we have a lot of great solutions that are popping up in different communities. And so I think, you know, what we need to do is three things, one, support those existing networks and get kind of a conversation going for kind of peer to peer learning about how can cities better adapt to extreme heat mid range, then we probably need to create pathways to kind of improve and generalize those frameworks through those learning processes. And then the long term solution is to create a durable institutional infrastructure around extreme heat because without that, it's kind of get lumped in with climate adaptation or mitigation and maybe not being addressed in a robust way,

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Doug Parsons 25:04

lad, I've read this, again, some of the resources that you guys shared, and that there's all these

floodplain managers out there across the US and in some relatively rural areas and small communities. And the stream heat obviously kills a lot more people than flooding does, even though flooding is a very serious issues. And this might be apples and oranges kind of thing. But like if we've created that sort of infrastructure to help deal with that threat. I mean, it just seems like there's pathways out there to get their focus more on heat.

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Ladd Keith 25:30

Yeah, and I love that comparison, whether it's flooding or wildfire, or the tension that we dedicate to hurricanes or drought. And if you kind of look at the number of professionals, whatever flavor of professionals those might be across the country, and the dollar amount of resources that we assigned to those climate hazards versus extreme heat, I think you'll see that Kelly's point that we're in the very early days, that's certainly true, because, you know, three chief heat officers, they're combined salaries, right, compared to the hundreds of 1000s, of professionals working on all of these other climate hazards in the United States. And it's just like not even comparable, considering the extreme heat is increasingly a threat, and, you know, is the number one weather related killer. And we certainly have seen, you know, a trend upwards in many communities, particularly like those in Arizona that are seeing more heat related illness and death kind of consecutive year after year. So I think that's a really important point, I would say, the two main things I would add to what Kelly said is, We need a whole of government approach. And so a dedicated institution, or something like beefing up with the National Integrated heat health information system is able to provide is really critical. But we also need all of the other federal agencies, whether the department of transportation, housing and urban development, Department of Education, you can go through the whole alphabet soup of federal agencies, all of them need to be addressing heat and the way that it affects their agency mission. Right. And I think the other point would be not just the federal government, but a lot of times we kind of the heat governance conversation centers on what are cities doing, and what's the federal government doing. And then we missed the whole middle landscape of governance. And so I think what states are doing is incredibly important. And then the role that counties play, particularly as most of our public health agencies, at the local level, are housed in county health departments, and is really critical to those counties also serve a lot of rural and smaller communities that are not incorporated. So I think we have to do a better job of including states and counties in this discussion to

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Doug Parsons 27:25

Kelly related to this and back to some of the federal issues. And there's talk of FEMA, because right now when there's an extreme heat event, and you could have hundreds of people dying, there's they can't technically do a disaster declaration, right? Just please correct me when I'm wrong. When a hurricane hits, the the federal government can do that. And that just frees up lots of money. But right now, you can only really do that at the state level. But the Feds can't do that. And FEMA, specifically, right.

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Kelly Turner 27:49

That's my understanding. And I think one of the really exciting things about the proposal to have FEMA support heat as a disaster would be that FEMA has been moving away from just emergency response and into long term resilience planning. And so this is, in a way kind of a

emergency response and into long term resilience planning. And so this is, in a way kind of a clever way to get heat funding to communities by way of FEMA to do both emergency response, but also trying to, I guess, build back in a better way that is more heat resilient.

D Doug Parsons 28:19

And Ladd. You have anything to add to that. That could be a pretty big deal if that happens.

L Ladd Keith 28:23

Yeah, absolutely. And I would say, again, kind of looking at the state level, we actually saw this summer in August, both Arizona and Louisiana, both declare a state of emergency for heat. And I think that's really interesting development to see if other states kind of follow that lead next year. And I think there's we need a conversation on what is the state of emergency for heat when, you know, a place like Arizona or even increasingly, California or other the southern states, essentially have summer long heat waves that as we saw this year, it was just month after month of record breaking temperatures that didn't let up. Right. And so is it a state of emergency if you have extreme heat? That is record breaking throughout the whole summer? And I think kind of how we approach that delicate kind of conversation that Kelly was talking about? Is it really preparing and responding to an emergency? Or is it just preparing and responding to kind of our climate as it is increasingly looking?

D Doug Parsons 29:14

This is probably the favorite part of the conversation for both of you. And I'm gonna stay with you at the moment, Ladd. And there's been a steady push to name heat waves. And what's the status of that right now?

L Ladd Keith 29:24

Yeah, so it's a kind of a media friendly option to potentially like look at the pros and cons of naming or ranking heatwaves. Right. And, you know, on the proponent side, it's often compared to the public attention that named hurricanes get. And so I think there's been a lot of good discussion about kind of the pros and cons of it. So I serve on the Management Committee for the global heat Health Information Network, which is part of the World Health Organization and world electrical organization. And I think there are some concerns with this idea two. One is that we really only want national governments to have the power to To declare named storm events, right? And that's kind of the way that it works for hurricanes. And there could be public confusion, essentially, if we see, you know, nonprofits or local cities declaring one heatwave has a name. And then the national government doesn't agree with that. And so I think we've seen some examples in Europe, where that's occurred, where, you know, neighboring cities or neighboring countries aren't following suit with that naming scheme. And it can create some public confusion. So I think that's one concern. I think the second one is that fundamentally just heatwaves don't act like a storm, right? And so they don't follow the spaghetti plot of potential tracks that they could go like a hurricane does. And a lot of times, like I mentioned, these heat domes, essentially, increasingly sit in place over a gigantic region of the world, and just kind of sit there for weeks or even months at this point, right. And so in

that case, is it really again, about naming the storm or naming the heat wave? Or is it about getting that information out to the public that isn't paying attention to their phones, and not necessarily on social media? And so I'm thinking of the digital divide, and those that are experiencing homelessness or the elderly, that are really sometimes the most at risk? And it doesn't matter so much whether you name something or not, it's can we get the social services to respond to get those folks to help that they need as soon as possible?

D

Doug Parsons 31:17

All right, Kelly naming heatwaves, I just keep give us a status update. But let's just get your perspective.

K

Kelly Turner 31:23

Well, I mean, there was Heatwave, Zoe, right. In Europe, they've been doing this. And I think the groups that advocate for this are trying to track how that will play out in terms of people's behavioral responses. And it's probably quite frankly, too early to know. But I haven't seen that as much energy and enthusiasm around the idea of heatwave naming, or even really ranking in the US. But what I have seen is the door open to talking about a wide range of sort of creative solutions in California talking a lot about climate insurance and insurance around heat. But I think also there's some sort of existential questions that it opens the door to is what does it mean to be too hot? Is it some sort of maximum temperature threshold? Or what is it? How do we define that?

D

Doug Parsons 32:06


I was thinking about this this morning, and you guys can correct me that this is a dumb idea. lands like where's it going? Like, I think about some of the previous heat waves and the idea of naming it advance. There's just so many X factors and slide You've been a good tutor on the why that's not necessarily a great idea for X y&z reason. But even naming a heatwave after the fact. First off, it's it takes a while before you can even identify the people that have died from the heatwave. And so the sort of severity, but eventually they do and I read this whole article on Phoenix and how the time it takes and sometimes it can take months before they can really attribute something to the heatwave. But when I think about when we talk about the Chicago heat wave, and remember, the big heat wave in Paris was like 2003, or something. In essence, it was named it was the Paris heatwave of 2003. And it has value and has a legacy kind of lives on. And to me almost after the fact where you're sort of it allows you to put other people who died and not forget about them. And maybe we do that by default. But thoughts on like creating a guest a naming legacy, even after the fact because you can kind of learn from it. And so Ladd put you on the spot to that dumb idea.


o


33:14


Yeah, no, I mean, I think I'm open minded to all potential strategies and solutions that increase awareness and potentially save lives. Right. And so I think if there's evidence that shows that that would be something that would advance efforts to plan and prepare for heat, I think we


should consider it right. But I think the devil's advocate argument would be that you just need those two heat waves with the Paris heat wave and the Chicago heat wave and remember them quite well without kind of attaching a moniker to them like Zoey, or one of the other names that has kind of been floated recently, right. So I think we do similar things for earthquakes, right, like earthquakes don't have human names attached to them. But we certainly when they occur, or tsunamis, sometimes in the same way, we certainly remember them and know what they are historically. Right. So I think, you know, from the WMS perspective, they currently have a really important initiative that I want to mention, that's called early warnings for all. And this is just the idea that whether they're named or not, there's still a great proportion of the global south in the world that doesn't even have the capacity to get early warnings for heat waves. And so this WMO initiative called early warnings for all is essentially trying to fill that gap so that every person on the planet Earth can be warned in advance of a heatwave that's approaching. And so I think that that's a really practical way to get awareness out there and to make sure that everyone has that information in hand to prepare and respond accordingly. Yeah, so the last thing I would just mention is that, again, the naming and ranking heatwave idea does draw our attention more to those heatwave events, right. And I think it's just really important to keep in context that those extreme heat events like heat waves are certainly something that we need to pay attention to. But it's also the increasing chronic heat, and those average rising temperatures that are also threatening health infrastructure, the economy and the environment. So it's not just heatwave but it's also those chronic temperatures that we're seeing increasing. And I think when we're thinking about planning and preparing for heat, we have to look equally to both of

 Doug Parsons 35:07
those. Kelly, any additional thoughts on that?

 Kelly Turner 35:09
No, I'm all set.

 Doug Parsons 35:13
But you know, I listen, when you say Paris, 2003 Heatwave, you're giving geographic information. You're giving timescale information, and then you get the heatwave.

 35:21
So I mean, the, you know, that's what we do with fire. Right with the campfire. Right, right. Yeah. So the really naming hurricanes is an anomaly

 Doug Parsons 35:30
in advance, it's just yet and you sit there and track and you can watch it and it's just, it's narratively, it's better designed to do that. Okay, Kelly, you're based in California, and a lot of the research in the work that you do is in California, and what I keep reading, and I keep

the research in the work that you do is in California, and what I keep reading, and I keep hearing about is that some places are going to become uninhabitable. And you hear more about the Middle East, and some of those places, it's just literally the human body can't survive in these areas. And you think about maybe, is that a future for the United States? And is that a conversation that's coming up? Because governments just doesn't they don't like to give up on areas. But you think of the even in the southwest, managed retreat has always been associated with sea level rise. But you know, there's now whisperings of managed retreat, because some areas will be just too hot to live in. Does that come up at all domestically in any of the conversations that you have?

 Kelly Turner 36:21

Yeah, that's not been a point of emphasis, although it does come up for everything from wildfires to sea level rise. And you know, one of the early conversations I had I work with a group out in nice Coachella Valley. It's a group of primarily agricultural workers. And one of the first things that they said is, you know, great, you're here to study heat in our community. But will we have jobs in 10 years from now? Will it be viable to even have agriculture out here? And you know, I don't know, I don't know the answer that question. But one thing I do know about extreme heat is that your capacity to cope with it is directly related to the resources you have. And so that for a lot of Americans, that means their ability to go into an air conditioned building in many parts of the world. I'm glad that had brought up the global South, in many parts of the world, air conditioning is not an option. But I think that one of the things is that we can really do a lot with urban design. And we can do a lot for outdoor communities through smart design, remembering passive cooling, and we just haven't designed in a way that that makes cities cool in hundreds of years, because we've had technology like air conditioning, to kind of offset the impacts of heat. So to the extent, you know, we could start whittling away at the map of the United States based on different climate related hazards. Or we could start thinking about how we can be smart about how we plan and design our communities so that they are livable and change behaviors where we need to as well

 Doug Parsons 37:52

And Ladd, if you could weigh in on that in I think, again, like let's say sea level rise in Florida, there's just really no adapting around some of these projections seven, eight feet. And yet there are projections for extreme heat. And so with the extreme heat projections, as Kelly just described, there are a lot of technical fixes and a lot of planning fixes. It's not so much like the sea level rise issue where you're really not going to plan around eight feet of sea level rise, right?

 38:17

Yeah, I think certainly to Kelly's point, every place in the world has its own unique set of climate hazards. Right. And so when I get asked the question by the media, will Arizona be inhabitable in 50 or 100 years? Right. I think that's really the wrong question to ask. Right? Because we saw with that Pacific Northwest heatwave of 2021 place that was considered quite the climate change Haven, the Pacific Northwest kind of experienced its own record breaking temperatures that were even hotter than what was going on in Arizona at that time. Right. And so I think I think these heat domes can essentially force heat and these heat waves to happen anywhere in

the world. But certainly for a place like Arizona that's been historically hotter. And many of those global south locations to that may lack air conditioning, like Kelly mentioned, it's not a question of will they become uninhabitable for everyone, but it's more of a question of who will be uninhabitable for? And you know, usually that ties into income status, how marginalized populations are by their government or by historical factors. And so I think it's a big equity question of looking at what climate change will do to the communities that have the least resources to cope with it. Right. Okay, Kelly,

D

Doug Parsons 39:25

I'm pivoting a lot here. But these are broader issues. And you guys have talked about these heat networks and just efforts nationally to start addressing heat and killing. I don't know, if you had any opportunity to think about there's an effort, there's legislation that they're pushing for a national climate adaptation plan, and the United States is pretty much the only country in the world now that doesn't have a national adaptation plan. Would that at all provide value to dealing with heat? Because I mean, it's a climate impact or do you think too many things and there's it needs to happen more locally? Do you do you see value in a national adaptation plan?

K

Kelly Turner 39:58

Oh, absolutely. I mean, In California, we have both a climate mitigation plan and the climate adaptation is sort of where we're moving towards. And one of the things that happens when we focus very heavily on mitigation is that a lot of the adaptations that are life saving to people like cooling and air conditioning automatically become sort of things that are working against sort of the national goals and strategies under mitigation. But the fact of the matter is that when it comes to extreme heat, I really liked the way you put it, you know, it's not a matter of will places be uninhabitable, right, it's about who's going to be exposed. And so we have the creation of sort of haves and have nots in the United States with respect to heat, and a lot of that falls on adaptation. So I think about two people getting ready and going to work during the day, one person waking up with air conditioning, getting into their air conditioned car and going into an air conditioned office and you know, returning home to the same thing. And then the other individual, you know, waking up in an apartment that doesn't have air conditioning, taking public transportation or walking in a place that maybe is like a shade desert where there's not enough tree canopy covered to keep them cool. And then they go to work outside and do physical labor, and they never have a chance to get their core temperature down. So I think we need to have a national adaptation strategy because it's on the backs of those people that live that hotter existence that we were going to be sort of, we're going to be missing them if we only focus on mitigation

D

Doug Parsons 41:25

Ladd. And Kelly, if you've read it, too, please weigh in. But Jeff Goodell, who has climate writer for Rolling Stone, and I know him he's been on the podcast a couple times has a new book out right up your alley is let me see if I get the heat will kill you first. So nothing subtle about that. Did you read it? Do you have any thoughts about that?



L**Ladd Keith 41:43**

Yeah. So it's funny because we've you work on heat 24 hours a day, right? The last thing you want to read this book about heat, and like, you know, something that just kind of further during your free time is about work. It's I did the wait about a month to pick it up. You know, when it became so popular. I like I couldn't ignore it anymore, essentially. Right. And so I did go to the local bookstore. And ironically, when I brought it up to the cashier, they even commented, this book has been flying off the shelf. It's just so popular. Everyone's like, if the moment we get like copies, and it just like disappears quickly. So So I thought that was kind of a funny moment where even the cashier was kind of noting how popular the book was, you know, given the circumstances of the record breaking temperatures this summer, so So yeah, so no, I did read it. I like the storytelling components were really the strongest part of the book. For me, I'm kind of giving a human voice to a lot of the different aspects of heat that we don't typically hear about. And again, that kind of almost mirrors the sophistication of those long form media articles that we've been seeing more of. So I think that that's a really good thing. And it did have some good summary basic information that I think the general public that has clearly picked up on this book and then kind of catapulted to its success might not have been aware of before. So I think in the long term, this is probably a really good thing for folks to be more aware of heat through this book.

D**Doug Parsons 43:04**

It Kelly, did you get a chance to read it?

**43:05**

Well, I pre ordered it, but um, I never actually read books. I'm a runner, I long distance run. So I listened to it as I was running through the hot Los Angeles City. Perfect. And I agree with lad, the storytelling is really impeccable. In the book, I thought one of the strongest points was the components of the book where he talks about the body and how the body physically breaks down under certain hot conditions. And honestly, that's all part of the conversation I would like to see sort of explored more, we talk a lot about extreme heat. And we talk a lot about mortality. And we talk about heat sickness. But what we don't really talk about is the myriad ways that heat affects well being in our daily lives, it affects your cognitive abilities, your emotional state, you're more likely to be angry, unable to concentrate. And I think these are ways that the lived experience for many Americans is going to be degraded because they don't have access to cool communities or cool infrastructure.

D**Doug Parsons 44:04**

All right. Well, Jeff, if you're listening, flying off the shelves, that's a good sign, you know, my bill option that for a movie or something, but that's fantastic. That's getting a ton his you know, as sea level rise book was really popular, and so he's on top of these climate issues. Kelly, I'm going to stay with you. We've heard quite a bit about some of the research and work that you're doing. But tell us a bit more about there at UCLA, and maybe some of the students you're working with some of your graduate students were some of the projects and kind of future research that you're involved in, that we haven't heard about.

K

Kelly Turner 44:31

Yeah, well, we're focusing on two big buckets right now at Luskin center in my research group, the first bucket we did touch upon is schools, but that's really a part of a heat communications framework that we're working on developing ways to do policy briefs and to get research on extreme heat into the legislative discussion, not to influence legislation specifically or advocate for it, but to understand how to better frame heat in it. way that it's usable for policymakers. So that's one area of research, but the other big one is a shade. So I recently published a piece with Arianna modelo and Jenny Manos, my colleagues at Arizona State on the importance of shade and shade infrastructure. And we're following that with a couple of research grants, we have one, I'm continuing work in the East Coachella Valley to create a shade equity plan for the unincorporated rural areas out there. And then I have another one through the Robert Wood Johnson Foundation to create a shade equity score building on the American forest tree equity score. And that would be for the developed areas, the United States. And that one I'm particularly excited about, because I think it's really important that communities consider shade. And it's just not the kind of data that they're using or centering right now. But it can be really transformative to people's day to day lives.

D

Doug Parsons 45:50

Great. And Ladd, similar question, but also just when you have graduate students reaching out to you or maybe when you're recruiting them is extreme heat, something they want to talk about, do you? Are you noticing that as a graduate advisor?

L

Ladd Keith 46:02

Oh, absolutely. And I think with the generation of whether they're academics or kind of practitioners in the university system right now, and Kelly can probably confirm this, I think I'm really optimistic for kind of the future of our heat preparation and response just based on the folks that are being educated and kind of dealt with these projects right now. So that's a really positive sign. So currently, my research areas heat policy planning and governance. And I have three research programs right now at the University of Arizona that tackle different aspects of that question, right. And so, one is the Department of Energy funded southwest urban corridor, integrated field laboratory, we call it the Southwest ifl. And so that's a partnership with University of Arizona, Arizona State University in Northern Arizona University, essentially looking at climate change modeling, fieldwork, observations, and resilient policy solutions for the whole Arizona urban corridor. And so that's for \$25 million, and for five years. So we're supporting quite a few graduate students through that effort. And I have another one through NOAA. And that's one of their climate adaptation partnerships. And that one is cleanest so the climate assessment for the Southwest. So we've been funded with cleanliness for a number of years now. But in this iteration of the program, we have three different pillars, and I'm in charge of the heat resilience pillar, looking specifically at rural, agricultural, tribal and border land communities, with the idea that much of our research to date, and we ice kind of like the academic community has focused specifically on cities and kind of that urban heat island idea. And so this focus of our program, this time is really looking at the solutions and the impacts of heat on those communities that are in those more rural natural areas with the idea that sometimes they actually suffer greater proportions of heat related illnesses and deaths. But things like cooling centers, or more urban forestry or cool pavements aren't necessarily

appropriate in a small rural community, right. So we're kind of looking at what strategies that those smaller towns can use across the United States. And then the last one that I'm involved with is the CDC brace project. So that's building resilience against climate effects. And that one is a partnership with Arizona department of health services and Arizona State University. And we're essentially working with different county health departments, and focusing explicitly on kind of incorporating climate change into public health outcomes. And so we've been really working the last couple of years on our statewide network of cooling centers in Arizona. And it's resulted in a map of cooling centers across the states that are protocols for recruiting cooling centers. And we're working on things like spatial optimization tools to know which neighborhoods are the most vulnerable, that we should recruit future cooling centers for so kind of addressing heat through the urban areas through the rural areas. And then at those county health departments to

D Doug Parsons 48:49

You professors and doing all these things. My goodness, it keeps your brains on right for each project. I don't get it. Well, thank goodness, you guys are out there. Alright, Ladd, I'm sticking with you here. You know, the routine. If you could recommend one person and come on the podcast, who would it be?

L Ladd Keith 49:04

It would be interesting to bring maybe, and I know this may be difficult, but maybe like a legislator or a politician or an elected official, who's actually recommended one of these really important bills that's kind of either at the state level or at the federal level to kind of hear their perspective on is, as Kelly mentioned before, some of these bills have been repurposed a couple of times, so I'd be interested to find out what they think the stumbling block is and how we can move some of these important pieces of legislation forward.

D Doug Parsons 49:29

Okay, I know legislative staff of all sorts, listen to the podcast, if you're out there, and you have your boss is doing that kind of work. Reach out. So let's see if we can make that happen.

K Kelly Turner 49:39

I'm going to echo what lads said but I would say maybe reaching out to somebody who's working in a particular sector legislation. So for instance, we have some schools based legislation and the staff they're talking about, you know, how is a legislative infrastructure that's set up to think about educating kids and keeping kids happy, healthy and say thinking about climate adaptation.

D Doug Parsons 50:02

All right, great. Well, if you guys come up with you know, some specific names to on some other areas, let me know. All right, this has been fantastic. We have covered a lot of ground

other areas, let me know. All right, this has been fantastic. We have covered a lot of ground some quite quickly to just be covered a lot of bases there. Thank you for coming on. We will be in touch I know we're going to cross paths in many ways and I appreciate you guys out there sharing the the heat work that you're doing and thanks for coming on the podcast.

K Kelly Turner 50:23

Thanks so much for having us.

L Ladd Keith 50:25

Yeah, thanks for having us on again. Doug.

D Doug Parsons 50:32

Okay, adapters, that is a wrap. Thanks to Kelly and Ladd for joining the podcast. Ladd is irregular and it was the second time for Cali. Have a look in the show notes for their previous appearances. They are doing some really interesting and important work in heat management. Obviously, it's an issue that will only become more important in the warming years ahead. As you can tell, the issue of naming heat waves is filled with differing opinions, it remains to be seen if it'll catch on. But big picture we need to do better about communicating the threat of extreme heat to the public. As our discussion around media coverage acknowledged the media is doing much better, but there's still much to be done. And the seasonal focus on extreme heat sometimes makes it difficult to make policy progress in the realm of extreme heat. Let's get in front of this and without fail, there seems to be a consensus that having a national adaptation plan could help organize and supercharge adaptation across the various impacts out there. I think the bill is stuck in Congress but hopefully congressional supporters can get some traction there. Hey, you guys. There's huge demand for this. Let's get that thing passed. Definitely check out my show notes to see some of the important work Kelly and Ladd are doing and some of the additional resources if you're looking to do some planning around extreme heat. Thanks, Kelly and Ladd. Okay, all you folks doing great adaptation work out there, consider sponsoring a whole episode of American apps. This opportunity allows you to showcase your organization's achievements to a wide network of climate professionals. By integrating a podcast episode into your long term communication strategy. You can move beyond traditional formats like webinars and white papers to engage your partners and members effectively. Partner with us to identify experts who can share your organization's impactful adaptation work through the power of podcast storytelling. Podcasts offer an enduring value as they continue to promote your message long after the initial release, making them a valuable educational resource for years to come. Join our esteemed list of partners which includes prestigious organizations like Battelle and RDC, University of Pennsylvania Wharton World Wildlife Fund, UCLA, Harvard University, the trustees of reservations, and many more. For more information on how Podcasts can benefit your organization, email us at America.daps@gmail.com. Okay, finally, as the host of American apps, I'm always eager to connect with my listeners and hear their feedback. Whether you want to share your thoughts or suggest a guest I'd like to hear from you. I'm open to it all. Your input not only helps me improve the show, but can also lead to exciting new opportunities. So please don't hesitate to get in touch with me at America.daps@gmail.com. I look forward to hearing from you. Okay, adapters. Keep up the great work. I'll see you next time.

