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SPEAKERS

Ricky Telg, Phillip Stokes

Ricky Telg 00:04
This is Science by the Slice, a podcast from the University of Florida's Institute of Food and Agricultural Sciences Center for Public Issues Education. In this podcast, experts discuss the science of issues affecting our daily lives, reveal the motivations behind the decisions people make, and ultimately provide insight to solutions for our lives.

Phillip Stokes 00:28
Welcome to Science by the Slice, Phillip Stokes here, education coordinator with the PIE Center. June 1st kicked off the Atlantic hurricane season. So we wanted to bring you a series on hurricanes and hurricane preparedness. You'll hear from several great speakers in this series. And First up, we have a familiar voice.

Angie Lindsey 00:45
It's great to be back. I appreciate y'all asking me.

Phillip Stokes 00:51
That's Dr. Angie Lindsay. She was a guest in our last series discussing the impact of natural disasters on Mental Health. Dr. Lindsay is an assistant professor in the family youth and community Sciences Department at the University of Florida and conducts research in the PIE Center. And hurricane preparedness and recovery is one of her expertise. In our last series, she mentioned that she sees how people come together in times of crisis. And I can say personally that Dr. Lindsay is a great community organizer, and the type of person you want around when dealing with a tough situation such as a hurricane. So I asked Dr. Lindsay to have a short conversation with me to tell us a little more about the Extension Disaster Education Network, and then introduce our other speaker for this episode.

Angie Lindsey 01:36
So the extension disaster Education Network, or more known as the Eden network is actually a network it truly is a network of extension professionals throughout the United States. So each land grant university has at least one point of contact here at the University of Florida, we have two. I'm the point

of contact for UF IFAS. And then Maya Patterson is actually the point of contact for the Sea Grant. Because our Sea Grant is actually housed here at the University of Florida. So each land grant university has at least one person that is a point of contact that's part of the Eden network. And then you can have as many delegates as you would like to have. So a lot of universities have, you know, a lot of delegates and one point of contact or two or three delegates, and it's all part of the network and the membership and we share best management practices and managing disasters and managing hazards. But also we share resources as well, which has been really helpful in times of disasters. been able to pull resources from other land grant institutions as well. And Eden's a great network guides a good group of people, I tell people all the time, the minute we have a hurricane that's coming near us here in Florida, the first phone calls and the first text I get are from my Eden network asking how they can help. So it's been a great resource. And of course, we return the favor to our folks that have been impacted by flooding, or winter storms or tornadoes and other parts of the country. And it's a great way to learn about some of the other hazards that are out there affecting, affecting the United States and affecting other states as well. I think here in Florida, we get we're used to tropical storms, we're used to hurricanes, but learning about what some of the other states have to deal with as far as and even drought and wildfires. And so it's a great way to learn some best management practices that maybe have happened and other hazards and other disasters, this still can be applied here in Florida as well. But it's a great network, we have a yearly meeting, usually in the fall, and then we keep in touch with the listserv throughout the year as well.

Phillip Stokes 03:47
And so as we continue on, I thought it would be great if you could just introduce the conversation that I had with our guests today becuase I know your work overlaps. And so I spoke with Craig Fugate. So tell us a little bit about some of the work he does and some of the things that y'all do similar as well.

Angie Lindsey 04:04
Sure absolutely. And I'm so excited that you got to talk to Craig Fugate. I mean, he's actually kind of the father of disaster management obviously. And we're so excited that he's from Florida, and he's back in Florida now. And he's a great resource for those of us that, that work in disaster management and study disaster management like I do. I've thoroughly enjoyed talking with him as well as, as listening to him speak. I've tried every opportunity I have to see him speak I enjoy going to listen to him speak because I feel like I learned something every single time. But his experience is just phenomenal, and how he kind of worked his way up and into disaster management and then became the director of Florida division of emergency management. And then on to the FEMA Administrator for President Obama. And his experience and his knowledge is just phenomenal and that we're so lucky to be able to have him as a resource. And we thank him for sharing a lot of his information out there through speaking engagements and doing interviews like this, as well as working with different organizations throughout Florida as well. And so it's a, it's a great resource for Floridians and also throughout the country to have his experience and being able to learn from him.

Phillip Stokes 05:29
And now, we'll join in on my conversation with Craig Fugate, where he's discussing his experiences with natural hazards in his time as the director for the Florida Emergency Management Division.

Craig Fugate 05:45
When I got to the state, it was relatively quiet for hurricanes. We had a few storms in 1998, we had hurricane George, but you know, everybody's kind of looking back to the 1995 season where we had all the storms, including all pool that did a lot of damage in the panhandle, all the way back to Hurricane Andrew, and 92. But that that period was really, you know, it was right after the 9-11 attacks, a lot of focus on terrorism. It was almost as in Florida had forgotten that we had a hurricane problem. And we were reminded in 2004. And you know, I think back then you kind of you know, go back to the Hurricane Andrew, you get one big storm a year. So in hurricane Charley formed it hit Southwest Florida and crossed the state, including Orlando as a hurricane. We thought Well, that was our big storm. And 22 days later, here comes another storm bring out of the Bahamas, Frances and yeah, that storm fortunately we can but it was a slow storm moved across state hit a lot of areas that were already damaged because of Charlie. And then we thought okay, two storms were done. And then 11 days later, here comes Hurricane Ivan, and Ivan's making a beeline for the panhandle and comes out as a major hurricane. And now we're dealing with damage all the way down in Charlotte County, across the middle of the state. We got Frances to hit the Treasure Coast crossed the other direction that we're up in the panhandle. And nine days later, after I've made landfall, Hurricane Jeanne made landfall about 15 miles from where hurricane Francis made landfall. And again, a lot of areas that had already been hit by two hurricanes were hit by the third hurricane. And throughout all that we, you know, we were evacuating, sheltering, you know, massive power outages, getting all kinds of supplies moving. And, you know, from a lot of the things that we had learned from Andrew, things that we had changed the big focus while still speeding up response. So we, by the time that, you know, Jeanne hit, the team was worn out. But we kept going. And I was just kind of this period where it seemed like it was just nonstop. But we kept adapting to what was happening, you know, the hurricane season that everybody thought it couldn't ever get any worse, we were wrong, because in 2005, it got worse. He had been decades since we'd seen a hurricane with as much death and destruction as we did Katrina. And it pointed out the inequities of who makes it and who doesn't. When you look at the people that died in Katrina, disproportionate numbers were the elderly, the disabled, people from low-income areas. We were seeing that in Florida, but not on the scale that Katrina showed. And fast forward to the day, it's not much different than the same impacts we're seeing that COVID had on communities that it was not even handed, it tended to illustrate where we had vulnerabilities where we had lack of services, and the disproportionate number of deaths that occurred in those communities. Not much different than what we're seeing in a lot of these natural hazards.

Phillip Stokes 08:49
So I mean, all of these times that you're mentioning, you know, they're very stressful that you you mentioned that your crew, your team, they were worn out. And so there's has to be so much you learned about operating in a crisis. And so from your times, at the Florida Emergency Management Division, and with being the director of FEMA, what have you learned? And what would be good to have our listeners hear about operating in a crisis and what communities can do and what you learned in all of those experiences?

Craig Fugate 09:18
Well, probably the most important thing I've learned is recognizing that you need to do something different. And this may seem an oversimplification. But if you think about government, we always try to

make events fit our systems, our processes. Yeah, there's one thing about government systems is they're built for the day to day, and then we try to adapt them to the crisis and it doesn't work very well. You have to fundamentally change things. And what I found was, even though we were in these disasters, a lot of the day-to-day processes weren't adapting. They were doing what they would have done. If there was no storm hitting everything from procurement to travel to decision makings, like we needed more information. We needed assessments, and more Like, why it's a hurricane, it just hit. Why don't we just respond like it's bad, because I found the most precious commodity in any disaster was time. And government is not built to be nimble. It's built to be delivered very slow, very risk averse. You're trying to avoid mistakes and maximize efficiencies. And getting quick decisions is not something it's good at. But yet, that was the demand. And so for the team, it was important to clearly set what the outcomes were, and then give permission to deviate from the norms to achieve that. Like I told people, I said, Look, I remember President Obama came into the FEMA National Response Coordination Center, how the federal agencies, and he's telling everybody to cut the red tape. And I had to remind them, I said, but he didn't say break the law. So there's some boundaries there. But unless the law specifically says it's illegal, it's possible. And getting people to understand that they got to do something different. We need to focus on the outcome. Don't start with your processes, and try to make it fit the problem to find the problem, what success looks like and work backwards and figure out how we're going to do it. And be willing to work in a situation where it's very fluid situations, changing decisions you make an hour ago, maybe irrelevant, because a new information, but you can't keep waiting for the new information, you have to start acting and adjust to that situation, because the time you spend trying to get to the best possible answer is time that may cost people their lives.

Phillip Stokes 11:37
I think that is such great advice. And I want to ask you now. Okay, so you're speaking more from an organizational level, right from kind of government? Well, let's take that same advice. And let's now talk about the households. So how can households How can homeowners and people in the state of Florida in the southeast when they're hurricanes coming when they're in them? And then shortly after? How can we use that advice of acting quickly to help the individual at the individual level, if that makes sense?

Craig Fugate 12:06
Yeah, we're going to talk about the public. This is it's cut and dry. First thing is find out if you live in an evacuation zone. And if you're not sure what that means, if you live anywhere along the coastal areas, certain areas inland even particularly around Lake Okeechobee, and some of the river systems that are subject to severe flooding during hurricanes, you can look up, go to your county emergency management agency, you can go to the state of Florida, you can go to floridastorms.org. And look up and find out if you're an evacuation. So this is the key thing. If you're in the evacuation zone, your plan is to move to higher ground if an evacuation orders given. And that means you your pets and everything that you need to have medications, papers. And the reason we evacuate is not because of when we evacuate because these are areas where people drown. And this is, I think one of the biggest problems we see. And I'm trying to explain people coastal and other areas where you may need to evacuate and the hurricane is there's so much focus on the wind, but the winds, not the big killer. If you look at all the data of the National Hurricane Center, all the deaths from the storms, the number one cause of death is drowning, and trauma by water. And that's why we evacuated we don't evacuated

from when we evacuated those low lying areas. So that's the first thing find out if you're in evacuation zone. And, again, you're moving away from water, not wind, so you only have to get 10s a mile. So that's the first thing if you're not in the evacuation zone, you may still need to evacuate. older homes are not well constructed, particularly a lot of homes that were built before codes, older mobile homes, you know, you may have local officials, you know, or evacuated, if you're in a recreational vehicle Park, you're definitely going to have to evacuate the winds will be a problem. But for most other people, it's really about getting your home ready for the storm, securing outside, being prepared for power outages that, you know, it's not just days, in some cases, it's weeks in a lot of cases, and having the supplies on hand to get through that timeframe. But the big thing is, if you already know that you're in an evacuation zone, you don't have to think about that. And you can now start thinking about where you're going to go. And it turns out that the more people think about it, the better their outcome is, even if they did nothing else. If they just knew in their head that okay, if I'm if a storm threatening my community I know I'm in evacuation zone. I know I need to get everybody and go if you've just thought through that you just increase the chance of survival because when that warning comes, you've already made the mental decision. You're leaving now. It's just the execution of that. So if we're going to keep the loss of life down, we need people to heed those evacuation orders. And don't wait for another forecast. And don't hope it gets better. Don't hope it turns because as I tell people hopes not a strategy. And we've seen people run out of time there was a very eerie series of 911 calls I listened to in Escambia County with Hurricane Ivan, it was people dial in normally one is a storm was approaching the coast and the storm surge was coming and all that water was rushing in. And they were calling to get rescued. And the 911 operators were telling them, it was too late, it was too dangerous. They couldn't get out there. The crews couldn't go. You were kind of left wondering, did those people survive? You don't want to be that person you want to you and your family knew the higher ground.

Phillip Stokes 15:23
So I want to change things a little bit and talk about something that you have kind of coined the term. It's the Waffle House index. And so just tell us a little bit about that. And, you know, what are the greater implications of this?

Craig Fugate 15:37
Yeah, the Waffle House Index came out of the 2004 hurricane seasons, we were down in hurricane Charley. And our day started early, and we were running long days and you weren't sure because it was a pretty devastated area. There wasn't like places to go eat. So you tried to get breakfast because you didn't know what the rest of your day look like. And we were staying just south of the area devastation. We were on the interstate and we found the Waffle House and it was open, we went in. And normally you go in the Waffle House they have these big bright plastic menus with all this great food on there. We walked in, sit down and the waitress handed us a paper copy of a menu and it was limited. And she said look, this is all we got. We brought fresh stuff in. We lost power. So everything in the freezer and to be thrown out. So this is all we got. But it was breakfast. It was hot and we got coffee. It was a good way to start our day. Next morning, similar routine, except there was a waffle house opened closer to the disaster area. So we stopped there. Same deal. My team, we were dealing with so many counties if you remember Charlie was like a 10 mile wide tornado. As bad as it was in Charlotte, DeSoto, and Hendry counties you had the Orlando International Airport they had major damage there you had hotels is the second or third floors ripped off in Orlando, and it exited out Volusia

County, as a problem we're running into so many counties had different levels of impact that what normally on a routine event would have been like the priority County was like, You're not even close to being bad compared to what we're dealing with here. But nobody could really visualize that. So we just borrowed the stoplight analogy. And red was bad yellow was not as bad. But you're going to need help and green was you really need to handle what you got. Because we don't have enough resources to get everywhere. It didn't mean you didn't have impact. But it wasn't as bad as other areas. And we started using that across indicators like school openings, water systems, Power. My team threw in a slide on Waffle House and it was the Waffle House index. The Waffle House was closed because of the disaster. It was red if it was opened with a limited menu as yellow. And if it was opened with the form and it was great. And the reason why if you if you know waffle houses, they don't close there 24 hours a day, seven days a week, and they're up and down. Most of Florida's interstate system, there's hardly an interchange, you go by that you don't see a Waffle House. And the reason this became something other than just that one time slide. Was it speeding up our response to disasters? We weren't waiting for the locals to go out and do assessments. You know, I thought, well, if we're going to speed up our response to disaster, we need to cut out every step that is it adding to the outcome. And historically, we would try to assess and send teams and to see how bad it was. But that generally meant 24 hours to three days, we were still trying to get information before it made a decision to go. And I'm like let's do something radically different. Let's just assume that a hurricane making landfall is going to be problems. And why don't we respond based upon the population and the impact of that storm? Well, that's all good. until you start thinking about, okay, I've got National Guard, I get search and rescue teams, I got Highway Patrol, and they're all driving to that area of landfall. And well, before you get there, you're going to start seeing damages. You know, trees down billboards blown over awnings ripped off the gas stations. And the question was, how do we know we're in a hard hit area yet. And that's where the Waffle House index became operational, they would drive by and they would check the Waffle House and it was open and they had full menu. They kept going. If they got there, and they had a limited menu, they knew there was a lot of power outages water problems. But that was more than the mass care of sheltering and feeding operations. But for the rescue teams, that wasn't a hard hit area, keep going. And if you got to the spot where the Waffle House had been closed by a disaster, you're in a hard hit area. If there's stuff that needs to be done, go to work. So that index became something that we became operational we began using it got talked about a lot, but also goes back to the Waffle House, the company itself, they have a very strong mission statement about getting open after disasters. And they take a lot of steps to do that they do this safely, but they have a lot of experience. And if there's anything that's going to get open in the aftermath of a disaster, it's it's generally gonna be a Waffle House. So the index it gave us a quick snapshot because if you get there and it's open, and they got a full menu, that basically means the power system, the water system, the roads are fine because their workers could get there. They didn't have any disruption in utilities if you get there and it's all that limited menu, it's a very quick size up that I got water and power problems. Otherwise, they would be up and running full menu. And if they're close because of the disaster, and knowing that a waffle house will get open, I mean, basically, if they can get propane or gas to their flat top, they'll open that not only can they not workers can't get there, they can't even get the store open. I would tell people, it's like taking a pulse of the community. It doesn't tell me everything that's going on. But if you don't have a pulse, I know you're in a lot of trouble.

Phillip Stokes 20:30

I thought it was interesting. You know, at the beginning, you said about things that you learned during your time at FEMA, and just working with government is you have to do something different. And that's what you did you employed those your own advice, and you said, Hey, we need we need to work quicker. And so this is this is one thing we can do that will kind of help us assess a storm. Are there any stories or scenarios where you have seen communities respond better after a storm, some of those stories of success?

Craig Fugate 21:02
Well, probably the big success in Florida has been our building code. And for every builder and developer, remember, the legislature tries to water it down or weaken it because they say it's too much red tape. The reality has been the difference in how homes have performed and hurricanes often comes down to when it was built and under what building code. We know that in adapting to climate change and adapting to the increased rainfall, the increased damage to the storms that were in how we build are the big determinants of how resilient communities are. And so we're seeing that the building codes, most notably for wind has driven down the losses and made homes more survivable.

Phillip Stokes 21:44
So I think today, as we're kind of wrapping up, I just wanted to ask if there were any last points you wanted to mention, you know, any last tips for hurricane preparedness as we're coming into hurricane season and just next month, any last points you want to say before we close out today's conversation?

Craig Fugate 22:03
As we get ready for hurricane season, get with your insurance agent, check your policies, I strongly recommend to get flood insurance. Don't let somebody tell you you're not in the flood zone because we got feet of water coming down from a storm you're gonna probably get water in your home. Second thing is, you see all these supply kits you got to go out and buy and you periodically people go out and they'll buy all that stuff is hundreds of dollars. People can't afford that. As a last grown up in Florida, first of all, we didn't drink bottled water we drink tap water perfectly fine. And we got ready for hurricanes we would store water and empty milk jugs and soda bottles, we'd rinse them out, clean them out fill full of water, put them in the freezer, leave a little bit of space for them to expand turns out, that still works. The other thing somebody recommended i thought was genius was filled Ziploc bags full of water because it packs in better. Not only do you now have cool water on hot days after the power has been out for several days, it keeps the things in your freezer cold longer because it fills in all the voids and gives you more mass there, storms threatening you pick up everything outside doesn't cost you anything but get things that can be wind blown into Windows and stuff. If you can get shutters up great, if not plywood still works. But another step that is doesn't cost anything. It turns out that when the winds are really howling, shut all of your interior doors of your home, it helps to more home strengthen and perform better. Because what generally happens with wind isn't that it blows your house down, it blows out a garage door blows out a window and blows out a sliding glass door. And that creates a pressure inside of your home that lifts up. That's why we have hurricane straps and all the stuff that people say well, you know, it costs too much and it slows down construction. But it's all those things we do in Florida that keeps the homes together. And keeping the doors close is another simple thing to do. And then probably the last thing is, I'm a pet owner. I've had dogs most of my life and as much as you see all the human tragedy. To me, one of the most unexcusable cruelties I've seen are the animals that are

chained up or kept in their cages while their family evacuated. When the floodwaters come in, so always plan for your pets. And if you're told to evacuate, take your pets with you. Increasingly across Florida, we have pet friendly shelters, our hotels and motels will often relax their policies on pets. But again, this is not something you want to figure out the last minute plan ahead and know where you're going. And if you need transportation, or you need assistance, find out what's available at local level. Don't wait until the storm stripping. Mostly steps don't take a lot. Then the last thing is take your phone and make sure you got all the contacts for all of the folks you need to communicate with. So that if something happens you have everything there. And a lot of times the cell systems will go down. Keep a portable radio handy. Stay tuned to the local stations because they're going to have the best information about What's going on in your community?

Phillip Stokes 25:02
Craig Fugate, it was an honor and a privilege talking with you today. I just want to thank you for being on our podcast for this this series on hurricanes.

Craig Fugate 25:10
Well, thanks for having me. And, again, as we go through this hurricane season, we always hope to avoid the storms. But if you know what to do, we can always rebuild. We just can't replace you. So take steps now to protect you and your family.

Phillip Stokes 25:30
Once again, that was Craig Fugate, former director of the Federal Emergency Management Agency, or FEMA. I want to thank Craig for being on science by the slice and providing insight into hurricane preparedness. And many of the steps we can all do now to prepare. And next up in our hurricane series, we're discussing hurricane force winds. We're on site at an experimental station that simulates these wins, and Michaela Kandzer talks with Dr. Kurtis Gurley, a structural engineer who researches wind effects on residential structures. Dr. Gurley said he sometimes goes into impacted communities immediately after a hurricane to assess the damage.

Kurtis Gurley 26:10
And along the way, there's a lot of opportunity to talk with homeowners and their experiences. And something I experienced more than once I was walking through a neighborhood looking at, you know, literally counting how many shingles came off the roofs and so on. And I started having a conversation with the homeowner and I always ask them, what were their perception of how strong the winds were. And this particular homeowner said, well, the wind was about 132 miles an hour. I said, that's pretty precise. What How do you Why do you think it's 132 miles an hour? He said, Well come here with me. He took me to his backyard. And he pointed at the roof. And he said, Well, my home was designed for 130 mile an hour winds and I'm missing three shingles.

Phillip Stokes 26:53
Is it that straightforward? You'll have to listen to find out. Part two is available now. As always, I want to thank everyone involved with Science by the Slice and Michaela Kandzer, Rachel Raybon, Ricky Telg, Valentina Castano, Alena Poulin, Ashley McLeod-Morin, and Sydney Honeycutt. I'm Phillip Stokes. Thanks for listening to Science by the Slice.