Transcript of “Tanya Brown-Giammanco, Managing Director of Research at the Insurance Institute for Business & Home Safety in Richburg, South Carolina”

Clear Skies Ahead: Conversations about Careers in Meteorology and Beyond

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Kelly Savoie:

Welcome to the American Meteorological Society's podcast series, Clear Skies Ahead, conversations about careers in meteorology and beyond. I'm Kelly Savoie and I'm here with Rex Horner and we'll be your hosts. We're excited to give you the opportunity to step into the shoes of an expert working in weather, water, and climate sciences.

Rex Horner:

We're happy to introduce today's guest Tanya Brown-Giammanco, Managing Director of Research at the Insurance Institute for Business & Home Safety in Richburg, South Carolina. Welcome, Tanya. Thanks very much for joining us.

Tanya Brown-Giammanco:

Thanks for having me.

Kelly:

Tanya, could you tell us a little bit about what sparked your interest in atmospheric science and how it influenced your educational path?

Tanya:

Sure. I was a young child that grew up in Kansas and Oklahoma. So I was around a lot of different severe weather, thunderstorms, tornadoes, hail, things like that. So I had a bit of a natural interest as a child. I found the storms fascinating. I thought they were interesting. But then my family moved. My stepfather's in the army, so we moved all over the place. We moved to Hawaii when I was about 10 years old and living there, we got our first dose of hurricanes.

Tanya:

Hurricane Iniki made landfall while we lived there on the islands which was an interesting thing. But while we lived in Hawaii, my biological father back in Oklahoma, he lost his house to a tornado in that same time period. So those events together really solidified atmospheric sciences in my mind as a place to learn more and really to try to make a difference in the world. Helping people understand the damages that they can cause and what we can do to remedy that.

Rex:

Tanya, that huge loss must have been devastating to your father. Do you remember what were his impressions or things he told you about his experience after that happened?

Tanya:

Yeah, there's a couple of key things that stand out in my mind. One was, he was actually home. He had gotten off work, he was home. I mean, he lived in Oklahoma forever. So he felt like something wasn't quite right. And he didn't feel safe in his home. So he got in his truck and went the half mile down the road to my grandparents' house, where they had a storm cellar that he could get into. So when he finally emerged from the cellar and went back home, that's when he found out that everything was gone. So thankfully he had the foresight and realized, "Something's not right here. I need to go ahead and seek shelter." And he took the actions to get to a much safer place. So that was good.

Tanya:

But after the event he and my stepmother lived with friends for about six months while their house was being rebuilt and they were getting all the insurance settled out. So they had a pretty major disruption in their lives. They moved in with friends, which they were grateful for, but those friends also had four kids. So it was a pretty crammed house for that six month period.

Rex:

Yeah. That sounds like it would be a hectic situation to be in.

Kelly:

You were really interested in atmospheric science and when you were in high school, did you decide, or did you have a guidance counselors who influenced you and let you know that there's actually a major out there for this and you decided to major in atmospheric science?

Tanya:

It was actually my high school boyfriend that suggested it. I always talked about weather. I always paid attention. I always watched it. I always went outside when things were active. I didn't really think much about a career in it. I knew I was interested, and he was the one who finally said, "Why don't you just do that?" Everybody else is talking about career choices and he had a good sense of what he wanted to do and I didn't really know. And he said, "Why don't you do meteorology?" And that was it. So it's funny now to think back that it was a boyfriend who I haven't talked to in 20 years who suggested it.

Kelly:

And where did you end up going to school?

Tanya:

I did my bachelor's at the University of Kansas. I mentioned that I was born in Kansas. All my family still lives there with the exception of my parents and my siblings. So I'd been around the area. I have a lot of family still in the area. I could get in-state tuition there because that was my family's home of record since my stepdad was in the military. So it was a really good fit for me. It was a small program and I was still relatively close to some family, my grandparents, my aunts and uncles, my cousins, even though I couldn't be near my immediate family.

Rex:

What opportunities at school in Kansas did you pursue Tanya besides the standard curriculum that you felt helped you in finding and secure a good job in your profession?

Tanya:

When I was a student, I think it was my junior year. I did an internship at the weather service in Topeka. And that was a really nice experience. I enjoyed it. I learned a lot, but I also realized at that point that day-to-day forecasting probably wasn't for me. I liked the severe weather things that we had to work through for a couple of events and I enjoyed the atmosphere then. But the day-to-day operations just weren't quite for me. So it opened my eyes to think about what else could be possible within the profession. And that's when I really started thinking a lot more about the building damages side of things, and really started to explore avenues in the engineering school in addition to my atmospheric science studies.

Tanya:

There was an option within our program to get a concentration in hydrology but it came out of the engineering school. So I got a chance to get into some of the fundamental engineering classes and that really started to shape where I would eventually go, which these days I'm much more on the engineering side. But it is still a nice interaction of weather and buildings within my job. So I took my experience and I almost made an opposite turn to try something else.

Kelly:

So what was your first job in the field and how did you end up where you are now?

Tanya:

This is actually my first job. I've been with IBHS for just over 10 years. But I actually was an intern for them several years before that. As part of my PhD curriculum at Texas Tech, our program required students to do an offsite internship for a full semester. So I got a recommendation from some of the faculty members to go to this IBHS place. Back then it was a lot smaller and in some ways it was a different organization. We didn't have the testing capabilities that we have now, but I made connection with who was at the time, the chief engineer there and he offered me a spot.

Tanya:

So I moved to Tampa for a semester where the headquarters is located and worked with him on several different projects. One of them was basically putting together a deployment process to do post disaster investigations for hurricanes, which is something I had gotten into when I was at Texas Tech was disaster investigations. So I did that and I also worked on a study that used remote sensing imagery, aerial imagery, following a fire to come up with key characteristics and statistics that helps understand why the fire burned, where it did, why some homes were spared and others were not based on the weather patterns as well.

Tanya:

And I loved the work that I did as an intern. There was a couple of projects that I was able to continue even after I went back to Texas to finish off my degree. So the chief engineer kept me on as a consultant for two additional years. By that time they had raised the money to build what is now our research center and had started the construction. So when I graduated from Texas Tech with my PhD in 2010, I went immediately to the job. I was one of the first seven staff at the research center in South Carolina. So I've really had a wonderful opportunity to shape where we've gone and what it looks like and the programs that we study at the research center. So it was an internship that led me to where I am now.

Kelly:

If that's not a great plug for internships, I don't know what it is because you did one internship and you learned pretty quickly that this is not the job for me, which is a great reason to do an internship. And then the other one you did got you a job. So I'm very lucky. That's great.

Tanya:

Yes, definitely. It's good to build those connections, get those experiences. They obviously help you figure out what you do and don't like about a particular career, but the relationship building is almost one of the best things as well.

Rex:

Your internship was off campus and during semester, it sounds like it was full-time. Is that correct, Tanya?

Tanya:

Yes, it was. Yep. So I packed up and moved to Florida and I worked a regular shift just like everybody else, 8:00 to 5:00, Monday through Friday for a full semester.

Rex:

And do you think that was relatively unique at the time in colleges or in meteorology to have the opportunity to do an internship that wasn't just a couple hours, a couple of days a week, but was actually essentially doing a job full-time?

Tanya:

Yes. I would say that most internships are like, you suggested a few hours a week. Maybe they're onsite, maybe they're remote or I think some people have had opportunities in summer programs to get a little bit more of the full-time experience, but to have one during a traditional semester where you don't have any other classes and other responsibilities, just the internship. I don't know of another program that does that at all, to be honest.

Rex:

That sounds like a really great opportunity that you were able to have. So now you are managing director of research at the Insurance Institute, IBHS and you were there when the research wing of IBHS was founded. So I want to ask you what a typical day on the job is like. And of course, what I think of is the dramatic thing, which is you're destroying houses every day and finding creative ways to destroy them, and then finding creative ways to make them more resilient to severe weather. But I'd like to hear it from you.

Tanya:

So since I've been with the company for so long, my days have changed. When the facility first opened, there were only seven of us. And we were trying to run this big $40 million facility. So the first year that I was there was a lot of totally random stuff. We needed to set up cubicle desks and make sure everybody had a phone line. So I installed phone lines and the cubicle desks. I learned how to operate a fork truck because we would get shipments of lumber and shingles and all these building materials and somebody had to unload it. So I did a lot of really random things in the beginning just because there were so few of

us. We all did a little bit of everything, but our staff grown tremendously in the 10 years that I've been there.

Tanya:

So in my position now I'm a manager, I'm an administrator. So a lot of my day is consumed with meetings, coaching of staff, budgets project planning, relationships with our founding member companies, our funding agency, basically. I have a team of scientists that that work with me and help do a little bit more of the science that I used to do. That's not to say I still don't do some science. I do. I have a couple of key projects that I oversee and manage. But every day is really different. There are still days when I could spend six or seven hours just working on samples in the laboratory. I'm usually not the one that does the testing anymore. So my biggest focus is on hail and wind testing.

Tanya:

I'm not the one pushing the button to fire the hail shot or pushing the button to make the wind run anymore. There's other people in the staff that do those kinds of things. But there are days when I could be spending six or seven hours with the samples that we've just tested to understand how they've been damaged. What some of the patterns are showing. There's days when I'm spending a lot of time working on reports and analysis. I'm also highly involved in what will become the next version of the enhanced Fujita scale, plus a couple of other methods that we're working on to estimate wind speeds from tornadoes and other storms.

Tanya:

I chair the IES scale committee. That's part of that standard making process. So I spend a lot of time looking at new versions of the eyes for the Fujita scale or the F-scale. One of the things I like most about the job is that it's highly varied. I get to spend a lot of time with a lot of cool researchers who do really interesting things. I spend time with manufacturers of products trying to help them understand how they perform and where they could do better. I spend a lot of time with our member insurance companies, helping them understand how they could help communities reduce their risk and better underwrite. So I really mostly enjoy the variety.

Rex:

So you started out with seven people, essentially running a small business in the sense that you were doing a lot of the DIY work yourself. I'll be at a small business with a $40 million budget. How much has the staff grown? Can you share a number of what you're at now and maybe how that compares to the budget you're operating now?

Tanya:

So the $40 million investment was just the facility construction. That's not our operating budget. We have an annual budget that allows us to pay the salaries, buy the materials that we actually need to test. That was just the capital cost to bring that research center up and running. Back then, there was probably about 25 people or so in our headquarters in Tampa. So that included engineers, people specializing in communications, membership, the typical HR functions, finance things like that.

Tanya:

There was about 25 of those folks in the Tampa headquarters and there were seven of us at the lab which included two researchers, me and one other guy. The research director, who's still my boss to this

point, we've just all moved up along the path. We had a machine shop operator, a construction crew runner, except he was the only guy on the crew. So really he did most of the construction unless he tapped the rest of us, and the administrative assistant. That was it. So it was very small. Again, we had to do all kinds of things. I think at this point we probably have almost 30 people on site at the facility in South Carolina. So we are bigger than the Tampa campus now. That that campus has actually gotten a little bit smaller. And we have some people that work remote as well. So all in, we've got just over 60 people on staff at IBHS versus the 25 that were in place before the lab was constructed.

Rex:

Wow. So it is a relatively small company altogether?

Tanya:

Yes.

Rex:

That's interesting to hear.

Tanya:

Yep.

Kelly:

So you mentioned you really like the variety in your job. Is there anything else in particular that you like most?

Tanya:

Well, we're a little bit different in terms of how we operate compared to what probably most people would be used to. As a researcher and academia, you're out hounding for grants to try to fund your research. I mentioned we have an operating budget. Now obviously we have to keep our members satisfied so that they'll continue to pay their dues every year, but we don't go out hounding for specific project funds. We use our operating budget to plan out the best projects we can possibly do. We take our members' input, use our expertise to see where the gaps are. Places that we can help fill in information and get a better understanding and we just go.

Tanya:

So we have a little bit more flexibility and ability to move very quickly because we're not going through the grant proposal process. We just decide we want to do something, get the members to agree that it's a good idea, and we just go. We already have the money, we just allocate it and start moving. So that's a nice part of the job that we don't have to worry about. We just go when we're ready.

Kelly:

So you mentioned you have members, like who would be a member? Would it be engineers or would it be like city planners. Who would be a member of your organization?

Tanya:

We are fully funded by the insurance industry. So our members are the major insurance companies in the US both commercial and residential. So think your all State Farms, your Liberty Mutuals, all the car commercials, those same companies insure properties, those are our members. We've got about, I think it's about 80% of the residential insurers in the US are members of IBHS and about 60% of the commercial insurers are members. So they are basically making an investment in us so that we can do the research that we do, use the programs that we create as a result to improve the way buildings are built. And they're banking on that, ultimately, meaning less damages when there's a hurricane, a tornado or whatever the case may be.

Kelly:

Right. Less claims.

Tanya:

Mm-hmm (affirmative) yep, less claims. So if they have less claims they're paying out less as a result. So t's an interesting model but they believe very strongly in the work that we're doing to try to make the world a better place, which has a benefit of potentially helping them save money.

Rex:

Tanya, do you have any insight into... did it take a bit for these insurance companies since they were founded and became an institution in the US. Did it take a while for them to realize we need to come together and create something like IBHS? Or was it this very like collegial, initial thought like, "We're creating these companies. We want to insure people. We want them to understand what's being insured and how it can be as safe as possible." Do you have any idea of what that history was like?

Tanya:

I know a little bit and mainly again, from the internship working in the headquarters. I ended up with a handful of tasks that helped us organize some papers. So I ran into some history as part of that. IBHS has been known by a couple of different names in its history. It was actually founded in the 1970s as the Insurance Institute for Property Loss Reduction. In that period of time, it was really more of a committee than a true organization, but it was the insurance industry representatives coming together saying, "Hey, we all have a need to help reduce damages. It's in all of our best interests, shouldn't we organize and try to do something about this?" So they did that in the 1970s and actually incorporated the organization in the state of Illinois.

Tanya:

I have no idea if we ever even had an office in Illinois. Nobody who worked for IBHS back then is still around. But it went through a couple of different phases. At one point, it was located in Boston under the name Institute for Business and Home Safety. In the early 2000s, it moved to Tampa. The membership has grown tremendously since the 1970s, and obviously the funding ability has grown tremendously as well. Again, we started from a committee formation to now having a full-time staff of 60 over two campuses with this wonderful $40 million facility. So they did recognize several decades ago that something could and should be done, and they would be best able to do that by using an industry organization, as opposed to each company trying to attack it themselves.

Rex:

What are some of the biggest challenges you face in your research?

Tanya:

To some degree, it might depend a little bit on the peril. The wind hazard was easier for us to get started. At the research center, we had the fans, there's a lot of wind engineering expertise and knowledge out there in the field about how to test buildings against wind. The same was not necessarily true in the hail space. There's some standard test methods that are out there, but nothing really replicated the true threat of hail. So early on when we opened the facility, I was asked to attack this hail problem and help understand why buildings were being damaged and what we could do about it. I didn't have a sink. I didn't have a freezer, I didn't have water in the lab.

Rex:

That makes it hard to make hail, huh?

Tanya:

It makes it really hard. Yeah. Water is a key ingredient. So it took us a long time to be able to stand up the capabilities and honestly, to figure out what the heck we were doing. We knew some of the things that we needed to try to mimic to make a testing program that was much better, but there was a lot of things we didn't know. We launched a hail field study in 2012 that really was designed to go out and capture characteristics of individual hailstones. If you look at the literature about hail, you'll always see it referred to as hard, soft, slushy, but there was never any information about what that meant. Like what quantity means hard, what quantity means soft. We had no idea. So we had to actually get that data, but in order to do that, we also had to invent an instrument to be able to capture that information.

Tanya:

So I think a lot of times some of the biggest challenges that we face is that we want to do something. We know what it is that we want to do, but the tools and capabilities to actually do it don't exist yet. So we have to create them or invent them or build them from scratch. And that's true with so many of the projects that we do at IBHS. We actually just hired a new staff member this week as a prototype engineer. And that's his whole role is I as a scientist I know. I want to do X doesn't mean I have the mechanical know-how to build whatever piece of gadgetry to do that.

Tanya:

So we're expanding the team to try to help that a bit. That's probably the biggest challenge that we face which means it's slow too. There's no calling up Walmart or Lowe's and saying, "I want a do hickey to crush hailstones." To tell me the hardest, it doesn't exist. So it makes us a little bit slow. It took us nine years to basically start from no water and no freezers in the hail lab to something where we have a brand new test method that's respected by manufacturers of roofing products which on the one hand, I'm like, wow, it only took us nine years. And then as the person day-to-day working on it, it's like, "Wow, for nine years we worked on this one thing."

Rex:

So is there a next frontier for research that you're interested in or that the insurance industry is excited about like fires or floods or electricity or whatnot?

Tanya:

So fire is probably the one that's getting the most new attention right now. And that's because in the past three, four years in particular, the number of houses that we're losing to wildfires is going up. Five, 10 years ago, as you look at individual fires, maybe you're losing a couple hundred houses, which to be clear is a terrible tragedy for the people that live in those hundreds of houses. But as you think about the impact on our country and on communities and on the insurance industry and FEMA and all these other groups, fires just didn't have the same building counts and severities that a hurricane would have. I mean, hurricanes affect thousands and sometimes tens of thousands of homes. And fire just didn't have that a reach, but we've had a couple of significant events over the last really two, three years that have started to shift that title a little bit.

Tanya:

We've had individual fires that are taking out over a thousand homes, 2,000 homes. Fire spreading into places that were not thought to be a high risk zone. I think as everybody thought about wildfires in the past, they really focused on the wild land, urban interface, so right where communities butt up to the wild land areas, but we've seen a lot of instances of wildfires moving through suburban communities where the houses are closely spaced and it just spreads pun intended like a wildfire. It's easy to spread in those communities. So the fact that it's getting into those communities and starting means that the impact can be a lot bigger from a structural loss standpoint, just because they're so much more densely packed in those areas. So fire is definitely something that has the attention of our membership, as well as us as researchers.

Tanya:

We put out a product this year that we called the suburban adaptation roadmaps, and they were specifically intended to help building owners, insurers, legislators recognize the parts of a house in a suburban neighborhood that are vulnerable to fire. How you can assess how vulnerable they are and what you can do to make a change, to make it less vulnerable. That was a huge undertaking for us. But one that was really important to help us start communicating the threat has moved beyond the wild land interface and really is now getting into the places where our people live and work.

Kelly:

What would be one of the things that would make a home less vulnerable to fire?

Tanya:

One of the big areas that we focus on is called defensible space. It's basically the landscaping directly around your home. So in the area that's closest to your house, if you think about a typical suburban house. Right next to your house, you're likely to have shrubs and mulch. Those are not necessarily good things for a wildfire risk. If you get a little bit of flame or you get some flying embers that deposit in that pile of mulch or against those shrubs and those things catch fire, it can easily catch the building next to it on fire. So one of the things that we recommend is using a defensible space where you have very little or no combustible materials within five feet of the house. So this is not saying that you can't have any shrubs or any mulch. Choose rock mulch instead of pine straw or bark mulch.

Tanya:

There are certain plant types that are less prone to catching on fire than others. So you would want to use those kinds. And as you get further away from the house you can start to introduce trees and things like that, but there are specific guidances that you can do to make your house still look nice, a pleasing

environment, but without having the risks stacked so close. A lot of things about reducing wildfire risk are really just in manual labor efforts, cleaning up, making sure there's not debris in your gutters.

Kelly:

Leaves and lots of leaves.

Tanya:

All that stuff. We don't want it on your roof, you don't want it in your gutters. You don't want it up next to your fence if it's a combustible fence. Fences are actually one of the easy examples to talk about from a mitigation standpoint. If you have a wood privacy fence around your house, there is some risk associated with that. But one of the practices that we would say to take is, we're not saying you have to go replace your entire wood fence, but what if you replaced the five or 10 foot section at the corner that butts up to your house right next to the wall? Why don't you make that a metal gate instead? So you're getting the wooden combustible part to not touch your house anymore. Just giving yourself a five foot gate buffer. That can make a huge difference in fire spreading to your house if the fence was to catch on fire. So little things like that can make a big difference.

Rex:

It's thinking in terms of looking at everything critically and thinking, "Will this burn and how much?" And then thinking, "Is this a barrier or is this a route for the fire to spread?"

Tanya:

Yes, we want to cut down the routes and introduce breaks or stops to stop the fire from spreading closer to the house.

Kelly:

So, Tanya, you also serve on the Hurricane Research Team at Texas Tech University. Could you tell us a little bit about that?

Tanya:

Sure. That's a program I've been involved with for a long time, although I'm not as involved as I used to be. I started when I was a student and the idea with the program or the team was to take wins in other instrumentation and put it in front of land falling hurricanes to collect data where we just don't really get a lot of data. The Hurricane Research Team was founded in 1998 by the director, John Schrader. And at that time he had one very tall 10 meter tower that he would go and put in front of hurricanes and collect measurements. But since that time period, and really as I was a student at Texas Tech, we changed the fleet up. So instead of having the single large towers or two or three large towers, we switched the concept over to the platform that's now called Stick-Net.

Tanya:

They're basically engineering tripods. So a couple of feet tall. Actually I think they're 2.25 meters. And you can have a lot more of them because they're small, they're maneuverable. You can put a whole bunch into a trailer as opposed to pulling a 10 meter tower on a trailer. You only get one shot. But with the engineering tripods, we had 24 platforms when I was a student broken up between two different trailers. So we could split the teams up and we would basically just canvas an area before landfall based

on the forecast track taking into account elevation, surge, potential, things like that. And we'd set them out and then we would move out of the way, let the storm come through and we'd go back and pick them up. I started with the team in 2008 with Hurricane Dolly on the Texas coast.

Tanya:

2008 was a pretty active season for us. We also had Gustav and Ike. That year Ike was our big one. So we were on the road an awful lot, and I'm ultimately a field person. I think I started in Texas Tech with damage assessments after tornadoes and hurricanes, but I expanded to include the active weather assessments as well. So we use the same platforms for vortex too. That was our contribution to vortex too. But after I graduated from Texas Tech, there was a lack of personnel that had the experience to be able to do the deployment safely and make the most of them and collect the data.

Tanya:

So I actually was offered a chance to be an unpaid faculty member which basically just means I can still participate with the team and I can still drive the trucks and use the facilities so that when they need us, if they're short-staffed, if they don't have good expertise because they're using a lot of student labor, which obviously turns over there would still be some of us who really have a lot of experience making sure that we're making smart deployments, safe deployments can be able to put things out in a network that makes sense and optimizes the opportunities.

Tanya:

So I've been in that position since I graduated in 2010. I have not done a deployment since 2011. My husband Ian has been able to be a bit more active and has gone out on multiple deployments with them in the last couple of years. And now that we have a child one of us has to stay home and it's usually me. So lately what we've been doing in those events is he'll go out with Texas Tech and collect the wind data, and I'll go out afterwards and do the damage assessment side if that's what we need to do.

Kelly:

So since your research is focused so much on severe weather impacts, what has been the most expensive weather event that you know of concerning loss of property?

Tanya:

Good question. I don't know. I can probably name off a handful of pretty bad ones. I don't know if I know off the top of my head one of the most expensive ones.

Rex:

Give us the top five best of, or should we say worst of not best of.

Tanya:

Yeah. Well, I got to believe Hurricane Sandy is probably in there just given the densely packed areas that it affected in the Northeast. That one's probably in there.

Rex:

What about Harvey?

Tanya:

Harvey, that's possible. Harvey was one that I did an investigation of myself and it was a fascinating storm. I think the thing that maybe wouldn't tip it to that level might be that the higher wind speed side of the track. So the onshore side mainly and fall over a wildlife refuge as opposed to a built area. But there was still a lot of damage on the other side, on the Western side of the storm. So that one might be up there. Maria is probably up there. Even though a large portion of the losses were in the Caribbean and Puerto Rico. I still think that probably is one of the highest US ones.

Kelly:

I was going to say, we heard so much about Katrina, but I don't know if that compares to any of the more recent ones.

Tanya:

Yeah. I think Katrina probably is not in the top five anymore. This is something I'm going to have to go pull all the data once I hang up with you guys.

Kelly:

Now you're interested.

Tanya:

Yeah. But I'll just name a couple of other notable things. They may or may not be top 10, but... There was a set of hailstorms, I want to say this was 2014 I could be wrong in the San Antonio area where there was major, major damage. One of the most costly hailstorms that we've really ever seen. So that was a big one. I mentioned that fires are starting to get some more attention. The Camp Fire from 2018 in Paradise, California. That one was extremely costly just because it wiped out the overwhelming majority of the town. So there's a lot of different individual events. The Derecho from this year through the central Plains that had big impacts in Iowa and other places, that one was probably fairly costly just because it was so big.

Tanya:

Regardless of what the exact ranking is, it's clear that we're in a place that we're going to get hit by these billion dollar of disasters multiple times a year, regardless of where you live. Something is always at risk. So our stance in that is let's figure out how we can be best prepared to give it the least amount of impact possible.

Kelly:

Right. Because mother nature can be unkind.

Tanya:

Mm-hmm (affirmative).

Rex:

I think fires are interesting because Kelly used the phrase, a weather event, which I know has a specific meaning to it. So for instance, the Camp Fire is one event, but the wildfires are this systemic condition

that for instance, California is going through. And so it's not just one event, but it's almost this whole season.

Tanya:

Yes.

Rex:

Do you have any insight into how you look at wildfires that they're not like a hurricane where they're coming, they made landfall and then they're over, but they're this just roiling chaos.

Tanya:

Yeah. Fire is a complex one. Generally speaking, there are individual named incidents. Sometimes incidents will merge together if a couple of different fires combine. But they're usually referred to as incidents in the fire community speak. We have a couple of fire researchers, one of whom was a fire protection engineer. So these are the words I hear him using someone to try to mimic him here. But when you get these multiple incidents that are all happening in close proximity at the same time, it gets a little complicated because there's also the question of who has jurisdiction over it. Is it national forest land? Is it the local municipality? Is it the state? Is it the County? That's where I think it gets a little complicated.

Tanya:

So even as you think about the messaging surrounding fires, it's hard if you follow social media to try to sort through everything. And the messaging is not super consistent in terms of where you can find the right information about evacuations or where the fire's located, anything like that. And that's not because people aren't trying, it's just so complex because of how they come about in time and also who's responsible for having authority over them. So if you search Twitter, for instance, when there's hurricanes there's a couple of hashtags or handles that solidify pretty quickly on. It's usually the hurricane name and then the year or something like that. There's usually two or three that you can find, but the fires as you try to look for information, it's hard. It's a lot harder to find a single unified place and message because the incidents are all over the place and happening at the same time and so many parties are involved.

Rex:

Sure. I can attest that firsthand. I have family in California. So earlier this year I was in New England trying to keep up with how close the fires might be to different family members at different houses. And I was going on the San Francisco's newspaper website or another local newspaper, or maybe CAL FIRE, or maybe something else. And it took a while for me to get to like an authoritative source that had enough information for me to keep tabs on everything. And I can imagine, especially if you were someone that had to react, not someone that's just watching out of concern, it's a whole different ball game.

Tanya:

Yeah. It's definitely complicated. And again, I know that there are people that are aware of that and are working hard to try to figure out ways to overcome it, but it's a hard problem and it will take a while to come up with something that is really great. So I think for now, everybody can just do the best they can

and if you're in one of those areas, figure out a couple of different ways to get the information because different sources will have different things to say.

Rex:

As you know, this is a podcast focused on careers. So we're interested in learning about your career and learning about how someone rising in the profession could decide if your career path is the right path that they want to follow in whatever way. So if someone were to be hired in your research department, I don't know if you hire anyone coming directly out of school or maybe early career, but what are you looking for in their cover letter, in a resume, and then maybe in an interview?

Tanya:

Those are really good questions. And yes, we do hire people straight out of school. Again, we're a small staff, so we don't hire frequently or every year, but we do have at least one person who came to us directly out of a bachelor's program. I'm trying to think we had another one who came directly out of a PhD program. So we do have first career researchers on our staff. We're always looking for really good analysis skills. I think we're not unique there. We need people who can do analysis of the complicated data that we pull in. We're really looking for people who are creative. We're one of a kind lab that's our trademark. The things that we do in our lab, we do them specifically because nobody else does them.

Tanya:

So in order to be successful, you got to have an open mind. We're not looking for people to come in and say, let's just repeat all the same studies and tests that other labs have done. There's a distinctive reason why we chose to build this lab to do things differently, to fill in those gaps. So you got to be creative in coming up with ideas of things to do, and then also how to do them. But again, it's okay to ask for some mechanical engineering help the appeal to do it. From a resume perspective, anybody that has evidence of existing research either as an undergrad or a grad student, shows that they're used to the rigor of a research environment. Internships are always a positive when we're looking at a resume. We really want people who are okay to get their hands dirty and play different roles in a project.

Tanya:

On our staff again, we're still small, even though we've grown. So we're not looking for somebody who only wants to come in and just analyze the data. You got to be willing to get out there and help build pieces of equipment or put your hands on specimens to figure out what we're going to do next to help with the instrumentation. A typical wind test for us has over 400 pieces of sensors and instrumentation. You got to be willing to dig in if some of them aren't functioning or if we need help installing them or testing them or fixing them. So we want people who are willing to do a variety of jobs, even if it's not your core job. You've got to have that flexibility and that desire to help the team as a whole. In a lot of ways, we're also looking for people who are passionate about what we do.

Tanya:

We're small, we're a nonprofit. This is not the place where you're going to come and just cost and get a big old paycheck. That's not who we are. So you have to want to do the work that we do. You have to want to make a difference in the lives of people and overwhelmingly, our staff resonates with that. The vast majority of them say that they work for our company because they want to make people's lives better. So we really look for people who deeply resonate with that goal.

Rex:

Well, I hope your research unit continues to find these sorts of people and that these sorts of people continue to find you, and that our listeners would be inspired none the less, even if they go in a different direction or with a different branch of insurance research that you've given them some great advice. So Tanya, before we end the podcast, we always ask our guests one last fun question that is off topic, not related to meteorology. As a local from Kansas, what do you think people should do if they go there? How should they experience the culture in Kansas?

Tanya:

That's a really good question. So coming from the University of Kansas, if you ever get a chance to go to Allen Fieldhouse and watch a basketball game, that's something you got to do. When I moved back to Kansas to go to college, I had moved from the East Coast, so I didn't know anybody. I didn't have any friends. The first couple of weeks of school were a little bit lonely as I was trying to get settled in and meet people, but going to the first basketball game just flipped a switch. That environment is so electric and so unique. There's no place like it. It's definitely, definitely worth doing. Lawrence has what is now free state brewery. It was the first brewery in the state of Kansas to come back after prohibition.

Tanya:

So definitely always check that place out if you're looking for a good beer, but also really good food. That's an excellent place to go. Kansas has a really strong history in the aviation industry. So I was born in Wichita which has lots of ties to aviation, Boeing, beach. There's so many Raytheon. They've all had representation in Wichita at one point, if they don't still. A lot of my family members worked in the airline industry. So there's a lot of fascinating things there and there's still a lot of jobs there honestly from a meteorological standpoint for the airline industries, building planes, things like that. The Flint Hills of Kansas are pretty unique and maybe unexpected.

Tanya:

I think everybody thinks that Kansas is just really flat open wheat fields and it's not. But one of the things that I do love most about that part of the country is that there are places where you can see for miles, that is not something that we experience where I live now in South Carolina. There's tons of trees, tons of hills. You can't see five or 10 miles down the road. You can do that in Kansas, but there's also some places where you can see some interesting features like the Flint Hills and Lawrence itself is beautiful. It's got the giant hill where the campus is located, which I used to live on. I lived on the top of the Hill across from the women's dorms and you could just see throughout the entire town. I mean, you could see all the landmark buildings. So that was always really cool.

Kelly:

Yeah. I actually went to Lawrence on a business trip one time because one of our vendors is out of there and...

Tanya:

Oh yeah, the printer.

Kelly:

Yeah. Allen Press. And I have to say, I loved it. It was so quaint. It was such a cute college town. There was a nice little old fashioned movie theater and I was very impressed at how inexpensive the beer was coming from Boston. I was like, "Uh, $2 for a pine of beer? This place is great."

Tanya:

Yeah. It's a wonderful, wonderful town, a wonderful university. I loved my time there. I stayed there for master's part of it because I just really loved the school and I loved the town. It was a great fit for me the six years I was there.

Kelly:

Well, thanks so much for joining us, Tanya and sharing your work experiences with us.

Tanya:

You're welcome. Thank you so much for having me. I enjoyed talking with you all.

Rex:

We enjoyed it too. That's our show for today. Please join us next time. Rain or shine.

Rex:

Clear Skies Ahead, conversations about careers in meteorology and beyond is a podcast by the American Meteorological Society. Our show is produced by Brandon Crose, edited by Peter Trepke. Our theme music is composed and performed by Steve Savoie. And the show is hosted by **Rex** and **Kelly**. You can learn more about the show online at www.ametsoc.org/clearskies and can contact us at skypodcast@ametsoc.org if you have any feedback or if you would like to become a future guests.