Transcript of Justin Sharpe, Research Scientist at the Cooperative Institute for Severe and High Impact Weather Research and Operations at the University of Oklahoma in Norman."

Clear Skies Ahead: Conversations about Careers in Meteorology and Beyond

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Kelly Savoie:

Hello Clear Skies Ahead listeners. This is Kelly Savoie and I'm hoping you can take a moment of your time to rate and review our show wherever you listen to podcasts. We have produced over 60 episodes and you can help us reach even more individuals that will benefit from the diverse experiences shared by our guests. Thanks so much for listening and I hope you enjoy this new episode.

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 Matt Moll 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.

Matt Moll:

We're happy to introduce today's guest, Dr. Justin Sharpe, a research scientist at the Cooperative Institute for Severe and High Impact Weather Research and Operations at the University of Oklahoma in Norman. Welcome Justin, and thanks so much for joining us today.

Justin Sharpe:

Thank you for having me. It's a pleasure to be here.

Kelly Savoie:

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

Justin Sharpe:

Yes. I think we're all scientists from being a child. We investigate things, we want to know answers about things. I'm a parent now and I've pretty much got the prepared answer for why is the sky blue, because I think it's important that you've got those sorts of answers for your children. But I think I'd like to take you down an ever so slightly different kind of career path and a way of looking at science. Because I think science is... it is not just in its silos, but it goes across many different disciplines. And I would consider myself to be a geographer and I became a geographer really, I would say, at the age of 10. At the age of 10 I was extremely lucky enough to be able to go to Singapore, Malaysia, and Thailand. And I remember sitting in Thailand and seeing children begging for money and for food, but at the same time their stomachs were distended. And I said to my mother, "Why are they begging if they're fat?" Now, this is my 10-year-old brain. I didn't actually... And she said, "No, it's because they're malnourished, not because of anything else."

Now, I know a lot of things have changed since then. However, that blew my mind. That just made me think outside of where I lived, outside of my experiences, and I wanted to know more. I think that's

when I shared this love of finding out more about the world, both physical and human. I think probably where I've ended up being today is because of those things.

Kelly Savoie:

And so, did you know right away when you were in high school that you wanted to pursue degrees in a science field? Or did that come a little bit later?

Justin Sharpe:

I think it came a bit later. I've a strange and slightly longer career path maybe to here at the National Weather Center and the job that I do now. I've had so many different careers. Geography was my first love and geology was my first science crush, I would say. Even years later when I was working as a teacher in secondary schools, teaching 11 to 18-year-olds, so that high school age in fact. We bought a seismograph from the United States. A small, homemade seismograph. And that was there and recorded the Indian Ocean earthquake and tsunami.

Now, that particular tsunami ended up killing about 200,000 people, and that really just amazed me and shocked me. But I also wanted to help children understand how it could happen, but also the physical science behind what generates such big earthquakes and what generates tsunamis. And so, I started doing that and then that got to the attention of the United Nations, who then started including some of my work in some of their publications. And that brought me into this more wider scientific field. Then I decided to pursue a PhD at King's College London, which was in geography, and my specialism was disaster risk reduction.

I want to lay those things out, because often people just assume that geography is something to do with maps. And even geographical programs within the United States now, they have such a heavy geographical information systems emphasis. But I'm saying, "But hang on, we're dealing with human beings here as well." It's not just about finding patterns and looking at things from 30,000 feet. We need to get our hands dirty. We need to go into communities and actually learn from them. And this is partially what I do now in my work here as a research scientist and some of the projects that I work on. I hope that's a reasonable answer and you understand why I took it in a slightly different direction.

Kelly Savoie:

No, absolutely. Thank you.

Matt Moll:

And what opportunities did you pursue inside and outside of school that were beneficial to you securing a job in your profession?

Justin Sharpe:

See, I find that a very interesting question, principally because it shows a slight divergence between say the United Kingdom education system and the United States education system. And I think within the United States education system, these things are very much encouraged. These classes that are after school, or different pursuits or different camps. We don't necessarily have the same sorts of opportunities more broadly at a public high school level in the United Kingdom.

However, you have your own passions, your own loves. For me that was climbing volcanoes. I have seen many volcanoes erupt live. And when I say that, I'd like to preface that by saying that I do not go to gray volcanoes such as say a Mount St. Helens or a Mount Pinatubo in the Philippines or things like that,

because they're extremely dangerous. You do not want to be anywhere near them. I'm just going to make that really clear. People going, "Wow, that's cool." No, you could potentially die, so don't do that. But there is a volcano in Sicily called Stromboli and Stromboli has been erupting regularly since Roman times. It is known as the lighthouse of the Tyrrhenian Sea because it puts on a light show every single day and every single night. It erupts on average every 20 minutes or so. It fire fountains. So what it does, it releases the pressure up, so you tend to have less explosive eruptions and more fire fountaining. Which is rather beautiful to look at, but is predominantly fairly safe for you to look. And usually you're above the volcano looking down in the crater as it does this. And I've done the same in Mount Etna in Sicily as well. But I've also been to areas of the world where they've had gray eruptions such as out in Indonesia. And when you see the devastation, when you see how much ash there was, you realize that you don't want to be in the way of that.

Kelly Savoie:

Oh my gosh. It sounds so cool. Are you in a helicopter above? Is that how you view it?

Justin Sharpe:

Stromboli, no. You climb up there. You start at six.

Kelly Savoie:

Oh, you climb.

Justin Sharpe:

Yeah. You start at 6:00 PM. My favorite thing is they do a safety check and the safety check is, do you have good mountaineering boots on? Good. Do you have a hard hat on? You know, that you get on a building site. Good. Yeah, you're good to go. I've actually been inspected by the Italian police as I've been up there to make sure that we've all got the right ticket and stuff like that. But you're pretty much taking your thing in your own hands. One thing they do say to you is this: if you see the eruption come towards you in any way, do not turn your back and run. You want to look at it and try and sidestep where some lava might be coming towards you.

Because what happens at night... Of course it's spectacular to look at. It takes about three or so hours to climb up there, so you get up there by about nine o'clock. Because it's from zero to over 1,000 meters, so a kilometer up through ash and rock and things like that. But it's absolutely spectacular and beautiful and I would recommend it.

Etna, you were drove up near the top. There was really very little effort. They have these Jeeps with these gigantic wheels on and that's amazing. And Indonesia was post eruption, but I did go to a village that was kind of wiped out by the eruption and they have a museum. I think the museum [inaudible 00:07:55] it's called. And you can actually see where the clocks stop, where the ash fall came through and the washing up is melted in the sink. Incredible to see.

Kelly Savoie:

Oh wow. I'm going to have to put that on my bucket list, because that sounds really incredible. You were mentioning that things are a bit different in the UK. In the US lots of colleges encourage internships and things like that, but it sounds like you did things on your own that you found that would be interesting and helpful. You mentioned something about teaching. Was that your first job in the field? If not, what was and how did you end up where you are now?

Justin Sharpe:

I think it's fair to say that I think the teaching... I sort of went into that in my 30s, which was late. Before that I was a web designer. I was a web designer in the very early stages of the internet. And as I mentioned before, the call before, that I was a lead singer in an indie band. I've had an interesting career path, shall we say. But, I mean, I've always been interested in the world. Every single day I look at the Guardian and the BBC. I want to know what's going on in the world. Not just my country, but everywhere in the world. I'm fascinated by hazards, and these can be flooding, to monsoons, to volcanic hazards, to the weather hazards and the severe weather and tornadoes that we have here.

When I became a teacher, when you teach 11 to 18... But when you teach 16 to 18-year-olds, they're taking a specific course called an advanced level course. It's really just pre-university geography, but it's a really high level. In fact, actually some first year geography I would say in the United States don't necessarily even come up to that level. We're talking... It's a really quite a specialized thing. Then when you go to university, you're expected to know a lot of this stuff, but then they will blow your mind by saying, "You know that stuff you learned? It's all wrong." Because of course it's still simplified. And that's kind of the way, as we go through life, the more we know, the less we know. As a scientist you realize this more and more. Things get more complex the more you dig into things.

But I started taking on board the physical hazard geographies. Because everyone wanted to teach human geography, but I was the one doing the physical geography. That's why I got into the seismology and teaching about that. But I also taught meteorology, I also taught hydrology as well. I've kind of got this solid science background, and my first degree was a bachelor of science in environmental studies. I had that sort of grounding already. I had a science first degree. And by the way, I didn't get a master's. I did my postgraduate teacher training, which was at the Institute of Education in London, which is pretty much the best place in the world to study geography education, or education, teaching generally. So that was amazing.

But when I was going around to universities, they said, "Well what do you want to do?" And then I'd just talk at them and speak my brain and they'd go, "Yeah, definitely PhD. You don't need to do a master's. Do a PhD. You need to do a PhD." So that was one of those funny things. I realized I was quite intense probably, but I was passionate and I'm still very passionate about what I do. And I think that's really important. You've got to have that passion throughout your life.

Kelly Savoie:

And you sound like you were very focused, so that's why they were like, "Yep, this guy needs to just go straight to the PhD route." After teaching, did you then go to the University of Oklahoma? Or was there something in between? How did that opportunity come about?

Justin Sharpe:

I did. That's an excellent question by the way. What happened was, I was actually teaching. I did my PhD part-time and was teaching for a long period of time. Until it got to that point in the PhD where you go, "That's it. I need to just focus on writing right now." Because my PhD was a social science PhD, so I had to be under 100,000 words. I think I was 99,600 and something words, not including references and the other stuff. Because what I did is I went out to California. My field work was based on working with communities who were trying to help themselves through community emergency response teams, and I wanted to see to what extent that was transformational learning and whether this can help others. So I did that, I finished my PhD, and my first job was at the United Nations Disaster Risk Reduction Agency.

I was thinking quite good for myself, I have to say. But it was just a-

Kelly Savoie:

Yes!

Justin Sharpe:

It was good. It was an excellent experience. It was amazing. I learned a lot. But it was only a five, six months contract basically to go in and do something specific for them. What was wonderful about that was I actually saw how much they did. What was also scary about that was how understaffed they are. Genuinely understaffed for dealing something that affects the globe, the planet, and everyone on it. I feel it's something that probably needs more funding and more staff, but maybe that's biased. But I did see how hard everyone worked. Then I was applying for jobs, as you do. Because you finish your PhD and you go, "What now? Will anyone employ me?" You literally think, "I've done this PhD. Is it of any use to anybody?"

And so what happened was I was applying for lots of different jobs. I applied for 10 big ones that I went for. I got four interviews, one at the London School of Economics for Climate Change, one at the Stockholm Environment Institute. Again, climate change and disasters. After the first interview, I didn't go any further with those. There was a job at North Dakota State in emergency management. I got down to the last two but didn't get that. At this point I was like, "Uh-oh. No one's going to employ me."

And I'm on Twitter. I'm on Twitter quite a lot. I've got just under 2,000 followers and I only really tweet about disaster risk reduction, education for hazards. I also run an education network for disaster risk reduction called EDU4DRR.org. On that I've got comic strips that I use to get across things about disasters, hazards, for children. I've done 52 of those. They've been translated now into German, Spanish, French, Italian, Farsi, Iranian. Because I've been doing that for a number of years. I've had these things in and out of the field and things that I've done off my own bat, rather than just have someone come along and tell me.

I think that's probably how, when I did find out about this job... I remember doing the interview and you're very nervous. And of course the interview was through Skype and I was back in London. And I remember someone here, it was Alan Gerard, who's a very senior person here. And he asked me a question and I gave my answer and he just said, "Awesome answer." And I was like, "Oh, this is going well." Because no one has ever said that to me in an interview before. It was a wonderful thing. I know Alan well now, having worked with him for three years. He's not very effusive very often, but when he is, you feel it and you're like, "Oh okay. That's a good thing." So I really appreciated that.And I hope that answered that well. Again, I think I've made quite a securitist route, but at the same time also a direct route. But I've not realized that it's been direct as that's occurred. I think that's probably a good kind of analogy for life really. You want to be going from A to B, but sometimes you kind of zoom in and out of that and spiral in and out. But you get to where you want to be in the end.

Kelly Savoie:

No, that's a great explanation of your professional journey, so thanks for that.

Matt Moll:

Could you walk us through a typical day, if there is such a thing as a typical day, on the job as a research scientist at CIWRO?

Justin Sharpe:

Yeah. I think you've hit it on the nail. There's no typical day or atypical day. I think what happens is you come in, you turn your computer on, you check your emails out. But you've already probably checked those, to be fair, so you've already got a list of things. I'm a very organized person in that I have a little A5 notebook and a little fountain pen and every single day I write down to do, to develop, and I try and hit all those markers. I know that might seem a little bit old school, because we've got all these great flash tools to do things. But I usually try and work my way through that. However, you're a scientist and things can surprise you. Things can suddenly come up and you have to be flexible to those sorts of things.

I'm just trying to think about my day to day. My day to day has been working on an academic writing paper that I've got to report on back to some other people tomorrow. I met with my team here as well, so I'm the team lead for the Behavioral Insights unit on the CIWRO side here. I met with those for an hour.

One of the things we do, and this may sound strange, but we spend an hour on Monday going over our apples and onions, and it gives people a chance to... let them know what's going on in their lives that's good, and what's going on and not so good. I think that's really healthy for the team and it also means that we can also be understanding of someone if they're not working at a million miles an hour like we normally do. You go, "No, I get it. They've got some things that they need to deal with." I think that's really useful.

I may write on academic papers if I'm developing something like that, or correct things. I may be asked to do a review for an academic paper. Then there's the day to day work. I'm the VORTEX Southeast Social Science Coordinator, now becoming the VORTEX USA Social Science Coordinator. I coordinate the social science across that particular tornado program where we are really trying to find out what's missing on the societal side of things. What is the impact of social vulnerabilities? What do we need to be doing about the sheltering issues within the Southeast and across the United States as well? And how we can help people.

And as part of that, I also lead on a project that's working with Mississippi-Alabama Sea Grant, which is one of a NOAA's programs. We work with them because they have great in-reach and outreach into communities. What we wanted to do was return the social science findings to the community and say, "This is what we found. This is what we would like to help you with. Are there any further barriers? Are there things that we're missing? Either in communication or in the way that you can and can't respond to things such as watches and warnings when they occur?" Because otherwise I think we're making assumptions that we know those communities, and we don't. We can't. It's impossible. But what we got to do is chip away little by little. And so, what we're also trying to do is develop a six-hour curriculum, a little bit like a mini SIR developed specifically at severe weather so that people can know what to do better. But also, it's about neighbors helping neighbors. Trying to help people get connected a little bit better.

These are some of the things that I work on. Of course, we all have admin tasks that we have to do as well. And although they sometimes can feel a bit dull or you feel like you're not doing science, you know they're important for the wider mission of science, and so you're still doing them. You're still taking them seriously. And someone somewhere is also relying on you doing that. Taking it seriously is important, but it's not exciting. I think that the honest answer.

Kelly Savoie:

Right. Justin, it sounds like it's pretty varied. What do you like the most about the job?

Justin Sharpe:

I still have a thirst for knowledge. I still really want to know about people and how they respond to things. Because otherwise I think it's that idea that we assume we know. I think one of the great things that's been over the past few years is that we're moving away from the idea of complacency on the part of the public when they actually are faced with different weather hazards, to trying to understand why they appear that they may be complacent from the outside. If you get to the inside and ask them...

One of the great things we did was we went down after the Kentucky, Tennessee tornadoes of December 10 and 11 last year. Now, we waited three months. We didn't go straight away, because we were talking about EF4 and EF3 tornadoes that really tore through communities, caused huge amounts of damage, loss of life. That's the other thing about social science, is being aware and empathetic to the needs of others at the same time as wanting to collect the data. Data is perishable, but it's not quite as perishable as sometimes it's made out to be.

And so, we went and we talked with people. I think one of the hardest conversations I had to have with people, apart from with those that were in the candle factory in Mayfield, Kentucky, but the hardest conversation were people sheltering to the best of their ability in their homes, but they had nowhere else to go. They knew this was going to be a big storm. It was warned 90 minutes out. They were not complacent, they just didn't have choices. This is a really difficult societal problem, what we call a wicked problem in science. There's lots of complexity and you don't answer this with a simple answer.

I think that's what the behavioral insights unit and social scientists do. We try and find out a little bit more about, okay, if it's not an easy answer, do we need to be asking different questions? Do we need to be going and visiting with the people there and finding out more about that? And also making sure that our research is not extractive in any way. And by extractive I mean parachuting in communities after a disaster, asking them questions for our scientific edification, but then not giving that back to the community. So, they lose trust in us as maybe a science body. And tornadoes are going to happen again. I would like those people to be able to feel that they can trust us and trust in what we're doing, so I think that that's really important to say as well.

But I think the thing that really keeps me going is I learn something new every single day and it's from my colleagues, it's from the public. And I want to continue to develop that so that I feel that we've really... I don't think we're going to answer all the questions, but we're getting closer to answering all the questions. And more importantly, providing solution spaces for policy makers to maybe enact.

Matt Moll:

And what would you say are some of the biggest challenges that you would face working in the field?

Justin Sharpe:

It's trust actually. That's a really, really big issue. I've been in the field and I remember talking to one gentleman and I asked him a particular question about shelters. And immediately he saw this as a politically loaded question, whereas actually I saw it as actually there used to be more shelters. We seem to have taken away. What's going on here? What are we missing? And he just went, "Oh, that's a government question. Oh, that's government. Your government. Your government." And I'm like, "Actually, I'm here representing the research institute. It does work with government partners, but we're not here on behalf of the government." I think trying to build those trusting relationships is really key, and I think it's one of the biggest challenges that scientists face when meeting and liaising with the public.

But it's also a massive opportunity. They will tell you things that you hadn't thought of and that will blow your mind. I think I can link this to the tornado tales when we get around to that, but I think these things

are actually linked together. Because we don't have all the answers and I think that that's why we need to be working with those publics. But it's really about trust. If we can have people trusting us, if we can help improve their social networks and access to us as scientists, that also helps too.

Kelly Savoie:

What do you think the reasons are for not enough shelters in some of these areas? Are they just very small communities where there aren't a lot of options anywhere? There aren't a lot of, I don't know, convention centers or places where people would go? What do you think is causing that?

Justin Sharpe:

Well, I think that that brings us back to that complexity issue and the wicked problems right away, because it is different in different spaces. I can sort of unpack that a little bit. But actually, in some of the smaller rural areas, they do have quite reasonably... Not everywhere. They do have some access to shelters. And one of the biggest problems here in our larger metropolitan areas actually... And I can give Norman as an example. After some tornadoes about 10 years ago, several things happened that complicated the situation. There were two tornadoes very close to each other. I think one on May 20th and one on May 31st. Apologies if that's incorrect in any way. But the one that happened on May the 20th, people then went out or saw the damage or saw the damage on the news. And that's kind of a scary thing, to see that damage. And when I've been out there now and realized it, I also understand how they feel. But then what happened on May the 31st was that a meteorologist on one of the broadcast stations here said, "You need to get out now. This is so dangerous. Get out. Get out of this path." And that caused huge amounts of people to flee when they didn't necessarily need to.

So, one thing I think we need to really underline is this: tornadoes are hugely survivable. I can give an example from Joplin. The Joplin tornado impacted about 30,000 people that were directly under the path of that tornado. 98.8% of the people who were directly under the path of that tornado survived. We did lose 1.2% of the population and that is a tragedy in itself. But that was a monster storm, an EF5 tornado, which is going to have those sorts of impacts.

I think what we would say is that, if you're in a site built home, if you've got interior walls or if you've got a shelter, you should be fine in those and we need to be communicating that. Where we need to be communicating and where the people are most at risk are those that are the most socially vulnerable. Those living on minimum wage, maybe one or two jobs, living in a mobile or manufactured home that's not theirs. Even if they wanted to retrofit that mobile home or manufactured home to improve its structural integrity when a storm occurs, they can't do that because they're renting. By the way, this also includes folk in apartments as well. When I first moved to Norman, I was on the third floor apartment. I'm not anymore. I've moved. But after a few... We had three actual real tornado warnings while we were here. And thankfully didn't impact where we were and weren't particularly strong when they did touch down, but we were there and we were in them, so I can attest that that is a tricky situation.

That's a problem. One of the things that they did then is they shut all of the tornado shelters down. They just said, "Ah, there were too many people on the road." There were deaths on the road actually caused by a lot of what was occurring during that, and I think most of the fatalities were people on the road. Then there were people turning up here at the weather center, I believe. And again, that causes a kind of stasis in a way and people aren't allowed into buildings, and then people get upset when they're not allowed into buildings.

I'm going to introduce something new here: pets. People want to know if they can bring their pets to the building. And I think that's fully acceptable, but they've got to be caged. I happen to know that in Etowah

County in Alabama, they've had people turn up with a boa constrictor to a tornado shelter saying, "Hi. Can me and my boa constrictor come in?" And of course the answer is no. Do we have to explain why? But people have these conversations. And again, you see, this is why it's important being out there and talking to the emergency managers and finding out what their problems are, what their challenges are.

I give that to a county as they are an excellent, excellent example of being able to use local social networks and businesses to help them do things. If they want to raise money for the shelter, one of the things as part of that is, oh, they need the ground leveled and prepared. They actually get someone in from the local community to come in who's got the right earth moving stuff to do that at no cost to them. There are such ways of finagling things, there's an American word I've learned by the way, to try and fix some of the problems. It's very, very different in different places. I think that that's part of the answer.

Part of the solution might be to actually learn from those past things, including what happened in May that time here, and actually to say, "Okay, we need to communicate about when we're telling people to leave and how we're telling people to leave and what people need to leave and what people need to stay put. Rather than just a floodgate where we don't have the capacity and we're never going to have the capacity for everybody. That's why personal responsibility and if you have a shelter or safe room, things like that, that helps. Returning to the Kentucky idea... I'm sorry, the Kentucky field work that we did, we interviewed people who had safe rooms. They felt safe, they felt secure. They were not worried. As opposed to people who had nothing, who are still experiencing posttraumatic stress now. I think that's the difference and that's what drives me every day to do my job, is to help those most socially vulnerable people. Because we mustn't forget about them. Poverty should not be a barrier to safety. It should not be a barrier to protection. That's my view. It's my personal view, but it does come from doing some work out there in the field as well, so it's also based in rigor and science as much as I possibly can.

Matt Moll:

You are also the project coordinator for a citizen science web instrument called Tornado Tales. Could you tell our listeners a little bit about that project?

Justin Sharpe:

When I first came here, I was asked to conduct a literature study on tornado epidemiology. In order to understand how something is survivable, you also need to understand what kills and why. I went through tornadoes over the last 40, 50 years or so and actually looked at where the deaths were. Other people have been there before me in different ways, by the way. This is not like I'm a genius. I'm not. I actually built on their work and built on their literature and mention their literature and said that they'd done that, because they had done. I did this in the first six months or so of my position here, and it really helped me understand the nature of the problem and ask the right questions I think as well.

I found it fascinating, although it was a little bit grim. I felt like Dr. Death. It had to be said when I was doing this initially. But I also realized over time that, like I said, I gave you that Joplin example to show how survivable tornadoes are. I think that that's where that really came about.

Now strangely, I did my job for 17 months back in London and Essex, because I got trapped there in the pandemic. I went back there. But one of the first things I remember doing was I was part of a NOAA three minute thesis and I was asked a question. And I cannot remember exactly what this was, but I couldn't answer it and that bugged me. As a scientist you want to know answers to things. And it was from that, I'd been mulling on this for a few hours amongst the work that I was doing, and then I just went, "Why don't we have a way for the public to report how they're experiencing tornadoes in the

same way that people can report on Did You Feel It for the USGS?" And I came downstairs, because I was at my parents-in-law England, and I came downstairs and I just went, "I'm a genius!" I just claimed this to the room.

I don't actually think I'm a genius, but at that moment in time I was like, "Hang on a second." And so, I brought this to people here and I said, "Why do we not have this?" And they went, "I don't know." And I said, "Well, can I develop it? Can I actually turn this into something?" They said, "Yeah, go for it." And I wasn't too sure whether they said, "Yeah, go for it," as a great encouragement, or whether, "He'll never pull this off," sort of thing. Because you just don't know. Yeah, go for it can mean a couple of things if you read between the lines.

So I did. I worked with the web development team here within the National Severe Storms Laboratory. You have to do several things to make sure that it's secure. It's not just a case of chuck a survey in a Google link and you're done. Also, because we're collecting data on behalf of the government in a way, we had to go through OMB. That was a year-long process getting the survey through OMB.

Kelly Savoie:

Oh wow.

Justin Sharpe:

The survey is just one part of a tranche of things that we're trying to do. The Tornado Tales is the app survey side, which encourages citizen science. A little bit of background behind that. There's over 1,000 tornadoes a year. We only really sample about 1% of those. 99% of tornadoes don't get surveyed. This is where these questions came from from me and this is why I was going, "I'm a genius." Again, I don't really think I am, but I just saw this gap and I wanted to do something with it, and this is what we are trying to do now with the Tornado Tales.

It's a five-minute survey and it asks you what you did in a watch, what you did in a warning, whether you sought shelter. If not, why not? What protective actions you did or didn't take. Because again, it's not about assuming that everyone will do the same things. And we're really trying to understand what happens in that watch phase as much as the warning phase. When there's a warning given, most people, despite bravado and people going, "Oh, I like to look at it on the porch..." Because I've heard that story so many times, and that's great if you're in Kansas. That's great if you're in Oklahoma and literally you can see for 30 miles. Yeah, you can see a tornado from a long distance, and yes it's an amazing phenomena. But it's slightly different when it's a nocturnal tornado at 11 at night and you're in bed and the kids are in bed and you're on a third floor of an apartment, as I've been. You start to experience things in a slightly different way.

And so, I wanted people to be able to do that, but to also emotionally let out how they felt about things as well. Because I think it's important for us to know how people are feeling and whether that impacts their decision making as well. And are we giving them the right things for them to make the best decisions in the best timeframe possible? There's a lot of complexity there, as I've pretty much unpacked. I hope that helps and I just wanted to join the two things together.

Kelly Savoie:

Let's move on to our student and early career professionals who may be listening. What advice do you have for them for establishing careers in your field?

Justin Sharpe:

I think there's several things. You can just talk to us. If you're interested in working with me or anyone around here, you can reach out. The worst thing they're going to say is no. But actually, oftentimes they'll say yes, or they'll be thinking about something that is coming up. And they won't say, "We give you the answer now," but they'll say, "This is coming up. Keep an eye out for it. Make sure it's on your socials and you're following us or what have you, and then maybe apply to that when that occurs." And there are lots of programs that people can do, both as undergraduates and postgraduates, I'm pleased to say, that people can make use of and improve their career path. Or just see if the career path is the right one for them as well. I think that's important too. And as I gave you an example at the beginning, our career paths aren't always in a straight line as well.

I think the other thing there is do not be afraid to get knocked back. Do not be afraid to make mistakes. You will learn from those things, you will grow from those things, and you'll be a better person, a better scientist because of it. And don't see failure as failure. It doesn't mean you're not going to be upset, by the way. I'm upset if I don't get a job that I'm going for. Again, I'm human. But I also kind of go, "Okay, what's next?" That's always my attitude. What's next? And I think that it should be great if people can also take that on board.

Kelly Savoie:

Right. In terms of skills, say some of the courses you've taken or any professional development that you've done, is there anything in particular that students should think about or try to gain some experience in that you think would be helpful if they wanted to do a position such as what you are doing?

Justin Sharpe:

Yeah. For me, working with social sciences, you do need to know that social science is a broad field, as is physical science is a broad field, and it has its specialisms. You need to understand your positionality as you come here as a scientist. A positivist will say that, "We know about X. We want to know about Y. How do we find out about those things? Here's a survey." A social constructivist or a weak constructivist will say, "Well actually, we all construct knowledge. How do we construct that knowledge?" And so, we need to know more and that's why we need to go out in the field and ask questions. Learning how to ask the questions, making sure that your questions aren't closed, making sure that you're not biasing questions, taking those social science courses that is not just statistics based, although statistics is also important, is really important, I think, to understanding my world, which is also about understanding the world. And have an open mind.

Also, weirdly, take a photography class. Actually understanding how to photograph things, but also photograph things to document them, but also to do that sensitively. When I was out in the field and there's destruction everywhere and people have lost everything, I'm not taking pictures of people in there as they're combing over their record. I know that sounds weird, but taking a course of ethics and things like that and actually understanding that is important as well. Understanding how the internal review board works for universities for social science and such, really, really important.

I think the best thing is, keep an open mind as well with what you're doing. I think one of the great college experiences here in the United States is that first year or so that you can try different things and really understand what works for you. That's the time. If you've got an idea that you might want to be interested in this sort of field and the work that we do, that's the time to experiment in those sorts of things as well. And like I said, environmental science was my undergraduate degree and then I did a PhD in geography, dealing in disasters. And I'm English, so that's really confused everybody as well.

Matt Moll:

Well, we're so grateful for everything you told us about your career. However, before you go, we always ask our guests one last fun question at the end of our show. What is your favorite band or musician?

Justin Sharpe:

Yeah. You see, that's an excellent thing. I'd say this ties into my hobbies as well. I collect vinyl records. I have over 500 vinyl records.

Kelly Savoie:

Oh wow.

Justin Sharpe:

Yeah. I'd say there's about 450 in London. They're there at my parents-in-law's and I don't have access to them. But they're there and I know they're safe. Here in Norman I've collected about 70 vinyl records since I've been here. I absolutely love music on vinyl. The sound's great. I've got a really good stereo system. I think my enduring band from my youth into my adulthood is probably The Chill. Robert Smith with the big hair and the makeup. At university, that's how I used to dress. How I didn't get beaten up is beyond me, but there you go. But that's how I was. Makeup and hair out here. I think it's good. I think you need to go through that and experiment. I did become a musician and I did become a singer of a band, so it kind of becomes okay. That was soon after graduating.

I think very much The Cure, and I also think one of the best bands I've ever seen in my life is Dead Can Dance. Now, if you don't know Dead Can Dance, I know this [inaudible 00:39:31] little, but Google it people. But Lisa Gerard, who did the music with Hans Zimmer for the film Gladiator and many other things, her voice is just amazing. I saw them as a goth, dressed up with my hair and my makeup, in a tiny little place called Middlesbrough Little Theater in 1990. These, now, bands fill up stadia with their music when they go on tour and things like that, so to see them in that way was a privilege.

I also saw The Cure in a 2,000 seat venue in Newcastle as well. Standing venue. No seats. Around about the Disintegration tour from 1990, and I saw them at Glastonbury as well. They have been a constant. But I think generally music is an absolute passion with me and it helps me switch off, I think. I think you need to do that and really intentionally listen to the music. I love listening to soundtrack music as well, so John Barry who did a lot of the James Bond soundtracks. I love listening to the different sounds and how he communicates danger or calmness or a romantic mood. I absolutely love that about music that it does that. It moves my soul.

Kelly Savoie:

Well, I can relate, because I also collect vinyl, which I don't know too many people who do. As you mentioned The Cure, I have found those albums to be very expensive and not easy to find. Do you have a lot of Cure albums on vinyl?

Justin Sharpe:

I probably at some point had all of them on vinyl, but I have lot now. Back in the UK I've got a lot. Certainly Disintegration, Kiss Me, Kiss Me, Kiss Me. I've also got 17 Seconds. I bought Faith on picture disc vinyl, which is a record store they released this year. I have 17... not 17 seconds. Three Imaginary Boys I've got on picture disc back home as well. Back in the day when I was a student, I used to collect all the singles as well, so I used to have 12-inch singles of Lullaby on pink vinyl and Pictures Of You.

Kelly Savoie:

Oh wow. Yeah.

Justin Sharpe:

So I'm sorry. And to those people who are like, "What the hell is he talking about?" I'm so sorry. I apologize. But I mean, The Cure have been around for so long. They're actually playing when I'm back in London in December, and I was like, "Do I go? Do I go?"

Kelly Savoie:

Oh my goodness. You have to go.

Justin Sharpe:

Part of me thinks so, but also part of me knows that I saw them at the height of their powers. In 1987 I first saw them as well. I've seen Siouxsie and the Banshees in the Royal Albert Hall as well. I've seen bands like The National and things like that. I've been to Glastonbury four times, which is an amazing experience. If you can get to go, people, Glastonbury is amazing.

Kelly Savoie:

Oh, I would love to do that. Well, thanks so much for joining us, Justin, and sharing your work experiences with us.

Justin Sharpe:

You're welcome. I hope it was okay. I hope it wasn't too waffly. You never know when you're talking sometimes.

Kelly Savoie:

It's been perfect. Thank you.

Justin Sharpe:

You're welcome.

Matt Moll:

Well, that's our show for today. Please join us next time, rain or shine. Clear Skies Ahead: Conversations About Careers in Meteorology and Beyond is a podcast by the American Meteorological Society. Our show is edited by Peter Trebke, technical direction is provided by Peter Killelea. Our theme music is composed and performed by Steve Savoie, and the show is hosted by Matt Moll and Kelly Savoie. You can learn more about the show online at www.ametsoc.org/clearskies. And you can contact us at skypodcast@ametsoc.org if you have any feedback or would like to become a future guest.