Transcript for "Kim Klockow McClain, the UCAR Senior Social Scientist supporting the National Weather Service in Norman, Oklahoma"

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 Emma Collins, 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.

Emma Collins:

We're happy to introduce today's guest, Kim Klockow McClain, the UCAR Senior Social Scientist supporting the National Weather Service in Norman Oklahoma. Welcome, Kim. Thanks so much for joining us today.

Kim Klockow McClain:

Thank you so much for having me.

Kelly Savoie:

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

Kim Klockow McClain:

Yeah, I think like so many people in our field, it was a formative experience in childhood. I really got into meteorology because of the Plainfield tornado that happened outside of Chicago in the Chicago suburbs in 1990. I was a little kid then, and it was actually an unwarned F5. A lot of people died. It was very, very traumatic for all of us in the suburbs. And I just remember after that, I was so frightened, and the fear turned into an obsession with weather. But I also was really interested in: How did people make choices that day? How did they choose to respond? I've always been very interested in human behavior, and especially human psychology. So I brought both pieces of that together. I studied both meteorology and risk decision science.

Kelly Savoie:

And did you know of the certain school you wanted to go to, or were you kind of on the fence in where to go, or is there a clear winner?

Kim Klockow McClain:

I grew up outside of Chicago, and then my family moved to Northern Indiana when I was a little older. So meteorology programs in-state in Indiana, Purdue was right there, and it was a wonderful meteorology program. For me, I didn't really look around at that point, at least for undergrad. I knew Oklahoma existed and I was very excited about the potential to come out to Oklahoma, and I did that then for graduate school.

Kelly Savoie:

I just have one other question for you, Kim. So when you were going through school, did you still have that desire to kind of connect social science or psychology and meteorology? And was that your path when you started? Did you know, okay, I want to take these classes because I kind of want to keep it all together?

Kim Klockow McClain:

Yeah, I've never been great at just choosing a limited set of things and focusing on it, and it really manifested in my degree program. I started out in meteorology as a meteorology major, but I had other social science classes. I was doing the Gen Eds, and I did that thing where I sat down with the entire course catalog when I got to Purdue, and I highlighted every single class... It was a physical book back then. I highlighted every single class in every discipline that I thought was interesting and every class I wanted to take. I had done that in high school too. I did that when I came here for grad school. Some things never change. But I really quickly came to realize that the field of meteorology was really competitive, and there weren't necessarily a lot of jobs for straight forecasting available. Our program was very upfront about that.

So with that in mind, I thought, well, I should really cultivate maybe some more of my interests and at least have options when I get out of undergrad. I didn't think that meteorology and social science could be paired. Back in the early 2000s, that part of our field didn't exist yet. So I ended up just thinking, well, maybe if meteorology doesn't work out as a career, I could go into marketing. I was really interested in consumer behavior, consumer science. I knew though there wasn't a marketing program at Purdue. The closest we could come was an economics degree with a specialization in psychology. So I pursued both meteorology and economics degrees at the same time and ended up graduating with both. And when I came to grad school, I came here to do a study, an economic valuation study for the Oklahoma Mesonet for a weather data system. So continuing on, it was meteorology, but half of my courses were in economics. So I just always kind of paved my own way between programs and found ways to put it all together.

Emma Collins:

So what opportunities did you pursue inside and outside of school that you knew would be beneficial to securing a job in your profession? It is such a unique combination.

Kim Klockow McClain:

I had discovered by grad school that there was this intersection of meteorology and social science. And the way that I came to that realization by that point was all the things I did in undergrad. I did a lot of hands-on exploring. So this was great advice, that... I went to an engineering school, and engineers are all about just get the internship, learn the trade, learn the skill—very practical people. And so I sat down and I thought, okay, well, what internships exist? What opportunities exist? I did a field project. After my freshman year, I was just a little driver of instrumentation, but I got to be with all of the scientists on the

IHOP project. And so that got me out to the plains for the first time, and I learned a lot about field work, and that was something I enjoyed, I really did, and how data was collected.

And I got insight into the field, practical insight into, what is this field? I subsequently had an opportunity to teach. I was invited to be an undergrad TA for physics. And so I took that on as an opportunity. Do I like teaching? I need to understand what role in this field I even would want to occupy. And I also found that there was a research internship that I was able to get later in undergrad here in Oklahoma. It's called the Research Experiences for undergrads program, and there is actually where I discovered that both halves of my identity could come together where there was a project that was proposed by a senior scientist at the Severus Storms lab and an economics professor. They wanted to study the economic impacts of tornadoes, and boy were they excited when they saw my resume.

Kelly Savoie:

So how do you find research opportunities when you're in college? Do you reach out to the professors in your department, or do the schools usually list these?

Kim Klockow McClain:

It can be so tough when you're an undergrad to even know how to look. For me, it was really critical to come to the AMS annual meeting. I became an officer in our local AMS chapter, and Purdue sent their officers to the meeting. And it was there that I learned that the RU existed. I talked with Daphne Ledoux who runs the program, and she encouraged me wholeheartedly to apply. And it was that chain of things that helped me to know not only did it exist, but oh, I could really be a fit for it. I think as an undergrad, and especially women in our science, we can discount ourselves so easily and be so filled with self-doubt. And I sure was. I didn't think I was worthy of coming to Oklahoma or doing research or any of that, but I was encouraged to do it, and oh, did I love it?

And I learned that research was a career that I could be really excited by. So what I really recommend is there are a lot of these things that are advertised online. And if you don't have resources at your university or people who are necessarily connected to opportunities that you're interested in, then contact the person who's listed with the program. They would be happy to meet with you and talk about what their program is, get to know you and your interests. And if they think that your interest could be a great fit, they can also help you to put together your application materials in a way that will make you really competitive. Don't hesitate to reach out. Those people who run those programs are really, really looking for people, and especially people who maybe aren't traditional students just from big research universities. They already have a lot of opportunities. They want to see people, maybe from smaller programs too. Just don't count yourself out.

Kelly Savoie:

I didn't even consider that students have the opportunities to do research at other institutions outside of their own university, so that's some really good advice. It sounds like you did all the right things and you had a great resume. So what was your first job in the field? And how did you end up where you are today?

Kim Klockow McClain:

My first job, I would count my first job as being a graduate research assistant. I did research as a graduate student at OU for my master's, and then I went on. In my PhD in the geography department, I did behavioral geography. I was a researcher all seven of those years. Yes, seven years. I do nothing. I do

nothing quickly, but I do it well. So that job, I actually got interviewing...somebody had come out. I was invited for Visiting Students Weekend. Nobody had an economic specific project on the docket. But when I was meeting with different faculty members, someone who worked with the Oklahoma Climate Survey was meeting with me, and she just put a question before me, well. "If you were to try to figure out the economic value of an observing system like the Mesonet, what would you do?" And I created what became my master's in that conversation.

And so I think what I learned there and kept learning was that there wasn't a paved road for me, but I could, by giving people ideas that they thought, oh my gosh, that is something we should do, I could pave my own way by being really entrepreneurial about that. So to your question about how I've gotten into the profession, I've helped to create it. And there wasn't anything that existed. And what that meant for me was, oh, well, what do I think it should look like? And I teamed up with great people who had ideas about that too. And the AMS honestly has been the thread that's bound through all of that, the thing that's helped bring everything together. And I've found my people there and have been able to craft a community. And now, it's a recognized part of our field. Social sciences is recognized because we have a community and we're starting to gel and create opportunities.

And I love one of the things that I've gotten to do is create new jobs and new opportunities for people coming up so they don't have to face the kinds of uncertainty that I did.

Emma Collins:

What are some of those new jobs you might've created? It does seem like this is a really new and evolving sort of aspect to the industry. I'm just curious to hear.

Kim Klockow McClain:

Yeah. I kind of feel like I've been the Johnny Appleseed of social science positions, especially in NOAA. So I'll create something and get a federal job brought into it, and then I'll go to another thing and plant it at another organization. I started at NOAA headquarters after I graduated, I spent a year as a Congressional Science fellow. I thought, well, I know NOAA needs to have social science, and I know that that means that the infrastructure has to change. Well, where can I go to learn more about that, how to actually change an agency? And I thought: Congress. And so I took AMS, the Congressional Science Fellowship. The AMS partnered with UCAR to fund at the time. And after that, the folks at headquarters said, "We've heard you this whole time. We agree we need social science capabilities. Please come and join us." So I worked as the first social scientist in what's now the Weather Program Office, at the time, Office of Weather and Air Quality. But it is a research funder, so they're a grant office.

And I helped them to develop strategy, and honestly to put out calls for proposals and do all of that work to help found, what is the science that we're looking for and to help gear the research community toward NOAA and meaning the needs of NOAA and the weather service specifically. But I missed research very much, and I couldn't write another one of these. Someone needs to work on this thing without saying, "Okay, I'm just going to go work on it." And my next job, I literally just walked up to the deputy director of NSSL and I said, "You guys have done a lot. You're starting to think about a lot of social science problems. You have little projects here and there. You really need a team. Could I have a job where I start a team?" And they were like, "Heck yes. We've been waiting for you to be done with headquarters. Welcome back to Norman."

Kelly Savoie:

You must've been like, “Yay!”

Kim Klockow McClain:

Yeah, I was so excited. And so yeah, I came out here, and they hard funded me to start for a couple years, but I got just a bunch of grant fundings that I could fund other people on the hard money and... Anyway, it was a whole thing to create something, whole cloth out of nothing, but I created a couple of positions for... I brought in postdocs, so I had... There's a lot of programs that fund postdoctoral research, so gets people in the door for a couple of years. And so I used that as a step in. I basically took whatever funding was available and tried to route it to social science purposes. I was very crafty. So I created the postdoc positions. There are some research scientist positions that I helped to create out of programs, research associates. So all of these different research positions because it was a lab, right?

And so eventually, they got that team lead role. They got a federal job for it. So I was a fed for a little while. I'd been working for the University of Oklahoma as an affiliate of the lab up until that point, but I had a real, real firm job made. And that had happened too when I left headquarters. They had a fed job in the waiting. And now Gina Esco, a good friend to many in our industry, she has that job. So then I found this job in the Weather Service was open, this opportunity to work and support the national centers. And I just thought, well, that job has never existed. That position has never existed, and it's so important for bringing all that research I was doing and figuring out how to apply it. I have to go and be part of that.

Emma Collins:

That's really cool. Could you walk us through a typical day, if there is one, on the job as a social scientist supporting the National Weather Service?

Kim Klockow McClain:

Yeah, it's really diverse because the Weather Service is everything from the state to the sun. And supporting all the national centers, that's all these things. From the Space Weather Prediction Center to the Hurricane Center and the Ocean Prediction Center, it is really variable. I have some days where I'll get some quick questions. They'll just chat me and say, "I need a summary of whatever the research is on this in the next 30 minutes because I'm about to do a presser and I need whatever support." So in part, I'm just a social science support branch of one for this part of the Weather Service. But there are other things that are longer term projects, so SWPSC, the Space Weather Prediction Center. If you don't feel like you understand space weather very well and their scales don't help a whole lot, you're not alone, and there's an international effort to possibly blow them up and start over.

And we're starting to put more things in lower earth orbit than ever before, and so it's actually much more important than ever before as we're so dependent on satellites for space weather to be understandable and transparent. And so I'm helping to support a long-term effort to help evolve that. And we know other scales, like Storm Prediction Center. There's the Convective Outlook. There are questions about, should we evolve? And Hurricanes, how can we evolve our communication for that? So there's some things that are longer term projects where I'm helping to support better user engagement and meet long-term objectives to improve communication as well.

Kelly Savoie:

Sounds so interesting and varied, and you're probably never bored. What do you like? Is there anything in particular you like most about the job?

Kim Klockow McClain:

Goodness, like most about it? I think it's variety. I think that that variety is what I enjoy the most about the job. I've obviously been a severe weather nerd from the beginning, and so coming back to work in severe weather at the lab was a dream come true. I had sort of worshiped NSSL from afar since I was a very little kid, so it was hard to leave that, but I also recognized that there was so much value in coming over in what I could do for severe weather and beyond. I have really, really enjoyed the space weather part.

Kelly Savoie:

Yeah, it's so neat. Isn't it neat? It sounds really cool.

Kim Klockow McClain:

Yeah, space weather is so cool, and there's so little known, and it is becoming just more pronounced. And all of this is taking place, by the way, in the background of the solar cycle. There's an approximately decadal solar cycle that happens. The sun is more active sometimes and less active other times, and it oscillates on a ten-year cycle. We are approaching or in solar maximum right now. So the sun is very active, which means that it's shooting. There's more sunspots that shoot radiation at us, and there's more coronal mass ejections, those flares of actual just matter off of the sun, not just energy, but the mass. And that can affect our magnetosphere and create pretty lights, but also take down our infrastructure and induce currents that can fry things. So it's just really dramatic moment actually to be doing this work as well.

Kelly Savoie:

So is there demand for those positions, or is it still kind of not really at the forefront?

Kim Klockow McClain:

I'll tell you what, I think it's become one of the hottest areas in our field, and there are more jobs coming. The Weather Service just created a social science branch in its science tech division, and they're hiring a bunch of people. I know I left behind a really robust group here at the lab, and there's another lab, GSL, in Boulder that has just formed a social science research group to do a lot of similar kinds of support and working alongside developers to make sure technologies are actually useful to people, and we're not just making things because we can, we're making things that are use-inspired. I think that we are living in a time where technology doesn't always solve a problem. Sometimes it creates problems and sometimes it makes things more complicated, not less. So we really, really need to have people who come in with skills and expertise in user-centered design, in risk communication, in decision sciences to help and inspire the creation of technologies that are purposeful.

Emma Collins:

And with this very new and exciting and varied field of work, what are some of the biggest challenges you've found that you faced?

Kim Klockow McClain:

Early on in my career, one of the big challenges was really just how marginalized social sciences were. You come from these... Science and engineering culture is very, oh, you can't cut it. Go over to humanities and you can take the easy classes, and the rigor is just different. It's just different. I'll tell you, my economics courses were not at all easier. Especially the upper division courses were just as

challenging as my theoretical meteorology courses. I was deriving equations over there too. They can all have their own rigor and beauty and just... There are different ways of knowing about our world. It turns out that just learning about technology and thinking about the physical properties of our world hasn't taught us everything we need to know about solving problems in our world. And so many people get into this field with a desire to help people.

Well, it turns out you might want to study something about the world of people. And so that was something that was a little tough when I started out. I helped myself by being very good in meteorology, and I think that also is something that's given social sciences credibility. I'm one of those people who can sort of be a champion that I'm respected in our field. And because of that, when I'm helping to bring in these other social scientists, I think I help give them a degree of credibility by extending that, opening those doors to them. So what initially was a real barrier, I think we're starting to see the tide turn a little bit and recognize that the human part of our science actually is a very tough and respectable piece of the puzzle.

Kelly Savoie:

Right. And if you think about it, all these courses, undergrad courses and areas are all intertwined in some way. We hear it a lot on these podcasts where, yes, you can know the science, but you need to be good at English and writing, you need to be able to be a good communicator, and you also need to know about psychology and how things affect others, and you also need to know about the business side of things. So I think it's really smart for somebody who's going through school now to get a lot of different types of specialized skills and computer science as well. Machine learning is huge. So that's really a smart thing. People shouldn't just be focusing on one thing. It's not going to benefit them when they get a job. It's not.

Kim Klockow McClain:

It's not. Just forecasting just to forecast, it's not something that our field really gets to do a whole lot anymore. We really do need people with a diversity of skill sets. So just…you can think about it as just, what is it that I enjoy? And you don't have to have it all figured out from the beginning. I certainly didn't. I found I was very stumbly. That was actually one of the biggest challenges, was that there wasn't any path paved that was very clear. And I feel like in modern society, at the rate that everything is changing, undergrads probably feel very much the same way regardless of what their skills are, what they think they might want to do. There's this sense of everything could change on a dime tomorrow that makes things cloudy, and I just encourage you to trust yourself that it's going to be step-by-step. No one else is in any different of a boat. We have to take things step by step. And trust yourself that when it's time to take the next step, you'll be able to figure it out.

But you can situate yourself best to take those steps by just cultivating the diverse set of skills and knowledge, and then you'll be able to make all kinds of jumps as you need to.

Kelly Savoie:

And we were talking about how things are intertwined, so could you let our listeners know some of the ways that social and behavioral sciences are connected to meteorology?

Kim Klockow McClain:

It's so interesting. I actually thought there were so many... Even some of the fundamental equations of the atmosphere have corollaries in economics. There's the velocity of money, an equation for which was

remarkably similar to some of the equations of motion, and I laughed because you're just taking the same kinds of constructs and applying them to different systems. So if you like math... I wouldn't say I was a math prodigy, but I came to like it because I just applied so much force of will to do well in those classes that I ended up seeing these connections between everything. And especially on the larger scale, the way that we are interacting with our planet is shaping the atmosphere now, these systems are fundamentally and inextricably linked. Everything is linked.

Kelly Savoie:

And you were talking about how you're so interested in severe weather. Well, that's one example of how it affects people and their lives and their behaviors. And so that is one example of how it really is connected.

Kim Klockow McClain:

Yes. Yes. Weather affects us every day. It affects everyone. I think that's something that I've really enjoyed the most about it. Even for my time working in the Senate, one of the great skills that I was able to bring to that job, you have very brief little windows to meet with people when they come into the office. I would have 15 minute meetings as a congressional staffer. And to get people in the door, and then transition to business, it was really useful for me to have a little nugget of something to just, oh, did you know x, y, z? And then I'll be able to take the conversation and move it forward. And it was always weather. And I knew where people were coming from. I'd know just a little piece more about the weather than they did, but everyone was universally interested in it. Everyone's noticing it, everyone's living in it, and I could use that in this other context.

And yeah, I think that it's just so beautiful that it's something that connects us all. Even if we're living in this computer world, a lot of the time, we still all are impacted by the weather.

Emma Collins:

And speaking of connections and the community at large, you've served many roles in the American Meteorological Society, so how has volunteering benefited you?

Kim Klockow McClain:

Volunteering has helped me to find myself in the Society, to be honest. I started volunteering my time as an officer in my local chapter as a student. And because of that, I was brought into the society in a more full way and was able to learn about so many more opportunities, which turned into more opportunities to serve also. And yeah, I would struggle to even pinpoint what the most helpful piece of that service was for me. I think connecting in service to the Society has just helped me to feel like I'm part of the foundation of it, and I'm able then to see the bigger picture and mobilize people and mobilize ideas, and move things forward for the science in ways I think they should go. I've been able to be strategic and help form AMS strategy and broader field strategy in partnership with AMS to think about what is our communication goal as a field? How are we functioning together as a community of forecasters? What does that look like? I'm able to be a more just useful advocate.

I interface with policymakers still through connections with the AMS. It's really widely varied, but it all starts with service because then you start to understand the people, the system, and the different views on the science, and you can learn to work within it in a more effective way.

Kelly Savoie:

I think volunteering, from my own personal experience, it provides you with more confidence too. You feel like you're a part of it, and you belong there and you're getting involved, and it makes you really feel better about yourself and about what you're doing. It just makes you feel good overall.

Kim Klockow McClain:

That's absolutely right. You join because these are our people. We're the ones who are all the weather nerds. And we found each other. How great is that?

Kelly Savoie:

We're so grateful for everything you've told us about your career. However, before we go, you always ask our guests one last fun question. So I want to ask you, what is your favorite band or artist, or musical artist?

Kim Klockow McClain:

Yeah, my favorite band, this one, I guess it's getting a little old now, or it maybe dates me as a millennial, but the Goo Goo Dolls. And I will say there's one of their albums that was released in 2006, Let Love In, where there are three separate very excellent weather references. I was very excited. Yeah, when that album was released, I was just like, oh, this is great. Anyway, so you should check that out.

Kelly Savoie:

Yeah, I think they're touring too. I think I just saw that they were coming around here anyway, so you might have the opportunity to see them live, Kim.

Kim Klockow McClain:

Oh, yes. Kim has seen them an unmentionable number of times. We don't need to talk about that. It's been a lot.

Emma Collins:

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

Kim Klockow McClain:

Thanks so much for having me.

Kelly Savoie:

Me. 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 Johnny Le, Technical direction is provided by Peter Killelea, our theme music is composed and performed by Steve Savoie, and the show is hosted by Emma Collins and Kelly Savoie. You can learn more about the show online at www.ametsoc.org/clearskies, and you can contact us at Sky Podcast at ametsoc.org if you have any feedback or would like to become a future guest.