

**Transcript for Matthew Brown, Postdoctoral Fellow at the National Severe Storms Laboratory (NSSL) in Norman, OK**

*Clear Skies Ahead: Conversations About Careers in Meteorology and Beyond*

August 15, 2023

**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, Matthew Brown, a postdoctoral fellow at the National Severe Storms Laboratory, NSSL, in Norman, Oklahoma. Welcome, Matt. Thanks so much for joining us today.

**Matt Brown:**

Hi. Thanks so much for having me.

**Kelly Savoie:**

Matt. Could you tell us a little bit about what sparked your interest in atmospheric science and how it influenced your educational path?

**Matt Brown:**

Sure, absolutely. Yeah. Like a lot of people in meteorology, I was always fascinated with weather and storms and tornadoes as a kid. I still have some boxes somewhere in my apartment of tornado videos and books that I had and pictures drawn of me wanting to be a storm chaser when I grew up. So I was always fascinated with weather, especially severe weather. But then actually, I kind of diverted away from that for a little while into high school when I started getting jobs. I actually got really interested in hospitality. I worked in a restaurant, I worked in a bakery, and I worked in a cafe for a while, and I got really sucked into that side of things. I always have fun telling people this story and seeing the reaction. I actually went to undergrad for hospitality management at Penn State University, and I did that for an entire year.

And during that first year, I decided to take a, oh gosh, what's it called? A gen ed. A gen ed, a non-major class in meteorology. Because I knew I liked weather, it just had been a long time since I really did anything weather-related. And I sort of fell back in love with the weather side of things. My professor and TA of that class had a conversation with me or sat down with me about halfway through that semester and said, "Have you considered doing meteorology as your profession?" I had some

conversations back and forth and ended up switching into the major. And three degrees later, the rest is history.

**Kelly Savoie:**

Well, you certainly picked the best school to switch to a meteorology major.

**Matt Brown:**

The funny thing is I had no idea of the reputation of Penn State's meteorology program. I was like, "Oh, hey, this school has meteorology." And then later on, a year or two into the program, I was like, "Oh, they have a program." Yeah, I was very fortunate.

**Kelly Savoie:**

Did you grow up in Pennsylvania, or did you actually relocate to go to school there?

**Matt Brown:**

Yeah, I grew up in South Central Pennsylvania in Lancaster County, so in the heart of Amish country. And actually if you look at... This is where the weather weenie comes through, but if you look at where tornadoes happen in Pennsylvania, it's either far west Pennsylvania or south central Pennsylvania. So I'm in one of the hot spots. I remember as a kid, there was a town about 10, 15 minutes north of us that got leveled by an EF3 tornado, which is relatively uncommon for that strength of a tornado in Pennsylvania.

**Kelly Savoie:**

Yeah, I was going to say that.

**Matt Brown:**

So that left an impression on me, for sure.

**Emma Collins:**

Have you ever witnessed a tornado yourself when you were a kid growing up, or is it just hearing the stories from the surrounding towns?

**Matt Brown:**

In Pennsylvania itself, no, I haven't. It's just been seeing things around. I remember a lot of tornado warnings. Of course, I was the kid who when storms were coming through and everyone else was like, "Oh, let's get inside," I'm like, "Let's go outside."

**Emma Collins:**

I'm sure your parents loved that.

**Matt Brown:**

Oh, for sure, with lightning and tornado sirens going off and the weather channel...having their little kid run outside. But yeah, I didn't see any tornadoes until I left Pennsylvania.

**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?

**Matt Brown:**

Oh my God. I could go on for a very long time because I'm one of those people who struggles to say no to things, so this is a very long list. But I guess starting with undergrad, I took on a lot of, or took on a lot of various leadership roles in clubs, some meteorology related and some not. And then later in undergrad, I had research or RU experience through NCAS-M, which is an interdisciplinary center for atmospheric science research that's based out of Howard University. And I participated in the USIP program, its undergraduate student internship programs. So that was sort of the first foundational research experience that I got to take a part of. And then my senior year, I did an air quality forecasting internship with one of the professors at Penn State. So between those two things, I got to really bulk up my research skills and my writing and communication skills because the air quality involved writing sort of synopsis of air quality forecast to release to the public.

So communication was really important with that. And then as I got into grad school, I really got involved with recruitment for my grad school, which was Texas A&M University, and also being involved with planning like the prospective visits. Because I know for me, when I visited grad schools in my senior year, the prospective visits were one of the hugest factors in me deciding where I wanted to go for grad school. So I really wanted to be a part of that experience for other students. And then as I've sort of grown as an early career professional, I've started to get involved in more professional things, involved with AMS BRAID. I'm not sure if you've had anyone from BRAID on, but it's the board for representation, accessibility, inclusivity and diversity, as well as they're sort of an embedded group called Coriolis, which is the LGBTQ+ affinity group within AMS BRAID. And I've got the chance to go on several field campaigns as well in the last few years. So that's helped build a more collaborative network of scientists and get out in the field and help train some of the younger scientists.

And then actually just recently, I got back just a week or two ago from AMS Early Career Leadership Academy out in Phoenix, which was a really great opportunity.

**Kelly Savoie:**

Yeah, I was there too at the broadcast conference and...

**Matt Brown:**

Oh, no way.

**Kelly Savoie:**

Yeah. I know. Sorry, I didn't see you, but that venue was really pretty nice.

**Matt Brown:**

Oh, it was. As we were driving up, it just kept on going on and on. I was like, oh, it's like a city.

**Kelly Savoie:**

Yeah, it was lovely. It was a really good time. So it sounds like you were very busy during your undergraduate and graduate years.

**Matt Brown:**

Yes.

**Kelly Savoie:**

And I know that your PhD research was on the multi-scale evolution of southeast US storms in their environments. Could you tell us and our listeners a little bit about that?

**Matt Brown:**

Yeah, absolutely. So I kind of fell in love with... Well, I've always loved storms, but I specifically became fascinated with southeast storms, because the more that I learned, the more I realized how much they sort of deviate from our typical model of severe convection. So for instance, when you think about severe storms, you think about the prototypical great plains tornadoes. They're happening in these big, massive supercell storms. They're happening in sort of the mid to late spring, a lot of times in the late afternoon or early evening. And they're happening in environments that have a lot of juice to them or instability, or you talk about Cape, and a lot of wind shear as well. But in the southeast, you know, still have those storms, but a great deal of those storms, for instance, happen in environments with less juiciness or less instability. And they can happen in what we consider off months, like cool season fall, winter months.

A lot of those storms can happen in the nighttime, and just a lot of other things. The Great Plains has, doesn't have very many hills or topography, hence why I can see storms a hundred miles away on a clear day in Oklahoma or Texas. But the Southeast has very complex terrain. And when you have these storms, that are happening at night or they're moving extremely fast, there's a lot of complexities that make it really hard to track these storms. And then there's sort of a whole socioeconomic side as well. A lot of portions of the Southeast have increased poverty rates, or there are a lot of disparities or inequalities when it comes to housing standards. And a lot of areas don't have direct access to storm shelters. So even when storms are approaching, there might not be a feasible option for people to find shelter in time.

So if you take all the physical attributes and all these socioeconomic vulnerabilities, it really puts a sort of bullseye on the back of the southeast. And it really inspired me to dive into the storms and see if I could improve our physical understanding or predictability of some of these storms.

**Kelly Savoie:**

Yeah. And I can't remember where the storm was, but someone was telling me about a place where people were taking shelter. It was one of those big box stores, whatever, that just collapsed. So I guess there has to be some more research on, I don't know, better architecture for these safe places because that was pretty awful.

**Matt Brown:**

Oh yeah, there's a lot of engineers that I know who are on the case with trying to figure out what structures are more resistant to those kinds of winds... And yeah, like I said, when there are those disparities in housing structures or building standards, it makes it really difficult to sort of ensure that the public is protected from these high impact events. And all that has really nicely set the stage for my current postdoc work, which looks at the factors contributing to development of rotation in quasi line convective systems, or QLCs, which are very common in the southeast, particularly during the evening hours. And this pairs with some of the deployments for the perils field campaign that I mentioned about. And I'm really hoping to improve our understanding of the physical processes that contribute to this rotation and sort of update and modernize our forecasting paradigm for this rotation.

**Emma Collins:**

So how did you end up where you are today at Noah's National Severe Storms Laboratory?

**Matt Brown:**

Yeah, so it came with a lot of research and a lot of emails. Sort of in the last year of my PhD program, I started doing a lot of research about different postdocs that are in atmospheric sciences. Because sort of two main flavors of postdocs, I guess you could say. There are postdocs that are directly hosted by an institution, like, okay, I'm going to go do a postdoc at this university with this specific professor who has money for a postdoc. But then there are also these, I don't know if you call them third party postdocs, where you apply to a separate organization that then provides money to an organization or lab for a postdoc. So for instance, my postdoc is through the National Research Council, or NRC. I have friends who applied to the ASP, which is a prestigious postdoc out at NCAR. NSF has their own sort of postdocs called AGSPRF. That's the Atmospheric and Geographic Sciences. And there's some other ones.

So I did a lot of research. And then I sort of cold emailed a couple professors or a couple researchers at NSSL and just said, "Hey, you don't know me and I don't know you, but I've read your papers, and this is the stuff I'm working on," and just sort of asking them, "What are you working on? And would you have a use for a postdoc if I applied for one of these?" And they were fortunately very welcoming and hospitable to having those conversations or pointing me in the direction of people that I should talk to. And then I applied for a couple postdocs and a couple faculty positions as well. And then got several nos, which if you're in academia, you just get used to. And then fortunately got a yes at the institution that I'm at now.

**Kelly Savoie:**

That's great. And good for you for just putting yourself out there.

**Emma Collins:**

Yeah, I love the initiative.

**Matt Brown:**

Yeah, it's taken time to build up the, I don't know if it's confidence or just stubbornness, to just put it out there, and whatever happens, happens.

**Kelly Savoie:**

And thanks for explaining the post-doctoral, the differences, because I've always wondered that because I'm just like, okay, so where does this person... Do they really work at the university? Because it seems like they have the university in their title, but then they also have an outside organization. That always confused me. So you explained that well. Thanks.

**Matt Brown:**

Yeah, it's a complicated web. It's a lot of moving pieces.

**Kelly Savoie:**

So this is a good segue. Could you walk us through a typical day on the job as a postdoctoral fellow and let us know about some of the research you're conducting at NSSL?

**Matt Brown:**

Yeah, absolutely. So in general, I would say that the life of a postdoc is similar in a lot of ways to the life of a PhD student. I have a very flexible schedule, which is good and bad because it means that I need to hold myself to a schedule, considering that no one's checking when I clock in or clock... Well, I don't even clock in or clock out. I just show up. But I have a flexible schedule. I go in. I'm sort of in the... I guess one difference from the life of a master's or PhD student is I'm really completely in the driver's seat of my research in terms of what things I want to go after, how I want to go after them, and structure science experiments and things like that. But in general, I go in, I try to spend some time every day at least reading through papers.

I usually keep an eye... I'm always checking the early online releases for AMS journals to see what new papers, what new papers come out, so I can sort of mark down like, okay, I need to take a look at this. I need to take a look at this. I do quite a bit of coding for my particular research because I do a lot of numerical modeling, so a lot of coding and making figures. And currently, I'm writing numerous manuscripts, so hence why writing has become such an important part of my life. But I also spend a lot of the day having just sort of conversations with colleagues, whether it's in sort of area of cubicles that I'm in or down the hall. It's one of the really nice things about working in the National Weather Center at OU, because there's a lot of expertise all jam packed into the same place.

And really some of the best ideas I've had during my postdoc have come from talking to other postdocs and scientists. And in addition to that, there's a group of us, group of sort of undergrad grad students, postdocs, research scientists that meet on a weekly basis. And we all have similar interests in severe weather or severe local storms, and we meet to talk about whether it's recent weather events. Norman this year has experienced quite a bit of interesting weather. I've had, I think at least three massive supercells go directly over my apartment, which is three too many.

**Kelly Savoie:**

Oh my gosh.

**Matt Brown:**

Yeah. And there are actually some grad students in our group that were impacted by a tornado that happened this past February. So we've had a lot to talk about. But we've talked about that, we talk about recent papers, and we also do group projects from time to time where we can all collaborate on a shared idea. This summer, or this spring and summer as well, I've gotten to be out in the field a lot helping with some field campaign operations. So last year and this year, I was involved with the PERLS field campaign, which is the... Let's test my acronym knowledge. It's the Propagation Evolution and Rotation in Linear Storms field campaign.

**Emma Collins:**

Nice.

**Kelly Savoie:**

Ooh, that's a mouthful.

**Matt Brown:**

Right? Meteorology, we love our acronyms. And then I just got back a little bit ago from operations with TORUS, which is Targeted Observations of Rotation Using, I think it's unmanned vehicles, or UAVs and things like that and supercells.

**Kelly Savoie:**

Wow, that sounds cool.

**Matt Brown:**

That's been a lot of fun too. So I've gotten to help lead some of the... Specifically, I've helped lead some of the lidar and radio sound operations for that. And then I'm also very passionate about STEM teaching. I taught a couple classes and took some courses in STEM teaching practices in grad school. So I've sort of put the bug in the ear of some of the OU professors, like, "Hey, if you're out for any period of time giving a talk or at a conference, I'll fill in lecturing for your classes." So I've gotten to sort of guest lecture, a couple upper level undergrad classes both last year and this year. So a little bit of everything.

**Kelly Savoie:**

Nice. So it sounds like most of your work takes place in the office. Do you get to work from home at all or do you just prefer to go in, it's better for your research and your job?

**Matt Brown:**

It sort of depends. Definitely since COVID, the favorability or the feasibility of doing work from home is definitely better than it used to be. I can work from home if I'd like. For me, it really just depends on what step in the research process I'm in. If I'm making a lot of figures and doing a lot of analysis, I tend to be in my office because I have a nice huge desktop where I can pull up a lot of things and I can go ask someone to come over and look at something and get their opinion on stuff. But if I'm doing writing, I like to either be at home or in a cafe around here, or somewhere with coffee, somewhere with plenty of espresso.

**Emma Collins:**

Yeah.

**Kelly Savoie:**

It's nice that it's flexible like that for you.

**Matt Brown:**

Oh, yeah. It's one of the really nice benefits of being a postdoc, that, again, I'm not sort of tied to a distinct schedule. As long as the work and the research progresses, that's all that really matters.

**Emma Collins:**

You may not have a distinct schedule, but you certainly stay busy. I wonder when you sleep.

**Matt Brown:**

Yeah. Like I said, I have trouble saying no to things, which is... It keeps me on my feet, but it also keeps me on my feet. I'm always doing something. But a lot of people who went through a postdoc will be like, "Now's the time to do those things. You're young and you have energy and..."

**Kelly Savoie:**

And time.

**Matt Brown:**

... and time."

**Kelly Savoie:**

So I know it's flexible, but would you say that you still work maybe the normal 40 hour work week, or is it more than that? Do you put in more overtime?

**Matt Brown:**

I would say now, it's probably around that 40 hour work week. I know if you would've asked me that question at the end of my PhD, it would've been much more than much than 40. And that's something that I've just gotten better with as time has gone on in terms of trying to hold myself to a schedule. I had a reputation amongst grad students in grad school as sort of letting my work dictate my schedule, but I've tried to switch that, or maybe I should say my boyfriend has forced me to switch that to my schedule or my schedule determining work instead the other way around.

**Kelly Savoie:**

Right, because you need downtime. You have to have downtime.

**Matt Brown:**

Oh, yeah. And the ideas don't... The science ideas don't flow as well if I am sleep deprived and hungry, or under caffeinated.

**Emma Collins:**

Well, you seem to be excited about all of the things, but I am wondering what are some of the aspects of your job that you're specifically excited about? Or is it just all of the above?

**Matt Brown:**

Yeah. Sometimes, yeah, I feel like I can feel an excited puppy where I'm just like, oh my goodness, everything is so great. But I guess if I really had to narrow things down, it's nice to just be in this time in my career where I can really just focus on research and collaborating with people. In grad school, you have classes to worry about, and you're worried about the timeline of your dissertation and defense and things like that. And then on the flip side, once you get into a career, especially if you're in a faculty role, there's sort of organizational things that you have to worry about, like with meetings and serving on committees. And you have to worry about planning courses and having office hours and things like that. So right now, I can be very laser focused on pursuing research.

And like I said, it's really nice that I have the flexibility and the freedom to pursue the research ideas that interest me, especially as in a place like National Weather Center where I have somewhat unlimited computing resources, I'm surrounded by a lot of different people with different expertise and backgrounds, so I can get a lot of perspectives. But then also I would say, like I said, still being in the vicinity of a university where I can still teach and get those educational experiences as well.

**Kelly Savoie:**



Yeah. It sounds very varied. So that's always good. You're not doing the same thing every day.

**Matt Brown:**

Yeah. And it differs, like I said, depending on the postdoc. I know some people have postdocs that more strictly a research lab that's not tied to a university. So in that instance, you might have to rely more on some of the scientific endeavors, not as much the teaching, but I've been fortunate to get in the classroom again.

**Kelly Savoie:**

So on the flip side, what are some of the personal challenges you've faced working in the field?

**Matt Brown:**

Yeah, absolutely. This is when I drag over the proverbial soapbox and get up on it. I got a reputation at the Early Career Leadership Academy as kind of carrying the banner for the life of a postdoc. Because for all the exciting aspects and of being a postdoc, it's also a very precarious position to be in. One of my friends who's also a postdoc sent me an op-ed a week or two ago, and I think they described postdocs as sort of the invisible workforce in academia, because everyone talks about, or there's a lot of discussion about undergraduates and grad school experiences and life in academia as a faculty, but you don't really hear people talk about postdocs. Even with what you were mentioning, Kelly, about not knowing how postdocs really work, no one tells you. No one really tells you. I had to do a lot of sort of... The number of people towards the end of my PhD that I was like, what do you know about about postdocs? Tell me about, did you do postdoc? Should I do postdoc? Do I need a postdoc?

And even coming into a postdoc, there's not clear, this is how you do a postdoc. And partially, that's because you're supposed to be sort of solidifying your skillset and identity as a scientist, but it also can make things difficult to navigate. One thing that a lot of people might not know about postdoc too is even though you're getting more collaborators and you're beefing up your resume with publications and presentations, not many postdocs sort of naturally lead into a job at that given organization.

**Kelly Savoie:**

Right.

**Matt Brown:**

It's agreed upon that, "Hey, you're coming in, we're going... You'll do research for us. We'll help you, again, sort of become a more established scientist. But there's not necessarily a guaranteed position at the end of this. So you go into it knowing that two to three years down the road, you're going to be back in the situation where you're looking for jobs, and you might have to move again. And so that puts a lot of stress on postdocs, especially postdocs with significant others. I had to sell my boyfriend on the, "Okay, we're going to move from Texas to Oklahoma, and then maybe somewhere else. And I can't tell you where that place is going to be, but I promise I'll make it worthwhile." So it's a little bit of a... You're sort of in this nebulous, transient position. And with postdocs, I am definitely making more money than I did in grad school, but I'm not making as much money as I would if I got a faculty role or I was a research scientist or went into private sector or something like that.

And even when it comes to looking for funding, and you hit the nail on the head earlier, Kelly, that a lot of postdocs are don't have direct affiliation with a lab or a university. It's sort of like... For me, I work at a federal lab, but I work at a federal lab as sponsored by a third party organization. So I'm not technically a

federal employee. I still access the lab, I have a federal ID, but I'm not a federal employee. So I can't write grant proposals. I can't be a lead on grant proposals because there's no actual affiliation to point that money towards if I got the grant. So you're in this precarious position where you're working for a lot of people, but you don't belong to any specific entity.

**Kelly Savoie:**

And because of that... So I have another question. What about paid vacation time, sick time, medical insurance? Do you get any of that covered since you're not specifically at one of those institutions?

**Matt Brown:**

Yeah, so for me, with my postdoc, I pay for insurance through my postdoc. So again, it's not directly provided by the organization you're doing your research with, but the third party. And then when it comes with vacation, different people do it differently. For us, we usually put in sort of a request with that third party organization that, "Hey, I want to go home for a few weeks," or something like that, and that'll get approved as long as you're not taking a ton of vacations. But...

**Kelly Savoie:**

Right.

**Matt Brown:**

... yeah, there is flexibility with that, for sure. But again, it's the whole notion of knowing that the insurance you have then is not going to be there in two or three years. So there's more on the line for finding a job than just the job. There's also, okay, I need to not have insurance, or I need to... So again, it's sort of this very transient... I think I told one of my friends that right now, I feel as I ever have as a scientist, and probably as vulnerable as I've ever felt in a professional sense, because there's not a guarantee of where I'm going to be in a year.

**Kelly Savoie:**

Yeah. And so do they give you notice? Do you have enough notice? Would they tell you if your money or your grant or whatever it is extended in advance, that you can work longer there? Will they give you enough time, or do they just say a month out, "Sorry..."

**Emma Collins:**

Find a new house.

**Kelly Savoie:**

... your funding's done"?

**Matt Brown:**

Be like, "Oh, yep, it's dried up." No. The good thing, a lot of postdoc positions have a pretty set tenure that they'll say like, okay, your funding runs for two years, ending at the end of this fiscal year, this calendar year. And there are some instances where they can extend or put together extra funds, sort of extend you if you're trying to find employment beyond the postdoc. But they're relatively transparent with when things end. It's just the reality of there is a firm. There usually is a somewhat firm end date. So it doesn't sneak up on you, but it's always in the back of your mind.

**Kelly Savoie:**

Right.

**Emma Collins:**

So you kind of painted this really interesting picture where at work, it sounds like you do have a lot of areas where you collaborate and you talk and you're with other people and you're part of a team, but you're also in this middle ground, it seems, where you're almost like a rogue person. You're just on your own. Do you ever find the situation of being a postdoctoral fellow to be isolating in that aspect, because you're not sure where you're going to be in a few years?

**Matt Brown:**

Oh, absolutely. I think I've used the word isolating several times. And I love the place that I work at. I love the people that I work with. So it has nothing to do with their hospitality or willingness to collaborate. But yeah, you sort of... When you're in grad school, you have this very sure safety net of, you have your advisor and they have funding. And if they don't have funding, then you can be a TA, and there's always, again, some sort of safety net underneath you, and you know that as long as you're there, there will be funding for you. But that net gets taken away. Again, you have funding for a postdoc for two to three years, but there's some less guarantees. Sort of the onus of responsibility when it comes to collaborating and starting up projects and searching for other opportunities or funding gets put on you as the postdoc.

So yeah, a lot of the decisions that I might have punted to my advisor now are on me. And even the advisor or supervisor that I have now is meant to be more of a sort of collaborator and a colleague to talk with, not necessarily someone to hold my hand and guide me through the process. And again, the whole notion of there not being a lot of structure on the sort of broader field level or institutional level, or however you want to call it, for how to navigate a postdoc that I find myself sort of having to just find the right people to ask questions and feel my way through things. I think especially coming in still towards the end of COVID, and a lot of the lab working completely remotely, when I came in, it took a good, it took six plus months for me to really feel like I had everything set up for me to do my research the way that I envisioned. So yeah, it definitely can get isolating.

**Emma Collins:**

So is there anything you wish you'd done differently in your career?

**Matt Brown:**

Done differently?

**Emma Collins:**

That's a big question.

**Matt Brown:**

Yeah, I guess... Yeah, I was going to say there's different sort of phases of that. So I guess going all the way back to just undergrad, early grad school, I really wish, and I've gotten a lot better at this now, but I really wish I would've sort of talked to professors and went to office hours and asked questions and approach people at conferences without feeling nervous or awkward earlier on. Because in undergrad and early in grad school, I don't know if it's a combination of stubbornness where you're like, oh no, I don't need... I can figure this out on my own, or just nervousness of like, oh, well, this is going to be a

stupid question, and what is my professor going to think of me? Or at a conference, you're like, oh, this person's such a big name person, and why would they want to spend their time talking to little undergrad me?

And I realized just how much I was missing out on by not having those conversations. And it wasn't until late in undergrad and into grad school that you sort of, I don't know if you get reckless abandon or you just get more confident, but you're more willing to embarrass yourself and ask questions and really seek understanding of things instead of staying quiet. And I guess with that too, I wish I would've taken more classes in other disciplines. It's so easy to focus, when you're an undergrad especially, on all meteorology classes. And then as I got into grad school and started taking classes in, whether I took classes in the stats department or the oceanography department or other departments, you start to see that, hey, we're all looking at similar things with similar tools, but some of the tools that y'all use aren't the same as ours, but hey, maybe I should see what happens if I take that and apply it to my stuff.

And I think there's a lot of really interesting information that gets lost by us being compartmentalized as a field and not really working with other fields. So I guess taking more classes, especially stat classes. Every time I take a new stat class, I realize how much I don't know about statistics. And so it's nice to have that refresher and be able to say more meaningful things about my science. I guess in general too, especially earlier on, I wish I would've put more or dedicated more time and effort into mental health and work-life balance. Because especially in grad school, it's so easy to just focus on what next, what next, what next? Because you're always working towards some deadline of "I'm trying to get my master's defense finished, I'm trying to publish this paper, I'm trying to get ready for my qualifying or preliminary exams", or things like that. And it's always looking forward to the next thing.

And when you get focused on, on that, you either ignore or neglect your mental health side of things. And it's sort of like an unwatched, an unwatched, like simmering pot. And if you just keep on turning up the dial, keep on turning up the dial, you think everything is fine, and you look away from it and it boils over. And I had that even going into the postdoc where I had some mental health things sort of come out of the woodwork and really impact my ability to do my science and even just function. And I realized that I had neglected a lot of things towards the end of my PhD.

**Kelly Savoie:**

It sneaks up on you. Definitely sneaks up on you.

**Matt Brown:**

It really does. And you might think... I always was a person that was like, I can manage stress well. I know how to manage stress. And you say that or you think that until you can't. And then all of a sudden, you're like, oh my goodness, where did this come from? Why am I crying in my car on the way home from work? Yeah, it sneaks up on you, and it's so much better if you prioritize those things the way you prioritize your science and research objectives. I guess the last thing, or one of the last main things is just being more open about who I am. I identify as a gay man. I talked about my partner of, oh gosh, five and a half years now. But I went through a lot of undergrad and grad school thinking that I had to keep my personal and professional life separate. And a lot of that had to do with just a lack of having any LGBTQ+ mentors in my life.

Someone asked me for pride month, just within the last couple weeks, they're like, "Oh, who's been your biggest queer mentor?" And I had to tell them that I didn't have one because there just was never anyone throughout my career path, or there are very few people throughout my career path that I really saw myself in. So when you don't see yourself reflected in your professors and your mentors, you start to internalize this message of like, "Oh, well, I need to keep my private life completely private". So I avoided

conversations of my identity at conferences. I lowered my voice at conferences. Almost any queer person in science, if you ask them, they have their code switch voice. They have their straight voice.

**Emma Collins:**

Oh wow.

**Matt Brown:**

They know that when they feel... And not even just science, but I'm just bringing up science because it can be very sort of straight male dominated, but... And I know a lot of friends I have of color do the same thing where they know when to switch into a different voice or personality or whatever in professional scenarios where they feel like sharing their full identity is going to come at a detriment to their professional development. But I realized that that really was hurting my science, and I was denying a full part of myself, and I wasn't getting to share my voice, share my voice, and share my experiences and try to be a mentor or a voice for inclusivity in the field by hiding my authentic self.

**Kelly Savoie:**

Right, because you're going to be a mentor for someone else, and you want to be able to be that person.

**Matt Brown:**

Exactly. Like I said, if I, even in year 2023, don't see LGBTQ + mentors in my life, I need to be the one to break that cycle then, or I feel...

**Kelly Savoie:**

Exactly.

**Matt Brown:**

... a responsibility to be the one to break that cycle. So that, that's definitely something that I've come to a realization with really just in the last few years.

**Kelly Savoie:**

Well, that's some good advice. Do you have any other tips for our listeners who are hoping to find employment doing scientific research?

**Matt Brown:**

Yeah, absolutely. I would say in general, don't be afraid to try new things, even if they're not things that you think you'd be interested in. For instance, the first two research things that I did was my... So the RU through Howard University was lightning research, and my air quality internship was air quality with ozone and particulate matter forecasting. And I knew absolutely nothing about either of those topics going into those experiences, nor did I ever think that those were things I'd be super interested in because I was always focused on sort of severe weather. But I went into those things with an open mind, and you never know what you're going to get out of those experiences. So for me, I found out, in doing lightning research, that I don't overly lightning research, but it was something that I could check off the list and say like, okay, I've tried that. I know that's not for me. But at the same time, that, that experience really beefed up a lot of my coding skills and my ability to build and experiment based off of the dataset.

And then with the air quality research, I had to do a lot of writing and thinking about, "Okay, how do I distill these really high level science ideas to a public non-science audience?" And that's paid so many dividends moving forward in talking about and sharing my research with people. So when it comes to research things, it doesn't have to be a topic that you want to pursue later, it doesn't have to be absolutely groundbreaking research, and it doesn't even have to result in a publication. I've seen in the last couple years that there's, I jokingly refer to it as an academic arms race among students. The students that are coming in are so smart, so smart. And the computer model that I used for my research during grad school, I didn't figure out how to use until a year and a half into my master's. And I see high schoolers who know how to use it now.

**Kelly Savoie:**

Oh my gosh. How?

**Matt Brown:**

And I hear them come in almost with this sort of mentality that the only way that they can be a part of the field is to have those, or to have publications coming up undergrad. And don't get me wrong, all those things are great, but the experiences you have in undergrad and grad school are about gaining those skills and learning. And you don't have to meet a certain threshold of things to be worthy of grad school. Same thing goes with GPA. You don't have to be a perfect student to be worthy of or to flourish in grad school. I guess sort of tied to what I said before, don't be afraid to reach out to scientists. You find that scientists, myself included, absolutely love to talk about what they do.

They love nothing more than someone being like, "Hey, tell me about what you're working on." And a lot of scientists, especially love when younger students are enthusiastic about that. So the worst thing that can happen if you go up and talk to someone at a conference is they don't really give you the time of the day and you just move on to the next one. And once you get sort of over that fear of approaching people, sort of breaks free and all of a sudden you're like, I can talk to anyone. I'm like that, for better or for worse, at conferences now where I'm like, I'll just go off to talk to people. I know they love science the way that I do, and why not? And I guess the last thing, and probably most important thing is, really, bring your full authentic self to the table in everything you do, both personal and science-wise.

Like I said, I spent so many years of my life sort of trying to figure out what version of myself I should portray in professional settings. And I didn't realize until later that it was just me all along. I should have just been myself all along. And all of your experiences and your identities that you bring to the table are what make you and the science that you do uniquely you. And especially when you belong to historically marginalized groups, you don't know the impact that you being vocal and proud and authentic as a scientist is going to have on the young students, young students around you, and having mentors that they see themselves reflected in. So yeah, like I said, just be your full authentic self and be proud of it.

**Emma Collins:**

Yeah, you never know who you're inspiring. I love that.

**Matt Brown:**

Yeah.

**Emma Collins:**

Well, Matt, we're so grateful for everything you've told us about your career. However, before you go, we always ask our guests one last fun question at the end of the show. So what is your favorite hobby?

**Matt Brown:**

So my favorite hobby is definitely cooking and baking. I always say that for all the science that I do, cooking and baking is my creative outlet. So, especially, I'm into baking. And always a fun fact, tidbit that I tell people, actually, when I was younger, I used to do a lot of competitive baking.

**Emma Collins:**

That's so cool.

**Kelly Savoie:**

Wow, interesting. I didn't even know that existed.

**Matt Brown:**

Yeah. So I can say that or state claim to some of the best cakes and sticky buns in the state of Pennsylvania. But I have the reputation amongst my friends of, whenever we have a get together, it's sort of like, okay, Matt will bring the dessert. It's like it's always the go-to. So that's one of my favorite things to do in my free time.

**Kelly Savoie:**

Yeah, we were talking about this before you joined the call. And I was like, oh, I wish it was in person because you could have brought us something delicious.

**Matt Brown:**

I could have brought you... I would've gladly. My favorite thing is when friends have birthdays, I'll just send them a cryptic text of what are your favorite flavors? Or what are you in the mood for? And just get that and put together their dream dessert and bring that to them.

**Kelly Savoie:**

Well, if you come to the annual meeting, I'll be expecting some really good brownies.

**Matt Brown:**

Yeah, I'll have a secret stash in my backpack...

**Kelly Savoie:**

Awesome.

**Matt Brown:**

... all ready for you.

**Kelly Savoie:**

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

**Matt Brown:**

Yes, thanks so much. I love being on and getting to share or demystify some of the life of postdoc.

**Emma Collins:**

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 Trepke, technical direction is provided by Peter Killelea, our theme music is composed and performed by Steve Savoy, and the show is hosted by Emma Collins and Kelly Savoie. You can learn more about the show online at [www.ametsoc.org/clearskies](http://www.ametsoc.org/clearskies). And you can contact us at [skypodcast@ametsoc.org](mailto:skypodcast@ametsoc.org) if you have any feedback or would like to become a feature guest.