Transcript for "Max Thompson, Certified Consulting Meteorologist and Lead Meteorologist at Duke Energy in Charlotte, North Carolina"

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, Max Thompson, Certified Consulting Meteorologist and lead meteorologist at Duke Energy in Charlotte, North Carolina. Welcome, Max. Thanks so much for joining us today.

Max Thompson:

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

Kelly Savoie:

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

Max Thompson:

Sure, I'd love to. As you can imagine, most meteorologists probably have their own passion, story or epiphany into the realm of weather. I have to recall one specific example growing up was, I don't recall the exact time period, but it was a severe thunderstorm event growing up in Central Pennsylvania that swept through my hometown from Mechanicsburg, Pennsylvania. And I remember being glued to the window and my mom from then on out really noticed how much I took an interest into the weather and I have to give my mom a lot of credit. She fostered that science and mathematical interest as I went forward through middle school and high school. But the two big ones that come to mind, as I mentioned, growing up in Central Pennsylvania, 2 big blizzards, the '96 blizzard, and then the President's Day storm of 2000. Those resulted in about 30 inches plus in my backyard. So those were fantastic winter storms to watch on the old classic weather channel following Paul Kocin and watching those winter weather graphics. Those were really fun events that really kind of kept jump-started my interest in meteorology.

Kelly Savoie:

And so did you know at a younger age that there were schools where you could major in meteorology? And did you have a list of favorites that you were hoping to get into?

Max Thompson:

So, no, I will admit that when I first got interested in meteorology, it was probably when I was in fifth or sixth grade. So right at first I had no idea, no. But growing up in Central Pennsylvania, again, most people bleed blue and white and they always talk about Penn State. You go back to looking at some of the more well-known football teams from the mid-90s of Penn State. So everybody talks about Penn State and Harrisburg and Mechanicsburg, but it was just pure coincidence that they happened to have one of the best meteorology schools in the nation.

So as I got older and started to really investigate meteorology as a degree and or a possible future profession, Penn State was my first top of the list just because it was right down the road, it was in state, it made sense financially. It was just far enough away from my mom's house to maybe get in trouble and not have her drive up to me. But I also really started to look at the University of Miami, the University of Michigan, University of Texas. But then I started to realize that it just made sense financially for me to stay in state and go to Penn State.

Kelly Savoie:

Is Penn State a…Is it an actual state school?

Max Thompson:

It is an actual state school. According to Pennsylvania, it's not technically a state school, but it's not a private school either. I forget what the exact designation is of Penn State, but it's not private. It is a public school.

Kelly Savoie:

Well, that's great that you were able to take that opportunity and it was so close to home.

Emma Collins:

Yeah, great for laundries on the weekend.

Max Thompson:

Yeah, great for laundry on the weekend, great for going home and getting snacks and a home cooked meal. The best thing about going to college was that my mom moved out and moved in with my aunt and uncle. And so when I came home for Christmases and holidays, it was everybody in the house, everybody was cooking. It was just a great time when I would come home from college and just to be an hour and a half away was perfect.

Emma Collins:

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

Max Thompson:

So when I first started out, I will admit meeting new people, making new friends after having been with so many great people going through high school and middle school, it's tough to really branch out, meet new people, join clubs, and find those leadership opportunities. And you really just have to put yourself out there and try different things. You may have a few base interests or likes and they may not exactly

align with clubs, but if you find something that you like, you meet people, that really has value, not only from a professional standpoint, but from a personality standpoint is growing through college, meeting new people, finding out new experiences. But some of the things that worked for me when I first moved to Penn State freshman year, I met a lot of people that were involved with the dance marathon. And if you're not familiar with the Penn State Dance Marathon, it's a 46-hour-long event where dancers are awake and on their feet for 46 hours, and we're raising money for pediatric cancer and it's student run. It's the largest student run philanthropy I think, in the country.

So I got involved with that and worked my way through there and got to a leadership position as a senior where I had about 20 people reporting to me in what was a committee called Donor Relations. So we were out kind of doing the development business side of things, but that was a really great leadership learning opportunity and experience for me.

Other sorts of activities that were more meteorology focused, campus weather service was a fantastic resource to join. I think at one point I became a shift manager where I was able to kind of mentor some younger students that wanted to forecast. And then also my senior year ... Well junior year, going into senior year, I was able to get an internship with AccuWeather, which helped me or introduced me more to the operational forecasting side of things. Met a lot of great people, connected with folks like Dr. Joe Sobel, Elliot Abrams, some people that I grew up and knew very well and had heard their voice plenty of times. But I would say the AccuWeather internship really helped, at least from a forecasting experience standpoint, get me ready for the next step after graduation.

Kelly Savoie:

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

Max Thompson:

So I guess crazy enough in today's world and setting, where I am at right now at Duke Energy was my first job out of school. So I've been with Duke now for close...This will be 14 years this summer. And it was my first job coming out of college. I was applying to a few other places around Central Pennsylvania, one being AccuWeather, and just by a twist of fate, a position opened up at Duke and I was able to pursue that. And I ended up getting that position, moved down to Charlotte, and I've been here in Charlotte ever since. Duke Energy is a fantastic company. We've had great meteorologists here and we've built really kind of a great little team that supports Duke Energy here in Charlotte and also across much of the country. We have assets in Indiana, Ohio and down in Florida as well. But I've been here for 14 years and I'm hoping to stay strong and stay here for a little bit longer.

Kelly Savoie:

Yeah, well, that's really lucky that the first job, you really liked it and you found it to be worthwhile and you wanted to stick with it.

Max Thompson:

Yeah, Charlotte is a great city. I don't know if you've ever been to Charlotte. For those that listen that maybe have been to Charlotte, Charlotte's a fantastic city. I was able to move down here when it was just kind of emerging as that next step of mid-tier or larger tier city. And I met a lot of great people down here, met my wife. We have two kids, so really have found a nice setting here in Charlotte. Very, very fortunate. Very lucky.

Emma Collins:

So could you walk us through a typical day on the job as a lead meteorologist at an energy company?

Max Thompson:

Sure. And we're probably going to get to this later, but the energy landscape when it comes to a utility has changed dramatically over the last decade or so. But looking specifically at my role, we are largely concerned with how weather and our customers respond to the weather. So one of the biggest things that we deal with in terms of forecasting is looking at customer demand and customer load. So the easiest way to put it, when it gets really hot or really cold outside and you run your appliances at home harder or less so in the spring and fall months, a utility company behind the scenes there is forecasting how much demand we need to be able to account for on any given day. And we look at that going out to 7 days, we look at probabilities going out to 15 days, and then we even have long-term forecasting that's looking out on more of a monthly perspective.

But the biggest day-to-day operation for us right now is creating a weather forecast that is tailored to our system or our jurisdictions. So looking at how our customers are going to use air conditioning and looking at how our customers are going to use heating. So that involves us creating a weather forecast, an hourly forecast out to 15 days. We look at dew points, cloud cover, wind speed, humidity, all of those fun variables that then go into a load model. And we're actually able to create a curve on how we expect customer demand to fluctuate throughout the day. So it's a little bit of a different application for meteorology. We're not creating a point forecast like what you would see on the National Weather Service, but creating more of an average forecast that represents our entire footprint.

So in the Carolinas, our biggest cities are Charlotte, Raleigh, Columbia, Asheville, Greenville, Spartanburg. So we're essentially customizing an average forecast that would, I guess at the end of the day, would basically just be a forecast temperature for the entire region. And we call that a system average temperature. So that's our day-to-day operation. And we're actually going to be getting more involved in the load forecasting side here going into 2024 and beyond. So that should be exciting.

Other areas are outage forecasting, so we're monitoring severe weather all the time. We just had some severe weather come through Indiana and Ohio yesterday, came through the Carolinas overnight and into this morning, and then yesterday was a busy day in Florida with severe weather as well. But we're actually forecasting not only when severe weather will happen, but then translating that into customer outages as well. How will this severe weather event translate into number of customers offline, number of events, how many resources do we need to stage ahead of time such that we can get customers back up online as fast as possible? So you can imagine during hurricane season, it can be very stressful and traumatic, but that's when we really shine at Duke Energy in terms of trying to save money by getting it as accurate as a forecast as we can out to those that are making decisions.

Kelly Savoie:

So just a couple questions for you. Are your clients the energy companies? Like say Eversource or ... I mean, I don't know what they are down there, but up in New England, Eversource is the huge gas and electricity company. So are they the ones that hire you and you provide them with information? Because we just had a storm the last couple of days, and I get texts from Eversource saying, "Oh, a storm's forecast, so we're keeping an eye on outages and things like that." Is that what Duke does for those types of clients?

Max Thompson:

Yeah, that's correct. So it's a little bit of a different regulatory landscape up north in the northeast and the mid-Atlantic versus down south. But that's more on the generation of transmission side. But yes, when you're looking at a severe event, let's call it, let's say yesterday you had a lot of wind and a lot of snow up in the northeast. I'm not as familiar with Eversource in terms of meteorology department, but my guess is they probably do have one or two meteorologists that are monitoring severe weather. And then their role and mine is communicating to all of the different functions across the utility itself that is involved with customer restoration when you have a weather event.

So you have distribution, which would be the power poles that deliver power to your home, you have transmission which is essentially transmitting the high voltage power from the generation plants to those distribution poles that then go to your house. And then you have the generation plants that are actually generating the power. They need to know what type of severe weather is coming their way to for safety concerns.

But then the other really big caveat that you hit on is the customer call center, really the customer experience group. They need to know how many customers are going to be offline so that they can staff appropriately in order to handle the amount of phone calls, in order to handle all of the incoming texts and social media mentions that come in. They need to be staffed appropriately in order to handle that volume. And so they're getting their weather information from an internal meteorology source, which would be us. So yeah, we have clients all across, I guess pretty much the enterprise you could say.

Kelly Savoie:

Yeah, and I was going to say, you must be busy all the time because there's always something going on.

Max Thompson:

There's always something going on.

Kelly Savoie:

There's always something going on. The other question I had is, and I think about this all the time when it's really hot and everyone is using their air conditioners. How is the grid able to handle that without everything just going off?

Max Thompson:

I know. It's amazing when you think about it, when it gets really hot or it gets really cold that the eastern interconnect and the western interconnect, the grid largely remains stable. And stable in my mind is yeah, you stay in a frequency of 60 hertz and you may deviate slightly between up and down 60 hertz. But it's amazing to think that no matter ... I mean, aside from major challenges, we have a very reliable grid and we have come a long way in hardening the grid and modernizing the grid and getting a grid ready for the 21st century. But yeah, and you brought up hot weather. It's a little ironic or maybe backwards to think about it a little bit. What concerns me is actually very cold weather. And when you look at how you cool your home and air conditioner, even though there's a lot of air conditioning load, air conditioners are rather stable when it comes to the voltage use in each person's home.

So when it gets really hot, yeah, you're talking about a lot of demand, but you're typically not seeing as much variance when you get to the peak of the day when it's really hot outside. When it gets really cold, there are a lot more things that can go haywire in the morning when it's really cold. And one of the reasons is that up in the northeast and in the southeast, you have lots of different apparatuses to heat homes. You have furnaces, you have heat pumps, you have strip heating, a lot of which are not efficient

when it gets really cold outside. It's a bit ironic, but when you get really cold out, those machines really struggle and they zap a lot of load. And a lot of times we forecast it, but it may actually come in even higher than what we're forecasting because our load models just aren't quite seeing or sensing the type of instrumentation all across our jurisdiction. So yeah, when it gets really hot, that's one thing, but when it gets really cold and the entire eastern US is cold, that's when we have problems.

Kelly Savoie:

Yeah, I completely understand that because my house was built in 1900 and I do not have a very efficient heating system. And boy, have my bills been massive, so I understand that. So it sounds like you do a lot, but is there anything in particular you like the most about the job?

Max Thompson:

So when I first came into the job, I had very little ... I mean, I had book knowledge on tropical meteorology, and at the time when I joined Duke Energy, Duke Energy was really just the Western Carolinas, which comprised of Charlotte, Greensboro, and Greenville, Spartanburg. Our neighbors to the east, Carolina Power & Light, we actually merged with in 2014. So about four years into my career, we gained this whole other company and pretty much doubled in size for the Eastern Carolinas, and we picked up assets in Florida. When we picked up Florida, I was given the responsibility of starting to forecast for Florida, and then in the back of my mind I started thinking, well, what's the number one risk for Florida? It's going to be tropical weather when it comes to cost, make or break a season. If you have one hurricane in Florida that hits like Hurricane Ian, I mean, that's a couple of hundred million dollars on the books. So that's a make or break situation.

So with that in mind, I actually really started to dive deeply into tropical meteorology. And so from there about 2014, 2015, I'm certainly not a master's or a PhD person, but tropical meteorology has been my biggest passion, I think since we merged with Carolina Power & Light in the mid-2010s. So I would say tropical meteorology. And then shortly behind that, I really do still have a passion for winter weather, even though it doesn't happen very much down here. That's me trying to pay homage back to my Yankee brethren up north.

Emma Collins:

So on the flip side of that, what are some of the biggest challenges you've faced while working? You're dealing with a lot, so I can imagine there's plenty that come around.

Max Thompson:

Yeah, there have been a lot of challenges of late. When you look at a utility in general, our main revenue source is generating power that has then consumed by the consumer. We are heavily regulated here in the southeast, we have a utility commission that oversees everything that we do. But when you think about our revenue source, that's really it. And so in a warming climate, especially in the southeast, our winters are becoming more and more warm. And at one time we were a winter peaking unit, meaning that we relied on winter generation as well as summer. We would see cold mornings here in the Carolinas, and we would see strong peaks in December, January, February. That would help to drive revenue and drive our earnings per share coming into the new year. In a warming climate, and we've seen it the last several winters, our winters here are just not cold.

We are consistently averaging about three to four degrees above normal. And so we come into the new financial year behind the eight-ball because the winter just didn't really produce cold weather. And so

one of the biggest challenges has been internally cutting back and trying to do more with less. And so one of the big challenges for me right now is when we have something that we want to maybe innovate or really make better, it's hard, it's challenging because there are more things pressing on the budget docket that need to be taken care of. And so we have outage models that I would love to update. They were built in the mid 2010s. They were fine at the time, but I think we can make them better. With the emergence of artificial intelligence with more data at our fingertips, we can make these outage models smarter and better.

So it's more of a revenue challenge right now. And I think most utilities are feeling this pinch because we're trying to transform the system. We're injecting a lot of capital financial money into the system to make things better. And at the same time, we're not seeing as much revenue as we used to in the winter. We're trying to make it all up in the summer. So that's been a big challenge for me. It's probably more of a larger or overarching theme in the utility sector. But as a meteorologist and really anybody at the company, if you want to try and do something, you need money to do it. And that's kind of a hardship right now. But some of the other things that I would probably say are extreme weather and communicating risk. As we've seen extreme weather increase over the last decade or so, how do you forecast that extreme weather? How do you communicate the risk in a proper mode or a proper fashion?

And then also really trying to limit the noise. Social media has been a great advent of the 21st century, but it also could be argued, it's probably one of the worst things that was invented in the 21st century. Really trying to control the message, and I hate to say control the narrative, but when we see something in a model and we feel pretty good about it, everybody kind of has their own opinion, and you really have to try and drive home that this is what we should look at, this is how we should prepare. I know you're hearing this over here, you're hearing this over there. Let's just stick to the message and stay on point. Those are probably some of the other big topics that have really been challenging over the last 10 years or so.

Kelly Savoie:

There's a lot of misinformation out there on social media. It's tough. And you mentioned that the winters are a little bit warmer. I also think that the summers have gotten so much hotter. I just don't remember when I was younger, several weeks in a row of 90 degree temperatures in New England.

Max Thompson:

Yeah.

Kelly Savoie:

And last summer it seemed like it went on and on and on. And I mean, I don't know if you're seeing a trend in that as well. I just think, my gosh, I don't remember it being so extreme.

Max Thompson:

Yeah, I don't remember being this extreme either when you come into the summer months and even in the winter. I know I'm in the southeast, so I'm winter-challenged here, but we would always get at least one or two winter storms here in the southeast. One of our biggest concerns in the winter is a cold air damming situation where you could get a very good ice event. And that rings so hollow with so many people because in the utility world, if you hear ice, I mean that's up there with a hurricane. It might even

be worse than a hurricane in some people's eyes. And we haven't seen an ice storm here in Charlotte in, knock on wood, several years.

But back to your point about extreme heat, we've seen trends in the summertime to more extreme peaks here in Charlotte and maybe around the Carolinas. I would say some of the interesting trends that we have noticed when we look at our own kind of big city trends, December has gotten much warmer and the shoulder months, meaning the April, May, September, October months have also trended warmer. So summers are maybe still somewhat in line. You obviously have deviations and you have high peaks, extremes.

The other interesting thing too in the southeast is that our overnight lows are trending warmer as well. In Florida especially, that's where really my focus is. Some of the interesting trends in Florida of late is occurrence of 90 degree weather is happening earlier and earlier in the spring season. So what was 10 years ago in Orlando, the first 90 degree day may happen in mid-April is slowly trending more and more into early April and even into late March when Orlando is seeing that first 90 degree day. And that's a big challenge for us as a utility because we use those shoulder months to maintain our generation plants.

So we plan a lot of outages, planned outages when we take a lot of those big bread and butter generation plants offline to fix things coming out of the winter, general maintenance, etc. So when you start talking about 90 degrees in April, when we may have less generation on the system, that could cause challenges too, because we need to find the generation to account for the load demand from somewhere. And that means either we have to pay for it or we get it from a neighbor down in Florida. So yeah, I would agree with you completely that there are a lot of interesting trends toward the more warm and maybe more extreme that we have also noticed in the Carolinas and in Florida as well.

Kelly Savoie:

Yeah, I'm sure it affects agriculture immensely when in the spring it's 90 degrees. It's just not a good thing.

Max Thompson:

Yeah.

Kelly Savoie:

So the warming climate is one of the changes you've seen. Are there any other changes you've seen in the energy industry and how can meteorology graduates looking to enter into this field, how can they best prepare themselves?

Max Thompson:

That's a great segue into probably a good discussion on renewable energy. Over the last 10 to 15 years, Duke Energy, I believe it was in 2016 or 2017, made a commitment to go carbon-neutral by 2050, which is going to require us to retire pretty much all of our coal units. One thing that we're fortunate with here in the southeast or at Duke Energy is that we have one of the largest nuclear fleets in the United States. We have about five or six nuclear units that provide cheap, low cost, low emission base load. And when I say base load, when those nuclear plants spin, they provide an abundant amount of energy at a very low cost, low emissions as well. But when you look at the amount of renewable energy that has come on to the system here in North and South Carolina, that has created a challenge for us as meteorologists because let's face it, solar forecasting, there is an art to it.

There's obviously science behind it too. And we very much appreciate days that are completely sunny or completely cloudy and raining because then we know we've got full solar or we don't have solar at all. But it's those in-between days when you've got a mix of sun and clouds, and models can only do so much when you have that variable, I guess, sky or irradiance coming in. So I would really tell meteorologists or maybe give advice to current meteorology students to really focus in on renewable energy and forecasting for renewable energy and looking at it from more of a probabilistic standpoint. I know in the professional setting, everybody wants a deterministic yes or no answer. Give me a number, what's the generation going to be? But that paradigm is shifting as we bring on more renewable energy because now not only do we have to forecast the amount of renewable energy, but now we have to forecast the total amount of generation we're going to have on at any given time.

10 years ago, we would already know that. We would forecast the load and we would bring the generation online, but now in the future with more and more intermittent variable renewable energy hitting the grid, we have to forecast that and then balance that with what generation will have online. So there's a lot of emerging need for forecasting, modeling, probabilistic and deterministic modeling. So I would definitely say renewable energy is going to be a huge ... A continuing emerging theme as we go into the future, but also looking at modeling in general. I was not the greatest programmer in college. I had to kind of learn on the fly when I went into the professional setting. I was okay at C++, but Python and Fortran really gave me a lot of fits, but I've gotten better at it.

But that was kind of segueing to my next point, is that computer language and computer programming is just an immense wealth in knowing how to program just even the most basic simple regression models. And with the amount of data that is now available to your fingertips today, if you can grab the data, manipulate it in a way that could present value and show it in a model. I mean, there's just so much value you can bring to the table if you're able to do that. And I think a lot of 30 some and 40 some year olds are probably still catching up to that, whereas the new generation coming into the workforce probably has a better handle on a lot of that programming language that could present a lot of value to not only a utility company, but really anywhere. If you can make a connection between big data and show it in a model and show that it can forecast to a pretty good degree of certainty, I mean, you're going to do pretty well no matter where you're at.

Emma Collins:

So you're also an AMS Certified Consulting Meteorologist. In what ways has that certification been beneficial for you?

Max Thompson:

Let me tell you, that was a very humbling experience for me. When I applied, I had actually looked into doing it in 2019, and the way that it works, you're probably familiar. You submit in 2019, you don't actually start until 2020 and boom, COVID hits at the start of 2020. And so I didn't really know what was going to happen, if it was going to be paused, or would everything just be virtual or what was going to happen. And I was told that it was going to continue and that we would do everything virtual. And so when I got the exam, I hadn't done that much in-depth, I'll say meteorology 300, 400 level type coursework in a long time. So I was very humbled. But I will say I was challenged in a very good way, and I can't tell you how appreciative I am of that process of going through and working through those problems, getting your mindset around how to be more of a savvy meteorologist and how to apply it to a consultant or a professional setting.

And then also the paper. I wrote a paper on Hurricane Irma, and I received very good critical feedback on how that basically read and how things I could make better in the future. And so that whole process was

just fantastic. I remember being a student in college, and I was never quite that motivated to get through a problem like I was when I started the CCM. But once I got through that and I ended up getting the certification, I would say selfishly it helped me professionally at Duke Energy in order to keep, and probably most places where you go through the hierarchy of a senior or a lead or a chief whatnot, most places will require you to have advanced certification. And I had one child at the time, and I just didn't think that a master's degree or an MBA would be valuable to me at that point in my career.

And so the CCM presented kind of that bridge of let's do this, I'm going to get it. And to the people that know, especially in the meteorology community, see that as an accredited certification. And my boss at the time essentially said, "We will treat that as a master's degree or an MBA, and that'll help you advance further in your career, probably more so at this point in your career than a master's or an MBA." And that's not to say getting a master's is wrong. It was just me personally at that point in my life, I preferred to go that route with a CCM versus going back to school. And so it's created tremendous amount of professional value for me. And now even on the side, I get approached by private vendors, private companies that will ask for my opinion, and I'm able to ask for a small fee. But even that type of thing, I was never doing that before I got my CCM. But that's just opened up other doors to network, meet new people and earn some extra income on the side.

Kelly Savoie:

And I think that process too helps you to have more confidence, knowing that you can get through that and you get positive feedback from a group of professionals doing that type of work. And then once you earn that certification, which Emma and I deal with that program personally, that's part of our position at AMS. It's not easy, but you definitely have to brush up and it's a really good process, and I hope more people would consider applying for it. I know a lot of people are afraid to apply for it. They think it's too difficult, but I think you're a perfect example of someone who is like, "Oh, this isn't easy" but you're able to get through it.

Max Thompson:

Very much. And for those that may be thinking about it, at the time I had a six-month-old, I will say, if I look back at COVID, that was probably one silver lining of COVID, is that we were home all the time. And so I would attack a question, stop, maybe go do something else or start working, and then maybe an hour later I'd attack it again because we weren't really going anywhere or doing anything at the time. So that may have made it a little bit more unique for my situation. But yeah, I felt the same way going into the CCM, I was nervous, I was scared, I hadn't taken courses like that or done that kind of book work in some time. I just didn't know that my mind would kind of remember it all or kind of get back into that thought process of answering a book stock question like that. But it was very humbling, and I am very appreciative of it.

Kelly Savoie:

You just had to dust off your intro to meteorology books.

Max Thompson:

Intro to meteorology. I had dust off a 301 book that I hadn't open since probably junior year and a dreaded thermodynamics book that I kept for some reason. It's been collecting dust, but-

Kelly Savoie:

Eek.

Max Thompson:

Yeah, cloud physics, dynamic. Yeah, I don't know why I kept the books, but I have them here somewhere.

Kelly Savoie:

And you mentioned that for students interested in private sector positions, it's really good to have that computer language skills, but is there anything else in particular that private sector organizations look for in candidates, like on a resume or other skills? Is there leadership skills, communication skills? What other things can students brush up on to prepare themselves for that type of job?

Max Thompson:

So I know the job process has changed immensely in the last 15 years. Most job applications and interviews are now conducted online or over Zoom or over Google Chat, whatnot. And I think there's a little bit of negativity to that. I think you lose a lot of body language. I think you lose a lot of in the moment tangible variables about a candidate that you lose over the camera. When I applied for my job, I was told that I was probably 1 out of 130 people that applied for it.

Kelly Savoie:

Wow

Max Thompson:

And my boss's feedback after I was offered the job, said I was the only person out of 130 candidates ... Well, they had trimmed it down, but out of maybe five or six candidates that they brought on site, I was the only that had a notebook that had already written questions down and was actually writing notes while the interviewer at the time who became my boss was asking things or telling me things. And I was writing down notes, and he said I was the only person that had a notebook and was actually actively engaged and had things prepared. And so I thought that was interesting that I don't know. That was something that I was fortunate to hear about when I was in high school, that we had an older teacher that said, "Anytime you go into an interview, make sure you have questions ready. Make sure you have a notebook. Show that you're engaged and you're enthused. Show that you want the job."

And that gets lost over the camera because I can sit here and perform an interview, but you don't know anything else about me. We can't shake hands. I can't make direct physical eye contact. So I wish more places would come back to more on-site interviews, especially for such a niche position like a meteorologist. But I would really stress interviewing skills. I know some of the things I talked about are more in person, but brush up on your resume, be confident. But one of the biggest things I tell younger ... I say younger kids like I'm old. Some of the things that I tell younger folks, especially coming out of college and into a professional setting, is really understand and learn how to effectively communicate.

One of the biggest challenges I had coming into a professional setting was transitioning from college communication to professional communication. And that's even more of an issue now with social media and texting, shorthand, whatnot, abbreviations, what have you. Having good grammar, having good language skills, good English skills, that all goes so far in a professional setting when you sit down with somebody who might be 10, 20, 30 years your senior. But being able to effectively communicate and get your point across was something that took me years to figure out. And it was not something I was really taught in college. That was one of those things that I wish somebody had set me down and said, "You

learned how to write a story all through grade school. You learned how to write a body or an intro, body and a conclusion." And yes, we did some technical papers in college where you were actually doing more of an experiment and writing an abstract and then going through all your data, but that's just not the professional world.

And so I wish I had somebody that said, "That's all great, but you kind of want to throw that out." And when you get to a professional setting, four sentences or less, that's all you need. You can be succinct and to the point, and that will go so far. And so when I started working at Duke and I would send out an email, say like a severe weather email or blast, I'd be writing these novels and my boss for months would say, "You've got to trim it down. Nobody's going to read your email if you write that much." And so just get the main messages apart to the end user or to the audience. And then from there, people will continue to read your subject.

So I would say effective communication, kind of keeping things concise and succinct will go a long way, especially when you're young in a professional setting, in impressing those that might be 10, 20, 30 years into their career. But yeah, communication is a big one. And I would just say showing passion and being confident is probably two things that are also very important when you go into an interview.

Emma Collins:

There definitely is an art to writing a professional email.

Max Thompson:

It's not easy. I've gone through so many times. It's interesting because I'll write something and I go online and I'll say, "Did I write that correctly?" And I guess there are things now with AI. I've heard about this ... It's called Grammarly. I think it uses artificial intelligence.

Emma Collins:

Yeah.

Max Thompson:

And it'll actually read what you have written and make changes. It's like spell check on word on ... But yeah, there are certain things where I think is it affect, effect? Which one is it again?

Emma Collins:

Yes.

Max Thompson:

But I try to be as accurate as I can because our emails are going out to thousands of people, and I want to make a good impression.

Emma Collins:

Absolutely. Well, Max, 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 our show. So if you could meet one famous person, alive or dead, who would it be?

Max Thompson:

That's a great question. I have so many, and I probably shouldn't name them all, but I'm a big hockey fan. So somebody who has passed on Gordie Howe just recently passed away. Man, I would love to have met Gordie Howe. Alive, Wayne Gretzky, The Great One. I would love to sit down and meet Wayne Gretzky. And then another big hockey name is Joe Sakic. He played for the Colorado Avalanche in the early 2000s, a team that I idolized growing up, and now he's the general manager with the Avalanche now. And so he's another person that I would love to talk to. Larry David, I love Curb Your Enthusiasm. I love Seinfeld. I would love to meet Larry David. I think he'd be a ball to talk to.

And then somebody who may be more serious, probably maybe at the top of my list is Frank Sinatra. I'm a huge Frank Sinatra fan. I probably don't listen to his music as much anymore. But growing up, I had an uncle whom I was very close with who loved Frank Sinatra, Dean Martin, the Rat Pack, you name it. And I became a big fan of Frank Sinatra as well because of him. And I would love to listen and see him, and it'd be even more of a thrill to actually meet him, shake his hand, and talk to him. There's a lot of people decades ago that would say it would be a true honor to shake Frank Sinatra's hand. So that's probably at the top of my list of somebody who has passed that I would've loved to have seen Frank sing and would've loved to have meet him.

Kelly Savoie:

Yeah, wouldn't it have been awesome to go to a hockey game with Frank Sinatra? Now, that would've been the best.

Max Thompson:

Well, now we're in Fantasy Land now. That would be fantastic. And they have a hockey team in Las Vegas. Then you can stay in Las Vegas. I mean ...

Kelly Savoie:

Yeah,

Max Thompson:

Then you're just connecting all the dots there.

Kelly Savoie:

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

Max Thompson:

It was a real honor and pleasure to be here. Thank you very much.

Emma Collins:

Well, that's our show for today. Please join us next time, rain or shine.

Kelly Savoie:

Clear Skies Ahead: Conversations about Careers in Meteorology and Beyond is a podcast by the American Meteorological Society. Our show is edited by Johnny [inaudible 00:42:17]. Technical direction is provided by Peter [inaudible 00:42:20]. 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

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