Transcript of "Nicole Casamassina, Hydrologist at the National Weather Service Southeast River Forecast Center in Peachtree City, Georgia"

Clear Skies Ahead: Conversations about Careers in Meteorology and Beyond

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Kelly Savoie:

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

Rex Horner:

We're happy to introduce today's guest, **Nicole Casamassina.** She's a **Hydrologist** at the **National Weather Service Southeast River Forecast Center**, located in appropriately named Peachtree City, Georgia. Welcome, Nicole. Thanks very much for joining us today.

Nicole Casamassina:

Thank you for having me.

Kelly:

Nicole, what sparked your interest in atmospheric science and how did it influence your educational path?

Nicole:

So, funny enough, I actually have no idea. I know most of us in this field, we have this weather event that happened when we were four and their dad told them about clouds and how weather isn't scary. And I didn't have that at all. I think I just kind of woke up one morning and said, "I want to be a meteorologist," but I've always been interested in the environment. I guess my first memory of wanting to be in the industry was in fifth grade and we had to write a poem about who we were and it included my likes and dislikes. And one of the things I liked were the Mets. I'm a big baseball fan. I disliked the Yankees and I disliked my brother, which is still all true, but my favorite dream was to be a TV meteorologist, so that's my first memory.

Nicole:

And then in sixth grade we had to write this big speech. Everyone had to write a speech. And my mom suggested that I write about going green. It was the big thing that was happening back in like 2006 to get people interested in environmental science and everything. And so I talked about CFL light bulbs, and recycling, and how to protect the environment. And so I guess that's my second memory, but my real interest in meteorology kind of happened when I was in eighth grade and I took earth science for my science course. And I fell in love with weather and climate and that area in that class. And I had kids actually bullying me for liking weather. I think it was because the teacher wasn't very well liked. And I was like, "What the heck? I just like the weather. What's the big deal?"

Nicole:

And so the vice principal heard about it and she had a friend who was a TV meteorologist. And she wrote me a letter encouraging me to continue loving weather and just keep going. And so I did. And then my senior year of high school, Hurricane Sandy came to where I was. I grew up on Long Island and that's where it really, really made some big impacts. And so that just kind of confirmed that that's what I wanted to do. So I ended up going to Stony Brook University, which is on Long Island and I majored in atmospheric and oceanic sciences. And then I minored in coastal environmental studies and geospatial science, so that allowed me to basically combine all of my interests in weather, and hurricanes, and emergency management, and the impacts to the coastal zone, and all of that fun stuff. So I guess that's my origin story, I guess you could say.

Rex:

That's an awesome origin story, Nicole. And I'm sorry that you were bullied and hopefully they got soaked in the thunderstorm — or something minor but still annoying — for their meanness toward you. So you told us a little bit already about some opportunities you pursued. For instance, connecting with your vice principal about meteorology, finding a school and really filling your curriculum with atmospheric and oceanic sciences and geospatial sciences, which we're looking forward to talking with you more about later.

Rex:

Were there any other opportunities in high school or in college that you felt were helpful or beneficial to securing a job or gaining more knowledge in the field you were working towards, which was hydrology at that point coming out of your bachelor degree.

Nicole:

Sort of. I guess I'll kind of start in college then. So my first year of college, I joined my school's meteorology club as most meteorology majors do. And I got really, really involved with it. I was treasurer, vice president, and then president. I was on the leadership team for seven out of the eight semesters I was there, so I was really in the leadership part of it. And we, as a club, we went to regional conferences, we became Weather-Ready Nation Ambassadors and we went to middle schools and we taught kids weather safety. And then we also participated in our university's annual Earthstock, which is the biggest Earth Day celebration in the New York Metro area. So just being involved on campus and within the club really helped because my grades weren't really great in the beginning. I was questioning whether or not meteorology atmospheric science was my path, because my grades were bad. I was almost kicked out. They were so, so bad.

Rex:

Can I ask if it was a specific topic that was difficult or that was more difficult than you anticipated? We've heard from other students, and people that have gone through meteorology programs, that sometimes the physics or the math is just extremely hard if you don't happen to have that particular inherent knack for it. Was it that sort of area that was difficult for you?

Nicole:

Yeah, it was kind of a combination of all that. I was never really particularly great in science, so I don't know what made me think, "Oh, let's go study science in college where it's extra hard," but it was the combination of taking physics, calculus, and chemistry, all at the same time, I think is what kind of did it.

I was basically taking the same exact classes as biomedical engineers. And I mean, while it was great, it was hard. And they explicitly told us, "We are trying to weed you out."

Rex:

Yeah. Not to mix metaphors, it sounds like a perfect storm.

Nicole:

Basically. So I had to retake a bunch of classes and thankfully I was able to get through it all. So I'm in my junior year and I'm like, "Okay, my grades are okay now. I'm going to try and get some sort of experience." So I applied to REUs — Research Experiences for Undergrads. And I applied to maybe ten of them, all of them were rejections. And I was so discouraged like, "I'm trying so hard to make it in this major, get into this industry. And the one way I was told to do it was, 'Go do an REU.' And well, I can't do any of them because I got rejected." I was basically so desperate to get experience. And at that time I was just finishing my first GIS course. I presented a poster of it at one of the regional conferences the meteorology club would go to and it was about hurricane preparedness in New Jersey based on data from Hurricane Sandy. And really, my university wasn't really telling me career options that I wanted to do.

Nicole:

And so I was told, "Either go to the National Weather Service as a meteorologist or go get a PhD and become a professor and do research forever." And I didn't want to say no to these options, but I just wanted more.

Rex:

Yeah, of course you did.

Nicole:

It just didn't seem like those were my right fit. And there were so many other options, but at the time I had no idea. And the people ahead of me were just going into these two options for the most part. And I was like, "I don't want to do this. I don't think this is for me. I want to explore other things." So I was gaining these skills in GIS and I realized I liked that a lot more and I didn't really like weather forecasting as much. So I was like, "Okay." There's a GIS conference that the Long Island GIS association hosts twice a year. So it's like mid-April of my junior year. Everyone has their internships already set, ready to go for the summer. I have nothing. And so I go to this conference, resume in hand, and I'm just ready to network, get an internship.

Nicole:

And so, one of my GIS professors was there and I was like, "Hey, please help me. I'm so desperate. Please. You have a ton of connections." And that's really what you have to do, you have to find your professors and say, "Hey, can you please use your connections to get me a connection?" And so she got me in touch with someone from the USGS New York Water Science Center. And he looked at my resume and said, "You're perfect for the projects I'm working on for this summer. Let me give your resume to my boss. We'll give you an interview, but I want you to be my volunteer for this summer." And so I'm like, "Oh, thank goodness." So I go through the whole process and two weeks into my internship, my mentor got into a motorcycle accident. And he was out for the foreseeable future, very devastating kind of injuries. Thankfully, he's fine now. But at the time...

Kelly:

Long recovery.

Nicole:

... it was very bad. Long recovery. So I ended up taking up some of his work under the mentorship of some other people in the office. And that really allowed me to create connections within the office. Now, this is not a meteorology kind of office. This is a US Geological Survey, so it's full of hydrologists, geologists, geographers. I was the only meteorologist in the office, actually, as a volunteer. So even though I was only there two days a week that summer, I ended up getting some of the GIS data I created, published as a volunteer. Like insane things that I never could have imagined happened. And then, I was selected to be their pathway student for my senior year. So I went from having no connections at all, no hope for a career, really, no experience, to having an awesome internship and then getting a paid internship out of it that could lead to a job after.

Rex:

So just to be clear, a pathway intern is what you're describing, where it is paid and it does give you more of a segue into a full-time job after school. Is that correct?

Nicole:

Yeah, that's correct. It's not totally guaranteed just based on federal funding and everything.

Rex:

Of course.

Nicole:

But it at least gives you that experience, so that when you are applying to jobs, if you don't get this position, you have real job experience coming out of college or being a recent grad.

Kelly:

So that experience being the internshiop and working with the geographers and the hydrologists, and knowing that you were really interested in that, is that when you decided to pursue a higher degree?

Nicole:

Sort of? There's more to the story, actually. It gets even crazier, so...

Kelly:

Oh, continue, please. I can't wait to hear it.

Nicole:

So it's the end of the summer between my junior and senior year. And not only was I selected for a Pathways position, about two weeks after, I found out about this volunteer position, I get a letter, an email from my local National Weather Service Weather Forecast office saying, "Hey, we want you to be a volunteer here." So again, a person with no good grades, no experience, somehow gets two volunteer positions within two weeks of each other. And they said, "We want you to come in the fall." So I said,

"Okay, I'm going to do the USGS over the summer. I'll do the weather service in the fall." So I go to volunteer at my local WFO while my security clearance is going for the Pathways position, so I'm in like seven different government positions at the same time, it feels like.

Nicole:

So I volunteer at my WFO. And this is the New York City Weather Forecast Office, so one of the busiest, most amazing Weather Forecast Offices in the country. And it ended up not being the experience that I had wanted. Kind of disappointingly, when you're a meteorology major, one of the dream paths is to be in the National Weather Service in some way. And so I go to be a volunteer and it's not what I expected. I didn't have as great of a time as I expected and what my friends were telling me they had experiences doing. And so I basically kind of started to reject meteorology in a way. I was like, "This is not for me. I'm going to go be a hydrologist geographer." I was doing this other internship as well. And so I was like, "Okay, maybe I should start applying to grad school, because I don't really know exactly what I want."

Nicole:

And I was doing independent research at the same time about hurricane tracks, just an idea that I had come up with one day and my GIS professor was like, "Roll with it. I'll give you credit for it." So I'm doing all this at the same time. And then I start to apply to grad schools. And basically I wanted to go for geography with climate applications because I was really into maps, and making maps, and doing stuff with that, but I still wanted that weather aspect to it, but not the nitty gritty math, not the forecasting part of it. That part, I just didn't like all that much. Kind of strange.

Rex:

And you know what, Nicole? On your LinkedIn, it says you got a 4.0 when you got to your master's degree in science at Texas A&M. So it looks like everything turned out for the best.

Nicole:

Oh, definitely. And then, so while I'm in Texas, really loving this program, the Stony Brook Meteorology Club Facebook group, one of the members posted a flyer saying that NCEP was looking for interns for the summer and grad students could apply. And originally, I had just brushed it off because I was working at the USGS as a Pathway student, part-time, when I would go back to New York. And honestly, I didn't think the National Weather Service was for me. And then, even the graduate student advisor in my department told us that the summer between year one and year two of your masters should be focused on writing your thesis and you shouldn't have an internship. And there were multiple people in my first year of my masters that were wanting to do internships, but this graduate student advisor was saying, "No, this is not what you should be doing."

Nicole:

But my advisor was like, "No, go for it. Here's a letter of recommendation. I know the deadline's in like a week, but here you go, try. The worst they could say is no." I did it. Honestly, didn't think I was going to get picked because my undergrad grades weren't great. And I was only in grad school for one semester, so I had gotten all A's as you had mentioned, but one semester, it might be a fluke. And turns out that's exactly what they were looking for, a GIS-based weather nerd. And so I ended up doing this internship and I was at the Ocean Prediction Center, which is in College Park, Maryland. The internship is now called the Lapenta internship, if anyone is interested in doing it, but it was seriously the best experience I've ever could have had.

Nicole:

It changed my entire perspective about meteorology, weather, the National Weather Service and their mission and goals. And it just turned my whole mindset around about everything, so if I didn't apply to this random internship that I found on Facebook, I probably wouldn't be where I am today. So I mean, I guess all of that, this whole story, I guess, I just kind of had to find opportunities for myself because I went against what my professors and mentors were initially telling me and what the people were doing around me, because everyone around me was just doing the standard typical path. And I'm really, really happy that I did.

Kelly:

And that internship that you said you found on Facebook, was that through the local chapter, did the local chapter post that through your undergraduate university?

Nicole:

So we didn't actually have a local chapter of AMS. We were just kind of a club and it was just people who had gone through the program, whether it's undergrads or grads. And it was one of the grad students that was there when I was in undergrad. And at the time, she worked at NCEP and was just like, "Hey, we're looking for interns. Grad students can apply." And it was like crazy, crazy. And I did it and it was the best experience. Seriously.

Kelly:

Amazing. Facebook is good for something. So Nicole, your position now at the National Weather Service, was that your first position in the field or did you start somewhere else before that?

Nicole:

No, so after I graduated from grad school, I completed my Pathways internship at the USGS and I transitioned to a full-time employee at the USGS New York Water Science Center. And I became a Hydrologic Technician, that was my official title. But I wasn't a typical technician. I didn't really go out into the field and get data in that way, maybe once or twice a year to assist people. But mostly I found my data online and through model outputs. So I guess in a way, that is still kind of going in the field, just the field of the internet, but my main focus there was assisting in groundwater modeling projects using Python in GIS. And while it was a great job, and I'm so grateful that they took a chance on a meteorologist by training in a geology and hydrology focused office, I kind of had the goal of going back to the National Weather Service after completing the Lapenta internship, just because everyone had changed my mind there. And I was like, "Okay, I want to go back to the National Weather Service," but I didn't want to be a meteorologist per se.

Nicole:

And I know that you don't have to be a meteorologist to be at the National Weather Service. There's plenty of positions out there, but there aren't many entry-level positions to do that. So I started job searching at the end of 2020 just to kind of see what was out there. And I see that there were two hydrologist positions at the Southeast River Forecast Center in Peachtree City, Georgia. And my boyfriend and I, we had kind of set a radius for ourselves for moving, because typically in the National Weather Service, you kind of have to be willing to move a bit in order to get in. So we had set the radius to North Carolina from where we were on Long Island, because we wanted to be able to be close to family and we wanted to be able to be home in case there was an emergency.

Nicole:

So this job comes up and we're like, "Okay, that's kind of out of our radius, but let's see if it checks other boxes." So funny enough, I have family that moved from New York to Peachtree City, specifically to Peachtree City. And they moved here about 10 years ago.

Kelly:

I wonder if that's fate. You're like, "Oh, I just have family, they moved to Peachtree City. This is going to be it."

Nicole:

Yeah. So my family moved about 10 years ago. And so I was like, "Okay, we'll have family there. That checks a box. Okay. My dad lives in Knoxville, Tennessee, which is about three to four hours away. All right. Check. Peachtree City is less than an hour from the Atlanta Airport, which is like the busiest airport in the country and easy access to all parts of New York, because my boyfriend's from upstate New York. So okay. Easy access to family to go home. Check. Okay. All right. This is checking a lot of boxes. Uh-oh."

Nicole:

And so then I go on the Southeast River Forecast Center website to see what they do. And one of the sentences says that about 70% of the tropical cyclones that impact the US impact the Southeast River Forecast Center area. So I can actually apply my training and my expertise. Wow. This is actually the perfect job. It's just a tiny bit out of our radius. So I applied in December of 2020. I interviewed in January of 2021 and then I started in June of last year, so I'll be hitting my one year mark really soon, but that's the crazy story of how I ended up in Georgia.

Kelly:

Well, congratulations on getting that position. That's excellent.

Nicole:

Thank you.

Rex:

Nicole, I'd like to hear from you what a typical day on the job is like in terms of your responsibilities and your routine as a hydrologist at NWS. Can you take us through that?

Nicole:

Yeah, so it depends on what shift I'm assigned on for the day, but a typical normal day starts by coming in the morning and I get myself briefed on what's happening meteorologically and hydrologically, past, present, and future. So was there rain overnight? And where was it? And how heavy was it? Was it in a particular basin that tends to be a little bit flashy or gets into flood easily? Are there any river basins already in flood, or going to go into flood, or did anything surprise us overnight when the evening shift left? Are there any calls or emails from dam operators telling us that there's going to be a change which could impact the downstream points?

Nicole:

So those are just some of the questions I ask myself when I walk in. And then I just kind of figure out what's going on in the short term, in the long term. And then we start issuing our forecasts in the morning. And the Southeast RFC has over 300 points that we forecast every day, although not all of them get issued every day. Sometimes you only issue them if they're in flood, or going into flood, or something like that. And forecasts not only involve looking at the model and where the rain has fallen, but it requires coordinating with the Weather Forecast Offices that we work with, with the dam operators, with water management agencies, to get these forecasts out and make sure that we're getting the right information so that we can make as good of a forecast as possible.

Nicole:

And then, once those forecasts are out, we just make sure everything's running smoothly, no rivers are deviating too much from what we were forecasting in the morning, answer phone calls and just remain situationally aware throughout the day. And then, on days that we're not really doing operations or on more quiet days, we do professional development. We attend webinars and training, we work on improving the model that we use, we give presentations and we work on other in-office initiatives that we have, but that's a typical day.

Rex:

Well, that's a really nice balance that you have. There are some days where it's really focused on the immediate events that are happening, in terms of possible flash flooding or other water risks to life and property. And then you have those professional development days where you really get to kind of relax and take a wider view of your own career, and the field, and the knowledge base that you and your colleagues are working from. So that's a really nice position to be in, it sounds.

Nicole:

Yeah. And that was something that I was kind of looking for in a job when I was looking for a new job, a year and a half ago almost now, because being at the USGS, I was doing all research, and while that was great and the applications of it was really impacting people, I just realized that I didn't want to do research all the time. And so I was like, "Oh no, I don't want to be a weather forecaster, but I don't want to do research all the time. What is this?"

Nicole:

And then, so this position came up and I had friends who knew people in other RFCs around the country. And they were like, "Yeah, this is like..." I wouldn't say it's 50/50 every day or anything like that, but overall, it's a good balance between focusing on what's happening for the day and being really hyper aware of that, but also taking a step back, like you said, and working on the model. Like I was just working on calibration of one of our river basins and making that better for forecasting overall.

Rex:

It seems similar in some ways to what teachers experience when they have the summer off, for instance, although it's a different timeframe. Also, there's the active work of educating students and mentoring students. And there's the more self-directed time as well outside of the classroom.

Nicole:

Yeah, it's very similar except I don't get summers off. The weather never stops, so.

Rex:

Weather never stops. A little bit more unpredictable.

Kelly:

Yeah. And that's a good segue. I do have a couple of questions for you about the way the National Weather Service is set up. So the Southeast River Forecast Office, is that a division of the National Weather Service? Is it one big, giant place in Peachtree City that has separate divisions or the office is separated?

Nicole:

So we are co-located with the Atlanta Weather Forecast Office, so one half of the office is all the river people and the other half is all of the weather people. And they are one of the offices that we coordinate with, so it's actually really nice to not have to pick up the phone. I could just walk over to the other side and say, "Hey, can we talk about this river and see what your thoughts are and have that coordination?" So it's kind of cool to have a regional office within a local office. It's very unique in that way.

Kelly:

And do you have to work a certain shift or do your shifts change?

Nicole:

So my shifts change, so typically I'll do like a seven to three or an eight to four. We work evenings two to ten. We don't really do overnights very often, except when there's something going on. Like if there's a big hurricane, of course, there's going to be people there answering the phones and everything. And then every now and then I'll cover the hydrometeorology shift just to help out, because I have a meteorology background and relieve some of the people that are specifically assigned to that shift, but yeah. So for the most part, it's like a... I don't want to say it's a nine to five or anything like that, because it's not, but having most days be a typical workday is nice and an alternative to having the WFO where you're doing regular midnight shifts. And if you like that, sure, go ahead. Great. That just wasn't for me. And it's nice that we only do a few midnights a year.

Kelly:

Well, that's not bad. I know some people have trouble with that shift work where it's overnight or they're changing times. It's difficult for their work life balances.

Nicole:

Yeah. I give them so much credit because I barely do shift work and it's difficult, so.

Kelly:

And so you have varied duties. Do you have something in particular that is your favorite thing or what you like best?

Nicole:

I wouldn't say that I have a favorite. I'm still learning. I guess that's kind of my favorite part. I really like learning.

Rex:

Great answer.

Nicole:

I just really believe that as a scientist, you need to keep learning. And especially in the weather, water, climate industry, everything is constantly changing. The science is changing, the way we do things is changing, the way... I mean, just everything is constantly changing. So I guess if that's what you were asking, yes, I like learning, but I guess my favorite shift, I guess in a way, I do like covering the hydrometeorology shift. I have no idea why, because it is very similar to what I do every day anyway, but I don't know, I guess I like looking at rain.

Rex:

Do you have some things that you find are the biggest challenges in your field that you haven't highlighted already for us? And it could be either in your specific position or in hydrology as a field of study or in the industry.

Nicole:

There's a lot. I mean, I'm new. I've only been in my position for not even a year and I'm also new to the Southeast. I grew up in New York, where things are different. Like here, there's dams and they're operated by local companies, by counties, by power companies and everything. And honestly, until I got here, I thought that the dams in the United States were like the Hoover Dam and that was it, because on Long Island we don't really have dams. So I didn't really know that that was a thing outside.

Nicole:

But I'm also new to hydrologic forecasting. It's very different in hydrology. And even just hydrology is a challenge. I'm atmospheric science trained, hydrology is something I learned on the job the whole time. I've taken just a handful of hydrology classes over the course of my educational career, so having that is a challenge, but I'm learning and I'm doing my best. And just trying to get a little bit better every day.

Rex:

Maybe now would be a good time to take a pause and just check in, in a nutshell, how would you define hydrology versus meteorology? I know that the AMS, obviously the American Meteorological Society, puts under its mission advancing weather, water, and climate sciences, with hydrology most likely falling under the water part. But how would you summarize it as a field of study compared to meteorology? Just in general terms, how would you explain it to a friend of yours that worked in a totally unrelated field?

Kelly:

So it's much less forecasting, because you said you didn't particularly like that as much. Is it more geography-based, like you said, maps? What would the difference be that made you like one over the other?

Nicole:

So I think with weather forecasting, it just seemed like so much physics and so much information coming in at once, because you have to worry about the temperature, the wind, just so many things that I barely even remember now because I'm so hydrology focused now. But with river forecasting, hydrologic forecasting, the main factors are not only just like the rain and where it's falling, it also depends on how quickly the water travels through the system. And is some of it going into the ground? Is there a dam upstream that's releasing more water than we were originally saying? To me, it just clicks better. I don't know what it is in all honesty, but I mean, I guess in a way, to me it's easier even though it's the same amount of information.

Rex:

That's fine. And that's good to recognize.

Kelly:

Yeah. And you do have some really great skills. You have expertise in geographic information systems, in Python. And it sounds like these skills have benefited you. Do you find that they're pretty much essential to your work?

Nicole:

Oh, they're so essential. I mean, I don't really use Python as much anymore, but I did when I was at the USGS and I am a little bit now, but basically if I didn't have those skills, I wouldn't be in my current position. I wouldn't have the skills necessary to be in my position. In the weather, water, climate enterprise, you need more than just your degree and your experience and internships. You need to have skills. And I've used my skills in GIS and Python more than anything else in any of the jobs I've had so far, especially because I didn't want to go into the typical meteorology jobs, having those skills allowed me to stand out from others and have more and different opportunities than my classmates in college.

Kelly:

Can you take GIS in school, in college as an actual course?

Nicole:

Yeah. So at my institution, Stony Brook University, I was able to take multiple courses in GIS. They offered a graduate certificate in it, although I didn't pursue it, I pursued the minor. And then that's how I got into a geography-based master's program. I just kind of took what I loved, which was the geography part of GIS, and just rolled with it. And got a whole degree in it, basically. But if I didn't have those skills, I wouldn't be able to stand out from others in a job applicant pool.

Rex:

I'm going to put you on the spot again, Nicole, and ask if you could let me know what exactly a Geographic Information System is. Is it software? Is it a field of study? Is it both?

Nicole:

It's kind of both. So it at Stony Brook, I minored in geospatial science. So the first class I took was just about maps and what is a map? What are the components of a map? How do you make a map? What are they used for? Etcetera. And then I moved on to the GIS courses, which were more about the

software that is used. There's free software, there's paid software. And so basically it's just like it's software that's an interface where you can use geospatial data and make maps or visuals. You don't even need to make a map, you can just make visuals, or you can analyze data in that way. So it's just a powerful tool for data analysis and visualization.

Rex:

That sounds incredible. And I think for those of us that are visual learners, myself among them, it seems like a really incredible way to understand the natural world and earth science through maps, in terms of being able to take the real world and slice it into different layers that you can use to understand both political boundaries and zoning, as well as things like topography, and water distribution, and such.

Nicole:

Exactly. There's so many applications of GIS besides just, I guess environmental-related things and earth-science related things. People use it to track where bookstores are. I remember that being a project in my first GIS class. Someone wasn't in the earth science field, he was an English PhD student who was taking an elective. And he did his final project on where bookstores were in relation to more densely populated areas in New York City. And it was a fascinating project, but it just shows how powerful maps can be.

Rex:

So can you give us a recommendation if someone is interested in exploring one of these free GIS tools? Do you have one that you find is great to use?

Nicole:

So I'm a little bit of a hypocrite. I don't use any of the free ones, although I probably would, if I didn't have access to it at my job, but.

Rex:

Okay. Let's back up then. What is the one that you would recommend that people would use just if they wanted to explore it as a paid version?

Nicole:

So there's ArcGIS Pro, which is produced by Esri. And they are kind of basically the industry leaders in making GIS software. There is a free version of ArcGIS, it's ArcGIS Online. And it's a little bit more limited, but it is a free way to make some very simple maps online using data you find online, or sometimes you can get data that they have provided, they have oodles and oodles of data you can find and you can make maps out of it if you really want to.

Kelly:

Well, it sounds like a good way to spark your interest, just try it that way.

Nicole:

Yeah, see if you're interested.

Kelly:

Then you can pay for it if you're really into it.

Nicole:

Yeah. It is very expensive though. That's why I use it at my job and through my universities and stuff. There's no way I could be able to pay for it by myself, but if you have the opportunity to learn on that software, it is a treat.

Rex:

Well, thank you, Nicole, for telling us about the options for exploring Geographic Information System software as a field and your background in geospatial study.

Rex:

Before we end, we like to bring the conversation to our student listeners and our job seekers and ask you for advice on how those groups might be able to establish careers in hydrology, if you were hiring or if you were just talking to a peer and mentoring them as a peer, what would you look for on their resume or in their experience overall?

Nicole:

Yeah, first of all, I just want to say that I've been listening to this podcast pretty much since it was started. And for me to give advice now is crazy to me because I'm very early career and I still don't feel like I'm someone who could really give advice, but I guess if I had to, I would just say that be open to careers in hydrology, especially to the meteorology students, people with meteorology backgrounds. I know when you're a meteorology major in college, you might think that being a meteorologist is your only choice because that's your major. Meteorology major, meteorologist position. But the truth is this degree is so versatile and hydrology is just one of the many applications you can use with your degree, so if you want to be in hydrology, great, be open to it, apply to those positions, find your little niche within hydrology, because it is a little bit of a big subject.

Nicole:

So whether that be modeling groundwater, surface water, GIS, coding, whatever, do it, hone in on those skills, be great at it. And I love that being in hydrology means that I get to work with and learn from people outside of my field. So I learn from meteorologists, hydrologists, engineers, geologists. The list just goes on, and on, and on, of the people that I have been able to work with, especially in the last year being at the National Weather Service. So just be open-minded and just apply. And also, be involved with AMS. I know it's called the American Meteorological Society, but it really truly is the weather, water and climate enterprise.

Nicole:

And I've met so many people through the early career leadership academy, through the board for operational government meteorologists, and the AMS social media team. And establishing those connections has just been great to figure out like, "Where I fit in the meteorology spectrum?" I guess you can call it. And, "Where I fit in within the society?" And I feel like I've kind of found it, still trying to figure it out, but I guess that's what being an early career professional is about.

Nicole:

And to answer your second question, if I was hiring, I would look for skills you learned outside of your major, particularly the soft skills. You can learn how to do your job, but your supervisor can't teach you how to get along with people and be a leader, so definitely do those leadership things. And don't say no, that's one of the best things I had a peer tell me back in college, just don't say no to opportunities and to bettering yourself as a professional and as a person, within reason, of course. Obviously you don't want to overwork yourself, but.

Kelly:

Yeah. And you mentioned that you might not be experienced enough to give advice, but early career professionals are perfect for giving advice to students who are looking for positions because it's fresh and you've just gone through it all, and you've known what to do, and what not to do. And I mean, you landed a job and that's what matters. So everything that you've told us today has been great. I think our student listeners have learned a lot from you, so thank you so much for being a part of the podcast. But before we end, we'd like to ask you one last fun question unrelated to atmospheric science. I'd like to ask what's your favorite hobby?

Nicole:

Okay. So I have been playing the flute and piccolo since I was nine years old. When I was in high school, I played at a semi-professional level. And then, when I graduated and went to college, I joined The Spirit of Stony Brook marching band. And I was in the Stony Brook wind ensemble for two out of the four years I was there. When I graduated college, I took a break from music to focus on grad school. And then I had a jaw injury right after I graduated from grad school and I just had surgery in May to correct the problem and then I moved to Georgia in July. And I joined my local community wind ensemble.

Nicole:

So funny enough, I used music as a stress relief and for like a mental therapy, but my surgeon actually really encouraged me to continue to play the flute as a physical therapy. So mental therapy, physical therapy, it's all great things. And it's helped me to meet people in my area. Like I said earlier, I'm brand new to Georgia. All I have is my aunt, uncle, and my cousins. And with COVID, it's also been really hard to meet people in the area, so it's been really nice to have that time once a week to do something I love that's not work related.

Kelly:

It's nice to hear that they actually have community groups where you can get involved in something like that. I just always assumed it had to be through school, high school, or university. That's awesome.

Nicole:

Yeah. Funny enough in Georgia, there's so many local community wind ensemble. So if you live in Georgia, go find one or join the one that I'm in, it's called the Peachtree Wind Ensemble. Very fitting name.

Kelly:

Well, I hope that we can hear you sometime.

Nicole:

Yeah.

Kelly:

It would be great. Maybe you have some local performances that we could link to from your podcast notes, but thanks so much for joining us, Nicole, and sharing your work experience with us.

Nicole:

Thank you so much for having me. It's really been a great day.

Rex:

Thank you, Nicole. That's our show for today. Please join us next time, rain or shine. Clear Skies Ahead: Conversations about Careers and Meteorology and Beyond is a podcast by the American Meteorological Society. Our show is produced by Brandon Crose and edited by Peter Trepke. Technical direction is provided by Peter Killelea. Our theme music is composed and performed by Steve Savoie and the show is hosted by Rex Horner and Kelly Savoie. You can learn more about the show online at www.ametsoc.org/clearskies and can contact us at skypodcast@ametsoc.org if you have any feedback or would like to become a future guest.