Kelly

Welcome to the American Meteorological Society's podcast series on careers in the atmospheric and related sciences. I'm Kelly Savoie and I'm here with Jason Emmanuel, and we will be your hosts. Our podcast series will give you the opportunity to step into the shoes of an expert working and weather, water, and climate sciences.

Jason

We're happy to introduce today's guest, Elliott Abrams, a broadcast meteorologist who has had an illustrious 51-year career forecasting the weather, his most recent position being senior vice president at AccuWeather. Thanks so much for joining us.

Elliot

Well, thank you.

Kelly

Elliott, what got you interested in meteorology?

Elliot

I think I got interested in meteorology when I was five years old. I liked looking at the sky and kept asking questions about the weather. And I actually later learned that after I gave a talk in Philadelphia, where they said there was a thunderstorm outside the hospital when I was born. A man came up to me afterwards and said, "I'm the only one here who can vouch for the fact that there was a thunderstorm outside the hospital that day. I delivered you. But, around age 5.

Jason

And did you start your career as a broadcast meteorologist, or had you had other roles before that?

Elliot

Well, over the years, probably too many rolls but that's a different topic, of dieting. But in any case, I became—I did some weather observing. In fact, I was a cooperative observer for what

was then the U.S Weather Bureau, now the National Weather Service, when I was a teenager. And my first part-time job was at the Franklin Institute in Philadelphia working for TV meteorologist Wally Kinnan. They had a weather display at the institute.

Kelly
And could you give us a little bit of background about your education and what you majored in?

Elliot
Education was in the Philadelphia school systems. Went to Central High School in Philadelphia, which is a magnet school. Not exactly sure, wasn't exactly sure at that time what the attraction of that magnet was. But I wasn't made of iron either. But in any case, the main thing that I knew that you had to stress was physics and math because there was going to be a lot of that later on in college. And if you didn't get a good foundation in it you really weren't going to get into the field because you have to pass those courses.

Kelly
And where did you end up going to school for your undergraduate degree?

Elliot
I went to Penn State University. It was actually the only place I applied to. And that started in March of 1965 and graduated in '69, and then I got a master's a few years later. And the topic of that was problems in the routine communication of weather information.

Jason
Had your undergraduate degree been in meteorology or a different field?

Elliot
Meteorology. It was a fairly small department but an illustrious one at the time. They were already doing some TV weather each night in central Pennsylvania. And we also did some radio work with some local stations that we volunteered for.

Kelly

And after you graduated, what opportunities did you pursue that you knew would be beneficial to securing a job as a broadcast meteorologist?

Elliot

When I was a junior, I was approached by Dr. Joel Myers who had started a consulting service, forecasting service several years before, and he asked me if I'd like to work for him. And he said, "I'm hard to work for, but I'm fair." And he was right. And I worked for him for 51 years.

Jason

Oh wow. So over those 51 years, you must've, like, seen the field change in many different ways. What are some sorts of the changes you've observed?

Elliot

One of the things early on was in terms of getting information. We didn't have high-speed computers or anything like that. There were teletypes that look like sort of fast typewriters where the data would come in. There were no real graphics. You could get some radar pictures by fax. And to make a satellite radar loop or a succession of pictures, you had to take these little 4 x 4 fax maps, paste them on a map corresponding roughly to the location you were looking at, and then do a series of those. And this took quite a bit of time, and the faxes weren't all that quick either. But it was the only way you could do it. There was no live radars. Satellite here was just beginning. We weren't getting very many satellite pictures. And so it was a much more difficult thing to come up with a precise forecast.

Jason

Do you think forecasting has become more accurate with the development of radar and satellite?

Elliot

I think it has become much more accurate. And the statistics all show that. Today's five- or six-day forecast is about as accurate as a three-day forecast was some years ago. But there are still some challenges. For example, if you want to ask a meteorologist, "Is it going to rain at 2

o'clock this Saturday afternoon because I have a picnic?" Uh-uh. We're not going to be able to do that because sometimes those individual showers don't form until minutes before they arrive. Or they may change character. You may even be in a shower zone, but as everyone knows, with scattered showers, if they're not scattered right over you, you're not going to get them. Some people believe in the idea of occasional rain: You plan an occasion, that's when it rains.

Kelly
How do you see the future job market for careers in broadcast meteorology?

Elliot
a) It's a hard forecast, but b) I've heard over a whole 50-year period, worries that the job of the human meteorologist was going to go away. It was all going to be taken over by computers. And that there weren't going to be a lot of jobs. And yet each year I see the field expanding—more opportunities, not only in weather but in climate and other Earth-related sciences. So I'm quite optimistic that the job market in the future will even be better than the job market has been in the past.

Jason
Do you feel like broadcast meteorologists are expected to interact more or less with the public than they used to?

Elliot
It really depends. On some radio stations there's less interaction. It really depends on the format of the station. And if the format of the station is conversational or it's all talk, then there's a lot of interaction. Otherwise, you feel more like an automaton sometimes just reading a forecast and not really being sure if anyone is listening to it.

Jason
Right, yeah. So you're a Certified Consulting Meteorologist, or CCM. Could you tell us a little bit about why you decided to pursue that credential?

Elliot

We were doing not only radio forecasting but we were talking to people about the upcoming weather and what to make of it. For example, if we were talking to a school district, what were the things that went into whether they decided to have school that day or whether it would have to close. For example, let's say we knew that it was going to start snowing at 9:30 or 10 in the morning and last until noon and be heaviest at 11. The schools could probably open. Anybody going—any buses and things like that scheduled for late morning would be questionable. But the thing we wanted to stress at that point was, don't just send the kids right home at 11 o'clock when the snow's the heaviest just because you're scared. We're certain that it's going to end by the middle of the afternoon when school lets out. So that kind of consulting work—learning what to say in what situation and base it on science as much as possible—led me to seek that designation.

Kelly

What was your typical day on the job like at AccuWeather?

Elliot

Well, wake-up was around 2:30, quarter to three in the morning.

Kelly

Whoa.

Elliot

Well that was for 50 years. In fact, these days I actually wake up at quarter of five and go to a gym class 4 days a week at 5:30 and people look at me like I'm crazy. But to me that's sleeping in. But in any case, I would get to the office around three, and there'd be a pretty large crew at that point. And we would proceed to discuss and assess the current forecast and what we believed was going to be happening and any highlights of particular storms that might be strong or questions that we have in the forecast. And then we would complete the forecast process. Now today, that forecast process is largely automated, but there are still weather discussions held around the clock. So you want to always see what—whether the forecasts are working out, what

changes we can make to make them better, and what factors are coming into play that may change what we're thinking. Stubbornness is fatal in weather forecasting. If you're stubborn, you're going to lose.

Kelly
So how did it work with AccuWeather in terms of your radio broadcasts at like local stations? Because I remember hearing you on the Boston local station. So do local stations and national stations hire AccuWeather to do the forecast for them? How does that work?

Elliot
Well there are currently thousands of stations that use the service, and there are other services besides AccuWeather. The basic idea is the station specifies what it's looking for, and then the meteorologist or meteorological organization fulfills that need. Sometimes it's just making sure that there is a dedicated line for getting all the watches and warnings to them that we feed back through from the National Weather Service or custom information, such as for sporting events or outdoor things like concerts and also the day-to-day forecast. So the way it would typically work is that we would work it out that we were going to make several different forecasts. For the local station in Boston, for example, we would make four or five recordings of the basic forecast, and then we would be live on the air every 20 to 30 minutes, during a storm every 10 minutes, and give frequent updates. And then similar at many other news and talk operations around the country. There were other stations where there was much more entertainment going on. And so, for example, on the day that Shakespeare was born and died, I might talk about the weather being a midsummer night's dream, but if the forecast was going to be wrong, it could be a comedy of errors, in which case all love's labor's lost, but the merry wives of Windsor across from Detroit would be happy but people living in Jordan at the Coriolanus would not, and the merchant of menace might be the same storm in both cases.

Kelly
That's some quick stuff to come up with! So funny.

Elliot
Oh, I don't want to cause a tempest here.

Kelly
So, I mean, what else—what other types of positions are there at AccuWeather? I mean, how many people does it employ? It must be huge, right?

Elliot
There's somewhere between five and six hundred right now and at least three offices. The IT department is now the biggest one. Use of big data, aggregating large masses of data, and making sure that it applies to a particular customer's need, and then making automated forecasts. A company can actually make an automated forecast for any spot on Earth just putting in the latitude and longitude, and knowing the basic climate and altitude of that area, make a forecast. Now, that doesn't mean it's going to be the very best forecast. In fact, the AMS awarded one of our forecasts an award a couple of years ago. There was a situation in northwest Mexico where there was very heavy rain occurring, and our office in Wichita was responsible for issuing forecasts for railroads. And they assessed the possibility that there'd be a flood. So they contacted the railroad and said that at milepost such-and-so, please stop the train, have somebody get out, walk forward on the tracks, and make sure the tracks are still there. They did that, and the tracks had been washed away.

Kelly
Oh wow.

Jason
Oh my God.

Kelly
Yes, that deserves an award.

Elliot

That's the kind of thing that I think every meteorologist who goes into the field wants to do—save somebody's life or protect some property. It doesn't happen very often, but we're always trying.

Kelly

And are most of the positions like shiftwork positions where, you know, it has to be covered 24 hours so people have to get up at three in the morning?

Elliot

Yes, there are round-the-clock shifts. Now when I was in the Air National Guard in the early '70s, there were progressive shifts. I think you'd work something like from 5 AM to 3 PM, and then there was 2 or 3 PM to 11 PM, and then an overnight one in the wee hours of the morning. And that shifted every few days. I would have found that very difficult to do because—

Kelly

Oh, yeah.

Elliot

You never get that—but that's what a lot of people in the National Weather Service do. Ours are—we try to have the same time and same place. So if you're getting up at 10:30 in the middle of the night and coming to work at 11 PM, that's your regular schedule. You may not have much of a social life, but that is the schedule.

Kelly

Right.

Elliot

On the other hand, though, I liked the fact that since I came in very early, I was home in the midday and afternoon hours, so when the kids came home, I would be able see them right after school. And my wife is a teacher. And they once asked what your parents did as their jobs. And

our younger son said, “Well, my mom is a teacher.” “And what does your dad do?” “Well he sleeps all day.” They answered that because I usually took my nap around two or three in the afternoon, might still be napping when he came home. He later learned that that wasn't the full story.

Jason
So it sounds like you had a broad range of responsibilities at your job. Did you have a favorite thing about your job?

Elliot
Favorite thing was just the fact that each day was different. It was never boring, and it still isn't in weather forecasting because each situation is different. Each day represent some opportunities and threats, and so you never—you might be doing the same types of work, but the outcomes are totally different, and that makes the job much more interesting than what many people have when they do the exact same thing every day.

Kelly
So was, was the early morning start time one of the most challenging things about your job, or were there other things that you found even more challenging than that?

Elliot
That was probably the most challenging, and you don't really get used to that if you don't work a regular schedule or a regular daytime schedule. But on the other hand, once you do get used to it, you probably are a bit sleep deprived, which isn’t the healthiest thing. But nonetheless, there’s—you get to talk to a lot of people around the country if you're in the radio business or TV, where you’re talking to people in different stations and interacting with them, and you really feel like you're involved in ongoing issues of the world.

Jason
So it might be hard to pick just one thing, but looking back on your career, what was the most memorable experience in broadcasting?

Elliot

Most memorable experience was probably during Tropical Storm Agnes in 1972. We started the radio service a year or two before and only served a few stations. But here is this tropical storm coming up with a great deal of rain and at the same time a pool of cold air in the upper atmosphere had arrived from the west, and the two were interacting so that the storm would stall. It might've been the Harvey of 1972. The storm stalled over New York, Pennsylvania, and Maryland and dropped 12 to 20 inches of rain across much of the area in a fairly short period of time. I never really saw it rain so hard for so long. Virtually every stream and river flooded. And one of the stations we served was the Wilkes-Barre/Scranton area of Pennsylvania. And the first thing you had to learn about forecasting there other than hydrology was the fact that when they say the flood stage was 22 feet, well that was along the natural course of the river. But there were various dikes that were built to hold back the river. For example, the one in Wilkes-Barre at that time was 37 feet. It's now a little bigger than that. But the idea was that with this kind of storm, every river was going to flood, and you just had to get the word out. And it wasn't going to be a flash flood. It would come up fairly slowly, but when it would overflow it would cover everything and create a real mess, and it cost billions of dollars.

Jason

Man.

Elliot

So we were on the air every 15 minutes talking to the stations that were involved. And I had post-radio syndrome after that because it was stressful that day and night.

Jason

Yeah, I'm sure. I can't even imagine. Was that the worst storm you had covered?

Elliot

Up to that point, Jason, that was the worst storm. But there were others. There was in 1996, a major blizzard came up along the eastern seaboard. There were the blizzards and snowstorms of 1977–78 along the East Coast. I always associated those as occurring the same winter that

Saturday Night Fever was my favorite, favorite movie at that time. My wife and I both took disco lessons. And I think my nickname at that point was John Revolting. In any case, the storms—a whole series of storms came up the East Coast and each one of them was different. But in January of ’78, several of them started to snow and turn over to rain. And we kept saying, “Okay, it’s going to snow heavily for awhile, and then it’ll rain.” And sometimes people got the wrong idea about it, and it was probably our fault, because it would snow about two, three, four inches an hour. And if you do the math, if it does that for three or four hours, you’re going to have a foot of snow on the ground. So who cares if it turns to rain after that. Nothing’s moving at that point. And so the concept, when you hear, “Oh snow’s turning to rain today.” That sounds like a storm that isn't going to be that bad, when in fact everybody got stuck.

Kelly
Is there anything you wish you had done differently in your career?

Elliot
So many things that—I don’t know, I could write a book about it, but I’m not going to. That’s one thing when people say, “Would you like to start your life over,” it would really depend on whether you have to go through the same mistakes again.

Kelly
Is there anything in particular that you would warn, you know, potential students who were going into broadcast meteorology to do differently than you did?

Elliot
One thing would be to watch your people skills. You want to always be as positive a person as you can to your coworkers and also anybody who might be a listener or a watcher on TV. And typically you can—people will do better work when they feel like they're encouraged and brought along rather than chastised for maybe a bad forecast. Everybody’s going to make a bad forecast. But the idea would be coaching people so that the next time the situation comes up, one might do a better job.

Jason

Right. I think that's really good advice. So in addition to the CCM, did you pursue any other professional development opportunities to keep current in the field?

Elliot

Well I also earned the TV and radio Seals of Approval at the time, which have now been pretty much supplanted by the broadcast meteorologist certification. But I give talks in various places around the country. One thing I began to become interested in was how the weather affected the Revolutionary War. And I've given several talks on how George Washington's knowledge of the weather actually helped him win the Battle of Princeton in 1777. And what happened was they had just won the Battle of Trenton. They crossed the Delaware. When I talk to school groups, I say, you know, "George Washington was so smart. How did he know that the best place to cross the Delaware River was Washington's Crossing?" And depending on the age of the kids they either get what I'm saying or laugh at it. But in any case, so there after they won the Battle of Trenton, they were trapped. And Cornwallis, a British general, was about to come in and probably capture them. And George Washington notices on this one January morning, at noon it's 37°. He was a Virginia farmer, and he had a thermometer. So 37° with a strong northwest wind, so he figured it would freeze that night. The British would not think that because in Great Britain a northwest wind coming off the Atlantic is not going to cause freezing at night just, as it wouldn't cause freezing in Seattle or Portland. But Washington knew that it would freeze, so he gathers the generals up, and they hatched a plan where they built bonfires during the afternoon to make it look like they were camping for the night. This would then discourage Cornwallis from traipsing through the mud to capture them that afternoon, figuring he could finish them off the next morning. Soon as the sun went down and the ground froze, they put cloth on all the wagon wheels and moved out after midnight, circled around, and took the town of Princeton. And it was a stunning defeat for the British because up to that point the British had won all the battles from the time they landed near New York City and came across New Jersey. And it looked like the Revolution was going to fail, and the people who participated in it could have been hanged for treason.

Jason
Man.

Kelly
That's very interesting. What advice would you give students and early career professionals who are, you know, just graduated and they really want to pursue broadcast meteorology as a field. Is there—are there certain things that they should do, put on a resume? Certain things that stations would look at that would set them apart from others?

Elliot
Well the first thing is you want to join the American Meteorological Society because you'll find a lot of like-minded people who are—want to do the same thing. And at the various meetings you can get scientific information, meet people who are doing the same thing you are, doing networking. And so it's a fantastic organization. I even joined as an associate when I was in high school because I was excited about it. But that's one thing. As far as resumes are concerned, I am not the expert to talk about resumes because after I got my first job for 51 years I didn't need a resume.

Kelly
Right, right. I would think that maybe presentation skills or, you know, taking public speaking courses or doing internships. You know, even if it wasn't paid experience, just experience in general would probably look favorably.

Elliot
That's true. Actually, the woman who teaches the cycling class I go to at 5:30 in the morning on Monday and Wednesday is actually a teacher of Shakespeare and Shakespearean plays. And she was going to be doing an interview for NPR and asked me how she should prepare for it. Well just remember you're going to be talking to people who are interested in your topic. You want them to be more interested, so you're going to tell a story about what's happening. And you want to pace yourself and listen carefully for the questions. Now I don't know if I'm following that

too well for you right now, but basically try to follow the questions and tell a story about what's happening so people become interested in and follow along with you.

Jason
Yeah, definitely. So do you plan to stay a part of the meteorology community in your retirement? Just keep involved?

Elliot
I think so. I'm still doing some part-time work for AccuWeather, and I'm also on the CCM Board right now. I have a couple of exams to grade. And I'm looking forward to the oral exam process at the AMS meeting. I also encourage people who go into the field, don't be daunted by this. If you're a competent person and an honest person, you can become a CCM quite easily. And that's something else you can put on that resume you were making.

Kelly
So Elliot we always ask our guest one last fun question at the end of each podcast. What is your favorite book?

Elliot
My favorite book was *11/22/63* by Stephen King. And most of his books, of course, are horror books, and I can't even watch the movies that were made because I just don't like watching that stuff. But reading it, you know, you're just looking at that page. But this book was about the time leading up to the assassination of President Kennedy. And he takes you back into the 1950s and early '60s, and if you're of that age it was fascinating. Of course, most people they are not anywhere near that age and that's fantastic for them, but it's still interesting to hear—to be sort of transported back in the day-to-day living in another time.

Jason
Was it like an alternate history version of it? Or was it just more realistic—

Elliot

Well it's alternate history because something changes in the outcome of the final thing.

Jason

Oh, okay.

Elliot

But it seemed plausible the way he presented it, and that part of the book represented a small fraction of the total thing that went on. It was just a fascinating story to read.

Jason

Nice, I'll have to check it out. Well thanks so much, Elliot, and sharing your work experiences.

Elliot

Thank you. And just remember: if today isn't a bright and sunny day and you want sunny weather, at some time it will be in the future and I hope it happens for you.

Jason

That's good to remember and keep in mind. Well that's our show for today. Please join us next time, rain or shine.