Transcript of "Episode 10: Jeff Yuhas, K-12 Science Teacher at the Morristown-Beard School in Morristown, New Jersey"

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 on careers in the atmospheric and related sciences. I'm Kelly Savoie and I'm here with Brandon Crose and we'll be your hosts. Our podcast series will give you the opportunity to step into the shoes of an expert working in weather, water, and climate sciences.

Brandon Crose:

We are happy to introduce today's guest, Jeff Yuhas, who is a K-12 science teacher at the Morristown-Beard School in Morristown, New Jersey. Thanks so much for joining us.

Jeff Yuhas:

My pleasure to be here.

Kelly:

Jeff, could you tell us a little bit about your educational background and what sparked your interest in meteorology?

Jeff:

I think like a lot of people in meteorology, the spark and interest goes way back when I was a kid. I had a paper route back when the *Globe* and the *Herald* still let people deliver newspapers. And one, I was always concerned with what the weather would be in the morning and I also got to watch Don Kent on WBZ TV every morning, and just seeing it every day got me very interested in it. And then as a kid there was always the snow days you were trying to track to see if you were going to get any of those. Growing up we sailed, so knowing about map reading and learning about sea breezes and the Marblehead hurricane that always blow in and out of the Harbor every day, were sort of things that as you got interested in them realizing there was more and more to do.

Jeff:

Went to college, ended up sort of leaning towards geology after not really enjoying math once it became too much with linear algebra and then trying physics, but then electricity and magnetism kind of steered me away. Not to mention the fact that the professor did true/false questions, which I think that experience might be something that was in the back of my head and say, "I can teach better than this someday." Although at the time I didn't think that I was going to be doing that. And then I went on to grad school at Penn State in meteorology.

Brandon:

I very much relate to your story of having been a paper boy. I was one myself actually during the . . . there was a horrific nor'easter I want to say in 1996.

Jeff:

I go back a little before that. Yeah, it was the blizzard of '78.

Kelly:

Oh yeah, I remember that one.

Jeff:

That I was delivering newspapers for and the first day of the blizzard was the first time that the *Globe* never put out a paper. And then the second day they advertise that they only printed so many thousands of papers, but I got 30 of them and I was climbing up and down snowdrifts. Got a lot of good tips that week.

Brandon:

Yeah, the newspaper gave me a t-shirt that said I survived the blizzard of '96. It had this illustration of a paper boy holding a paper above a snowdrift and basically buried up to his head.

Jeff:

That's what it was like.

Brandon:

That was basically my experience all along.

Kelly:

So why didn't you just immediately major in meteorology? Did you not know enough about it or was it not offered at the school you were at? How did you switch?

Jeff:

So I switched . . . I went to Brown University as an undergrad and they did not have an atmospheric sciences or a meteorology program and it wasn't until my junior year that I met Dr. Thompson Webb who was doing paleoclimatology and looking at pollen fossils and things like that, that I got interested in it and he kind of guided me along. I didn't do any . . . He had one weather and climate course that he taught that I took, but he also sort of guided me to hone up on my differential equations and fluid mechanics and things like that, and was probably the one that guided me the most towards thinking about going to grad school for meteorology.

Brandon:

Cool. Other than being a paper boy, what was your first job in the field and how did you end up where you are now?

Jeff:

The first job in the field was after graduating from Penn State and still not thinking of myself as a teacher, having had enough of an experience there knowing I didn't want to go into broadcast meteorology. I started as an environmental consultant doing air quality meteorology for a company called Ensor, which has probably been two or three other things since then. And I did air quality modeling to support state and federal air permitting. Did that for about eight years. And in the movie *Risky Business*, there's a scene where he's sitting in his chem class and he's looking up at the clock and the clock starts ticking backwards and that's sort of how my day started to feel in consulting and I decided I needed to get out. And really on a whim applied for teaching job.

Jeff:

At the time I had two of my boys and they were young. I enjoyed coaching, I enjoyed teaching things to kids and there happened to be a science job posted in the town I lived in. I applied, never heard back. And then later that summer, about two weeks before the school year started, I got a call from a principal at a different school district who had just lost a teacher having filled the position that I had applied for and saw my name in the list of people there and called me in, offered the job. And two weeks later I was a high school science teacher.

Brandon:

So you had plenty of time to prepare.

Jeff:

Very much time. It was like, here's the textbook, you got a week. Good luck.

Kelly:

So what opportunities did you pursue that you knew would be beneficial to keeping the job? As a teacher what is required of you to stay current?

Jeff:

I think that there's sort of two parts of teaching. There's the skills to be a good teacher and then there's understanding and knowing the content. And I think that all along the one thing that's been constant through being successful as a grad student or in consulting or in teaching, are the basic communication skills you develop. I think that all along being comfortable presenting, being able to make an argument or make your case or to share ideas in ways that people understand them is sort of the number one skill. And anywhere along the way, I was definitely not preparing to be a teacher because again until almost the last minute it wasn't something that was necessarily on my radar, but I think that's something that more than any other sort of non-weather based non-science based skill is something that served me best.

Brandon:

So did you have any mentors along the way that provided you with the guidance that you kind of still employ today?

Jeff:

I think I mentioned Dr. Thompson Webb at Brown is sort of the one that said maybe meteorology is something I could do as a career. And he was sort of the one that first sort of guided me in that direction. And at Penn State, Dr. Peter Bannon was my advisor there. And once he realized or we realized together that I was not going to be a PhD candidate, he was actually very good at helping me understand what I wanted to do in getting out with my master's degree and he was actually the one who sort of helped me move along.

Jeff:

Once I became a teacher, you sort of had those mentors that you may not know they were mentors at the time. But back in high school I had a physics teacher, Mr. Greenman, who was wonderful, and like I said, at the time he didn't necessarily inspire me to be a teacher, but as I've gone into the field, I sort of think back in classes with him and there's a lot that I do today that I reflect back on the ways that he was teaching, both in the way he just presented material and the way he kind of interacted with and cared for his students.

Kelly:

So when you started teaching, have you been at the same school? Have you been a teacher at different schools? How long have you been a teacher?

Jeff:

I'm in my 23rd year of teaching.

Kelly:

Wow.

Brandon:

Wow.

Jeff:

I started at Reading Memorial High School. That was that first job with—very gratefully—a principal and a science department chair that decided to take a chance on me. And then after three years there I went to Concord-Carlisle High School, also in Massachusetts. There I got to teach in their earth science program and that's something that's sort of got me to be able to teach something more in line with my interest and my background. And after doing that for 13 years, the public education scene started getting to me. I think there's a lot going on with standards and a lot going on with evaluation programs and things like that. And while it may be necessary in some ways, for me, it became kind of stifling.

Jeff:

And so at that point I decided to look into teaching in an independent school and that's how I ended up down here in New Jersey at the Morristown-Beard School where I do freshman physics, which is fun to play with the freshmen. And I also, at the senior level, we have an environmental science program, which for me was a great opportunity to come down here and

teach this almost college seminar type course, which would have trouble fitting in in a lot of different public schools.

Brandon:

Yeah.

Kelly:

What do you consider the advantages and disadvantages between an independent school and a public school?

Jeff:

I think the advantages of public school to some extent, what drove me out personally can be an advantage. There's a lot more structure. I think there's a lot more job security with teacher unions and things along those lines and for the most part, salaries in public schools tend to be higher than in private schools. What I have found in independent school is that I have much more freedom and choice in what I want to do with my curriculum and the kind of lessons that I want to teach.

Kelly:

So do you feel like you made the right decision switching? You're happy?

Jeff:

It's been great for me, very happy. Especially having found an opportunity to really be able to do the environmental science program where, if there's a lot going on, I can lesson plan while reading the *New York Times* Sunday morning and address current event issues that week with my students.

Kelly:

So what other courses beyond math and science . . . if somebody really wanted to pursue a position as a public school teacher or a private school teacher, and say they did have a degree in science, are there certain professional development opportunities? I mean I'm assuming most people who go that route, who know about it ahead of time would do like student teaching or some type of internship.

Jeff:

I think today, especially if you're going to get into public school, the certification requirements are strict enough that it really is very beneficial while you're in college to either actually get an education degree or a lot of schools will sort of allow either a minor or some kind of a certification program, where through the school you'll get the background and you do your student teaching or things along those lines. It's a little trickier if you don't have the education degree to get into the public schools. One advantage of private schools is there are no certification requirements and so a private school has the option of taking a chance on somebody just because of a skill set that they may have picked up while they're in college.

Brandon:

Right. So dovetailing on that a little bit because you're unique in that you sort of changed fields in the middle of your career into education. You mentioned earlier that there's the content skill and then there's also the classroom management skill. What was learning classroom management like for you and is there anything you could have done to prepare yourself better in retrospect?

Jeff:

Classroom management when I first started was a disaster. I will be the first to admit that and there are some people I know who tell me that they were stunned that I decided to go back for year two of teaching. I think the conundrum is if you're going into teaching, you're probably doing it because you enjoyed some aspect of being at school. You enjoyed some aspect of connecting with your teachers or what you were doing. And you were also probably a decent student. So of course you did your homework, of course you studied for tests and things like that. And to stand in front of a classroom for the first time and realize that those students, no matter how much they may like, would rather be almost anywhere besides in your class, and to try to work through the idea that their default position isn't going to be to pay attention to you, it was a very, very big challenge.

Brandon:

Yeah. Yeah, I taught a college for a year after grad school as an adjunct and yeah, I got a taste of that.

Jeff:

I think with the students, I think the lesson is, I think most young teachers come in and the mistake they make is they want to be every student's friend.

Kelly:

Oh yeah. Yes.

Jeff:

And I think that the day that I realized that the students actually wanted me to be the adult in the room, the day that the students really respected me more if I was myself, and I was genuine, and I was honest with who I was, it was the day that my classroom management started to become much better.

Kelly:

And I'm assuming a good sense of humor doesn't hurt either.

Jeff:

Right. With a little slight self-deprecation because the students will always be coming at you with something.

Brandon:

So over the course of your career so far, what is the most exciting thing that has happened to you?

Jeff:

I think the most exciting moment came recently and it was actually set up a long time ago when I used to teach at Concord-Carlisle. One of the things I like to do the most is those opportunities you get to work with students outside of the classroom, either as a club advisor, as a coach or things like that. And almost 15 years ago, I created a trip to Hawaii when I was teaching earth science. We were frustrated. We figured the French teachers got to go to Paris and the Latin teachers got to go to Rome and we told the principal, "Shouldn't we get to go to Hawaii and study volcanoes?" And he kind of said, "Sure," not thinking anything of it. And then when we came to him with an itinerary for a trip, he sort of realized we had him.

Kelly:

Oh, your students were psyched.

Jeff:

The students were very happy. So we ran that trip for a few years in Concord. At the time, my son, my youngest son was three. And then when we moved down to New Jersey, my son started here at the Morristown-Beard School as a sixth grader. And then the trip is for . . . I started the trip up again here, it's for juniors and this past spring he came on the trip with me. And the ability to have something that I had shared with almost a hundred students over the years, to be able to share it with him was something that was very, very exciting.

Brandon:

That's great.

Kelly:

So for our listeners who may be interested in possibly pursuing a career as a teacher, what's your typical day on the job like?

Jeff:

Well, the hardest thing to get used to, I think for people who get into teaching is the structure of the day, where you really have to be somewhere at a certain time and you have to plan when you're going to get your cup of coffee and you have to plan when you're going to go to the bathroom and things like that over the course of the day. The best part about it is that there really aren't that many typical days. I could have four classes doing the same thing and the fact that I'm presenting them in a room full of teenagers means that no two classes will go the same. And I think that's something that going back to a skill that's good to have. You almost have to have a level of improv ability. You sort of need to be able to see where you're going to end up, but know that the students could take you on one of several different paths to get there.

Jeff:

So I think in a good way, and it's not one of those situations where you have a to-do list and your day gets out of hand and you don't get anywhere to done on your to-do list. I find it really is that the students are such a wildcard. You walk in on any given day and you really don't know what kind of experiences you're going to have.

Brandon:

So what do you like most about your job?

Jeff:

It's the kids. I think one thing I would say is that you can't get into teaching K-12 science because you love just the science. I mean you need to be able to love getting kids to be excited about science, but it's not a very high-level science. There's nothing I'm doing that goes that far beyond what I did in high school many, many years ago. So if it's about experiencing cutting edge science, you don't really get that teaching in high school. But the kids, the kids are great, the kids keep you young, the kids give you energy and then you have those moments where it could be electric circuits, it could be hurricanes, when the students sort of have that "aha" moment and they just get it. And especially when all of a sudden they're getting excited about something that you're excited about. Those moments are the best. And also the fact that I still get excited about snow days is really kind of nice.

Kelly:

So on the other end of the spectrum, what's the most challenging thing about your job?

Jeff:

Can it be the same answer?

Kelly:

Sure. It sure can.

Jeff:

I mean it's the kids, right. And I think that while you may have administrators that drive you crazy, that sort of stuff isn't going to be no different than any other career. But these kids, this wildcard, I mean because someday you're going to be standing there and you're going to be excited about a lesson plan and you're going to have the 55 minute class to fill and it may be something that the day before you did with one class and you did not even get through it. And then the next day you try to come with full of energy with the exact same thing and you present it to your class and it just drops like a lead balloon. And all of a sudden, you're 15 minutes in with another 30 minutes to go and you're digging into your bag of tricks because you need more content because it just didn't go the way you planned.

Jeff:

When stuff doesn't work, when you're not getting the reaction from the students that you think you're going to get, that's always challenging. I think, getting back to earlier comments, I mean

the discipline side of things is not the fun part of the job, but sort of like parenting. It's a necessary part of it.

Brandon:

Right. You mentioned improv. Did you take an actual improv class or have you kind of learned that on the job?

Jeff:

I never actually took one, but you learn that you have to be a little quicker than the students.

Brandon:

So do you feel like your job allows for a good work/life balance?

Jeff:

For me it does, especially if you're a family-oriented person. Because if you're teaching, you are at least on a similar schedule to your children. And that's something that I've valued throughout my entire career is that, just to be able to work full-time, but still be able to coach all my sons in sports, to still be able to attend events, to be able to go to every school assembly you could. So I think from that standpoint it's been great. It's sometimes a little challenging as far as the schedule goes because what you also learn is that if you're a teacher, you're going to bed a couple hours earlier than all of your friends.

Kelly:

What time does your day start?

Jeff:

We actually start kind of late here. We don't start until 8:00.

Kelly:

Oh, that's good.

Jeff:

Before here, I was starting at 7:25 and teachers were expected to be there at 7:00. So as you can imagine, sort of what comes up is you're going to make dinner plans with friends and you're saying 5:00 and they're saying 7:30 and you're saying I'm in bed by 7:30 can we make it a little earlier? And so there's a little bit of a challenge there, but nothing you really can't work out.

Kelly:

I would imagine that you don't have as much flexibility either as some other job where you have certain vacations and I'm not sure if it's the same with independent schools that it is with public schools, but you're expected to be there. If you're not there, you probably have to go through a lot of trouble to come up with a lesson plan for a substitute teacher. So I'm guessing that it's not good to just say, "Hey, I can't come in today."

Jeff:

Oh, absolutely. There's no doubt that it takes more work to prepare for my classes when I'm not going to be here than when I am going to be here because you have to script it out in so much more detail for someone who's not you to be able to run the day that you want to run. And as far as the timing of the vacation goes, it's a long, long time since I've been to the beach in September. I've never been able to take advantage of that. I've never been able to take advantage of the discount rates that Disney offers at different times of the year. And that gets back a little bit to even the day, and I suppose I didn't always think about it because I've been doing it so long, but also over the course of the year. Your time is very, very, very structured and it is difficult to get personal time beyond a day here and a day there. So that's something that does take a little getting used to.

Brandon:

How about summers? Are you off or is there something else you do to bring in more income or to keep yourself busy?

Jeff:

So I think that's something that as I've gotten older and further along in my career, the need to make money in the summertime has been less for me. But I do think that most new teachers to make up for the salary do do something over the summer. For me now, the financial part of the summer is I get to save money because I don't have to pay somebody to redo my deck. I redo the deck. Sort of things like that. But it's also that the summer is a great time for sort of being a continuing learner. I think if you're a good teacher, you're also somebody who always wants to learn. And having time over the summer sort of allows you to pursue a lot of different opportunities. I'm mean I'll make the plug for the stuff that AMS education does, whether Project Atmosphere and the Maury Project and things like those. So to be able to participate in those programs.

Jeff:

Several years ago it was either NOAA or NASA, sponsors the research experience for teachers program, which is sort of like the REU program. And I was able to spend a summer at MIT's Haystack Observatory in Massachusetts, both learning how it works and developing lesson plans. While you can sit back and do nothing and enjoy and relax, the summer does offer you an opportunity to do professional development, to learn new things and to make some few extra bucks if you need to.

Brandon:

Yeah.

Kelly:

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

Jeff:

I don't know. I don't know if I would have gotten here without all the steps I had taken along the way. I mean it would have been nice if I had stayed in public education to start right out of school. Because I do think that teachers who start right out of school in their early to mid-twenties and they go to public school, they tend to be looking near, maxing out in the retirement system by the time they're in their fifties, in the late fifties, which is kind of nice. But that said, I was in my early thirties when I started teaching high school and I don't know if I could have done it if I wasn't more than 10 years older than the students. I think there's a definite challenge there. When you're 22, 23 and you're going to teach high school and you're teaching 18 year old kids who are only four or five years younger than you, it sort of gets a little close as far as that goes.

Kelly:

So are your students aware of the AMS and have you shared anything with them or ever taken them to an annual meeting?

Jeff:

Yes, ever since . . . and I guess it was sort of one of those for me, sort of a career midlife crisis moment about 10, 15 years ago, I sort of got myself more involved in AMS trying to get some more background and get some more sort of a spark into my career. And as doing that, I started going to the annual meeting on a regular basis, got to meet a bunch of AERAs there. And ever since, I've been bringing some high school students to the annual meeting as well.

Brandon:

Oh, wow.

Jeff:

I think that there's both in Concord-Carlisle and here I've started weather services clubs, where I've had students come in and the beauty of that is there are so many skill sets that can apply to a meteorology club. Everything from wanting to forecast to computer graphics to presentation skills, to programming, to tinkering with hardware and stuff like that, that it's really been a wide variety of students that I've gotten involved. And then what I've taken advantage of is having them on a yearly basis go to the annual meeting and presented at the conference and education, sort of sharing posters and occasionally presentations about the work that they've done and how, not necessarily the scientific discoveries they've made, but how these experiences from an education standpoint have been very beneficial to them.

Kelly:

That's excellent.

Jeff:

As a matter of fact, I don't know how soon this will get out, but if you're going to AMS Boston, come find us on the floor of the poster session. I'll have a handful of students again there this year.

Kelly:

That must be such a great experience for them. You must really enjoy it.

Jeff:

It really is. And I think that even if they're not planning on going into meteorology, to be able to be in that kind of environment to sort of see how this is how science is really done. And also, an appreciation to all the members at AMS, they are treated like rock stars. I mean most professors and people like that who are there can't believe that high school kids are doing this and can't believe the opportunities they've had. And so they get a lot more appreciation than sometimes science-based clubs would get back at their high school.

Kelly:

And you mentioned AERAs. For our listeners who aren't familiar with that education program, can you tell us a little bit about that?

Jeff:

So AMS education has had these AERAs and LITs (local implementation teachers), which are teachers that have worked through the AMS doing different programs and really as part of almost like a liaison sort of as an outreach from AMS and in the community to sort of be that connection that helps AMS reach out into the teaching community. And also helps the teaching community sort of feedback into AMS with ideas on how things can be done.

Kelly:

Jeff, we always ask our guests one last fun question at the end of each podcast. What is your all-time favorite movie?

Jeff:

I guess if I can I'll say two.

Kelly:

Sure.

Jeff:

One will be the stereotypical weather geek movie. I love *Twister*. I could watch *Twister* over and over and over again, whether it's true or not or works or not. It's a fun story. And then also, probably just as high-quality of a movie, the old Western *Silverado*, which I've always loved and one I can recite most of the lines from the movie, but also the Kevin Costner character, Jake, is probably why my oldest son is named Jake. I always enjoy watching that one.

Kelly:

Interesting. I haven't seen that. I'm going to have to put that on my list.

Jeff:

It's a great with Brian Dennehy, he and Jeff Goldblum and Kevin Kline. All these people are in it before they were really famous.

Brandon:

So regarding *Twister* as an education professional, what are some of the inaccuracies in that movie if you were to pick one or two?

Jeff:

I think the biggest inaccuracy is that it's an awfully exciting evening that's going on there. But then again, with all those movies, I think it's great because if you can do a movie, I mean when I've done volcanoes, I show *Dante's Peak*. And I have been known to show *The Core*, which is worse than most as far as scientific accuracies go. But I think that all of them, if you can get the kids engaged and get them to think about what's real and what's not real, you're teaching them without them knowing you're teaching them.

Brandon:

That's great. Thank you so much for joining us, Jeff, and sharing your work experiences with us.

Jeff:

It's been my pleasure.

Brandon:

That's our show for today. Please join us next time. Rain or shine.