

Jinny Nathans: This is Jinny Nathans on June 7th, 2018. I am in Denver at the WAF/NWP conference. I'm speaking with Peter Neilley, and he is going to start by telling us how he became a meteorologist.

Peter Neilley: One of the really cool things about our field is that it has so many people who at a very very young age knew they wanted to be meteorologists. You don't see that in many other careers, there's just a passion, it's almost a DNA that's ingrained in people, they just knew that's what they were going to do. I think that creates so much enthusiasm in our science that you just don't see elsewhere. Many meteorologists have some story, some sort of life event that they point to and say "that's when I knew I wanted to be a meteorologist." Oftentimes it's a tornado that went through their grandma's farm or something like that, for me growing up in the Northeast it was snow and northeast snowstorms. I remember at age about eight or nine sitting in front of the TV anticipating the next big snowstorm, and very frustrated that none of the meteorologists that were on the TV were predicting as much snow as I was hoping for, and saying to myself "I can forecast more snow than any of those guys." That was sort of the first overt moment in my life where I realized that DNA that was ingrained in my soul.

JN: And how did you act on that desire to become a meteorologist and make your career path?

PN: So for the most part from that point on I knew that's what I was going to be and through high school and getting ready for college, the scientific sort of path was the one that I was on. I started looking for colleges and it was only the colleges that had meteorology programs that I was going to, and that up until college was the path that I went through. I went to McGill University as an undergraduate, and was embarked in their meteorology undergraduate program and did well, but to be honest I didn't have a great sense of what my meteorology career was going to look like, I just really didn't give it any thought. I just was being instructed in meteorology and very content because I was immersed in meteorology, without a real sense of where this was going to lead me in ten or even fifty years or whatever.

I had the really fortunate, what's the word I'm looking for, you know, I had an undergraduate advisor who brought me into his office one day and said to me, basically asked me... I think it was late in my junior year, maybe early in my senior year, I can't quite remember, and basically said to me, so what are you going to do when you graduate? And I gave him a "I don't know what I'm going to do!" and he says well here's what you're going to do, you're going to apply for graduate school, and here's the application for MIT, which was his alma mater, fill this out and you're going to grad school. It wasn't quite that simple of a conversation, but basically that was it. And I'm incredibly grateful to Roddy Rogers for pointing me on the right path, because I didn't really see the path, I just hadn't really even looked for the path at that point, but he sent me off to MIT and I went there, got my PhD, and went that path thereafter.

JN: So you spent quite a few years in the Green Building. This also leads us into the topic of mentors. At that point and other points in your career, what to you was the influence of mentors you've had?

PN: Probably the most single important thing that happened to me at MIT wasn't any of the educational activities that I undertook, or at least there's the overt, direct educational activities.

But one day Kerry Emanuel took me aside and asked me to work on this new computer that we had in the department that was going to be used for ingesting real-time weather data so that we could use it as part of our weather lab there. This was an era where the digital aspect of weather was just starting. Things like the Unidata program at NCAR hadn't been formed yet, and they were very important in launching the digital era, certainly in the academic environment. But it was just starting that you could start receiving weather data via computer. The department didn't have one, and Kerry basically said to me, "Peter, I would like you to go figure how to use this computer to receive the weather data that we need for the department," and as an undergraduate I took computer classes and I basically aced them all, but I had never thought about computing as a career. It was a tool for me, but never a career.

But this particular project required me to understand computing much more than I had done up to that point, and do so in a very pragmatic way. There was a very specific outcome that we wanted to get, and so I had to use this computer to achieve a real endgame, not just sort of do an academic exercise for class and things like that. And that awoke in me the very sort of pragmatic nature of what my career came to be. I really learned that I was motivated by seeing tangible end results and delivering something that you could see and touch and feel, it wasn't just an academic exercise for me. And that really guided the rest of my career, which has been in the pragmatic side, reducing the science to real practice, to having direct impact on people.

JN: And so have you published in AMS journals results of that kind of work, because sometimes it's hard to find a place for that kind of material in the journals?

PN: So to be frank, the journals are often the container of the more academic nature of the science, and the pragmatic nature, the fruits of what you create are embodied many times in software, numerical weather prediction models for example, and so, given that pragmatic nature of what drives me, I've not been a prolific author of AMS journals. I tend to be more so participating in conferences and representing work that I do in that mode, but not so much journals. I certainly use the journals as part of understanding the science so I can help do the reduction to practice kind of work that is so pragmatic, that is needed for the pragmatic work, but...

JN: It's very interesting to hear you talk about that conferences as the vehicle in a much bigger way for your work than in the published journals. How long have you been a member of AMS?

PN: I believe I first joined either late in my undergraduate school years or early in graduate, so my guess is 35 years or something like that. I was very humbled, and unexpectedly so, to be elected a Fellow of the AMS last year or a year ago. I think it's nice that the AMS recognizes that it's serving the entire weather enterprise, not just the academic, but everything that helps deliver atmospheric sciences to serve society.

JN: That's very important, and it sounds like the meetings are of significant importance to you.

PN: Sure. There is another aspect of the AMS besides the meetings that I think has been important to me in my career, and it's participation on the committees, the STAC committees in particular, but also some of the boards as well. I find it tremendously valuable to have the

interactions with your peers and your colleagues, whether it's at the meetings or in the committees and whatnot. I find it one of the most important ways to advance the science is through the social interactions of the scientist and the technicians who work with us. And those social interactions come in many ways, sometimes they're in written forms through the journals, but they're also in the conferences as well as the meetings. Meetings are also, I'm sorry, the committees are also, because the Society serves us as individuals, it's really important that we all give back to the Society, and I personally feel that sense of duty to the Society, and have been committee chairs and on STAC and many of the boards and things of that sort.

JN: It's amazing to me how effective the Society is, given that so much is volunteer activity.

PN: I think a lot of the success of the Society and the meteorological enterprise as a whole comes back to that point I made earlier, that so many people in our science are there because they have that ingrained DNA passion for the science. It's what they wake up to, and it's what they go to bed with every day. I think that passion really serves our science well.

JN: I'm just going to ask you one more question, because we've sort of been talking around it. After you left school, what was your very first job in meteorology?

PN: I got a postdoc and then a scientific appointment out at NCAR and was there for 10 years. I was in the Research Applications Program, as it was known at that time, it's now known as Research Applications Lab, which was again more the pragmatic side of NCAR, and it suited my career interests very well. I was there for 10 years and during the latter portion of that tenure I was there, we got a contract to develop some artificial intelligence means of forecasting for the Weather Channel. I was the lead scientist on that, and it was a great deal of fun work and very pragmatic advice and when that contract ended I actually followed that work back to the Weather Channel, and have been with the Weather Channel and what it's become now the Weather Company, and now part of IBM, ever since.

JN: That's fascinating. Is there anything that you'd like to add? We're just hitting time.

PN: I think we covered everything that was in my mind coming in, and some more, so that was good.

JN: That was my goal. Thank you very very much.

PN: Wonderful.