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How did you first get interested in weather?

I have been interested in weather as long as I can remember. As a kid growing up near Orlando, Florida, I was fascinated (and perhaps a bit fearful) of the heavy rain, lightning, hail and occasional tornadoes that accompanied the almost daily thunderstorms that occurred through about seven months of the year. On many an afternoon I stood with my nose pressed to the sliding glass door that looked out on our back yard to watch the rain splashing off the patio. As if it were yesterday, memories of the earthy scent of the wet pavement and the strange steam rising off the street as the sun returned following these daily downpours live in me with astounding clarity. It seems only last week that I got a “hurricane day” off from school as Hurricane David brushed Florida’s east coast.

My first experience with snow is also an indelible memory. A freak Orlando snowstorm in the late 1970s dropped a dusting at about 9:00 p.m. on a school night. Since our trusty, local T.V. meteorologist, Danny Trainer, had discussed the possibility of snow on the evening news, my brother and I had been lying awake in bed (as it was a “school night”) in anticipation of experiencing our first snow. Sure enough, about an hour after bed time, my father’s voice pierced the silence as he declared in a voice that carried through the house, “boys...you might want to look outside.” I threw on my rain boots and coat over my pajamas and ran outside in a flash. In the instant wonderland of our front yard, we pelted Dad and Mom with wet snowballs and made a little snowman be scraping all of the slush off of our Chevy. The snowman subsequently camped out in our freezer for about a year before we melted him in the kitchen sink. Later in my youth, my family moved to Maryland where I was able to enjoy the wonder of snow several times each year. To this day, I anticipate an impending snowstorm with a wonderment only exceeded by that of my own children. Given all of this, perhaps it is no mystery that I became a weather man.

However, my path wasn’t always so clear. I started my college career at Penn State University as an electrical engineering major. Engineering seemed to me to be the best way to capitalize on my skills in math and science. I never even considered majoring in meteorology. That all changed



during my sophomore year when I took METEO002, Penn State’s general meteorology course for undergraduates. In that class, my intellectual curiosity fed on my childhood fascination with weather and I was hooked. At the end of the semester, I officially changed my major to meteorology. Being a cadet in Air Force R.O.T.C at the time, my college career in meteorology turned into 14 years on active duty as an Air Force Weather Officer. Along the way, I earned an M. S. in Atmospheric Science from Colorado State

Figure 1. This is me taking a tactical weather observation on a deployment with HMX-1.

University. In 2006, I separated from active duty (transferring to the Air Force Reserve) and landed a job as a Senior Engineering Specialist and consulting meteorologist at The Aerospace Corporation in Chantilly, VA.

How did you find your first job, and what was it like?

In 2006, I was hired by The Aerospace Corporation as a Senior Engineering Specialist. This was my first job in the private sector. I didn't find this job any more than it found me. Near the end of my stint on Air Force active duty, several professional, private sector associates recruited me. Following a series of interviews, I was hired to work in Aerospace's technical "matrix" called the Engineering and Technology Group (ETG). The position into which I was hired did not specifically require my expertise as a meteorologist for every task. However, Aerospace recognized that my educational background in physical science, along with experience acquired during my Air Force career, had prepared me well to work in a multi-disciplinary environment.

Aerospace is a not-for-profit, Federally Funded Research and Development Center that supports the Air Force's space program. ETG is Aerospace's think tank where hard problems are tackled by niche experts and cross-functional teams. ETG is a very collegial, almost academic environment that prides itself in subject matter expertise across many technical disciplines and high quality applied technical research and analysis. It is not uncommon for members of ETG's technical staff to present at conferences and publish papers in peer-reviewed journals. My division was called the Sensor Engineering and Exploitation Department and was comprised of mathematicians, engineers and scientists from a variety of disciplines. My job was to provide meteorological consultation (when it was required) and leadership to cross-functional project teams.

I'd characterize my job as interesting and rewording work with time divided between independent technical analysis and collaborative efforts with other staff members. These experiences broadened my technical knowledge base in ways I never imagined. My work on various projects thrust me into advisory roles to senior personnel in multiple government organizations including the Department of Defense, Department of Homeland Security, National Oceanographic and Atmospheric Administration (NOAA) and the National Air and Space Administration (NASA).

How would you describe your current job and how is it different from a forecasting job and other jobs you've had?

Today, I am still with The Aerospace Corporation in the Engineering and Technology Group. I have been promoted several times to Senior Project Leader. As the title indicates, this is a senior position in the company with a broad range of responsibilities emphasizing technical excellence and team leadership. I now work in the Advanced Sensor Engineering Department (ASED). ASED specializes in end-to-end development of advanced sensors. At any one time, I am leading two to three project teams while making substantive technical contributions to others. I spend about half of my time supporting the NPOESS Integrated Program Office (IPO).

As described above, my job is very much like working in academia. We are essentially doing applied research and development as well as technical analysis to provide advice to the government. On rare occasions, I have been asked to provide forecasts to support the planning of field activities. My primary role as an atmospheric scientist is to act as an internal and external meteorological consultant. To enhance my credentials, I earned a certified consulting meteorologist (CCM) designation from the American Meteorological Society in 2008.

Regarding forecasting jobs, I spent about six years in the Air Force in operational units with weather forecasting responsibilities. In the military, these are high-paced environments in which you are directly responsible on a daily basis for providing information to ensure the safety and security of American military personnel. In the Air Force, your efforts are usually focused on forecasting for aviation and resource protection. These jobs can involve long hours and shift work. In the private sector, forecasting jobs can involve a similar work pace and schedule. Private sector forecasters support a range of activities from commercial aviation to agriculture and even retail. The nature of these private sector forecasting jobs is almost nothing like the applied science environment at Aerospace.

Is forecasting the weather part of your job anymore?

I occasionally provide weather forecast support to assist with the planning of engineering field activities. Otherwise, forecasting is not a big part of my job description.

What would you say to those interested in working in the private sector?

1. Build your professional network. Your best employment opportunities will probably originate with people you know.
2. Pursue a graduate degree (at least an M.S.) within 5 years of completing your undergraduate degree – particularly to enhance your employability for work outside of forecasting.
3. Aspire to acquire your AMS CCM designation once you have the required experience and education.
4. Be flexible with your requirements on where you will live. Your choices are relatively limited in private sector meteorology compared to many other types of careers.
5. Be open to expand beyond traditional meteorological disciplines such as forecasting. Many jobs throughout the private sector are in applied meteorology or even applied physical science.
6. Be able to articulate how your skills as a meteorologist (or a physical scientist) have prepared you to work on a wide variety of problems.