Transcript of "Ryder Fox, Research Fellow in the Department of Energy Computational Science Graduate Fellowship Program at the University of Miami and Consultant at Diversity Learning Solutions"

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 Rex Horner 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.

Rex Horner:

We are excited to introduce today's guest, Ryder Fox, a research fellow in the Department of Energy Computational Science Graduate Fellowship Program at the University of Miami and a consultant at Diversity Learning Solutions. Welcome, Ryder. Thanks so much for joining us.

Ryder Fox:

Thanks, Rex.

Kelly:

Ryder, can you tell us a little bit about when you became interested in science and how it influenced your educational path?

Ryder:

Sure. My story is very nontraditional, so I'll start by just giving a little bit of background. I was kicked out of my family's home when I was a teenager and I also did not grow up in a home that allowed me access to education. So science for me was an investigation of the world in ways that were nonacademic. And it was my career. I was eighteen when I got a full-time career working as a news videographer. And so I was shooting a lot of severe weather out in the field and worked all over the U.S. in my time as a videographer. And that's what really informed my interest in science at the academic level.

Kelly:

So that's interesting. So how were you learning the science on your own? What types of things did you pursue?

Ryder:

As a child I really didn't have any access to science. So it was more in my working years that I began to work with emergency management, understand the weather by being out in the field. It

was not until I started being able to have access to college classes, that I was able to more deeply go into the academic nature of science, but I did a lot to teach myself math and computing and to get every kind of educational opportunity that I could as I grew through my twenties and early thirties.

Kelly:

When you enrolled in college, did you know right away that you wanted to major in a certain science, was it meteorology or was it a different field?

Ryder:

I did not know. I didn't even know exactly what the pathway traditionally was. I took an earth science class pretty early in my community college experience. And at that time was able to put a little bit more together with the work that I had been doing out in the field and the things that interested me about science. And when I transferred into the university level, I actually pursued a physics degree because physics was, in the department at the school that I attended, was who was doing the tropical meteorology research.

Kelly:

Oh, so that's interesting. A physics degree. And then did you go on to pursue a higher degree after that in a different major?

Ryder:

Yeah, I'm currently doing a PhD and I'm getting that in meteorology and physical oceanography.

Kelly:

Excellent. So I'm sure your physics courses really helped with a foundation for that higher degree.

Rex:

While at college what else were you doing outside of the classroom that helped supplement your education?

Ryder:

For me the most important thing to do besides be in a classroom, was to do work with my hands, to do research, to actually be applying the information that I was gaining in the classroom, because I am a very nontraditional learner and my entire work history has been manual. And so right away, I pursued an opportunity with research by asking if I could volunteer in my department and learning how to code, learning how atmospheric models work and continuing that research within the department for the whole time that I was an undergrad. And then I started working toward internships that would be outside of my university so that I could gain more lab experience. But the ability to apply knowledge is really where I learn the best, because that's how I've taught myself everything. And beyond that, I do a lot of volunteer work and diversity advocacy.

Kelly:
Did you have any mentors that provided you with guidance along the way?

Ryder:
I think in undergrad my greatest mentor was my advisor and I really lucked out with having somebody who could see me and see my value regardless of my background. And I additionally worked as a Significant Opportunities in Atmospheric Research and Science (SOARS) Protégé at UCAR and that provided me with a wealth of mentors and people that really value people who come with different backgrounds and experiences.

Kelly:
So for our listeners who aren't familiar with the SOARS program, could you tell us a little bit about that? You know, just a very general idea of what that program's about.

Ryder:
It's a diversity related internship that is a bridge. So it is meant to serve people in the upper undergrad years, as well as that bridge into graduate school. And it is built around individuals who have not traditionally had access to higher level education and to the geoscientist people who are not represented in geosciences. And so not only does the internship pay very well and provide very well for the protégés or the interns, but it also provides them with writing mentors, computing mentors, coaches, people who are research-specific mentors, they give us graduate school education, how to take your GRE, how to write applications and those kinds of things. And additionally they take care of important things like people who have children, making sure that there's childcare, making sure that as a trans individual myself, making sure that I was safe from harassment that I was experiencing when I was in the city during my time there. So they really care for the entire individual as a whole and by that token, get more people into the geosciences.

Kelly:
Sounds like an awesome program. So is it just an application process?

Ryder:
It is an application process. It's traditional in the sense of you write an essay and have to go through a selection committee. It is, I believe about a 1% rate of people who go through the application process and get chosen to be protégés. I know that they tell us in the beginning that we've surpassed the MIT acceptance rates. So it's intense in that sense, but the big difference is in their application, is that they really want to see people's true stories and they want to see what challenges you're overcoming. They don't believe that the GPA is what tells the story.

Rex:
So if STEM students wanted to branch outside the traditional curriculum that a college might offer, what skills, classes, or extracurricular activities would you recommend as an added benefit?

Ryder:

I think that STEM students have very rigorous training programs in the classroom. And so there's not necessarily a lot that's missing in classroom learning. I do believe that if you can get coding experience and field or lab experience, even if you don't apply that in your actual career, the ability to think through processes that are being used by a lot of the people that you're going to work with, and be able to communicate those things from a broader perspective, is going to help you continue to work interdisciplinary. And you're going to need to do that through all of your career.

Ryder:

I additionally think that things that aren't brought into traditional STEM educations are things like inclusion. Being able to really write a story when you write your research and to write it accessibly so that the public who pay for your science can also learn and understand that science. Getting very solid mentors that you can grow with, but also who think differently than you and gaining more project management skills and really learning how to write a solid proposal, are all very important skills to have.

Kelly:

Yeah. We've heard that a lot about the writing skills, how important they are. Lot of people that we've talked to on the podcasts, it's just crucial to be able to communicate and to write effectively in the sciences.

Ryder:

Yeah. I think that writing is really how we communicate primarily. We have some presentations, they're traditionally 12 minutes long and they're generally attended by specialists more than anything. And so if you are writing in ways that are getting out to the broader public, and you're able to share that in a way that anybody, whether they're a specialist or not can understand, then you really improve access all around.

Kelly:

Ryder could you walk us through a typical day on the job at the University of Miami?

Ryder:

For me, there is no typical day in the job, day in the life, because I'm a person who has supported myself with multiple jobs throughout my educational process. And so I have traditional classroom experiences. I'm still doing coursework. I also have the research deadlines that every other student has. But additionally, I have clientele that I work with, and I volunteer 20 to 40 hours a week often on top of that. So I'm a person who time manages a lot, but I think I spend about five to six hours coding every day. If I'm doing a lot of homework, then my homework might be 30 to 40 hours a week on a rough week, but that's starting to be lessened by the experience within grad school. I'm having fewer classes. But I think a day for me is really about understanding what my priorities are, what my meetings look like, and what my deadlines are and then managing my time in a way that I can do the things that have deadlines, but also make some space for myself and my life and my wife and my community.

Kelly:

For a PhD program. How many credits? Is that like a three, four year program? If somebody was listening and they had no idea what goes on to get a PhD, how much is research? Do you need to publish a paper? How do you earn a PhD?

Ryder:

Yeah. Earning a PhD can be different for different programs and for different schools, even. So whether you're in the atmospheric sciences, even school-to-school that can look differently. But at the University of Miami, a person generally goes to the PhD directly out of the bachelor's program. So that means that it's a five to five and a half-ish year program. Some people take a little bit longer, but at the University of Miami, it really hangs close to that five years. And because you're still doing full graduate coursework like you would if you've got a master's degree before you went to do your PhD, then I think a traditional student in my program takes about 10 credit hours. And I have more than that because my graduate fellowship requires four additional courses that are computational science and mathematics. So I'll have about 12 to 14 classes when I'm completed. And then the general course is to have about three papers published.

Ryder:

I'm sorry. I don't know if the storm is getting in the way of the audio.

Kelly:

I could hear it a little bit.

Ryder:

It's starting to thunder pretty heavily.

Kelly:

That's good. It's a podcast about atmospheric science. We love it.

Ryder:

Indeed. So yeah, I will be ideally publishing two to three papers before I defend my PhD. And I, additionally, as part of my fellowship also will do required lab practicums. And then non-required lab practicums, because for me, training in the lab is really what I value the most.

Rex:

What do you like most about your current routine and what are you studying right now that is really catching your interest?

Ryder:

As a computational scientist, I get to do hours and hours and hours of heavy puzzling. And so I can spend a lot of time on a single script sometimes, which can feel like you're banging your head against a brick wall, but I love the puzzle of it. It's always some amount of logic that if I can figure out how to ... it's like writing, if I know how to say what it is, I'm trying to explain to my best friend or my grandparent or somebody like that, then I'm going to be able to get that

script to run because I just need to simplify it a little bit more. And so I spend a lot of my time just really lost in those puzzles, but I love being able to lose myself in something and then getting to see it work on the other side.

Kelly:

So you mentioned there's lots of time management. Do you find that the most challenging thing or is there something else more challenging?

Ryder:

It's not challenging to me because it's what I've done my entire life. I think it's my superpower.

Kelly:

It's a good superpower to have.

Ryder:

I'm a very solid time manager. So I don't think that time management is really a struggle for me. I think that the biggest struggle is that there's a very significant lack of diversity, equity and inclusion in the sciences. And that really causes a regular amount of barriers and barriers that I really should not need to face. And that slows down the learning process and lengthens the time that it takes me to get through my courses or my homework or things that should be aiding my learning process, they usually do not as they could, if I were in a place where I was also represented better. But that said, I am very privileged in a way that I'm able to get a PhD still, and overcome, not just overcome, but I've had mentors and I've had people who experienced similar things that I can reach out to. And there are a lot of individuals who we won't see in the atmospheric sciences if that lack of diversity and equity and inclusion is not seceded.

Kelly:

So do have any strategies for individuals who might be in similar situation that you have been in, that have worked for you or that you think have made it easier for you to overcome some of those problems?

Ryder:

I think that community matters more than anything. That visibility. It's not always safe for people to speak up and to say who they are, how they identify, and people still lose jobs and lose access by speaking to their identity. But every time that somebody can, it means that somebody else sees somebody like themselves, and every time that you have a voice. So me being an older person, I have consistently spoken to things that shouldn't happen, but I don't do that in the fear of losing my job. If I lose my education, I still go on and do the things that I've done in my life because I've had a job for 20 years before I went to school. So that's a privilege that I have, but I think that every time you can see somebody else, hear somebody else, and you can change one person's mind who is already in a position of power, to help them see how important inclusion is and access is to bring more people into your programs that are diverse. Then those are things that are important.

Ryder:

But I think we're still in a place where we have a lot of work that we end up doing ourselves, and it would be great to have more people in advising relationships and faculty and admin, and in those positions of power that were doing the advocacy work for us.

Rex:

How would you answer the question of work-life balance and how it plays out in your career at the moment?

Ryder:

I would say that work-life balance is a privilege that a lot of people don't experience in the traditional sense. I think traditionally work-life balance looks like go to work for 40 hours and do nine to five. And that's not an experience I've ever had, but that's taught me incredible things. And I don't believe that I live a life without balance. I am very aware of what balance looks like for me today, what it looks like this week, etc.

Ryder:

And I also think that if you really, really, really dream and want something, you're not going to get it, if you don't put in the time, whatever that looks like today. That said, I don't think that you should work yourself to the grind for something that you're not passionate about and not inspired by. And so I think that really being able to maintain awareness of what are your needs right now. What are you inspired by? Where can you find yourself losing yourself in the things that you really love? If you can find that at any given season, then you're going to be able to get your priorities in order, find the balance, find what's blocking you, and then reset, and I think that that's a practice that I maintain in every day, in every season and every different opportunity that I have in my life.

Kelly:

Ryder, what's the most exciting thing that's happened to you so far during your career?

Ryder:

Everything.

Kelly:

Is there any one or two things that stand out?

Ryder:

I think it's a challenging question for me because I have had so many opportunities and little young me would never see where I am. I didn't even know what a PhD was. I didn't know really what college meant or what graduate degrees were, so I can't even relate to that as a younger version of me. And I was homeless as a teenager and here I am, so I think that exciting right this second is that I get to educate myself. I get to give myself a gift that I never would have had access to or even been able to dream of, and I get to dream now. And that's really exciting for me. And I think that what I have learned in my life is that every time there's something a little bit

uncomfortable, a little bit scary, but going to push me outside of a comfort zone, that it's an opportunity.

Ryder:

And if I open myself to it and really put everything that I have inside of that, then I'm going to be able to live at the best of myself. And that's exciting.

Rex:

Do you have any career advice for job seekers who are writing their resume or preparing for an interview?

Ryder:

I think learning how to market yourself is a skill. And maybe one that we add back in one of those other questions. Really being able to sell your story is so valuable and knowing what your audience is, is really what you're doing every time that you write a resume and every time that you go on an interview. And so I think that learning how to succinctly say, this is who I am, and this is what matters to me, and this is what I've done and how I can show that I have the skills that you need, or that I'm willing to gain the skills that you need, I think that's really what's most important in resume and cover letter and interview processes.

Ryder:

I think that we are taught in a lot of academia to get the highest GPA and to get the highest test scores. And that's just very minimally reflective of your real skills in the world outside of school. So I think that those things are important, but I think that there are also a lot of individuals that aren't going to have that GPA, that have all of the skills that you're looking for in an employee. I think additionally that what we aren't told very often is that resumes should include who we are and what we value, because we forget that when we go on an interview, we are also interviewing the people that we are going to give a huge chunk of our lives to. So making sure that the organization that you are applying to and that you're interviewing with also shares your values is going to help you to make sure that you're going to stay inspired and keep wanting to learn and grow in that organization.

Kelly:

That's some good advice, you don't really think of that when you're going for an interview. You're just like, "Oh, I hope I get this job," but you're right. It really is important to be comfortable with the administration and your coworkers and gosh, that might just be like, "Hmm. Even if they want me for this job, I don't know if I want this job." So yeah. That's definitely something to think about.

Ryder:

Yeah. It's something that we don't get told and that we kind of always, if we, it's that good enough, if I can just be good enough, that if they think I'm good enough, and that reduces the power that we have and even the comfort in sharing our own needs and stories, and yes, it's important that we show up and that we are what that company is aiming for, but there's a whole person, a whole you that you're taking to work, and you're taking at least eight hours of your

day. So you really want to make sure that it's in a place that you're going to continue to be inspired by.

Kelly:

Exactly. You're a member of the Board on Women and Minorities at the AMS. Tell us a little bit about that board and what your role is on it.

Ryder:

Yeah, I'm a student member. So I reflect the student vision, I think to some degree, but I support advocacy work and conversations around greater inclusivity in the AMS. And so specifically I speak to the LGBTQ+ experience and to a lot of helping conferences be more inclusive. It's work that I've done at fairly high levels. So I put on conferences and build inclusivity in those spaces and can speak to that. I additionally really love committees, like working with the Coriolis Group and working on the Minority Undergrad Scholarship and try to make sure that I get to be a part of that committee every year.

Rex:

Ryder, we always ask our guests one last fun question at the end of each podcast. I'm curious to know what is your favorite food and tell us why?

Ryder:

I have the luck of being married to this wonderful woman—our anniversary is today. So that's why I chose this question.

Kelly:

Happy anniversary.

Ryder:

Thank you. She can cook everything every, every, every everything. And she gets a little bit mad at me sometimes because she'll say, "What are you craving?" And I say, "How can I crave anything? You're too able and too ..." Every kind of food you can imagine can come to our table." And so in the strangest of turnarounds, what I crave most often is the really simple comfort food that I grew up with when I was poor. Like just a hot dog or meatloaf.

Ryder:

So I thought that that was kind of my fun question right now, because that's surprising to me, but that's really, I don't crave other than the things that I don't usually have.

Kelly:

So I want to ask you a question about meatloaf, because I like it better cold afterwards, like a meatloaf sandwich. Do you like it like a better hot or cold?

Ryder:

I do like it hot, but I also like it tomato-based. And I think in my adult life, I've rarely seen the tomato-based, so I think that that's more reflective of my own experience than what the greater experience of meatloaf is.

Rex:

So what's on the menu for your anniversary dinner tonight?

Ryder:

We actually went out for our first outing in the COVID world that we live in. And so we went out and had a French patisserie and tea room where we had a little corner to ourselves. So that was what we've done so far for lunch. And I don't know what dinner is yet.

Kelly:

Very nice.

Rex:

Well, happy anniversary again and thank you so much for joining us Ryder and sharing all of your experiences with us.

Ryder:

My pleasure.

Rex:

Well, that's our show for today. Please join us next time. Rain or shine.