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AN INTERVIEW WITH DR. LATOYA MYLES
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INTERVIEW CONDUCTED BY
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Molly Graham: This is an interview with Dr. LaToya Myles. The interview is taking place on November 6, 2020. The interviewer is Molly Graham. It's a remote interview with Dr. Myles in Knoxville, Tennessee, and I'm in Scarborough, Maine. I like to start at the beginning. Could you say when and where you were born?

LaToya Myles: Sure. I was born in Kosciusko, Mississippi. I'm going to spell that [laughter] because I see your face. It's K-O-S-C-I-U-S-K-O.

MG: Wow. Do you know the origins of the town name or anything about its history?

LM: I do. It is named for Tadeusz Kościuszko, and he was a Polish – I think it was – general, who fought with [George] Washington. And so the Polish pronunciation is more Kościuszko. But, of course, in the southern vernacular, over time, it became Kosciusko.

MG: I guess that's slightly easier to say.

LM: It's slightly easier; it is. But it's an interesting place to be from – a small town in central Mississippi with a Polish name. [laughter]

MG: Can you describe the town a little bit? I've never been to Mississippi before.

LM: Oh, awesome. Our claim to fame for my small hometown is we are also the birthplace of Oprah Winfrey. She was born there and spent her first few years there being raised by her grandmother. We're also known as the "Beehive of the Hills." While there are some parts of Mississippi, like the Delta and the coast, that are relatively flat, the area where I'm from is actually really hilly. Our town is located along the Natchez Trace Parkway. For individuals, if you've ever driven the parkway between Nashville, going all the way down to Natchez, it crosses the entire state. It is an old Native American trail, is what it's based on, and it was a main route for commerce for a long time. But now it's a beautiful parkway, and it's maintained by the National Park Service. It's really a scenic route to take. It takes you past a lot of small towns and areas in Mississippi that probably most people have never heard of.

MG: I was curious about how your family arrived in that part of Mississippi. Can you talk a little bit about your family history?

LM: Sure. So our roots go back, particularly on my dad's side, pretty far in central Mississippi. A lot of extended family lived in a small community right outside of our town and still remain there to this day with lots of cousins and other extended family. So we've been there for a while family-wise. My mom's side of the family is also from Central Mississippi. She grew up in our county, but her family origins are from the next county over. But we're really rooted in Mississippi on both sides of my family tree, so to speak. It's one of those things where I really enjoyed growing up in a small town. It was a wonderful experience because almost everyone felt like family. It was one of those things where, as a kid, you knew everyone, and everyone knew your family. When you were in school, you were in school with friends and family members as well. So it was a pretty wonderful upbringing.

MG: You said where you were born. Do you mind saying when you were born?

LM: Sure. August 18, 1976.

MG: Do you know how your parents met?

LM: It's so funny. They are both in education, both retired now, but they actually met in those education circles. We're from a small town. So it's one of those [towns] where everybody knows everybody. So they met when my dad had come back from college and moved back home and started his teaching career in our area.

MG: Did they teach at different schools?

LM: Yes. It's kind of interesting because my dad actually worked in the – when I was young and firstborn, he worked in the central office, like the superintendent's office for our school district. My mom worked at one of the elementary schools where I actually went to school. I tell my kids all the time I actually went to first through sixth grade with my mom in the same school building that I was.

MG: What was that like for you? My mom was a substitute teacher, and it was painful.

LM: At that time, it was actually kind of fun because she was a teacher that the kids liked, and she worked with kids that needed some extra help outside of the classroom. So she really enjoyed that, and the kids enjoyed being around her. For me, it was fun because I really enjoyed school growing up. So I was able to get there early when the teachers arrived and stay late when my mom had duty. So it was a lot of fun for me.

MG: Good. Do you have siblings?

LM: I do. I have one brother. He was born the summer I turned thirteen.

MG: That's quite a gap.

LM: Yes. Very, very big age gap. He actually now has his PhD in business, and he's a professor in California.

MG: Oh, neat. Well, tell me, what else you remember about growing up there, and particularly, your experiences in school?

LM: Oh, gosh. I remember great friends and being outside a lot, not just at times we're on the playground for recess. But sometimes, we had a science class or something outside. I think some of those early experiences helped spark my interest in the environment. I have a really great memory of my first science project that I was engaged [in] with elementary school. It was so much fun putting together the project. It involved plants, and so understanding the life cycle of plants and how they grow and understanding all of the nurture and care and environmental factors that a plant needs to thrive – it was just so interesting to me. That really is, I think, the

pivotal moment for me where I realized the world of science and how interesting it could be and how it related to things that I knew about as a kid.

MG: When would you say that was?

LM: I want to say that was fifth grade.

MG: Did you have a particular teacher that was a mentor or nurtured this interest?

LM: So I've had a lot of teachers, and it's so difficult to name names because I always feel like I'll forget someone. But I've had teachers at elementary, at junior high – which my kids now tell me that no longer exists; it's now middle school – and high school and college and graduate school that were pivotal in different ways for me in the scientific realm as well. But also, I have a love of reading; that's probably my favorite hobby. I had teachers who encouraged me to read. I had librarians in the school who were very close to me, who encouraged me with books and just my interest in that area. So it's hard, particularly for K through twelve, to name one teacher because I feel like so many of them had a positive influence on me.

MG: What about your life outside of school growing up? Did you attend church? What activities were you involved in?

LM: Sure. So I was involved in a lot of activities in my community. Since my dad worked in the school district, I spent a lot of time with him in the schools and attending school functions and school events and really learning about how education works from the other side, not just from being a student, but being a classroom teacher and an administrator, and just having different experiences around education. Looking back, I realize we spent – our summer vacations, we would go to the Gulf Coast in Mississippi. But a lot of it was around educational activities – visiting the museums, looking at the aquarium, and just having really enriching experiences that I didn't realize at the time were teachable moments, but looking back, they really were.

MG: In high school, were you starting to think about your next steps and what you wanted to go on to do.

LM: I did. One of the things that my dad, in particular, encouraged me to do was do summer internships. I did those every year of high school with support, of course, from my high school teachers, as well. I was one of those kids where I knew I had an interest in science, but I couldn't have told you what that particular discipline or subject I had an interest in would be. So I did internships at local universities in our state – one in acoustics, one in engineering, another just in general science, another in chemistry. Some of those I realized that while the work was interesting and the people were very gracious and nice, that wasn't the field I wanted to go into. I didn't see myself working in that area in ten, twenty, or thirty years. So I tell some of the students that I mentor all the time that sometimes you have a learning experience or an internship, and it teaches you what you don't want to do. Not everything has to be aligned in the path of this is exactly where I want to be. But sometimes, you can check things off the list after an internship.

MG: Yes, I agree. Were these internships all while you were in high school still?

LM: Yes.

MG: It's amazing you had that opportunity.

LM: It [was]. And it was amazing to me that – because for so long, I was an only child until my brother was born, and so I was very close to my parents. For me, it was scary to go off to a college campus in the summertime as a freshman in high school, a sophomore in high school, and spend a few weeks away from my parents. But I felt like it helped me not only on the education side but personally grow and develop and learn how to be more self-sufficient and independent.

MG: Yes, I want to ask you more about that. But first, how did your life change when your brother was born? At thirteen years old, one can feel they are the center of the world.

LM: I was. So it was a surprise for me. [laughter] I remember my mom telling me that I was going to have a sibling. At that time, I was turning thirteen. That was probably the last thing I expected her to say, honestly. I was just like, “Why?” [laughter] But he was born. Because I was older, he almost became my baby. I wanted to take care of him and feed him. Watching him grow up was a joy. But I tell people all the time, those formative years for him were while I was in high school. So by the time I went off to college, he was going off to kindergarten. [laughter] In some ways, it's almost like we had two different experiences in the household because, by the time he was old enough to really understand things, I was off in college.

MG: Well, it must have given you a preview into motherhood. It took my being a mother to know how hard my mother must have worked.

LM: Absolutely, yes. Because I was like, “Wow, you mean they have to eat every day? They want clean diapers multiple times a day? And if they cry, they can't actually tell you what's wrong? You have to do this interpretation of what you think is wrong.” [laughter] So it was a learning experience. At that time, I just remember helping my mom install the car seats, and then we had to take the stroller everywhere. So suddenly, where she and I used to hop in the car and go shopping, now there were all of these accouterments that we had to take with us for my brother. So I learned a lot about motherhood and about the sacrifice that moms make, too.

MG: How did you arrange these internships? Was a guidance counselor helping you? How were they set up?

LM: I had a wonderful guidance counselor, but then also my dad was in education. At that time, he was principal and guidance counselor at another school in another county. So he was interacting with representatives from universities all the time and would pass things along to me and just encouraged me to apply and to consider the opportunity. Even though as a teenager, I'd be thinking, “Is this something I really want to do? What even is acoustics? What does an engineer do?” and he was so encouraging to say, “Just try it. You're not committing to it for

lifelong. It's two or three weeks. Try it and see what you like." Each one of them was rewarding in their own way.

MG: Were these internships at the University of Mississippi?

LM: So I had one at the University of Mississippi. I had another at Mississippi State University. Then I also had Alcorn State University, which is where I actually ended up going to undergrad. But all in-state, so not too far from home. But for me, they felt a world away.

MG: Did this help with your college search? Did you have a great experience at Alcorn, which made you want to attend there?

LM: My dad, that's his alma mater. So, of course, that was number one on his list. I did a lot of searching. Because, of course, as a teenager, I thought, "Oh, I want to go far from home. I want to go out of state." I looked at a lot of schools. I received a lot of information in the mail and brochures. A lot of that was pre-email, obviously. But then I started winnowing down the list, and one thing my dad encouraged me to think about was, you have to look at – you can get a quality education as long as you're committed to it wherever you want to go. You have to look not only at the educational aspect of the university, but also where do you feel at home as a student, as a young person, because you want somewhere that's going to challenge you and allow you to grow, but then also somewhere that allows you to have a little bit of nurturing, too, when you need that.

MG: You talked about how these internships helped rule out what you didn't want to do. Was it also becoming clearer what you did want to pursue through these experiences?

LM: It was, and there's actually a really funny, ironic story associated with that. My last internship before I started as a freshman in undergrad was at Alcorn State, and it was an Alliance for Minority Participation program. Now they've been renamed Louis Stokes Alliances for Minority Participation program. At that time, it was run by Dr. Troy Stewart at Alcorn State University. I started that summer internship program experience thinking I wanted to be a medical doctor, and therefore I wanted to major in biology. That was when I arrived at Alcorn for that summer. Dr. Stewart was a chemist, a professor of chemistry, and he was very welcoming and opening about all of the sciences, but also reminded me and others in the program that you could also go onto medical school with a chemistry degree as well. I left that summer – one of the activities that we had that summer was to register for our fall courses. So I registered for the fall courses as a biology major, left, and went back home, didn't think twice about it. Then I received in the mail my fall course registration materials, with all of the times and dates of my classes. On the very top of that piece of paper – and it was one of those carbon purple pieces of paper that they used to have – it had my name, and it said, "Major: chemistry." [laughter] So unbeknownst to me, Dr. Stewart had finagled a way for me to become a chemistry major and not a biology major. When I contacted him about that, he said, "You can do both." Actually, that's what I ended up doing is double majoring in chemistry and biology. But if not for him, I wouldn't have really discovered the true passion that I had for chemistry and realized that there were scientific opportunities to do research outside of being a medical doctor.

MG: As someone who does not have a science background, that sounds like an overwhelming course load to do both chemistry and biology. Was it difficult for you?

LM: It wasn't difficult because Alcorn provided such a supportive environment. All of the professors were supportive of students' achievement. So I didn't experience any problems. I had a heavy course load every semester, sometimes taking physical chemistry and anatomy and physiology and organic chemistry all at the same time. [laughter] It was a lot on some days in particular, but I learned so much from that experience. I look back to this day, and I am so grateful and thankful that Dr. Stewart, in his own way, pushed me into chemistry because it has been the foundation for all of my work since then.

MG: I think I also read you had an internship at a nuclear power facility. Is that correct?

LM: I did. So, in addition to being a double major in chemistry and biology, while I was in undergrad, I decided to take an internship at Grand Gulf Nuclear Station, which was nearby in a small town called Port Gibson, Mississippi, which was near my university. So I could commute to work every day from my dorm room, which was nice. It gave me work experience. Some of the staff in the chemistry department there were some of the most dedicated people I've ever worked with. They really had a passion for their jobs and the work they did. For me to see that as an undergraduate student and understand that there were opportunities for science majors in areas that didn't even deal with medicine or pharmacy, that dealt with research, or monitoring, or observations – just a whole different world opened up to me there. I met some amazing people there that were supportive of what I was trying to do as a student and gave me a different perspective about what it means to be a scientist on the private sector side, which was something, unbeknownst to me, I never even considered before. It was a career path that I was completely unfamiliar with.

MG: Can you tell me a little bit about adjusting to college life and the community where Alcorn is?

LM: So it's a very small rural college. It's located in the southwestern part of Mississippi. Literally, it's just a few miles from the Mississippi River and the state of Louisiana. So we're saying the far southwest part of the state. It was, to me, such an interesting experience arriving at Alcorn after having spent that summer there in Dr. Stewart's program because so many of the administrators and staff there fondly remembered my dad or had been in college with him when he was there in the '60s. So it was a good experience to come from a small town where everyone knew each family to go to Alcorn. It felt like a family experience all over again, which was very nice for me and welcoming for me. I think that at Alcorn, I grew up a whole lot because I started meeting people who are not only from Mississippi but from other states and other countries, and just having a broader world perspective, so to speak. While I was pursuing education in the classroom, I felt like I learned a lot from my peers on campus as well.

MG: Did your dad ever share stories from his time at Alcorn? He was there in the '60s, and Alcorn played a major role in the Civil Rights Movement.

LM: Oh, yes, all the time. He talked, again, about some of the students he met because he had grown up – early days in Florida, but really spent his school years in Mississippi and graduated there. So he talked about the students he met from other countries, and he could still recall their names and where they were from, and his roommates that he had, and the people that he went to class with. So he always had stories about their experiences, and what they did, and the buildings they were in, and many of them were buildings where I also had class. [laughter] So it felt like we had this shared history at the university. Then my brother, later on, when it was his time to go to college, also went to Alcorn. So it felt like we just kind of had this multi-generational part of the university story within our family.

MG: What are the chances that one or both of your children will attend Alcorn?

LM: I hope those are high. Pre-pandemic, we would take them to football games, particularly the big rivalry football games, so that they could learn about the campus. When my brother was there, my kids were young. So we would go visit him, and they'd get to be on campus. So I'm hopeful. I've got fingers crossed because that would make another generation from my lineage that's at Alcorn. So we're doing our best to inform them. I say "we" because my husband, I met him at Alcorn when I was a freshman in my first month on campus. So he's an Alcornite. His parents actually met at Alcorn and got married. So it's not only my dad, myself and my brother, it's my husband and his parents as well. So we are all big supporters of the university.

MG: Can you tell me a little bit about your life outside of classes, and then how you met your husband?

LM: Sure. So I actually met my husband within the first month, literally right at the time period of my first month on campus. I had to tell my daughter this story a couple of weeks ago, so it's still fresh for me. She thought it was hilarious [laughter] for her parents to not have known each other, right? So I was walking out of the science building, Bowles Hall, on campus. I saw someone out of the periphery of my eye that was staring at me, but I ignored it and continued to walk down the sidewalk. [laughter] All of a sudden, this gentleman came up behind me, and tapped me, and spoke to me, and asked me if I was on my way to lunch. I said, "Yes." He said, "Well, could I join you?" We ate lunch in the cafeteria. Afterward, he drove me back to my dormitory, and we talked. Literally, we have probably been together almost every day since then.

MG: What's your husband's name?

LM: His name is Gerald with a G, G-E-R-A-L-D.

MG: What's his background? Is his family also from Mississippi?

LM: He is, So he's from Yazoo City, Mississippi. That's where his parents still live. His family background is his parents are both in social sciences. His father and mom have had careers in social sciences, even though they're retired now. My husband majored in social work and sociology. So he followed in their footsteps as well. Particularly my husband's perspective is so different juxtaposed to mine as a scientist because I'm interested in hard data and facts, and

he's always interested in the human aspect and what's the story behind the event? So when we're talking with our kids, in particular, it's interesting because I think they get both perspectives and both sides. Now, they can even predict how I'm going to comment on something versus how their dad's going to comment on something because I'm like, "Well, where are the statistics for that?" My husband's like, "Well, how many people were affected?" So it's really an interesting difference for us. It's something that while we were in school at Alcorn, he would look at my equations in notebooks in chemistry and think, "I never want to do that." I would look at case studies that he was working on in social work class and think, "I never want to do that." But I think we align so much in that we're not the same, but we complement each other.

MG: Good. It sounds like a good match. What else about your time at Alcorn am I missing? You must have done very well there because you graduated cum laude?

LM: Yes, I did. I did graduate magna cum laude. I had an internship there at Grand Gulf. I did a lot of things at Alcorn. I was really involved in the chemistry club and some of the other clubs and groups on campus, and it was a lot of fun. But once I started working at the nuclear power plant in that internship, a lot of my time was focused on classwork and then my employment, the job that I had there. So as I was graduating, I distinctly remember at the graduation ceremony; we were all lined up. Biology [majors] came before chemistry. I went up to get my biology degree, and then when the chemistry row was called, I had to get up again and step over people to get in line to get my chemistry degree. It was for my parents such a proud moment for them.

MG: I bet. Did you know what you would go on to do next? Because you went right into Florida A&M University [FAMU].

LM: Correct. Actually, I started thinking about it in my internship. I started thinking, "Do I want just to go and go to work and start employment and take a break from school? Or do I want to pursue graduate school?" I had another professor, who was actually the chair of the chemistry and physics department at Alcorn State by the name of Dr. Joseph Russell, who said, "I think you should go on to graduate school. I think it is something that you would excel in and that you would grow and learn about the direction that you want to take your scientific career." Dr. Russell had experience not only as the head of our department but also he had spent his summers working at Oak Ridge National Laboratory and other facilities. So he had a lot of contacts, and he had a colleague by the name of Dr. Larry Robinson, who had transitioned from Oak Ridge National Laboratory to Florida A&M University, and was in the Environmental Sciences Institute there. Dr. Russell was the one who said, "You've always talked about enjoying the outdoors. You've always talked about how that sparked your scientific interest. I think you should look at pursuing a graduate degree in the environmental sciences and using that in some way to meld with your chemistry experience." So he contacted Dr. Robinson. Before I could turn around, literally, I applied to FAMU, applied to this institute, and thought about how I could use the work experience I had working in the chemistry department at the nuclear power plant, the chemistry experience I had in undergrad in biology to answer some questions I had about how human activities affect the environment. With Dr. Russell's help, I was able to make that transition and connect with Dr. Robinson. Then I also applied for a STAR Fellowship, a Science to Achieve Results Fellowship from the EPA [Environmental Protection Agency] that Dr. Russell was really instrumental in, in writing letters of recommendation for me, as well as Dr.

Stewart. With that fellowship, that summer, I left Mississippi for the first time and drove to Tallahassee, moved into an apartment, and started my graduate career working under Dr. Robinson.

MG: Was Gerald able to come with you?

LM: So he did. He was actually out working in his hometown, working in social work. So when I moved to Florida, he started looking for positions there. Then he moved shortly thereafter.

MG: Oh, good. Can you tell me a little bit about the course of study at FAMU and your research there?

LM: Sure. So I actually went into that program thinking I wanted to study water pollution because I had been involved in some of the water chemistry work at the nuclear power plant. So that held an interest for me and an interest for Dr. Robinson, as well. So I started that, and that was kind of the focus of my first year, year and a half in the program, while I was funded by EPA. I had the experience to actually travel to scientific conferences and conduct research at Sandia National Laboratory, where I worked with some folks in their radiochemistry group. So it was really a growing experience again, where I learned about what opportunities are out there. I learned about what a national laboratory was. I learned about how the US government is involved in supporting science and research and development. Then, one of the things that – as I was transitioning with that project, Dr. Robinson made me aware of a fellowship from the National Oceanic and Atmospheric Administration [NOAA]. Quite frankly, before that time, I had never heard of NOAA. I didn't know that it existed. I didn't know the mission of the agency at all. So I applied for that fellowship and was blessed enough to receive that fellowship. That was my introduction to NOAA. For me, I took that on, and it changed the trajectory of the research I was interested in because I started working with scientists at NOAA, who were conducting Atmospheric Research. Shortly after receiving the fellowship, I went on my first big field experiment, which was in Tampa, Florida, and just started. I met individuals there that I continue to work with to this day. I started being connected with the Air Resources Laboratory of NOAA. Currently, that's where I work, as well. So it was really a major step career-wise for me into an area I have not even considered much before. I thought some about atmospheric pollution working at the nuclear power plant, just because you look at the cooling tower at the plant and you see the white plumes that people traditionally see. Well, that's water vapor, but it does make you think about what's in the air how, how things travel in the air, and that's what I ended up studying with the Air Resources Laboratory while I was in graduate school on this NOAA fellowship from the Graduate Sciences Program.

MG: Did the Air Resources Laboratory have a field office nearby in Tampa or Tallahassee?

LM: No, they did not. Actually, they were headquartered at the time in Silver Spring, Maryland. They're now in College Park, Maryland. But they had offices in Las Vegas, Nevada; Idaho Falls, Idaho; and Oak Ridge, Tennessee. So the group that I started working with was out of Oak Ridge, Tennessee. But I felt like it was really fortuitous because I was in Tallahassee, and the first two to three field experiments that they were engaged in, in that line of work, were all

outside of Tampa. So I was actually closer to the field studies than some of the folks from the office were.

MG: Can you say again how your research shifted and what you were looking at in the NOAA fellowship?

LM: Sure. So I went away from looking just at water pollution and actually started thinking more along an interdisciplinary route and understanding what happens in the atmosphere, the gases and particles that are in the atmosphere, and then how those gases and particles can affect the chemistry that happens in plants and soils, and how they can be exchanged between the atmosphere and everything on Earth's surface. So when I talk to students, I tell them, "If you think about seeing a dust devil in a parking lot or field, and you see the wind that has that kind of tornadic activity, what I'm trying to understand is when that wind moves along the Earth's surface it's picking up dust or particles, but then it also can deposit those in a different location from where it picked those up." So how does that turbulence, that movement of the wind, affect what particles and gases get picked up in the wind, how they get transported or moved? Then eventually, where do they get deposited again? So that really is at the intersection of not only trying to understand atmospheric sciences but also the environmental aspects of that. Those gases and particles, that's chemistry. Are they interacting as they're moving? So it brought together all of my loves from different disciplines to answer some really complex research questions. As a graduate student, it was exciting because I had wonderful professors in the department. I had support from NOAA's Educational Partnership Program through this fellowship. Then I also had this cadre of NOAA scientists that were engaged in this work, and I could ask them questions and learn about not only collecting the data with different instruments but analyzing the data and understanding how you report that data out by writing journal articles and other peer-reviewed papers and making scientific presentations. It was a learning experience for me and probably invaluable. I don't think I would be working in NOAA today if I had not received that fellowship.

MG: Was graduate school the opportunity to learn about the tools and modeling and techniques that go along with this kind of work?

LM: Absolutely. So I'm on the observation side of things when it comes to my work. I was able to use spectroscopy, as well as integrated sampling techniques, accumulation techniques that previously I didn't even know existed. So a lot of the tools that we use in that type of research are really very cutting-edge, and they have specific applications that we can deploy in a field environment to be able to measure what's in the air at that particular location. Then we can take that data and analyze it to try to understand something about how those gases and particles are emitted and potentially where they might even originate from.

MG: I was just curious about the demographics of your program. Were you among one of only a few women in your class? What was that like?

LM: So at FAMU, we really didn't have that type of gender disparity. I actually think in our department, at one time, we probably had more women in the graduate cadre of students than we did men, but it was always fairly balanced. So I think, in that way, our department was unique

because we did have a really good representation of women in the area. I do have to say, though, as I traveled to things like some of the scientific conferences and participated in meetings, that's when it really struck me how few women there were in this particular area, and even more than that, how few people of color work in this area and are engaged in scientific research at NOAA and in other places. So it's something I think about the geosciences in general, that we really continue to try to struggle in how do we find ways to make all of the scientific disciplines of studying the Earth more representative of the people, not only just in this country but also internationally. How do we open that up so that we have more voices at the table that can help us solve some of these really big challenging questions we have about how the Earth works and how we can help protect and preserve and manage the resources that we have?

MG: I saw that you worked under someone named Norma Ward, and I wasn't sure who she was.

LM: So Norma actually worked at Oak Ridge Associated Universities. She was part of the team that helped manage, on the backend, the fellowship program. So she worked closely with the leadership of the Educational Partnership Program at NOAA to help manage that fellowship program. Norma was fantastic to work with. It was another one of those very fortuitous steps in my career and in my personal journey because I was working as a graduate student with scientists from a NOAA lab in Oak Ridge, Tennessee. Norma, at that time, had been assigned to help manage the fellowship program. She worked in Oak Ridge, Tennessee. So I had a direct line to her because when I traveled to Oak Ridge to meet with all of the scientists that I was being mentored by, I could also be with Norma, who was managing the fellowship program. She did a wonderful job. She was always very supportive. To this day, I think Norma was one of those cheerleaders for students and trying to help facilitate student's transition from undergraduate and graduate school into their careers.

MG: That's precisely what you did because, after graduate school, you'd go on to work in Oak Ridge.

LM: Correct.

MG: Can you talk me through that transition?

LM: Sure. So there was a lot involved in that transition because I was finishing up my PhD. I also got married around the same time and also relocated, moved from Tallahassee, and moved to Knoxville and worked in Oak Ridge. So there were a lot of moving parts in my life at that time. But I think that professionally, it went so smoothly because I already had worked with this group, the Atmospheric Turbulence and Diffusion Division [ATDD] that NOAA has in Oak Ridge. So I was familiar with them, and I was able to go right in, set up an office, and just dive right into the research, and continue to work in the same sub-discipline where I had already been gaining my graduate experience. So I did not take the traditional route of doing a postdoc, and that's because this fellowship program under the Educational Partnership Program allowed me to transition directly from graduate school into a federal position with NOAA, which was really advantageous. I didn't have to go that postdoc route. I felt like I had that similar experience in the fellowship program. Then, immediately after transitioning, I had mentors and now colleagues that I could call on to help me navigate what was going on in the science at that time.

MG: Did you consider any other options or opportunities? Or was this what you knew you wanted to do?

LM: It was what I knew I wanted to do career-wise. Then, for me, another big plus for myself and my husband was that we could stay within driving distance of our families. I know a lot of people take on positions, and they move right to DC, and that works out well for them. But for us, we really wanted to stay in the South because we're blessed to have our parents and extended families still in Mississippi. So we wanted to stay somewhere where we could quite easily get home. I have to say, over the years, that has worked out well for us because our kids are able to go and see their grandparents and see all of our relatives on a more frequent basis.

MG: That's great. What was your first title? Can you describe the work you were doing when you arrived in Oak Ridge?

LM Sure. So it was as a physical scientist. That was my title. I continued doing that work in the discipline of trying to understand the interactions between the atmosphere and the biosphere, specifically the dynamics of a trace gas in the atmosphere called ammonia. I know when I say ammonia, a lot of times people think about the cleaner, but this is actually the gas phase of ammonia, NH₃. It gets emitted mainly from agriculture, sometimes as well from vehicular traffic or industry, but agriculture is the main source in the US. So, if you have ammonia that is leaving from the waste that you have in agriculture or from fertilizer application in agriculture and goes into the atmosphere, I became very curious about what happens to it when it goes into the atmosphere. Does it react with other chemical compounds? How far can it move in the atmosphere before it deposits back out, either in precipitation or gets transferred back to Earth's surface in the wind? I was able to continue to pursue that work once I relocated to Oak Ridge. For me, coming to work in Oak Ridge and living in Knoxville tied everything back together for me, back to undergrad and graduate school, because, as I mentioned, Dr. Russell, who was the chair of our department, spent his summers in Oak Ridge doing research. Then Dr. Robinson, who was my mentor and advisor for graduate school, had spent the first part of his career living in Oak Ridge and working in the Oak Ridge National Laboratory. So, all along through my career, I felt like there were pivotal people in places that helped propel me to the next step, and that I always had some tie that I could look back at previously, where it's almost like that was where I was meant to be. So I've been here ever since. It's been a rewarding experience for me because I've been able to grow in my scientific career and now grow into leadership and management, all while staying in a location that allowed me to raise my family.

MG: That's perfect. I was curious if you are still in touch with Dr. Robinson. He's now the president of Florida A&M University.

LM: I am still in touch with him. I was his first graduate student in that department. So I think we have a special bond. When he was inaugurated as university president, I actually came back to FAMU in Tallahassee and spoke at his inauguration. That was one of the proudest moments for me. He's been such an inspirational figure for me because he truly has epitomized a full research career, starting working in Oak Ridge National Laboratory, transitioning over to academia as a professor and the head of an institute, and then now growing that to become--he's

had a career at NOAA as well, and USDA [United States Department of Agriculture], and then going back to become the president of a university speaks not only to his education and training but just also the opportunities that he was able to take advantage of to grow his career as a scientist. Even though he is president of the university and has a lot of responsibility there, he also still is a scientist at heart.

MG: Can you remind me what year it was that you finished your PhD and then came to Oak Ridge?

LM: Sure. So I moved to Oak Ridge in 2003 and finished writing my dissertation, and then graduated in 2004.

MG: Can you say a little bit about how your career unfolded there and the different areas you focus your research on?

LM: Sure. So I started as a physical scientist, and I was working with, at that time, who was the lab director of the Air Resources Laboratory of NOAA, Bruce Hicks. He sat on my dissertation committee. Bruce was integral in me arriving in Oak Ridge and really taught me a lot about the history of the science that I was doing because he was engaged with colleagues in some of the early air quality studies that happened in the '70s and '80s. Being able to learn from him about how some of these observational studies were developed and how they built collaborations in order to develop monitoring programs to understand long term trends, to have process studies where they were trying to understand what happens in the short term over months and weeks rather than years, was really beneficial to me because I think it helped me have an appreciation for all of the different contributions and how people actually had to work together as a team in order to advance the science.

MG: Can you tell me what you know about the history of this field. I interviewed Nick Heffter last year, and he told me about the balloon studies. It seems like a very particularly brave branch of science. [Editor's Note: Jerome "Nick" Heffter, a meteorologist and modeler with NOAA's Air Resources Laboratory, was a pioneer in modeling the dispersion of nuclear radiation and other atmospheric pollutants during the Cold War era.]

LM: It was. There were balloon studies and a lot of the instrumentation – and I think this is the most exciting part for me. A lot of the instrumentation they were using, they built and developed themselves, along with colleagues who were maybe engineers. So for them, it really was a brave new world, so to speak, because they didn't have off-the-shelf instruments that they could purchase. In many cases, they actually have to go and think about how do I develop a tool that will allow me to measure whatever gas or particle or meteorological variable it was? A lot of the tools we have now are based on some of the work that these early pioneers in the career did and the techniques that they used. The balloon launches are one part of that, trying to understand how we accumulate air into either bags or denuders so that we can then take that sample and go analyze it in a laboratory and understand what's the chemical composition that was in that air sample. So it's actually encouraging, and it shows the growth and trajectory of this discipline over many decades.

MG: Yes, I was interested to hear about the techniques to use nuclear explosives to create craters, harbors, and canals. I'm fascinated by ARL's history.

LM: We have such a rich history. I mentioned the locations of our offices. If you think about the towns where we are located, particularly our field divisions, they're in towns where there was a large presence of the US Department of Energy [DOE], and that's how we started, particularly our laboratory here in Oak Ridge and Idaho Falls and Las Vegas. They started doing weather measurements in conjunction with some of the work that DOE was doing. In Oak Ridge, we date back to having personnel here before NOAA, as an agency and entity, existed. We have personnel who are doing weather research here, and so the genesis of our laboratory goes back to 1948. We've just had some wonderful individuals who've done science and engineering over time that have come through those doors and contributed to our greater story.

MG: Something else that you were a part of was the East Tennessee Ozone Study [ETOS].

LM: Correct.

MG: Can you say a little more about that?

LM: So that was one of the first regional studies I was involved with when I started in Oak Ridge. It was led by a scientist, Will Pendergrass, who actually still sits across the hall from me when we're in the office. He was very interested in trying to understand changes in ozone on a regional scale and developed a network of stations across East Tennessee that was representative of not only the Tennessee Valley but also the Smoky Mountains and the plateau to try to see how ozone was changing across the region over time. It was a really novel network for its time because it did look at the state-of-the-art instrumentation, and then trying to find locations that were representative of an area and then bring all that data together to see what some of the trends were. So I was involved in that with him and started expanding some of the chemistry measurements out at those sites, from ozone to include other things like sulfur dioxide (SO₂), or nitric acid (HNO₃), and ammonia (NH₃), and looking not only a gas phase but also particle measurements at that site.

MG: How did that project evolve?

LM: So it's not ongoing because of changes that happened in the policy. Actually, ozone trends have gone down over time, which is a good thing. So we don't currently have those measurements up and running anymore for ETOS. But I think it served its purpose, and it gave us a lot of regional data across an area that, at that time, was really having to confront the fact that ozone levels were increasing. But now we're on the other side of that, thankfully. I'm looking. I have a ten o'clock [meeting]. So I hate to cut you off.

MG: That's all right. Well, let me send you an email after this. I still a few more questions. It will probably just take another half an hour of your time. We'll find another time to wrap this up.

LM: Okay. That sounds great.

MG: I really appreciate the time you've given me, and I'll let you go right now. Thank you so much.

LM: Okay. All right. Thank you.

MG: Bye-bye.

LM: All right. Bye.

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Reviewed by Molly Graham 11/30/2020

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