SPECIAL SECTION

Conversations With Indigenous Academics And Elders

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SUMMER WILKIE AND DR. MARTY MATLOCK

This transcript represents a conversation between Summer Wilkie and Dr. Marty Matlock, two Cherokee scholars at the University of Arkansas. Dr. Matlock is a tenured faculty member in the University of Arkansas Biological and Agricultural Engineering Department. He is also an advocate for Native American and Indigenous students. Wilkie is a staff member of the Indigenous Food and Agriculture Initiative at the University of Arkansas and is pursuing a master's degree in biological and agricultural engineering. Wilkie interviewed Matlock, her advisor and mentor, on March 14, 2024, discovering more about his educational and career path. This interview offers insights into how institutions have changed and must continue to adapt, especially within STEM education and careers, to further encourage and support Indigenous scholars in these fields of study.

Educational Journey

Dr. Matlock (M): I'll start with my name and credentials. How's that?

Summer Wilkie (S): *OK, sounds good.*

M: PhD, PE Board certified environmental engineer, etc., etc., faculty professor of biological and ag engineering at the University of Arkansas. And you've got all that from my email. Those are my credentials.

S: And you're also a founding member of the 'IKE Alliance and a member of Science and Education for New Civic Engagements and Responsibilities, and this is an interview for our special publication on highlighting our work through the 'IKE Alliance. And you also just recently returned to the University from serving as Senior Advisor for Food Systems Resiliency at USDA.

M: That is correct. All of that.

S: Taking it back to the very beginning, would you just tell us about the story of your educational journey?

M: Certainly. Grew up in Osage County, Oklahoma, the Osage Reservation. I'm a member of the Cherokee Nation and grew up on a very small farm, about 7 acres. We had goats and chickens, and it was a quasi-subsistence lifestyle, because my dad was a machinist and was unemployed for about half of his career because of AFL-CIO strikes and other disruptions in the 60s and 70s.

I learned the value of education, of good education, from two good teachers, and I learned the disproportionate allocation of good education across rural communities by seeing just how underprepared I was for college and how underserved my colleagues and peers in my cohort group were for life based upon ZIP code, and frankly, underfunding of education for rural communities. So that made me particularly sensitive to the inequity of educational preparation for college, and that carries through with my passion for giving young people chances to grow and aspire in academia, as well as in other parts of their lives.

Actually, my college career began at Oklahoma Baptist University, because I didn't know what else I wanted to do, and so I was convinced by a Baptist minister that I ought to become a Baptist minister. I spent two years at Oklahoma Baptist University. I was a licensed Baptist minister at 16 and preached in the local church in my community.

I had two paths: I could go the path of what I consider to be drugs and just self-absorption, or community service, and in my world community service was limited to the church. It's a very narrow view of the universe pre-Internet, and that's just what I saw in front of me. I can tell you my parents weren't happy about that religious trajectory, but two years in Oklahoma Baptist University purged that out of me, and I realized I didn't want to be part of the religious community, and so I transferred to Oklahoma State University to complete my academic journey.

But at that time, I saw the transformation of the world through the first mass media coverage of the famine in Ethiopia. The first famine that the world witnessed real time, and I wanted to fix it. So I went to Oklahoma State University, transferred there, received a bachelor's degree in agronomy, and that's where I met Norman Borlaug. And he taught me that famine was not only an agronomic problem. It was an economic, social, and political problem, and Borlaug suggested that if I wanted to spend my life making things better for humans on the land that I needed to learn everything about how humans live on the land. I had great mentors at Oklahoma State University.

I finished my bachelor's degree, pursued a master's degree in plant physiology and botany because I wanted to understand the challenges of production and yield and disease and toxicity from plants. I had a bit of a gap where I didn't know how to pursue that goal because as a first-generation college student I didn't understand my options. I didn't know what to do, so I got a job working for an environmental engineering firm. Three years later, I was a vice president of that firm, and had 32 employees. Four years later, I turned 30 and realized this isn't what I want to do for my life and got back on track.

So I left the engineering firm and started a PhD in ecology focusing on ecotoxicology. I had lunch with Norm [Borlaug] after I finished all my coursework and was working on my dissertation. He said, "You've got the tools to document the decline of ecosystems. How are you going to make things better?"

Restoration ecology wasn't yet a thing at that time, and so I had a conversation with Bud Burks, my mentor at Oklahoma State. He introduced me to the Department of Agricultural Engineering at Oklahoma State. They were becoming the Department of Biosystems Engineering. They needed me to help introduce biology into their curriculum. I needed them because I needed to learn how to fix things. I'd worked for an environmental engineering firm for eight years, so that was easy enough of a transition.

So I pursued a bachelor's equivalent in biosystems engineering, and then got my PhD in biosystems engineering. That's how I got here. That's my educational background.

S: Very interesting. I learned some new things about you.

M: I bet it wasn't too different from yours, was it?

S: Ah, well, I don't have a PhD yet.

M: Well, that's on you.

S: I do feel like you're kind of my Norman Borlaug, so thanks for being that kind of a mentor.

M: Well, that's an honor. Thank you.

Service and Cultural Connection

S: And so, you served as a chairman of the Cherokee Nation Environmental Protection Commission for 16 years. And it sounds like you always, kind of early on, at least saw yourself seeking out service and a way to give back using your

education and to address issues in communities. But did you always see using your education to serve the Cherokee Nation specifically or Native American community specifically? When did that interest arise?

M: Part of the reason we, my wife and I, moved our family back closer to Oklahoma was to be closer to our kin, our relatives, and those include our Cherokee extended cousins and the Cherokee Nation. And that's what made Arkansas so attractive as a location for us to raise our family and have a career.

I wanted to bring my kids closer to their cultural heritage and Cherokee country, but also my wife is Muscogee (Creek), and [we moved] closer so that she could participate in the extended family activities and Muscogee culture. That happened when our children, our oldest daughter, was four. That's when we made that decision. That was a conscious decision to relocate, change our path of our career. Moved from a top 10 university to a smaller university. At that time, we had less than 14,000 students at the University of Arkansas.

We were tiny. Almost a third less than what we have now.

So that was the intention, and then, just by engagement with our Cherokee leadership at the time, they got to know me. I got to know them, and then I was nominated by the [Tribal] Council to serve on the Environmental Protection Commission. I served on the Commission for three years and then was elected to be the chair and served in that position for 16 years.

So 19 years on that Commission I think, total, with the Council's renewal every four years. I was just looking for ways to serve, but we worked with tribal communities in other ways. As we all know, it's not always easy to find traction and service with tribal communities because they're governmental organizations, they're not NGO's. They're not set up to take volunteers. That took some time to come to understand. And let me tell you, after almost 20 years of working with tribal government, I still don't really understand how it works.

And I would say that's probably true for everybody. It's just a wonderful, wonderful community—but my best analogy is thinking about the big extended family Thanksgiving dinner, raucous and chaotic, and then you try to make a decision. And during that chaos, that's what we do, because we are in the midst of celebrating life every day, and we have to come together and calm down a moment to make a decision, to find a common path. And it's not easy.

S: That makes sense. And as soon as administrations change in tribal governments, priorities change. And it's a whole new landscape for each tribe.

M: We have a tendency among all tribal governments, not just Cherokees, to burn down the house and start over. And you know, the federal government used to do that, and then the federal government implemented civil service programs. And we've tried, and we have now a civil service program with the Cherokee Nation, and that has made transitions a lot more smooth. So we're making progress.

S: That's good to hear. I agree. And getting back to your career in academia, how have you enjoyed being a faculty member? It sounds like you were instrumental in getting our biological and agricultural engineering program established. What has your time as a faculty member been like?

M: We've seen a lot of changes over the years I've been at Arkansas—I'm now in my 23rd year. I came here in 2001. It's 2024. Boy, it slips by fast. It's been the passion of my life to do the work we do. I am often criticized by my colleagues and peers for being involved in too many different things. That's what I love to do. I could not imagine spending a life, a career, doing a very narrow set of things every day. It's the best job I could imagine for me. I suspect other people are not suited for this kind of what we consider to be professional chaos. I revel in it.

It motivates me, and frankly, and you know, our universities are changing too. The demands of society on our universities are creating pressure for them to transition to something else. In spite of what the media landscape may tell you, universities are not progressive places. They're incredibly conservative. Decision-making at universities is incredibly slow. Change occurs usually only through disruption, not through strategic investments or transitions. That's just the nature of our institutions.

One of the most exciting things I have been involved in at the University of Arkansas and across our land grant

university landscape—which is my passion: the public universities, especially land grants—is this recognition that we have to become something different to meet the needs of the 21st and 22nd century, and COVID was that disruption in many respects that I just spoke about, that thing that made us change. I've been working in distance education, that is, technology-based delivery of education, since 1995, as a PhD student where we videotaped lectures, and then put them in a FedEx box and shipped them to other campuses across the nation to share lectures pre-internet.

Now all universities are addressing this fact that the brick-and-mortar institutions that we serve are not necessary for our goals. They are supportive of our goals, but we're not bound by them anymore. Technologies free them, free us.

So how do we now bring technology to our rural communities? Remember my discussion about the inequity of rural education? How do we now use technology to bring equity to primary, secondary education, and access to higher education to those communities who no longer have, who historically have not had access? And I think that our tribal communities, our tribal governments, provide a vehicle for achieving that because we have governmental, nation-level infrastructure in our smaller communities that can amplify these efforts, can motivate these efforts, can govern them, govern them in a way that they're not exploitative of the people.

So we don't have just-for-profit, paper certification generators out there exploiting our young people saying "here, pay us $5000 and we'll give you a certificate which you can't get a job with." That happens, and that's what we're up against. In any emerging technology you have the hucksters out there. And so how do we overcome that? That's another part of our role, to protect our citizens from exploitation and to enhance their ability to make better decisions.

So that's what I've been up to these last 23 years.

Native American and Indigenous Student Support

S: That's amazing. I agree that the universities, especially our land grants, are being called on to evaluate and change and adapt. And I love the vision of tribal governments, tribal communities being able to benefit from that and have education be more accessible for a Native American, Indigenous people.

M: That is my vision for what you and Greg are going to do with our Tribal Leadership Council on our campus, because our Tribal Leadership Council now is our foot in the door to tribal governments to take this vision back home.

S: Yeah, we're making great progress on our campus in that direction. I'm really proud of that work too. And it's worth mentioning here that we got a Tribal New Beginnings grant over the summer, which is for land grant universities to fund services for Native American students. And that was a historic creation of a position on our campus, our Native American Student Services Director. Thanks for that, and it's part of the 'IKE Alliance work we built towards this.

M: Absolutely. The 'IKE Alliance gave us the vision, and our discourses with tribes gave us the vision, that frankly, made us aware of what we're not doing. We weren't doing enough.

Made us aware that that there was work in front of us. That's funny. Until you've cleaned your house, you can become blind to the clutter and the dysfunction of your house. Once you clean your house, usually for a party, you think, why didn't I do this a week ago? My house is so much nicer. That's my sort of metaphor here.

The 'IKE Alliance taught us where, in our house, where we had piles of dirty clothes in our living room, and that we needed to change that.

S: And that speaks to kind of the reason why our 'IKE Alliance is so critical, and even universities who don't have high numbers of Native American students, especially if they're a land grant, have a responsibility to Indigenous, Native American people.

And how do you know what the resources are? How do you know, without those kinds of examples and cleaning house and doing laundry like you said, you know, without some kind of inspiration to do that then how will they really know what all the opportunities are? And we're just learning those as we go ourselves.

M: So now what is incumbent upon us is to help our cousins out there at the other public and land grant universities

to see their opportunities and help them develop their internal visions for how they can better serve.

Because as we know, many of our land grant universities were founded, were created, were constructed from land taken by the government from our Indigenous communities, our tribes, and sold. And that wealth was transferred to states to start their land grant universities. And the grant wasn't public land. It was in many cases, tribal land that was yet another taking.

And so yes, there is an unrecognized obligation from our land grant system to tribal communities, unrecognized and unspoken. We need to speak that truth loudly, and we need to proclaim our obligations, and then we need to work towards meeting them.

S: Yeah, and I'm thankful for some universities who are courageously addressing and speaking and learning and acknowledging around that topic. Thankful for the article published in High Country News, "Land Grab Universities," that made that information a lot more accessible for people.

M: That's the power of knowledge. That was a transformational article.

S: And the impacts are still rippling out. Their effect is happening.

Navigating a Career in Higher Education

S: So going back to your career as a faculty member, I would love to hear about what your experience was like. Achieving tenure and you know, if you found a support around your Native American identity and service that you were doing for your tribe and Native communities at that time. Did that help support the tenure process? Did the university acknowledge that? What was your tenure process like?

M: Tenure at the university is not complicated. In fact, it's fairly mechanistic. In the sciences and engineering our metrics are unambiguous.

The problem we have—and so many universities still have legacies of this—these very subjective criteria where basically it meant that the young faculty were exploited by the elderly faculty, the tenured faculty, in order to curry favor. That process, through effective management of human resources and policy, has been ferreted out. I was at the tail end of that, that culture in engineering. And so our criteria were fairly straightforward.

To get tenure, you needed to have at least 10 peer reviewed publications during your period of service pre-tenure, and that's typically five years. That's two publications a year. At that time it was just $100,000 of expenditures. Now it's $1,000,000 of research. You needed to have graduated at least one PhD and a handful of master's students at that time, and those are the criteria now.

I met those criteria easily, but the problem I had was, I am a very diverse scholar because I work on ecosystem-level problems that have human, economic, and ecological and physical elements to them. And because I'm interdisciplinary, I had to be tenured in two different colleges at the time: ag and engineering.

You know, several folks asked me afterwards, "Why do you publish in so many different journals? Why don't you just pick one and stick with it?" Because the mindset was very narrow, that the way you become a scholar is you do your one thing, and you put your head down, and you do that for 40 years, and you become the world expert in that very narrow thing. And that's why that's called a tower of knowledge, right? And it's isolated, and it's often called an ivory tower because it sits on the hill isolated by itself, like a monument to knowledge, without relevancy to humanity. Fortunately, in my 20 years, that's all changed.

But I was sort of the one at the front at the University of Arkansas and at Texas A&M in that interdisciplinary push because my Cherokee heritage taught me that everything is connected. My identity as a human was understanding the world through all those interconnections, and I saw that vast network that has been described by some of our previous elders as a web of life and a web of humanity, interconnected all.

And so that was a challenge. My Native, my Indigenous culture and heritage was an asset. It wasn't a liability because, frankly, I present as a white guy. But it wasn't an asset, wasn't recognized, and the University of Arkansas didn't even start recognizing Native American faculty

and students until 15 years ago. So I was well past tenure when that happened.

S: Yeah.

M: And by the way, I'm an excellent scholar. I exceeded all expectations and still there was resistance because of my diversity of scholarship.

S: Wow. That's interesting to hear, and hopefully we continue to move towarda more interdisciplinary understanding of the world.

M: Oh, now it's an expectation. Now, if you only publish in one journal, that's a negative. It only took 15 years, but the institution can grow.

S: That's good to hear. My last question is just, do you have advice for people considering careers in academia? That would be my last question.

M: If you love exploring the unknown, if you love expanding knowledge, if you love the scientific method, the creative process, the design method, any of those expressions of expanding human consciousness. If you find passion in that, and if you have the discipline to be your own boss. And you love working with young people, because ultimately, we're teachers first, mentors second, scholars third. That's the order of real activities, not the order of award. The order of award is reversed, but that's another thing we're working on.

The institution, if you can, if you have the confidence not to care what other people think, to find your path and to walk your path without regard to affirmation from others. Then it's an incredible job.

It's the only job I could do, because I put the affirmation from others part last. The affirmation that we get, the affirmation that matters, is from our students. That we're teaching them, and usually that comes well after the classroom experience. Usually it comes after they've applied the classroom experience in life and they realize, "Oh, that crap I hate, hated, actually is really important, and that thing, those exercises I had to do that I hated really do serve me well." Now that's the human experience.

So there's no affirmation immediately in the classroom. Often student evaluations are quite low on rigorous instructors. And so the real affirmation we get is through our proposals that are funded from our peers. We have to understand how to communicate a problem and a solution for that problem, or a method to better understand a complex system in order to get funding, because we have to sell the idea and then we get funding. And then we have to create a team of scholars, undergraduate and graduate students, peers who can work together on those problems. So there's a managerial element to that too, which I absolutely love, and you've been a part of that. It can be robust and it can be, you know, we're still coming out of COVID. We're still trying to figure out how to put that back together, but prior to COVID that was the water I swam in working with my graduate students and with my peers as well.

The opportunities for academic scholarship and academic careers are growing. There are bigger opportunities out in the private sector. They pay more, but none are more freeing than what I do. So yes, I'm a big advocate if you can do it. If you have the characteristics for it. Some people just want a job where they can clock in, do the work, clock out, go home, have their weekends, their holidays, and not worry about things.

This isn't that job. Remember I started my career as a Baptist minister. This is my calling and for most faculty they would characterize it the same way. It's the culture of the mind. This is what we think about all the time. It's our job, our passion, our hobby, these things we do, and somebody pays us to do it, too.

Marty Matlock PhD, PE is a faculty member in the University of Arkansas Department of Biological and Agricultural Engineering. He recently served as Senior Advisor for Food Systems Resiliency at the United States Department of Agriculture and previously held the position of Executive Director of the University of Arkansas Resiliency Center. Dr. Matlock received his PhD in biosystems engineering, MS in botany and BS in agronomy from Oklahoma State University. He is a licensed professional engineer, a board-certified environmental engineer, and a certified

ecosystem designer, and his research focus is measuring and managing complex ecosystem processes at local and global scales. Dr. Matlock is the recipient of the 2018 Cast-Borlaug Agriculture Communication Award. He has served on the United States Environmental Protection Agency Science Advisory Committee for the 21st Century and as a sustainability science advisor with conservation organizations and agriculture producer groups. He is a citizen of the Cherokee Nation and served as Chairman of the Cherokee Nation Environmental Protection Commission for 16 years.

Summer Wilkie is a Cherokee tribal citizen and the Next Generation Manager for the Indigenous Food and Agriculture Initiative, a program of the University of Arkansas School of Law. In this role she also plans and leads the Native Youth in Food and Agriculture Leadership Summit each July. Summer Wilkie has a BS in civil engineering from the University of Arkansas. She is pursuing a master's degree in biological and agricultural engineering. Other honors include participating in the Udall Congressional Internship Program and the Cherokee Environmental Leadership Program.