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Brooke Nemeth:

Welcome back to our I Am WT, Season Three podcast. I am Brooke Nemeth, one of your hosts.

Hunter Sparling:

And I'm Hunter Sparling, your other host for today.

Brooke Nemeth:

This morning we have with us Dr. James Cornette. Could you tell us a little bit about yourself?

Dr. James Cornette:

Where do I start? One of your first questions was, "Why did I come to West Texas? And when did I come to West Texas?" Well, I graduated from Canyon High School in 1952, and at least half of our class from Canyon High School came down here to West Texas, me included. A few, maybe four or five, went other places like University of Texas, but it was just natural to come down to the other end of the street and go to school.

My main activity here, that's one of your questions, probably being on the Senate, the Senate for West Texas students. And that was a fun time, fun time. We made a trip to San Antonio to meet with senators from all the colleges around. That was a fun time.

What was your next question?

Hunter Sparling:

Were you just involved with the Student Senate? Were there any other organizations you were involved in?

Dr. James Cornette:

Really not much. I was lifeguard at the swimming pool. You may not know, there used to be a swimming pool in the basement of Old Main.

Hunter Sparling:

Oh, I didn't know that.

Brooke Nemeth:

Yeah, me either.

Dr. James Cornette:

And it was used by some students, but also a lot of organizations from around the Panhandle would like to come over, have an hour swim with their students, not like that. And so that was pretty active operation.

Brooke Nemeth:

Wow, that sounds like fun. So can you tell us a little bit about your family and what brought you to WT?

Dr. James Cornette:

Well, my father was president and so that had something to do with it, I suppose. But he was very kind. He wrote a major paper, "Let them build their own tents." And that was advice to parents to let them build

their own tents, and so he did. He let his children build their own tents. And so I built mine and my two brothers, they each built tents. But anyway, and it was not... He was very kind not to involve me at West Texas when I was here. He was pretty neutral. Good.

Brooke Nemeth:

Can you tell us how you're connected to the Cornette Library?

Dr. James Cornette:

Well, I got connected quite some time ago when I thought that I would like to put a sculpture on the grounds of the Cornette Library, and I settled on the theme "On the shoulders of giants." Now, Isaac Newton used that statement to describe his success. He had been able to see further than others, it was standing on the shoulders of giants. And we actually located a very nice sculpture. It had Greek intermediate and students on top, and it was going to be a good sculpture, had a contract to it, and the artist sent us notice that to actually cast the bronze would cost three times what the contract was for. And so that fell apart.

Well, Shona with our unity stayed close contact with me. We would talk at least once a year about possible sculpture for the garden. And one January we were talking and somehow I mentioned that Robert Frost was a good choice, or maybe she had mentioned that. And I really supported that because [inaudible 00:04:12] was fond of Robert Frost.

Well, by the following September, she had found a Robert Frost sculpture and she had almost bought it. And I got a little anxious about that. I know Dad liked Robert Frost, but what is it? Well, Sidney Johnson and her assistant in the library found a newspaper article that said in 1962, my father gave eight lectures on KGNZ TV on Robert Frost. I was satisfied with that. That was before Sunday afternoon football, this television station made it suffer pretty bad. But anyway, it was very successful and it's a wonderful sculpture over there. And I followed that through.

And we've done another list with Dickinson that we're pursuing a year or two from now.

Hunter Sparling:

And getting her a statue?

Dr. James Cornette:

Yes.

Hunter Sparling:

Oh.

Brooke Nemeth:

That's exciting stuff. What do you think your parents would think of WT and how it is now?

Dr. James Cornette:

They would be very happy. Dad came here at West Texas State College and he managed to get it West Texas State University. That was 1962 also. And he was proud of that. Liked that. Now it's West Texas A&M University, and it has vet school. It has lots of it with schools. He had four schools, he could point to, to call it university, but now there are several schools and strong schools, and it's just wonderful to have the growth.

His work largely involved involving West Texas, in the Texas Panhandle, and he gave many high school commencements. He gave talks to Rotary, to [inaudible 00:06:16] Lions Club. He traveled around and he built the population from 2,000 students to 8,000 students when it became a university. And of course he's proud of that.

Today, I think, well, COVID set us back some, I don't know where we're now, but you were, I think at 10,000 before COVID, and maybe you're headed that way again.

Hunter Sparling:

I do see us with a lot of big numbers in our attendance lately.

Dr. James Cornette:

Yeah, yeah.

Hunter Sparling:

And I love it. I just love people coming in. We're on the map and I just, it's great to see that people are actually coming here and getting the education they deserve and the treatment that they deserve, here.

Dr. James Cornette:

Yes. All right.

Hunter Sparling:

Since attending WT, you have had the opportunity to do a lot of impactful research. Could you tell us about your career and what you do right now?

Dr. James Cornette:

Well, I will be a little brief about it. I went to the University of Texas, West Texas, got a PhD in mathematics and went directly to Iowa State University where I spent my career until the year 2000. And at that place I branched out. They opened my... I was in very narrow field mathematics points at topology. I branched out and published in population genetics. And well, I went to Malaysia for a year, a Fulbright year at the University of Kabungshan, Malaysia. And that was a broadening experience.

Probably the biggest broad experience was 1985. I went to the National Institutes of Health and I was working in the Laboratory of Mathematical Biology, and the director of that laboratory was Charles DeLisi. Now, Charles is an amazing person. I won't try to explain it all, but he and a immunologist had hypothesis about how does your body respond to a virus that infects you?

Now, you need to know the virus has proteins. And proteins for our purpose is a sequence of one of the 20 amino acids. Can be quite long, 500 and so on. And they had hypothesis about what segment your body would see and put it there and say, "That's foreign, kill that virus." So I took their hypothesis and wrote a computer program that would select such pieces in a long sequence of amino acids. Well, this immunologist colleague came in, this was 1985, it was a long time ago. But he came in and said, "I've got the sequence of the HIV virus. Would you like to run your program?" "Yes, I'd like to run our program on that."

Brooke Nemeth:

Of course.

Hunter Sparling:

Absolutely. Yeah.

Dr. James Cornette:

And we settled on two pieces that would be... It was out to 512, and these pieces are 12 amino acid pieces, maybe 10, maybe 14, but 12 is where we... For the class two molecules. So the immunologist replicated those pieces. That was 1985. He didn't have in his laboratory a way to assemble proteins. He had to send it off to get it done. Now they do it down the hall. It's easy.

And he tested those two pieces in mice. He tested them in 12 people from Zaire who had been immunized with Cowpox fire that had that sequence 512, [inaudible 00:10:16]. And he got very good results. The people from Zaire, 11 of the 12 responded to one of the two pieces he had. So he said, "We should have a patent on that as a vaccine. If you can put that in the body, it's good." And I'm part of a patent for a HIV virus. The hangup is they were very specific, HIV mutates a lot, and it doesn't take them long to mutate away from those pieces. So we didn't cure HIV, but that was exciting.

Hunter Sparling:

So going back to working with the HIV treatments. HIV I've read is a very, very difficult thing to cure just for the fact that it does attach to the DNA. Could you give your opinion on how close to a vaccine that you mentioned?

Dr. James Cornette:

Not particularly a vaccine, but they've got medicines for it that really knock it down a lot.

Hunter Sparling:

Makes you undetectable.

Dr. James Cornette:

And, yes. So that's the medicine for it. I don't think they have a vaccine that they can give to the population like Polio and stuff like that and wipe it out.

Hunter Sparling:

Right.

Dr. James Cornette:

That's not going to happen. Well, yes, that's going to happen sometime, it just hasn't happened yet.

Hunter Sparling:

Later on?

Dr. James Cornette:

Yeah.

Hunter Sparling:

Can you explain your research in lay people's terms of how it impacted the COVID treatments?

Dr. James Cornette:

Oh, the COVID treatment. Well, I've got to say that there's a student of Charles DeLisi got his PhD at Boston University, and I was working with Charles there. I got to know George Basmatis very well, and he is now Mayo Clinic. And when COVID hit, he said, "We should assemble a group to study COVID, the immunology of COVID." And he kindly included me. Now, these were Zoom talks. We didn't get together. It was COVID time and so you talked by Zoom. We had some good talks and good talks. And the first COVID was Wuhan out of China. The second came, it was Omicron, that's what they called it. Omega Cron, that's what it was. Omicron, they called it.

And I looked at the sections that the human sees of the Wuhan-Wu virus. And there are programs that do that now. And you look at sections that they see for the Omicron virus. And there was not much change, that the immune response to Omicron was going to be pretty much pretty good if they had been exposed to Wuhan-Wu. And the first vaccination was Wuhan-Wu. So Omicron should be not so terrible. And that's what I observed.

And there were some computer science students from University of Minnesota on this program, and they took that and blew it up, you see there, oh, well, you have six HLA molecules and six of about, let's say 20 popular ones. But in fact, there are 420 worldwide. And so they just did them all in their computer and they could do in 15 seconds what it took me a week to do. So I just did suggest it and, poof, it happened.

And now of course, we're looking at the more recent viruses, but that program has changed a bit. My friend George is interested in another program, and so we're drifting away from that.

Brooke Nemeth:

What other collaborations have you developed with biology faculty members at ISU, and why do you think it's important to work with people from other disciplines?

Dr. James Cornette:

I had a wonderful experience at ISU. I had been working in the area called bioinformatics. That's what the protein sequences and DNA sequences is called: bioinformatics. In 1997 in the fall, I decided that we ought to have a bioinformatics course at Iowa State. So I got three biologists and three computational people, including myself. Two others. And I suggested, "Let's sit for fall semester and design a course in bioinformatics." I had a potential textbook, was not really a very good one, but it had the topics that we needed to talk about. And so we would go through and discuss those topics and biologists would say, "Yeah, do that." Or computational people would say, "Here's a way to do it." And stuff like that.

Well, one of the biologists on that program put the word out that there was going to be a fall seminar in bioinformatics. And the first meeting of the six of us, 25 people attended, and there were lots of faculty members excited about that. And I gave the first talk 'cause that's what I planned to do, just talk briefly about how the computer searches the sequences and stuff. And we would announce a topic and a computational person would say what he could do, and a biologist would say, "I will give you the reason for doing that." And so it alternated for a whole semester doing that.

The last meeting we had, we had 45 people there, graduate students that grabbed into it. And then the next semester we did have a course in it. And that was a very exciting time. We now have a program, an interdisciplinary program at Iowa State: Bioinformatics and Computational Biology. And I just checked last month, there are 85 people at Iowa State faculty who are part of that program. The PhDs committees have one biologist, one computational person on their committee always. And so it's been a collaboration that has just been phenomenal.

Brooke Nemeth:

Wow. It sounds like you had a big impact on that, and it really changed the school.

Dr. James Cornette:

Well, it did, but I just sort of said, "Let's do it." And whoosh, everybody did it.

Brooke Nemeth:

And it worked, huh?

Dr. James Cornette:

Right. I retired in 2000. The program started in 1990, actually, 1998, I guess. There was a woman that I first asked to come talk with me who took the responsibility of putting forth the PhD program at Iowa State, and she had to talk to the college curriculum committee. She had to talk to graduate curriculum committee. She had to present it to the whole faculty to get approved. She just had three courses she could base it on, except she could draw from this broad category of courses that were out in other departments that would fund it, so to speak. We had three real strong computational courses. But anyway, yes, it's been a very good experience. Lucky experience.

Brooke Nemeth:

Sounds very great on that. We're going to go on a quick break, and next we'll be talking about Dr. Cornette's prehistoric find. And with that, we'll be right back.

Speaker 4:

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Brooke Nemeth:

Welcome back to the I am WT podcast. Once again, I'm Brooke Nemeth, one of your hosts.

Hunter Sparling:

And I'm Hunter Sparling. And today we are joined by Dr. James Cornette.

Now, Dr. James, could you tell us the story of the fossilized tooth of the phytosaur you found on your wife's family ranch near Palo Duro Canyon?

Dr. James Cornette:

I'd love to tell you that story, it was another happy event, fortunate event. My wife's family does have a large ranch, 10 sections, 12 sections over in Palo Duro Canyon. And I walked that canyon some with her father. He would go down to feed cattle, and I'd go with him and we'd sometimes look around, occasionally find an arrowhead and stuff. He passed away and my way of getting into the canyon was just to walk down into the canyon. It was pretty steep walking, pretty tough.

But one day in 1991, I was walking down and I found a clump that I knew was not a normal clump. I couldn't tell what it was. I took it back to the ranch and in Francis' kitchen washed it up and oh, it was a tooth. And it was three-quarters of an inch long, not a big tooth for a phytosaur. It turned out to be. I found out that it was a phytosaur of the museum, Panhandle-Plains Museum. And they have a skull of phytosaur that's 46 inches long, and it's got some big teeth in it. And so that's how I found out what it was.

Well, I kept walking down there and I found actually maybe 10 or 12 more phytosaur teeth. I later found out that phytosaur replace their teeth regularly just as crocodiles do. They replace their teeth. Phytosaur is a cousin of the crocodile.

Brooke Nemeth:

That was my next question.

Dr. James Cornette:

Yes. It looks a lot like the crocodile. They have one over in New Mexico at Ghost Ranch. They have a skeleton that's 25 feet long, of a phytosaur. It's a big animal. I kept finding them and kept being interested in them.

So I retired in 2000 and I went to University of Kansas to study paleontology, and that was the fortunate event too. And I had a good time there. I did a master's degree in paleontology, probably because you can't do an undergraduate degree in paleontology. You have to just be a master's.

And then the following summer, I went out to the Denver Museum of Nature and Science. A friend of mine at Iowa State in geology had told me they have a good volunteer program. It's an incredible volunteer program. They train their volunteers. You take eight courses before you can be a volunteer, and that takes a period of time. And living in the Ames, Iowa had to go back and forth and stuff like that, but got it done. And so I've worked with them for at least 17 years and by sort of an accident, I began working with a person, Scott Wing, who is at the Smithsonian Museum in D.C., and he's very interested in the period of time the Paleocene-Eocene Thermal Maximum when there was a five to seven degree spike in centigrade, spike in temperature, accompanied by a large amount of carbon dioxide. And it's generally believed that the carbon dioxide caused that to happen.

Scott has spoken at the World Economic Forum in Davos, Switzerland about how the past tells us about the future, and that's the source of his talk was the PETM and how we're coming up with the same results. And now, the World Economic Forum is not necessarily into paleontology, but he was welcome there. He gave a very good talk. I can still find it on the internet, and it's very good time.

Well, that's very... So I've been working on the PETM for the last eight years because he works on it. And that's what you do if you're a volunteer and you work with a curator. You work with what the curator interests are. And so with him, I worked very hard on that.

Brooke Nemeth:

You're a busy man. How do you manage to balance your work with your personal hobbies and interests?

Dr. James Cornette:

Well, my work and my personal hobbies are all the same. They're not different. And so I don't... When I work with my friend George on Zoom, and we still meet once a week on another topic, but retirement is pretty good.

Brooke Nemeth:

Yeah?

Dr. James Cornette:

You two are not quite ready for it, but it's really a good activity.

Brooke Nemeth:

I believe it.

Hunter Sparling:

Could you talk to us more about the founding of the Poets' Garden? What was it that interested you most about that?

Dr. James Cornette:

Well, it was not Smith's Garden, but it was the sculpture of Robert Frost. And when they got the Robert Frost sculpture pretty well lined up, then the library said, "Well, let's think of a poet's corner." And so that was sort of a simultaneous event that just happened. And now as I say, we're working on the second poet, Emily Dickinson, and I anticipate there may be 10 or 12 sculptures out there some day, of poets. And we are focusing a lot of attention on poets, there's some good programs. They have a poetry contest. And I think last year they had 102 entries and it was quite a job to pick the winner. And they picked one or two, three, I think, or something like that. But it's all happened by way of the group calling themselves the Poets' Corner Committee.

I can't get those names out for you right now, but you could get it on the internet anyway. And of course, Shona is very much involved in all of it. But it's happening. It hasn't happened yet. They're going to have to revamp it quite a bit because it's getting some water drainage from the library going into the area that is the Poets' Corner area.

Brooke Nemeth:

Sounds like a fun project and I'm excited to see in the future of course.

This year you're being honored as a WT Distinguished Alumni. Tell us what that means to you.

Dr. James Cornette:

Well, a little bit self-conscious, something like that. A bit, "Are you sure we're going to do this?" But yes, it's a wonderful distinction to have and I can [inaudible 00:26:49] with it for a long time. It's fun. I will mention that Don and Dorothy Patterson, who Don is a Distinguished Alumni, they nominated me for the position and carried through the process. And I appreciate that. Ronnie Hall has been sort of manager of it, and he's managed it well too. It's quite an honor. I say it, matter of fact, I'm a Distinguished Alum of West Texas State College.

Brooke Nemeth:

Right.

Dr. James Cornette:

I'll be [inaudible 00:27:25] West Texas A&M University. That's okay.

Hunter Sparling:

Right. So from the start, from your first day of college up to now, you've seen a lot. What advice would you give students right now?

Dr. James Cornette:

Do your homework.

Brooke Nemeth:

That's right.

Hunter Sparling:

That's right. "Do your homework and go to school."

Dr. James Cornette:

That's right. I always preached that in mathematics classes. It's so important. You look at your homework and you've got a number of problems solved. You take an exam, there's some of the same problems, maybe variations, but so-

Hunter Sparling:

It's all about paying attention.

Dr. James Cornette:

Yes,

Brooke Nemeth:

I think that's good advice.

Dr. James Cornette:

I will say, by the way, that I studied with a person named Robert Lee Moore at the University of Texas, and he was known for his method of teaching, and it was very powerful. He was also a member of the National Academy of Sciences. He was president of Mathematical Society and lots of recognition for him. But his teaching method was to first day walk in, state some axioms and a couple of theorems, "Go home, see if you can prove it." He didn't talk about how to prove theorems. He just, "Go home, see if you can prove it." This is the first class I had with him in Foundations of Geometry in the summertime.

And he walked in the next day and he had IBM cards with all the students' names on them. And so he went down through the cards and, "Theorem one. Do you have a proof of Theorem one?" "Well, not yet." Or, "Yes, I have a proof of Theorem one." And so, "Well put it on the board." And he would talk them out of it, find something wrong with the proof.

And so he went through about seven or eight people like that, and he finally got one that proved it, and that was good. So he started on Theorem two. I was lucky 'cause I didn't have a proof of Theorem one, but had a proof of Theorem two. And he got about seven or eight people in here and called on Ms. Brady and she said she had a theorem, she put it on the board. She had a proof and she did. And he talked her out of it. He then called on me and said, "Do you have a proof?" I said, "Yes, I have a proof. It's the same proof Ms. Brady had." He said, "Well, see if you can give it." So I gave it.

Brooke Nemeth:

Why do you continue to stay connected to WT so many years later?

Dr. James Cornette:

Well, it's part of me. And my daughter actually lives in Amarillo. She works for the Red Cross Disaster program, manager. And she stays very busy, and I'm staying with her for the time that I'm here. But West Texas is... That's where I grew up. And when I grew up here, I really first came, I wanted to be a cowboy. I didn't want to be a mathematician by any means. But actually, a fellow named Cecil Briggs taught a geometry course in high school, and that's when I first started... That's the first course I think I ever liked. None of the other courses were all that interesting. But that was the first course I...

And then I came to West Texas and he had moved down here, and so I took trigonometry from him. Now, it's strange to take trigonometry in college but at Canyon High School, they had algebra and geometry.

They didn't have trigonometry, calculus, pre-calculus, calculus and stuff like that. That's very common to me.

Hunter Sparling:

So in your graduating class, going back to graduating from Canyon, how many was in your class?

Dr. James Cornette:

52.

Hunter Sparling:

52. I had about 13, 12 or 13 in mine. And I was getting where you were coming from about trigonometry not being offered. We were offered three courses: Algebra, Algebra II, and we were offered English. And that was it at my school for dual credit purposes.

Dr. James Cornette:

Not geometry?

Hunter Sparling:

Nothing else. It was just those three things.

Dr. James Cornette:

Oh my goodness.

Hunter Sparling:

And I just took them all three.

Dr. James Cornette:

I didn't think that was happening nowadays.

Hunter Sparling:

And granted, it is just a tiny school, so I take what I can get [inaudible 00:31:53].

Dr. James Cornette:

Okay.

Hunter Sparling:

So what specifically does WT mean to you?

Dr. James Cornette:

Home. It's just part of my being. And I have been pretty lucky to be a volunteer in the Panhandle-Plains Historical Museum. And I worked over there with Veronica Arias for a couple of years, and that's a real privilege.

Hunter Sparling:

I used to work at the museum.

Dr. James Cornette:

Oh, did you?

Hunter Sparling:

I did. When you were mentioning the phytosaur, it just took me back to when I would give those tours, for nine years straight, and I would talk about the phytosaur. Just, "Could be as long as a school bus, loses its teeth rapidly, if you go in the Palo Duro, you can find them today."

Dr. James Cornette:

Yes.

Hunter Sparling:

It's just everything that you said, it just took me back and it reminded me.

Dr. James Cornette:

Okay.

Hunter Sparling:

And it's great to learn all this more knowledge about the phytosaur I didn't know before, even though I worked there.

Dr. James Cornette:

Yeah.

Brooke Nemeth:

Well, you've taught us a lot of great things today, and we greatly appreciate you coming on our podcast today.

Dr. James Cornette:

Thank you too, both Brooke.

Hunter Sparling:

That was great.

Dr. James Cornette:

It's been fun.

Hunter Sparling:

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Thank you for tuning in.