Dick Smiley Oral History Interview, November 21, 2014

Title
"Supporting Agriculture in Wheat Country"

Date
November 21, 2014

Location
Columbia Basin Agricultural Research Center, Adams, Oregon.

Summary
In the interview, Smiley discusses his upbringing and background in farming and ranching, his connections with Extension programs as a boy, and his educational experiences as a high school student and as an undergraduate at Cal Poly-San Luis Obispo. Smiley also touches upon his stints working for Brea Ag Services, and provides an overview of his graduate studies at Washington State University, noting his research and faculty contacts while in Pullman.

Smiley next relays the high points of his post-doctoral year in Australia and his subsequent world travels in the decades that followed. He then details his move to Cornell University, the school's similarities and differences from WSU, and his work there on turf grasses.

The remainder of the session focuses on Smiley's career at the Columbia Basin Agricultural Research Center, an OSU branch Experiment Station located in rural northeast Oregon. In this, he describes being recruited for the position of professor of plant pathology and station director, the status of the branch upon his arrival, the compromises that were required of him as he moved into his first administrative position, and the agenda that he established for CBARC as its director. He likewise comments on the station's relative isolation and its sense of connection with OSU, his recruitment of station faculty, his management of the Moro branch Experiment Station, and CBARC's continuing engagement with regional agriculturalists.

As the interview nears its end, Smiley reflects on his research on nematodes and soils, shares his thoughts on the controversy surrounding genetically modified crops, recalls his past interactions with OSU wheat breeder Warren Kronstad and other influential colleagues, and describes the organization of CBARC as well as day-to-day life at the station. The session concludes with Smiley's thoughts on change in the Pendleton area, his perspective on issues currently facing the region, and his sense of the Land Grant mission today.

Interviewee
Dick Smiley

Interviewer
Chris Petersen

Website
http://scarc.library.oregonstate.edu/oh150/smiley/

Transcript

Chris Petersen: Okay, Dick, if you would please introduce yourself, with your name and today's date, and our location.

Dick Smiley: I'm Richard Smiley, and I'm the plant pathologist at the Columbia Basin Ag Research Center, a research station of Oregon State University. And today is the 21st of November, 2014.

CP: Great. And I'll add that you are the 100th interview that we've done for this project, so this is a nice little milestone for us.

DS: Okay.

CP: So we'll talk a lot about your career, and we'll talk a lot about the Extension service, and life on the experiment station out here. The first thing I want to do is just talk a little bit about your upbringing. You were born in Paso Robles, California?

DS: I was born in Paso Robles, California. I actually lived between there and Bakersfield, out in the dry hill country of central California. And that was before there was irrigated grapes that now occupy that landscape, so I grew up on a wheat, and barley, and cattle farm. My dad didn't own property. My dad was a foreman on a ranch. And so we were out seventeen miles from the nearest town of 200 people. My mother made weekly trips to the grocery store, which was a 36-mile round trip. And so I went to school in a very small school where there were fewer than 60 students total in the high school, and each class was therefore twelve to fifteen students.

CP: Wow. So were your parents born into this lifestyle, or what was their background?

DS: My mom and my father both grew up with ranching and farming experience. My maternal grandfather was a dairy operator, and grew small grains at the same time. And my paternal grandfather worked as a foreman on a ranch, and then later in life, also produced chickens—a large-scale chicken producer.

CP: What was life like for you? You lived on the ranch?

DS: I lived way out in the country, and we didn't have electricity until I was eleven years old. We had a generator that could power the lights and the radio at night. But it was a very rural upbringing. I fondly remember when the power lines were starting to make their way toward our house. We lived in a house that was owned by the farmer, and at one time it had been a stagecoach way station, so very large kitchen and kind of an odd-shaped house.

CP: [Laughs] I assume you had farm-related chores growing up?

DS: I had farm-related chores. We did everything. We raised as many different animals as you can name. Everything domestic was produced. So yes, I grew up around ranching, cattle working, farming. But then, when I was a little bit older, probably twelve years old, we moved to a town of 200 people called Shandon, and that's where we had gone to school. But my father was the foreman on a ranch that was split into two different components, and that was a mid-location between those two properties. So it was more convenient for him to go either direction, and so we lived there for quite a number of years, as well.

CP: You mentioned you went to a small school. What was school like for you growing up?

DS: School was challenging. I did reasonably well in classes, but at a small school—as it happens today in small schools also—anyone that was physically fit was expected to play all the sports. And so yes, I lettered in baseball, and basketball, and football, even though I was a very tiny person at that time. When I was going to school—well, in the elementary school and high school, I was a very small person, and I didn't get a growth spurt until I was in college. [0:05:00]

But my father then moved to a different position. Health reasons took him out of the farming enterprise, and so he became the foreman of a hog-producing component of the state hospital network in California, and they had a hog farm at that time that produced pork for the state prison system, and also they had a dairy that did that. And he was in those hog and dairy operations for quite a few years, until a newly elected state senator decided that that was competing with the private

dairy industry, and they shut down all those farms. And so my dad started working in the heat plant of that state mental institution, and that's where he finished out his career.

CP: Did you have connections with Extension growing up, 4-H, or anything like that?

DS: Yes, I was in 4-H for many years. I was also in Future Farmers of America. And then what helped me to decide on my future was going to some Extension classes that were being put on by the University of California at Riverside. And their extension educators were in the region, and helped intrigue me about science, and going on to additional things other than farming.

CP: Hm. Well, you went to Cal Poly, San Luis Obispo. What was the decision there?

DS: Again, I was intrigued by the soils Extension courses that were being put on by the University of California. My family was very poor, and we had no resources to go into the university system in California. And so Cal Poly was a state college at that point, and it was a very applied-learning atmosphere. Their motto is "Learning by Doing," and that's a very adequate description of the kinds of things that they taught. You were hands-on in most everything.

And I was still fortunate, because it wasn't a part of the state university system until a later time, and so I was able to earn my way through college by washing dishes, working in a service station, working on summer jobs, and doing lots of things. And it was something that I could fund myself, which just doesn't happen anymore.

CP: Yeah. You majored in soil science. What specifically about soil science intrigued you? I mean, you mentioned these Extension classes that you went to, but what sparked your interest about soil science?

DS: I was mostly interested in the soil fertility area. I studied, of course, a broad range of soil science topics, but I was mostly interested in the soil fertility, and the ability of soils to provide nutrients for plants, and so that was something that was of keenest interest in the soils discipline for me.

CP: Was there anybody who was particularly influential during your undergraduate experience?

DS: Yes, my professors were very stimulating. We had lots of laboratory time, and field trips, and so there was lots of challenges. It was a very stimulating atmosphere. And again, our classes were relatively small, compared to classes in major universities today.

CP: What was the environment like for you at Cal Poly, having come from a rural background? I'm not sure how big the school was at that time, but I'm gathering it was maybe some level of culture shock?

DS: Yes, it was culture shock, although I had some stepping stones. Because of the change of my family's location, I had to move away from the small school district that I went from elementary and through the first two grades of high school. The junior year in high school, I went to a much larger school at Paso Robles, and then I had to move again for my senior year. [0:10:00] And so each of the last two years of high school, I was stepping up in population for the school size. And because I was new in each of those two final years of high school, that was a good break-in for what I found in the university system.

CP: At what point did you decide that you wanted to pursue an academic career, rather than any sort of applied career?

DS: Well, I had worked in the agricultural industry for several of the summers while I was going to college, and I was working for what is today called UniCal, but it was, at that time, Brea Ag Services. I did regional work for them. And so those were really good summer jobs, and I had an offer for full-time employment upon departing from Cal Poly.

But the opportunity arose for me to go to Washington State University, where I would become employed by the U.S. Department of Agriculture, the Agricultural Research Service, and through that employment, I would also have the opportunity to go on for a master's degree. So I thought that what I ought to do was go on and get the master's degree, and then go back to the Ag Research Service—or, pardon me, then back to the agricultural chemical industry. So I was definitely oriented toward the ag chemical industry, even though I was working for the Ag Research Service for three and a half years, while I did a master's degree, again, in soils.

CP: Yeah. How did this opportunity at Washington State come about?

DS: I had actually accepted the job with Brea Ag Services, and I was going to a post near Stockton, California. And I started receiving calls from an ARS scientist at Pullman, Washington, who kept telling me how much better it would be if I went on for a master's degree working for him, and all the hunting and fishing opportunities that were in nearby Idaho, and eastern Washington. And he kept bugging me until finally I decided that, yes, I think I will do that.

And so instead of calling the people that I told that I would be coming to work in the ag chemical industry, I drove to Los Angeles to tell them eyeball-to-eyeball that I was not going to do what I said that I would do. And I didn't want to do that in a telephone call, so I went to Los Angeles and told them personally, and then moved to Pullman, Washington. [Laughs]

CP: Were you an outdoorsman? The hunting and fishing you mentioned—was that a draw for you?

DS: Very much. At that time, yes. I had grown up out in the country, and so hunting and fishing were very common, very natural, and I enjoyed that part of the early years at Washington State University. But soon I became too busy for that, and so I'm not longer a hunter or a fisherman. [Laughs]

CP: Well, you spent six years at Washington State. You got a master's, and you went on to a PhD. Tell me about this period of your life, in Pullman.

DS: The master's degree was in soil science, but I was working on a root disease of wheat, and so I found it fascinating to work in that realm of the impact of soil fertility on root diseases of wheat. That raised an opportunity for me to go on for the PhD, working a different disease, but again, a very important interaction between the soil substrate and the pathogens that cause root diseases of wheat. So what I did is I switched my major, so that I could get the PhD in plant pathology, but did all of the coursework that would also qualify me for a PhD in soil science—which I don't actually have, but I did all the coursework. I'm probably one of the only guys, or maybe one of the few agriculturalists or biologists who took P Chem as an elective. [Laughs]

So anyway, I had to quit the Ag Research Service to go on to the PhD, because it wasn't part of the mission of the unit that I was in. So I was married at the time; wonderful wife that was working and supporting me while I did the PhD [0:15:01], and so things worked out very, very well for us.

CP: What was the environment like at Washington State for you, within your department?

DS: I found that the teaching was very rigorous, the expectations were high, professors were tough. And we had one professor who spent a lot of time, during the night and on weekends, at the office, and he took notes of who was there—mental notes, I would say. He took notes of which graduate students were working, and which were not, during weekends and evenings. And I would say that a lot of that doesn't happen so much anymore, but we were kind of expected to put in a lot of time as graduate students, and I was one of those that did.

CP: Who was your mentor during this time period?

DS: My major professor during the PhD was Dr. James Cook, and Jim Cook—as a legacy of himself, he is known internationally, and is a former president of the American Phytopathological Society. He's a former president of the International Society of Plant Pathology. He's a member of the National Academy of Sciences. And I was the first graduate student that graduated from his program. I wasn't the first to start, but I was the first to get out of that program.

He was tough. I remember submitting the draft of a paper, and he had it for several days, and he handed it back to me without any marks on it whatsoever, and said, "Dick, you can do better than this." And I'm thinking, "God, I really did my best on that to start with!" And so, his style was to make you go back and figure it out yourself. He was writing a book at the time, and so he didn't have a lot of time for meetings with graduate students. He made them work on their own, and get things figured out without a lot of daily, or weekly, or sometimes even monthly meetings.

CP: Did you do any teaching during this time?

DS: I only guest-taught in the labs, where teaching was a normal requirement, for one semester, and so I did minimal teaching. I was mostly in a research capacity.

CP: Well, you finished up and you went to Australia for a year—is that correct—as a post-doc?

DS: That's correct. I had terminated my employment with the Agricultural Research Service to go on for the PhD, with the full intention of leaving with a really good record, and getting right back in when I finished with the PhD. But at that time, the Agricultural Research Service was in a draw-down phase, due to economics, and they were needing to cut the service of 62 scientists in the western United States. And it wasn't a good environment for getting hired back, at that time. They still were hiring a few elite people, but there were no jobs that I was qualified for at that time.

And so I applied for a NATO post-doctoral fellowship, and I was able to secure that NATO post-doctoral fellowship for nine months, to go to Australia. And so I worked under one of the world leaders in root disease biology, and so that was a really good experience. And then they ended up extended my stay, so I was working for the Australian government at that time. And I had the opportunity to become a permanent scientist with the SCIRO in Australia, but I chose to come back, and my wife and I—our daughter was born in Australia, at the time, and we had our cars parked in backyards, and our belongings in basements. And it was time to get a real job back in the United States. [0:20:01]

So I needed to come back, but we could not afford to come back for interviews, which would be required as part of the job, so that was kind of a kick in itself, because I was going to be interviewing for jobs at the University of Hawaii, and at Cornell University. And if none of those worked out, I had post-doc capabilities, one working on root-rot of avocado in southern California, and another of soybean root disease in Ohio. So off we started on this journey back to the United States, and while I was interviewing at the University of Hawaii, I withdrew my application after the first day of the interview, because it just wasn't an atmosphere that I felt was going to be conducive to a career in science.

There were monetary reasons for that, but also that was before we had Internet, and before we had Skype, and other media for communication. But I would have responsibilities across all the islands. There wasn't enough money for airfare to fly a scientist to the locations, and so it was basically going to be doing Extension by telephone, and I didn't think that that's what I wanted to do. So I withdrew that application, and that left me with one real interview left. I went to Cornell University, interviewed, and when I arrived back in California with my family, I received a telephone call offering me the job, and then everything was good. I became a scientist at Cornell University.

CP: Yeah. Well, we'll talk about that in a second. I want to ask you a little bit, though, about your—the trip to Australia perhaps gave you a taste for international travel, because you've done quite a lot of it since then.

DS: That was the start of international travel for me and my wife, and my daughter. We had not really been out of the United States. Prior to that, my wife had been briefly into Canada, and I'd been briefly into Mexico, from my home area in California. But it was not really international travel; it was just basically across the border. And when we went to Australia, it was very much an eye-opener. And we did a lot of travel while we were in Australia, and we became international travelers. When I did get to Cornell University, and now, as part of my job at Oregon State University, it includes international travel to meetings, as well. And I think at last count, my family has been in 33 countries. Our daughter still likes to take vacations at the same time that we do, and so we select a country to immerse ourselves in for several weeks, and so we still love international travel.

CP: Yeah. That's terrific. Well, your first academic post, full-time post, at Cornell University, but for starters, I'm interested in knowing about the differences between Washington State and Cornell. They're both Land Grant universities, but different environments, I'm sure.

DS: Cornell is very much at a higher level in their breadth and depth in science. The individual scientists are not necessarily different, but at Cornell University, there are many more of them in each of the departments. And because Cornell is both a Land Grant university and a private university, there are the realms that kind of go between those areas, and so it made a very interesting type of activity. I was involved mostly with statewide research, and so I did a lot of Extension, a lot of travel associated with my research and my Extension. And then I also did a minor amount of coursework and graduate-student training.

CP: You're researching during this time—it sounds like you focused on turf grasses?

DS: Turf grass was the principal focus for which I was chosen, and that gave me a really great opportunity. [0:25:03] I was hired soon after a disease was named, Fusarium blight. It affected home lawns, golf courses, roadsides, commercial frontages, cemeteries, the White House Rose Garden lawn. It was very much a devastating disease that had come in and been newly named, and my job was to help manage it, and so that's why I was hired at Cornell University. Ultimately, after many years of intriguing research, about ten years of research, it dawned on me that the pathogen *Fusarium*, for which that diseased was named, could not be causing that disease. Too many things just didn't make sense. And if you sat back and thought about all the irregularities, it just didn't make sense.

And so I started digging deeper into it, and using my experiences with wheat on other pathogens, and found that Fusarium blight was really a complex of two diseases caused by other pathogens that were very different than the *Fusarium*, that had been named as that pathogen. That got me into a huge amount of grief, because the scientist in the state of Virginia who had named that disease was very much a leader of that sub-discipline of plant pathology, and he commanded a lot of respect, but he also was like an evangelical preacher, which actually he did on the side. But in public arguments, you could not maintain your case.

And he derided me in front of audiences, and our large conferences in the eastern United States for the annual turf-grass conferences would have anywhere from 300 to 1,500 people in attendance. A common audience at that time was 1,000 people for some of these state turf grass. The professor who was deriding me would be up there, and pose a question, and then, immediately, when I started to respond, pull the microphone back and pose something else, and it was really an impossible task. Ultimately, through additional science, we won that argument.

But at that time, then, I was considered one of the leaders in the little sub-discipline of patch diseases of turf grass, and I was being recruited to come to Oregon State University to become to the director of this experiment station, and also to establish the first plant pathology program in eastern Oregon. All the plant pathology in the past had been by individual scientists who had driven here from Corvallis, or from Pullman, Washington. And so I was able to accept that job, come here, and establish a plant pathology program that was locally based, as well as then do a lot of Extension work here. And then I was the director of the experiment station, and I also was very active in my professional society during those years, as well.

CP: Mm-hm. So OSU sought you out, then?

DS: Yes. Yes. I wasn't looking for a position, although I was growing a bit weary of all the wintertime extension meetings that I was being asked to participate in, because of the ongoing debate about the origin and nature of that patch disease called Fusarium blight. And so I was in high demand, and flying—mostly during the winter season—to places where it made it very difficult to get to, and also to get home.

CP: So had that conflict more or less been settled by the time you came here, or did you just basically leave it behind?

DS: It was more or less settled within a couple of years. Other key scientists in Wisconsin, Rhode Island, and Pennsylvania were really, really quick to confirm that what I was proposing was actually [0:30:00], in fact, occurring. And there's been a tremendous amount of research that has been done on those diseases since that time, so it basically started a new wave of research.

CP: When you came here in 1985, what was the status of the branch at that time? You mentioned there was no plant pathology program. What did you find when you came here?

DS: What I found was that the faculty at the station were aging. That creates two different thoughts. One is that, "Oh, my gosh! Our expertise is going to be retiring soon, and we're going to be losing that." The other way to look at that is that, "Wow! This is an opportunity to rejuvenate programs, to establish new long-lasting relationships, and to take each of our sciences to a greater level."

And so I found that there was a very poor economic status of the station. We had to climb out of some difficult issues. It didn't get any better in the 1990s, when Oregon was going through some recisions in their economics, and we had to

make some difficult choices all through the university system. And I had never been trained for laying off long-lasting individuals, and that became a very difficult part of the job. But we did reasonably well.

CP: Uh-huh. Well, tell me about—I'm interested in people that move into their first administrative post. It seems there's always some compromises that need to be made, in terms of what you have always done, versus what you have to do now. More and more of your time is spent administrating, and less of it is focused on research. Did you find that to be the case for you?

DS: I found that it was very challenging, but I had learned to work really long hours, and try to balance that with family life, when I was at Cornell University. It was not easy to get accepted for tenure for Cornell University. I saw scientists that did good work but did not get tenure. So I found that I had to put in really long hours to be able to do that. What that really meant is weekends, and after our daughter went to bed at night, I would get back into work, and so I was fortunate that I could work really long hours—work until midnight or one in the morning, and still be up and ready to go back to work at seven in the morning, or eight o'clock in the morning. So basically, I had that type of a lifestyle.

When I came here, yes, the administration took a lot of time. I had to balance that with the desire to continue my research, because it was imposed upon me, or expected of me by the College of Agriculture, that I would maintain an internationally recognized—I would develop and maintain an internationally recognized research program. And so I was able to do that.

At the same time, I was an officer in our professional society, the American Phytopathological Society, and I became the editor-in-chief of our book-publishing division, which at that time—I was the second editor-in-chief of that book-publishing company. And so that is operated out of St. Paul, Minnesota, and I was administering that here. It became a million-dollar operation while I was the editor-in-chief, and so I was doing that, also, while I was doing the administration here.

CP: Well, what were some of the kind of main thrusts of the agenda that you established, administratively, for the station? What were you hoping to achieve?

DS: Administratively, one of my key roles was to develop harmonious relationships with our colleagues here at the research center. Things had grown apart between the individuals within the Agricultural Research Service and Oregon State University components. [0:35:00] And the reason I was brought in, or another director was brought in, was because OSU and the ARS both moved the previous administrators out of their posts; one was transferred, one was retired, by the respective agencies. And Dr. Betty Klepper was named the research leader for the Agricultural Research Service. I was fortunate to be selected as the new director for the Oregon State University component.

And Betty and I made it a priority to develop harmonious relationships between our people, to develop lots of collegiality, have common meetings, have lots of social activities, and bring people together outside of the workplace to make everything as common as possible, irrespective of where one's paycheck comes. And our programs are obviously very different. Oregon State University scientists have to go out and acquire grants, and so much of their research is funded extramurally. Most of the Agricultural Research Service funding comes from higher administration, through the area office. So there's dichotomies, both financially and administratively, and safety regulations—all sorts of things that could go haywire between the individuals in the two agencies. And we brought it as close as we think we could possibly be. We shared a lot of activities, a lot of equipment, a lot of resources.

CP: Hm. What sort of connection—I'm interested in the sense of connection with OSU, being so far away from Corvallis, and in a pretty isolated environment.

DS: The connection has differed over time. When I came in, we did not have a useful Internet yet, at that time. When I arrived, there was just one computer for shared activity by all of the individuals in our unit. So all the scientists and technicians had one computer that could be rolled around on a typewriter stand, and whoever needed it at that particular time—and we quickly developed a culture where computers were at each work station, and we had as many computers, after a period of time, as we had people. But that took time to develop. Also, the communications were not real easy with main campus. There are many administrative meetings that are important on campus, but we did not have funding, either, for that travel.

And so I took the opinion that I was very reluctant to use my research funding to travel for administrative purposes, and I went to campus as seldom as possible. And so oftentimes I would only get to campus two or three times a year. Now, we have easier transportation, but we also have the various new technologies for communicating, and so it's a bit of an easier task than it once was. But I tried not to go to campus very frequently.

CP: Well, you mentioned that when you arrived here, the faculty were aging. You had the opportunity to recruit. Tell me about that process.

DS: The faculty were really good here. We had an agronomist, a weed scientist, and a plant breeder that were on the faculty. The plant breeder was the first to retire. Dr. Chuck Rohde, who retired fairly early in my tenure as administrator, is one of my heroes, because when Chuck Rohde retired, he went off of the payroll, but he didn't quit working, at all. He worked for the next twenty years, just like he had when he was here, and he had access to offices and fields and greenhouse facilities [0:40:02], and Chuck Rohde continued to contribute for twenty years after he had formally retired from the university system.

We have had other scientists who stayed around for a little bit of time, and one who, when he retired, he basically didn't come here any longer. And so we have had the whole gamut. But the people that we hired were good. They stayed long periods of time. And we have recently gone through a retirement and replacement for a position that I had hired, and several of those early hires that I made have already retired before me. So it's been a good run, and we have a very good staff, and we're just getting ready for the arrival of another new director in the program. So one has come and developed that program, and left, before I retired.

CP: Yeah. Another thing I'm interested in is you're manager of the station here, but also a station in Moro, which is 138 miles away. Did that present complications?

DS: It is easy, but yet difficult, to administer the station at Moro at the same time. It is very, very important to all of our programming here, and each of the scientists try to duplicate their research, so that it's not really a duplication to do research at the station at Moro, as well as at Pendleton, because it offers great opportunities for contrasting environments and climates. Whereas we're at about a seventeen-inch rainfall zone here at Pendleton, they are at eleven to twelve, and so it's a much different environment. It's a bit colder there. And so we could double the opportunities by studying our research at that station.

And, yes, it does cause some travel obligations. It requires in-depth thought to make sure that there are no shortages of funding there that aren't also applied at the Pendleton station, to make sure that the programs are equitable. The benefits far outweigh the challenges in that, and so we have those two research stations that, as you say, are a couple of hours remote from one another. But I also personally do perhaps 80 percent of my research on farm properties off-station. And so I go where the problems exist, and where the farmers are needing to deal with them directly. And some of those things you can't transplant onto an experiment station. You don't get the diversity of environments.

So I work with farmers, and because of the continuity of our farming systems, I work in Idaho and Washington as much as I work in Oregon. And in fact, my research has been funded, very helpfully, by the Washington Wheat Commission and the Idaho Wheat Commission, as well as the Oregon Wheat Commission. So all three of the grower organizations have been helping to fund the research in our program. So some of my work is done 550 miles from here, in southeast Idaho, and some of it is done several hundred miles north, in Lincoln and Adams County in Washington, and in Whitman County in Washington.

CP: Hm. That's interesting. I mean, it makes perfect sense that your research agenda is on some level made for you by the problems that arise in the region.

DS: Yes. And we're ideally suited, or located, here to go cross-border, and so the state boundaries have never been too much of a challenge for us. And the other thing that is very helpful is that a lot of my funding comes from the U.S. Department of Agriculture [0:45:02], and it is a regional funding project. So I do root disease research in all three states, and of course, the grower—I already mentioned that the growers have been contributing to that research, as well.

CP: Yeah, I'm interested in the connection between farmers around here and the station, if there's a lot of communication—I assume a lot of outreach between the area growers and what you guys are up to?

DS: One of the nice things that happens at a research center like this, compared to being on campus, is that when growers have a problem, or their advisory people from the agri-business sector have a challenge that comes along—wheat isn't growing real well, or other crops are not growing real well, or as expected—they'll walk in the front door with buckets or bags in hand, and they don't really care too much what you're doing at that particular time, because they need help, and they expect help. Our obligation is to make sure that we can help them if possible.

And the growers also don't really care whether you have an Extension appointment or a research appointment. They don't care if your funding is from the Agricultural Research Service at the federal level, or Oregon State University. When they have a problem, they are looking for the expertise that will help them. So we become immersed in that, and we have quite a bit of foot traffic in and out of our building, with fresh samples, that are never easy. If our training is like we think it is, the problems that come to us are usually difficult. And that also helps up to be alert for any new problems that are occurring in the area, so that's kind of a first-alert system by growers coming in.

On a different scale, we also have grower advisory committees at each of our stations, composed of a small number—up to a dozen—growers, that are geographically widespread. The growers that are advising this experiment station at Pendleton come from four counties in Washington, as well as eight counties in northeast Oregon. And down at Moro, we have growers on that advisory committee that come from Washington, as well as a four-county area of north central Oregon. And they help us develop programs. They help guide us through economic troubling times. They help us guide the research directives, setting up long-term plots, of managing long-term plots. We seek grower input. So all of that has been very, very helpful to us.

CP: Yeah. It's the Land Grant mission boiled down to its essence. Let's talk a little bit about your actual research over the years. The nematodes work, in particular, seems to have been pretty important.

DS: Actually, all of my training was in fungal pathogens that attack root systems of small grains. And so I came here working on fungal pathogens, much the same line of research that was being done at Washington State University by federal and state scientists.

And yet, because of international travels and things that I have observed over the years—I was intrigued when I was in Australia in 1999 about some work that was being presented at a conference, and they were showing damage caused by nematodes. And so I was paying great attention to that. I went to visit the scientist after the conference, and was looking at root systems, kind of looking over her shoulder as she was teasing out some root systems in a pan on a desk. And I indicated to her that, "God, up in our country, we would be calling that 'pythium root rot' or 'rhizoctonia root rot,' caused by fungal pathogens." [0:50:01] And Vivian looked up over her shoulder, and said, "We used to, and those diseases are still—the fungal pathogens are still important, but we had been overlooking, we thought, some nematode problems."

And so I had some nematology work from the very start at this research center, but on a different group of nematodes. So in 2000, I started doing survey work, to find out whether the nematode densities in our low-rainfall regions were high enough to potentially cause damage. I surveyed Washington and Oregon counties, and the answer was yes, we had some relatively high populations in some of our fields, and of course, there were other fields that had none of these nematodes in them. But there were certain fields that looked like they might be at risk, but just high numbers doesn't really tell you whether they're actually causing problems.

So the next question was, are they really causing economic damage to our growers? Because you can't see the symptoms in the foliar canopy. They're root-nibblers that reduce the water-uptake efficiency, and the nutrient-uptake efficiency, and so there are no real, visible symptoms, other than the plants aren't yielding as well as they should. And so, after doing many years of yield-loss analysis, I was able to demonstrate repeatedly that yes, these nematodes are economically important; we just have not been paying any attention to them.

In the year 2000, I was fortunate enough to be able to step out of the administrative role here, and be fortunate enough to remain a scientist that could focus more on the research in Extension, rather than being transferred elsewhere in the OSU

system. And so I was able to dig more deeply into the nematode situation at the time we were first starting to investigate it, and I stepped out of the administrative capacity.

And so the last fifteen years now, I have been—well, it's fourteen years—I have been focusing almost entirely on nematode diseases of small grains. And I must say that we have opened many eyes. There have been many follow-up surveys in other states. They have found the same thing that we have found. They have yield-loss studies and found similar relationships, and we continue making discoveries of new species. So we are opening a lot of eyes, and I would say that there are at least seven states in the western United States now that are studying nematodes on small grains, that had not been doing so fourteen years ago.

CP: Hm. Well, the list of work that you've done—you've been the primary investigator for a lot of different kinds of projects. I'm wondering what other topics, the work that you've done, that you're particularly proud of.

DS: I would say that the work that I did at Cornell University still is recognized today as groundbreaking research, and redirecting a whole cycle of additional research by people that are keener than I. So there's been a lot of that work going. And the same thing is happening today with the nematodes on small grains in low-rainfall environments. There are many students and other faculty members that are confirming what we have found, but also studying it in greater breadth and depth, and taking it to the next level of science.

That's really fulfilling, to see that not only were we making observations that ultimately stood the test of time, but now others can take a deeper and broader—and help to answer the questions of how these diseases can be managed economically, when water is king is our farming systems. We have to do all of our disease-management within the agronomic practices that growers will adopt and can afford. [0:55:05] And so if we were able to do things on a theoretical basis, we could stop a lot of these diseases in their tracks.

But the constraints of economic reality, and ecological reality for growers, makes it much more difficult for us to be able to fulfill our job. I still serve on graduate committees, mostly at Washington State University but also at the University of Idaho—people that are studying nematodes, and finding things that I didn't know, and yet they're basing their work on the discoveries that we made earlier. And the same is true for recently completed work with fungal pathogens. A lot of the work that has been done at Washington State University has taken that to a higher level.

CP: An item that's sort of current right now, popularly, is genetically modified crops, and it's a divisive issue. There was an initiative here in the state that was pretty close. There was the initiative to label all foods that were prepared by genetically modified plants. And one of the groups that significantly opposed it was the agriculturalists in the state—at least that's my understanding. What is your thinking on this particular issue?

DS: I concur that I am opposed to the genetic labeling of foods, and yet I come at it from a bit of a different perspective, I think. There are so many products that are in our food sources today that are including oils made by plants that have been modified genetically. Many of those products are excluded from the bill that was recently voted upon, and the bill also excluded foods that were served at restaurants or other commercial establishments. And so with all of the exceptions, I felt that it was pretty meaningless to be labeling foods that would be, then, specially labeled for the state of Oregon through our grocery outlets. And I understand, and I'm compassionate with those folks that are philosophically opposed to genetically modified organisms. Fortunately, we do not yet deal with that in the wheat industry, because there's no commercially registered wheat that is genetically modified.

But on the other hand, I pay a lot of attention to those who have shown repeatedly that there just isn't any difference between genetically modified and non-modified crops. And to my way of thinking, it is much safer to go the genetic-modification route to achieve some of these purposes, rather than the traditional breeding activity, which has, in fact, gained very strong credence among our growers. We have conventionally modified wheats that were grown that have the same end-use characteristics as genetically modified wheat, and yet the growers and the public accept that. And we don't know what other genes were transferred through that conventional process, rather than the very precise transfer that occurs through genetic modification.

CP: Hm. Interesting. I have a question about important colleagues, and the one person I want to specifically ask you about is Warren Kronstad.

DS: Warren Kronstad was a premier wheat breeder in the state of Oregon. He had an international reputation. And yet, we didn't really have a very close working relationship, in that the research trials that Warren operated included many, many thousands of different selections [1:00:04], and it occupied many more acres than we had available on our research stations. And so he had small trials on our research stations, and we, of course, enjoyed those trials during our field days, and they were important, but his main research was done off of the station. And for me to be a productive research scientist in my own realm, I could not provide the time to go through and screen all of the varieties for the diseases that Dr. Kronstad needed. So he had his own expertise hired within his work unit, to screen for the stripe rust and the root diseases and the stem diseases. They did that internally, within their program, out of necessity, because otherwise, I would have not been able to develop the internationally recognized program for which I was obligated.

CP: Did you get to know him as a person?

DS: Oh, yes, yes. Almost everyone got to know Dr. Kronstad, and he is still revered today in the wheat industry. His variety, Stevens, had one of the longest runs of wheat in the history of this country. So, yes, Dr. Kronstad, or Warren, as I interacted—yes, we knew one another well.

CP: Uh-huh. Well, who has been influential or important to you, either here or elsewhere, over the course of your career, in terms of a colleague?

DS: Some of my greatest colleagues are, of course, my major professor, Dr. Jim Cook, who set the stage, and is still very active in retirement. But then some international scientists, as well—one at Adelaide, South Australia, Dr. Albert Rovera, who continues in retirement, working as best he can in an elderly age. And then others have been elsewhere in the world, in France and Britain, and elsewhere in Australia. Those have been the key scientists that I have related to.

CP: Uh-huh. You've mentioned a little bit about your work with your professional organizations, the America Phytopathological Society. Another one I'm interested in is the work that you did with the European Union, with ENDURE.

DS: Oh, yes. The European Union is very progressive, in terms of trying to improve the efficiency of their research sector, as well as the conveyance of information from the research to the growers. And sixteen countries came together. I don't remember exactly how many research institutes were involved in that. They selected a board of directors that had an international flavor. There were two of us from the United States that were selected to be on that board of directors. And I served in the pathology and agronomic areas. There was a scientist from Mississippi who served a weed-control specialist.

And our work was to oversee the efficiency of that organization, try to lend our credence wherever possible, to see that efficiencies that they hoped to gain through funding by the European Union would be fulfilled. And that program succeeded. It has now expired. It was funded for a designated number of years, and there's a successor organization now that is taking it to an additional level of activity. And so I'm not on that board of directors. [1:05:03]

CP: I want to ask you a little bit more about the station here. How is the station organized, and how do you characterize life at CBARC?

DS: Oh, at CBARC, we're a very active group of individuals, scientists, the technical staff. We have long-lasting relationships. In the 42 years that I have been here—well, I've been here almost 30 now, but at Cornell for twelve, so there are 42 years—I've had seven technicians who averaged just about nine years of service in the program, and not all successively. There was overlap there. But I had one lady that worked for us for twelve years, and that length of service isn't common at a location like this. I've had really, truly excellent technical assistance. I've hired people that work really well in the field, the greenhouse, and in the laboratory.

One of the things that happened, also, is that I saw that we needed to move into the realm of molecular diagnostics in my program, and I was not capable of doing anything of that type myself. And so I developed a molecular lab, and hired a PhD out of Washington State University to develop molecular diagnostic techniques. Those have greatly improved the efficiency of our diagnostic capabilities, allowed us to discover new nematode species that we didn't know previously were occurring in North America, and so those are the first reports of that species in North America. And those techniques are now being used in a commercial laboratory, so they're available to growers.

I would say that we all work on individual programs, but we also work collaboratively wherever possible, so we have joint multi-disciplinary projects, as much as can be accommodated. We have very, very close working relationships with scientists at the University of Idaho, University of—oh, pardon, me, Washington State University, Oregon State University, but then many national and international programs, as well. I don't know that I've really answered that question properly, but I would not have desired to have stayed here if it wasn't a lovely place to work. I've had other opportunities to go elsewhere, and have ultimately elected not to put in the application, even though I was being recruited to do so.

CP: How many scientists are working here at this point?

DS: We have five OSU scientists and five U.S. Department of Agriculture scientists. And so we have a full-time staff that is close to 30 total, including our office administration and the technical staff. So we have a few scientists. I've almost been here for—nearly 30 years now. We have three people that were here in a technical capacity that preceded me at this station.

CP: And what are the major points of emphasis that are ongoing at this point?

DS: We have programs of wheat science, wheat management and control, and ecology; my program in plant pathology, the biology and management of the diseases that are of principal interest in the region. We have programs in organic agriculture, operated by a crop physiologist/agronomist; and we have long-term experiments that are also coordinated by our agronomist at the station. And these long-term experiments at this station have been maintained for many years. [1:10:01] They're among the oldest in the Western United States. Several of our long-term experiments have been continuously managed since 1930, with all the inputs and outputs measured since that time—

CP: Wow.

DS: —watching very closely what is happening to the soil chemistry, soil physics, the diseases that occur in those systems—and some that are younger, but still very old by long-term standards. We have long-term plots out of the Sherman Station at Moro, as well. And then the Ag Research Service has programs in soil science, various aspects, from soil physics to soil chemistry. They have a component of the research in global warming, with carbon sequestration, that is very active. They also have a very active program in precision agriculture, and the monitoring of crops as they go through their maturation, and trying to develop equipment that will measure what is happening to that crop, and then how it can be managed in a more precise manner, based on landscape scale and portions of fields. Those are some of the—oh, I failed to mention a very strong program in hydrologic activities, soil erosion, and the management of soil erosion. So those are some of the strengths of the program.

CP: Are there still people who live here?

DS: Yes. We still have two residential units at the station, and our farm manager occupies one of those residential units, and our office manager occupies the other residential unit. So we still have people based in the units here. We also have one apartment.

CP: Well, as we wind down here a little bit, one of the themes of oral histories that we've been doing for this project is change. You've been here a while, and I'm interested in your perspective on the changes that you've seen in the region, both within the agricultural world, and just in general, in Pendleton and the area.

DS: One of the things that occurs in the Pendleton area is the lack of change, and one of the reasons that our research centers were started in 1930 at this location was to develop rotational crops to reduce the stress on the wheat crop that grows so well in this area. But winter wheat still grows very, very well in this area, and rotational crops occupy a very small component of the landscape.

And so we continue to address the problems that occur in those wheat crops, because more than 85 percent of our wheat that is grown in the area is exported overseas. There's very strong market demand, and programs for the marketing of the wheat. We don't seem to gain a lot of traction with other rotational crops, such as some of the legumes or the *Brassica* crops, and there are other crops that have been studied. Our agronomic programs have studied rotational crops since the beginning of this station, and we still don't see much change occurring in that area.

However, yields have been improving, and it can't be all attributed to science, of course. A lot of it is in machinery technology, the application technologies by the agri-business sector. And so there is continual change in the way farms are operated. Farms tend to have fewer employees and larger equipment these days, and what that means is that more people are—how shall I state this? The farmer and his small management staff are doing much more [1:15:01], and they can't get everything done in as timely a manner as they might have done with smaller acreage. So farm size is increasing rather dramatically.

Farming systems are changing. And that all continues to put new challenges in front of the scientists that are trying to assist in that process, and we believe that we do contribute significantly to some of the change that is occurring. But the whole agricultural industry has changed.

CP: Yeah. Well, it kind of segues into my next question, which is: what do you see as the most pressing issues facing agriculture in northeast Oregon right now, or looking into the future a little bit?

DS: I would say that production efficiency is probably more important to the growers these days than maximizing yield, so product quality is very, very important. The production efficiency, the output compared the level of input, is very important, because of the increasing costs of input in the way of machinery costs, fertilizer costs, pesticide costs. And so there's going to be a continuation of that, as well as facing challenges in marketing, because of slightly declining consumption of wheat at the world scale, and certainly in the United States. There's a bit of a decline in the consumption of wheat products. And so that will continue to put pressure on our growers, and they'll need to seek efficiencies, which means economy of scale, but also increasing the value of everything that they put into that soil.

CP: Well, the last question I have for you is about the future of the Land Grant mission and you, as we've established, are right in the middle of it, and live it out every day. I'm interested in your thoughts on what might lie ahead for what has been a foundation of OSU and many other Land Grant universities for 150 years.

DS: I see change throughout the Land Grant university system, but I don't see it going away. There is always going to be a need for the concept of the Land Grant mission. There is an evolution, where we don't do as much hands-on with individual growers anymore. Extension has changed greatly over the period of time—less hands-on training of growers and advising of growers, but we do get a greater multiplier effect. The agri-business sector has hired very, very competent individuals, and when they learn something from us, or we from them, it goes both ways, of course. But that's a tremendous multiplier effect, because they work with many, many more growers than we would ever see at our field days, and on our individual training sessions. We see a lot of agri-business folks that are taking that messages and extending it, then, as a commercial activity, rather than what Extension once did in a more traditional manner in the past. Having said that, technologies change. There is a lot of a different media outlets for Extension education, and I don't see that going away.

CP: Yeah. Well, Dick, I want to thank you very much for your time, and your thoughts and recollections. This has been fascinating for me, and I appreciate getting the insight that you have shared with us, from a corner of OSU that a lot of folks have never been to. So thank you very much.

DS: Thank you very much for your interest, and I look forward to continuing working with you.

CP: Perfect. Thanks. [1:19:36]