Interview with Doug Parrett

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Interviewer: Mark DePue

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DePue: Good morning. Today is Tuesday, the 22nd of July, 2008. My name is Mark DePue. I'm the Director of Oral History at the Abraham Lincoln Presidential Library, and I'm here with Doug Parrett of the University of Illinois. We're excited about talking to you Doug. There's going to be a lot of things that I wanted to talk to you about, but I'll start with the standard question. When and where were you born?

Parrett: I started in 1951 in Mahomet, Illinois. Mahomet is actually just about fifteen miles west of Champaign-Urbana here, on a farm, out in the country.

DePue: And if I understand correctly, Champaign and Mahomet, we're sitting on some of the richest soil in the world aren't we?

Parrett: That's exactly right. I have had a chance, through my career and historically, to travel throughout the United States, and also in many countries of the world, and it's amazing, the amount of richness in the soil in Illinois. In fact, that's a motto on our original Ag building on this campus, by Draper, who is one of the original deans of our college, that talks about the wealth of Illinois is in her soil.

DePue: What we also should mention, and we're going to see a lot more footage as we walk around and look at this building. Where are we sitting right now, Doug?

Parrett: Well, we're in one of three round barns, round dairy barns, that are national historic landmarks on this campus. The round barn that we'll kind of walk through and look through later, was one of the designs at the turn of the century. I think the barn we're in now was built in 1912. It was one of those early designs to try to enhance dairy farming and make labor more efficient for those involved with dairy farming.

DePue: Well let's start with a little bit, or quite a bit more about your life and growing up on the farm. Tell me a little bit about your parents.

Parrett: Well my parents, the first thing I want to talk about is the farm that I grew up on and still own, along with my brother, has been in our family since 1837. So we have a long history of agriculturalist or farmers, located in the same location. My parents both are deceased now and have been for several years, but both come from farm families. In their lifetime, they did different jobs. My dad spent four years in Europe during World War II. It always amazes me that they got married right before he left, and he was gone for four years before he returned home. But when he returned home, then he started farming and then just farmed his whole life. My mother would assist with of course, raising children and farming, and held a job as office manager at the County Forest Reserve, for Champaign County, out by Mahomet. So as was the history, I think, of most family farms, one of the spouses farms, the other one does the odd jobs or works off the farm, just trying to make ends meet.

DePue: What were their names?

Parrett: My father's name was Harold and my mother was Thelma, and both of their parents were also farmers.

DePue: And your mother's maiden name?

Parrett: Thelma Taylor Parrett.

DePue: Describe the farm that you grew up at.

Parrett: You know, it seems a little odd to me, to be talking about historic issues, because I don't think any of us think of ourselves as older generation compared to younger generation. My life here at the university, one of the good things about it is how young it keeps you, being around bright young people all the time.

I grew up in the fifties and sixties, on a farm. I think we had what we would classify, a typical family farm in the fifties. We farmed about 600 acres, only owning about half of that. We had twenty purebred Hampshire sows, we had about fifty beef cattle, and my dad had quarter horses. My dad had a passion for horses. He always had black percheron draft horses when he was growing up. Now we didn't use draft horses at all while we were growing up, and he switched to quarter horses, and he would maintain four or five quarter horse mares, and raising their foals and then selling them to people who wanted to show or just have horses to ride for pleasure, on their farm. But he loved his horses. There's no doubt in our family structure, the horses were the highest priority. Well, probably my mother was the highest priority, then the horses and then the kids, and we grew up that way.

It's an interesting story, when you think back and tell young people, my children or other young people at the university, about growing up in the fifties. You realize most of the ones I work with now are mid-eighties as far as their birthdays, so that's thirty years that they're not aware of what happened.

In the fifties, a couple of unique things I remember about growing up. We didn't have air conditioning, and as I think of this past week here in July, where the humidity has been so hot and everything, I remember how we had a window fan in the bedroom. There were several window fans in the rooms upstairs. My brother and I would sleep there and most of our sleeping was propping ourselves out, hanging over our beds, trying to get a little air movement in this hot weather, as you slept in these hot nights. We also had a furnace or a center stove in the downstairs, but no heat upstairs, and so it was always a challenge mentally if you had to get up in the middle of the night. Could you get out of a warm bed to race downstairs, or how were you going to approach that, because it was pretty cold in that kind of environment. But you know, it wasn't that much discomfort. You worked, did chores every morning, you did chores every evening, but it was your routine. It was what everybody else did, and so it wasn't like you were depraved or lacking for something, it was just one of those situations. That's the way life was back then.

DePue: Can you tell us about the kind of chores that you and your brothers did, and the schedule; what time you got up to start them, et cetera.

Parrett: It seems a little early to me now, I wouldn't want to get up them, but you know you'd start the day somewhere around 5:30 to 6:00, because you had about an hour of chores, whether feeding the animals, feeding hay to the cattle, feeding the pigs.

I might tell you a little story. I remember when I was about nine years old, my dad had appendicitis and had his appendix out. These Hampshire sows, the feed bunk, we would always carry two buckets of corn from the shed, out to the feed trough. As a nine year-old boy, a three or four hundred pound Hampshire sow was pretty imposing, and I'd lay awake at night, thinking about having to get up the next morning, and how was I going to race from the barn, dragging a bucket, beat the sows to the bunk. Of course, when they saw the feed, they came charging for the feed, and I was sure that I was going to be eaten or gobbled up on any one of those days. But I devised a plan where I'd pour the feed on one side of the pen, race back in the barn while they're eating there, dump the feed out at the end of the feed bunk and race away, and when they were done eating, I'd go back and get the empty bucket, because I was at risk if I didn't hurry away when they were coming.

So the chores would take about an hour every morning, and every morning it seemed like a struggle to get up, get dressed, go out and do the chores and then come back, but you were awake when you went to school, and you'd go to school. Each evening, you'd have a repeat of those kind of chores. During harvest or during planting, the chores were a little larger, because my dad would be involved in fieldwork.

As you think back on some of these things, and everybody tells stories, but I remember driving a pickup to town when I was ten years old. I just drove to the store to get some supplies that we needed, and it wasn't that unusual. I wasn't sixteen, I wasn't eighteen, what you have to be to get your license. I was just ten

years old and drove the pickup down, drove it back, and actually it didn't seem that unusual. So now I often think about when I was teaching my daughter to drive, and her inability to maneuver a car around as she started driving, and I thought, she never would have made it with a tractor and a disc, through a tight gateway, and going up that way. So when you got to be old enough to work in the fields, then usually you came home and spent two, three, four hours a night, depending on the season, into the fields.

Now, when we were playing sports, my brother and I and my sister, had other activities, we always had opportunity for school activities. There was never, you can't do this. My parents found a way, that we were allowed to do what other school activities we thought were important. But often that meant after basketball or football practice, when you get home at 6:00, you still had your chores to do and things were delayed.

DePue: Would it be fair to say that when your father was growing up, that come harvest season, come planting season, you would not go to school for a while, to help out?

Parrett: Oh I think absolutely, but it was a culture I think, in the community, where the majority of the students were involved in some kind of farming activity. It would be an excused absence if harvest or planting demanded several days off. Particularly in the spring during planting, I would take days off from school, and they were still excused absences. When you do that, you still had to make up your schoolwork and do things like that, but it was all right.

Probably the breakthrough thing I remember growing up, was when we I got our first tractor radio. I would have been about fourteen, and we bought a radio for the tractor. And so all those hours, you could actually tune in stations. There weren't a lot of stations, but you could tune in a radio station, and having that to break up the monotony of the farming, I thought was just a spectacular advancement in my career growing up.

DePue: What kind of things were you listening to?

Parrett: Well you know, the local radio station. You got Illinois sports, because I was located just fifteen miles away, and I liked the Chicago Cubs, so I've been a Cubs fan for way too long. So we'd listen to any kind of sporting event, was probably my priority issue, and then music, of which my dad would say, "Do they call that music?" Of course, I would listen to what they preferred, and I would say, "Do they call that music?" Those would be good exchanges.

DePue: How big was your high school class?

Parrett: High school class, I graduated in 1969 from high school, Mahomet-Seymour High School, and had a class of sixty-nine students. My parents' graduating class is in the early thirties, would have class sizes of about eighteen to twenty-five, and so sixty-nine now. It's interesting, when I teach a freshman class here at the university, I

always ask the students, as one of the icebreakers is, "What size of class did you come from?" And we have many Chicago suburban students in our classes, with class sizes of 1,500, up to 4,000.

This past year, one of the stories that really sticks. I had a student from Southern Illinois Metropolis, clear down on the Ohio River. I asked him his class size and he said, "Thirty-two." And the class kind of laughed and wondered about it. I said, "Are you concerned, coming from a small high school class, about getting along in a big university?" And he said, "I'm not concerned, I'm happy to be back in civilization." So I thought, what a unique approach to the world, just to be excited to be stepping out and grasping on to those kind of things.

So a high school class of sixty-nine, which from a sports standpoint, it meant that all the boys played all the sports, and there was no specialization in one sport. You might have played a little baseball in the summer. Most of the summer was with farm work, and in my case involved in showing livestock and exhibiting at different county fairs.

DePue: I'm going to take you back here, maybe put you on the spot. Do you have any idea what brought your ancestors here in the 1830s? Illinois was a very young state still at that time, and very sparsely populated.

Parrett: You know, I'm not sure exactly, but as I understand what I've been told, they were always farmers, they always worked the land. In the 1830s, they came from—my great, great grandfather came through Kentucky. His family came from Virginia to Kentucky, and then up into the prairie land. My great, great grandmother's family came kind of from Ohio. But everybody, historically in our family, was basically farmers, and so I'm sure the lure of new land, rich, fertile soils, even though as I understand, the soil back then, a lot of it was swampy, until we made that enormous breakthrough of draining and tileage and things like that, to get rid of some of the water. But it was just farming, and the chance to get more ground, fertile ground, and continue their life as farmers.

DePue: So it wasn't that they were coming from Europe someplace. They were Americans transplanted to the Midwest.

Parrett: That would be about three generations of Americans for us. My family originated in Germany and France, from that background, and as I understand it, it seems kind of unique maybe, but they were farmers there and involved in agriculture that way.

DePue: Well it's also interesting that you know, where Champaign is roughly in the middle of the state and Mahomet certainly was, that you've got that mixture of southerners coming in, and people from the northeast, through Ohio landscapes.

Parrett: I can't tell you the exact story. For about at least two generations, we're here because our parents were here, our parents were here, and so the first ones that came in, I'm not sure whether it was a migration from the south or north, and just

here was a spot where they could establish. The unique thing about Mahomet of course, is the Sangamon River, and I think all of the early communities are typically located along some river at least. If not a major river, but some type of river seems to be kind of where commerce and cities and towns developed.

DePue: Well let's take you back to your own childhood again, and then high school. By that time you're thinking, well what do I want to do with my life. What were you thinking at that time?

Parrett: You know I really liked animals, and I guess people will hear, through the course of this interview, I've been involved in food animal production my whole life. I thought it was tremendous, the relation of a human and an animal, as far as production like that. It's different than maybe a human and pets are, right now. We have a course and curriculum right now that deals with humane education, and people and animals, and human and animal interactions. This is probably the most, very traditional type of relationship. Animals and production of food have always been something that I thought you know, this is a noble profession.

I grew up in an environment, and I think most agriculture, through the turn of the century until now, has been if you were willing to work hard, you can make a good living. Not necessarily get rich, but you can make a good living and have a lifestyle that was very comfortable. So I had every intention, never had a moment said, I want to get off the farm. I'm tired of doing this, I'm tired of this type of lifestyle. I mean it was a lifestyle that I grew to love and that I had passion for. So I was looking to go into the university, and the University of Illinois actually had—I came to the University of Illinois in the fall of 1969, and so if somebody starts keeping track, that means—we're in 2008—almost forty years, I've never left the University of Illinois. I came with the idea of returning to the home farm.

DePue: Can I ask you at that time, in 1969, was it the assumption that if you really want to be successful in farming, you need to have more education?

Parrett: Absolutely. I think I'll refer to my father a lot here. He came home from World War II and started farming. I think from the mid forties, up until the mid-sixties, when I was thinking about going to college, he saw the evolution of technology in agriculture. I think post-war, there was a tremendous amount of evolution that took place, and I think we became really industrialized and all that led over to new discoveries. Many of the things that were discovered for the war, actually were that technology and equipment, things like that, were really transferred into agriculture. So I think he understood you needed more education. I suspect that only about half, at most, of my senior class, went on to college. Those that come back to our high school reunions about ever five years, I'm pretty sure no more than half went on to college. Now, I would think that that statistic now would be about 80 percent to 85 percent of high school seniors are going on to some post high school kind of education. But I thought I was going to college, and I was going to have a degree in agriculture, learn some of the new technology and new management and business

principles, and then return to the farm, and I'm sure I'd be smarter than my father and we'd make a lot more money with all this knowledge I was going to create.

What's interesting, I might throw in here, is something that just occurred to me. I never wanted to go to college to be a veterinarian. Now a lot of students in my era wanted to become veterinarians and work with animals and animal medicine. What I'd experienced, when we would have a sick animal, often times we would try to treat that animal ourselves. My father knew a lot about animals and care, as far as nurturing animals. It would always seem like we'd call the veterinarian when (1) everything we had tried had failed, and the animal was probably going to die anyway, or the other scenario was, if this was a cow that was wild and it was uncomfortable to work on her, let's call the veterinarian and have him work on her. And I thought, well that's not a very good deal, so I didn't see anything attractive about being a veterinarian; saving animals that were already about to die or being wild. And so the circumstance never appealed to me, so I came to the university. My parents stressed education a lot. Education was paramount, and so I was fortunate to get in to the University of Illinois, and proceeded that way.

DePue: And it was right down the road.

Parrett: And it was right down the road. Right down the road of fifteen miles, was still a little worldly for a guy like me. Now, I'd had experience in high school, helping with people that showed cattle. I've been to the Chicago International many times, and helped herds from New York and around the country. I had actually exhibited cattle myself, at the Kentucky and Ohio and Iowa state fairs, and so I thought I was pretty worldly and at least had traveled some.

DePue: Were these cows that you had raised yourself then, that you were showing?

Parrett: I showed at four or five county fairs every summer, and I thought man, this is the ultimate lifestyle. You take care of animals, but you're in a town, it's pretty relaxed, the work's not near as hard as being at home, and it was fun. It was a lot of fun, and you'd meet a lot of people. It really is exciting to meet people and be in different communities. It started out as animals we had raised on our own farm, and then when I got into high school, I wanted to be a little more competitive. So we'd often go to different sales and then buy a few animals, trying to get a champion, trying to raise animals that we could compete at the highest level.

DePue: Your father, you said, had a traditional farm, so grain, corn and soybeans, cattle, hogs apparently, chickens, a little bit of everything at that time?

Parrett: No chickens. We didn't have any chickens or dairy cows, but beef and swine and quarter horses, along with the grain farming. Probably I didn't realize it as I was growing up, but corn was two dollars a bushel at the end of World War II. Corn was two dollars a bushel thirty years later, it was two dollars a bushel really up until the last four years, corn was always cheap. Economically, most farmers could feed corn to livestock, and actually gain value in the corn by putting it through livestock and

then selling the livestock. So it made a cheap feed and you'd add value. I mean, the whole swine industry in the Midwest, the basis for the poultry industry nationally, and even the dairy and livestock feeding industry, was built around the principle that we had an abundance of cheap corn. Now that paradigm—and I'm sure we'll address this a little later—the paradigm has changed dramatically, and it makes our time in the livestock industry quite a bit different right now. But at those times, the livestock were supplemental and helped offset any bad years that you might have, with grain prices. So they used your labor at a time where it wasn't fully used by crop farming, and it was a supplementary enterprise.

DePue: So in the late 1960s, when you're heading off to school, your father had a typical operation. How many cows did they have? How many hogs did they have?

Parrett: We had about fifty cows, and we were in a traditional kind of rotation. I think most farmers at that time would, for soil for tilling and purposes, particularly in the fifties. We'd rotate the farm corn, and soybeans and corn, and then some kind of hay crops, some clover, some alfalfa, some kind of hay crop, to put fertility, break up soil compaction. That was a typical rotation, and cows are the best utilizers of different kinds of forages, and so we would have had that type of rotation.

Probably by the time we were in the mid sixties, so with improvements of fertilizer and weed control, we pastured a little more on the ground that was a little rolling and rough and erodable, and then continually farmed in a corn, soybean rotation on those other crop. The sows, twenty-five, thirty sows, was just enough to give another diverse enterprise and different type of income, another type of utilization of the corn, cheap corn, another type of protection. So we had a little bit of several enterprises, and never got real big in any enterprise.

Now what happened when I went to college, we sold the pigs. We didn't sell the pigs necessarily to pay for my cost of going to college, but all of a sudden there was one less person to do chores. And so you know, the farming, by himself, my brother was around. My brother was three years behind me, and then he went to community college.

DePue: What's your brother's name?

Parrett: My brother's name is Tom, and Tom went to community college, followed a path of then building houses for a while, and then for twenty-five years now, has served as a conservationalist at state parks in Illinois, and currently is at Weldon Springs. He loves the outdoors, he loves his job. Probably it's a fiscal environment for things like state parks and state education, things like that, well it's better now, he'd really love his job. But he's found a home. He didn't want to farm necessarily. So he's done that his whole life.

So the pigs left but we maintained cows. Cows are pretty low as far as labor requirements throughout the year, as far as a cow herd and not a lot of feeding animals.

DePue: It's easier than maintaining a swine herd?

Parrett: Absolutely. Cows eat grass, and so for about seven months out of the year, cows are out on pastures foraging, so they're feeding themselves. And so daily, you make sure they're all healthy and make sure they have water and the grass supply is good, and that's really all the labor that's basically required. Now you make hay for winter feed for them, and during the winter you have to feed them on a daily basis, but during the winter there's no competition from grain farming.

Your hog enterprise means you feed them in the morning, you feed them in the evening, you're processing pigs. So they're a little more labor intensive. The other thing about the hog enterprise, from a cost effectiveness standpoint, in the late sixties, it was a time where, if you were going to make money raising pigs, you needed to maybe get bigger. Confinement operations in the sixties became the housing type of choice, and operations grew to cover those costs. It became much larger scale, to have a chance to make good income off a swine enterprise.

DePue: With this rich land that we've been talking about before, is it economical to keep some of that in grazing land, or are there certain aspects of the land that you gravitate towards that use?

Parrett: I think if we think about the beef cattle industry, historically it's been a second or third enterprise on most farms. Illinois is a state that the average cow herd size is about nineteen head. So that means there's lots of producers that have very small herds. Why do they have small herds? Well a lot of them are grain farmers that have some timber ground, rolling ground, bottom ground, that really can't be farmed but it will grow grass, so they have a few cows. Now the phenomenon we've seen in the last twenty years is there are a lot of people that work off the farm but live in the country. And so if you live in the country, you have your own little place with forty acres. Well, you think that's a great estate and then all of a sudden, nobody wants to mow forty acres. You can't afford the equipment, that costs the farm the extra thirty-five. But you can build a fence and run twenty cows. So it's a lifestyle enterprise, that the cow herds historically have allowed you to break even or make some money, on something that can be defined as an enterprise or maybe just a lifestyle hobby.

A national statistic, and I'll bring this up several times today, that the beef industry faces. Currently there's about 700,000 beef producers in America. Of those, about 8 percent raise 60 percent of the cattle. Eight percent of the producers raise 60 percent of the cattle. So that means 40 percent of the beef comes from 92 percent of the producers. So it's an industry that has a plethora of small producers. But you know, if you're in the cattle business, you have to own land. If you're in the swine business or a large dairy business now, with confinement, the acreage you need is much less, you know to handle the animals and then handle the waste as far as manure, and then you buy your crops from neighboring farms as far as feed. But for cattle, the only way to make money with cattle is let them graze. That's why

most of our cattle industry is in the west or in Illinois, most of the cattle industry is along the Illinois River, the Mississippi River, or Galena, in the northwest, or southern 25 percent of Illinois, where there's timber soils and not as good a farming country. In Central Illinois, where I grew up, you won't find many cow herds now, because the profit and the income potential from this rich soil is by growing corn and soybeans, and now especially it's true.

DePue: Yes, now that corn is at seven dollars instead of two dollars.

Parrett: Now that corn is at seven dollars, that's right.

DePue: Well let's get back to your education. You're in college, you have every intention, from what you've told us before, to go back on the farm and stay in livestock. What happened?

Parrett: Well I had a lot of fun. I think all of us who went to college, we have a lot of fun. The best thing that happens at a university or going to college is, you learn that there are different opinions in the world. I mean, you grew up in an environment, in high school you were with a group of friends, and you all had the same values, the same kind of views and entertainment of the world or whatever you had, but your all together. You go to college and you're thrown in from people from Chicago, actually people from out of state, and their view of the world. They want to know what a tractor is. They can't understand where food comes from. You wonder initially, how stupid are these people? And then you realize that maybe you're the one that's not very well educated. And so you open your mind and it's really exciting to be in that educational process and learn how broad the world is, and every year it kind of broadens. But I never lost focus. I still thought as a career, I'm going to return to the home farm and be involved in agriculture. But I learned things in the crops department, about different fertilization and hybrids of seed corn and soybean varieties and yield output and weed control and herbicides, and I thought man, I'm learning a lot.

My passion was for food animal production, and so as a junior, I started working in our meat science laboratory. This is where we would harvest animals that were from research projects. We might be studying milk production, so we'd harvest animals and study the mammary tissue. We'd be looking at the different impact of nutritional diets on fat deposition, or meat quality, or the amount of muscle, how fast they would grow.

DePue: Can I ask you, when you say harvest, my first thought was butcher, but it doesn't sound like that would be a good term at all.

Parrett: Butchering, slaughtering, are not politically correct in today's world, and so we've kind of adapted to the use of the term harvest, and that's probably only evolved in the last five to seven years. Mark, actually what's happened is, society doesn't know where food comes from, and society actually will eat more meat than we've ever eaten in the history of America this year. So we are a country of meat

consumers, but they don't necessarily understand the process, and they have different feelings about animals. If we say slaughter, it's a pretty negative connotation, so we use the term harvest. Harvest is exactly what we've done for hundreds of years, since the caveman, but we use the term harvest now. It's more palatable to get into a discussion and have open minds hearing you when you use that kind of term.

DePue: Well, that was a distraction from your main theme here, so let's go back to that.

Parrett: Working in the meat lab, processing animals and looking at the changes when breeding, in selection of nutrition, all of those results from science, I was intrigued by that. Really, an interesting change happened and I learned that we're not just raising animals, we're producing food. And so I became very consumer conscious and thinking about when we raise food animals; cattle, pigs, sheep, how do we do it as far as affecting the product consumers buy in a grocery story versus this is just a good animal. And so it was kind of a mindset change.

During my senior year, when I was starting to interview for different jobs, because—I guess I skipped over it. My dad told me, between my junior and senior year, and he was right. He said, "When you graduate from college, for five years, you should work for someone else." And I said, "Well, I'm planning on coming home to farm." He says, that might be a waste of your education, if you just come back here and we do things like we've always done. You need to take what you've learned, go out in the real world, whether it's a meat corporation, an animal production environment, or for some other farmer, and learn how to do things different than we do them. I initially was a little upset because I thought, well that means I don't know what I'm going to do, and that causes myself and students ever since, some uneasiness, wondering what we're going to do with our lives and our career. He was right.

During my senior year, I was lucky they asked me if I wanted to work on a masters in meat science; manage our meats laboratory and get a masters degree. My dad told me the second most important thing maybe he ever told me was, "If they're going to pay you to go to school, go to school." Now, if they're going to give you an assistantship and pay you to be in there, and you can advance your education, that would be the best thing you could ever do. So I did that. Now my assistantship, when I was in graduate school, they paid my tuition fees, and I got six thousand dollars to live on for the year, and that would have been 1972. But that was enough to share an apartment and get along. I wasn't going to get rich, but I could pay my bills. And then during the second year, after I was completing my masters, they said you know Doug, we need someone to help teach courses, coach our livestock judging team, would you be interested in getting a PhD? Well I liked the university. I think if anybody remembers their college years, if you could extend that time period for a while that's a good thing.

So when I was working on a PhD, I was getting paid ten thousand a year, and I could actually put a little money away. I think worked on a PhD for five years and by that time, I'd really become engrained in academic life, as far as teaching and working at a university, advancing my degrees and stuff like that. When I chose to start on the PhD, I knew I was never going home to farm. It's not that I didn't love the farm, because I was in a good situation. During harvest and planting, any time I could drive fifteen miles and be on the farm, and I could be involved, but I didn't have to grind on that tractor or the 5:00 mornings unloading corn. I really had a luxury of just picking and choosing when I could help dad on the farm. Now I went out there a lot of those times, those intensive times, to help out, and so I was lucky. I could be in the academic world, I still had my feet in production agriculture, but I grew at that time, realizing you know hey, maybe I can make—not just make more money, but have a really good lifestyle too, in academia. So I stayed and finished my PhD.

DePue: And then what happened?

Parrett: Well, then I interviewed for jobs. They offered me a job here at Illinois. They wanted to keep me on the faculty, which I knew that, but I also observed that if you're trained in an institution—and now I encourage my graduate students to do the same thing—go somewhere else. Broaden your career, broaden your background, enhance your career by looking at different places. There are always better jobs than maybe just where you've been.

So I interviewed at Oklahoma State and Colorado State, and got offered jobs, and I've looked back many times and thought, Oklahoma and Colorado are big cow states, and my passion was for the beef cattle industry. I think professionally, I might have advanced or created a little more unique career for myself if I had gone there. But as happens in many people's lives, in the last couple years of getting my PhD, I fell in love. I met my wife to be, and she didn't think Oklahoma and Colorado were as attractive, with her family being here, from Illinois too. It came down to the fact that I thought, if I left for another institution, I'm sure I'd have had a great career, but I'd spend my whole life trying to get back to Illinois, and so I stayed. So I enrolled at the University of Illinois in the fall of 1969, as a freshman, and I'm still here.

DePue: And you've made a very good life of it.

Parrett: Well, it's been absolutely phenomenal. I tell my kids that I hope in their lifetime, their careers are as fulfilling as mine have been. So I've been lucky. I'm near family, I have a good career, a good lifestyle, a comfortable living. I've gotten to travel, involved in animal agriculture. So a lot of positives, a lot of positives.

DePue: Well, tell us a little bit more about your wife.

Parrett: My wife's dad—they're a unique family.

DePue: Her name.

Parrett: My wife Susan Limacher Parrett, and her dad is a dentist in Joliet. His 92nd birthday is next Saturday, here at the end of the July, and he still practices dentistry four mornings a week. He has a very prosperous clientele. He's an amazing person. His father was a dentist. His father retired at age eighty, and only lived another year, so my father in-law assumes that as long as he's practicing dentistry… He tells his clients and patients you know, find a new dentist, and they keep saying doc, you're the only dentist we've ever had.

Now my mother in-law is Miss Joliet, or Mrs. Joliet. Billie Limacher is well known in Joliet as a fundraiser, a philanthropist, civic person. In fact, they have a bicentennial park in downtown Joliet that is named the Billie Limacher Bicentennial Park, because she is a historic buff. She took Bluff Street, which is the original street in Joliet, and all the businesses, and salvaged some businesses and then put a park in at the bottom, by the Chicago River, that goes through Joliet. She raised the money and developed this wonderful park, where they have band concerts and theater performances. It's an extremely exciting place. So well established in the city of Joliet, Dr. and Mrs. Limacher.

My wife was here though and we met. She's four years younger than I am. She was a senior and I was in graduate school, and met through some mutual friends. She was in finance and a banking career, and we got married, and she worked in banking for twelve years, then took ten years out to raise kids, and now is in marketing in an upscale retirement center here in Champaign.

DePue: What did you think, daughter of a dentist, a city girl, getting hooked up with this farm kid from Central Illinois?

Parrett: It wasn't easy for them. I think initially they were wondering what happened. I assume that through the years, they've warmed up and think actually the lifestyle is pretty good. They weren't sure. I mean, she's the youngest of four children. Her brother is Chicago's number one Northwestern Mutual Insurance agent, so you can imagine the type of money he has. Her other brother has been president of a bank and since retired. Her sister is married to a hugely successful—my brother in-law is a hugely successful CPA. I always say he works less and makes more money than anybody I know. And then their youngest daughter is married to a professor. They are smart enough to know that the lifestyle is good, the respect you get from being involved with an institution like the University of Illinois, and the flexibility you have, actually to raise a family and be involved in a passion you enjoy, is maybe more meaningful than how many dollars you make.

DePue: Well I want to touch on this before we move on to some other kinds of subjects. The relationship with your father sounds very important. I'm wondering if your father has ever wondered if it was the right advice, to tell you to continue on, and had really hoped that you would find your way back to the farm full-time.

Parrett: I don't mean to be emotional but I get this way when I talk about my father. My father was a simple man. He had a tremendous faith, he never wavered in that. I remember the months he was dying from cancer, you know people would stop to see him. He held a wake almost, while he was alive. People would leave the house feeling better about themselves, after a visit with a man who is dying from cancer. He was a staple in his church, in the choir, and was one of those men that when I look back—I was aware of it at the time, but I look back, everybody liked him. It was just impossible for him to say something negative about somebody. I'd seen him mad, but even in the maddest times, he just couldn't come to really being negative about a person, and he would let it go. He wouldn't stay mad very long, but that doesn't mean he wouldn't get mad. He used to get mad at my brother and I, how we could lose tools out of the toolboxes on our tractors, out in the middle of the field. Each season he'd say, the toolboxes have these number of wrenches, this hammer, these pliers, stuff like that. Within a few weeks, most of it was gone somewhere; bounced out, we'd left it laying somewhere, stuff like that. But he wouldn't get mad, he was very encouraging.

I think my father, many of the years when I was growing up, he would take off farm jobs during the winter to supplement the income so the family would be fine. He'd work building bleachers or working in the local steel factory and building furniture or different equipment and stuff like that. Many farmers did it during the sixties and seventies. I think he really thought not coming back to the farm was going to be a better lifestyle, and I don't mean lifestyle as far as relaxing and raising and farming, but having more financial stability and more opportunity to travel, more opportunity to broaden your life. He loved the farm. He had no regrets of choosing to be a farmer, but I think he was also—he didn't think that I had wavered off for the wrong reasons. I think he was very aware that I chose education.

My son lives in Chicago, does the daily grind every day in high finance, and will make a lot of money. I think my dad would have wondered if that's the right lifestyle, but I think he was very comfortable. We were close, we were always close. I could still help out. He could be involved in my kids' activities. I was still in agriculture and have spent my whole life involved in agriculture, and he was quite comfortable with that.

DePue: The family farm then, you're the primary operator of that?

Parrett: Well actually, I'm kind of a absentee owner. My cousin, one of my dad's brother's sons, farms actually our farm, and then there was a third brother, and he actually farms the third brother's farm too. He's the one of our generation that's continuing the farm. Now, I still go out helping. I drive the truck in the fall and haul crops to the elevator. In the spring, I'll put in some long hours, but by choice. You know, it's hugely different when you get to choose because you want to go help, versus every day having to do it. So I still help farm a lot and we sharecrop. Most people now rent their farms, because it's pretty aggressive and pretty competitive, take your

money and not worry about it. But we still sharecrop the farm, share expenses, share the income, and that wasn't necessarily the best financial choice for about ten years. The last couple of years it's been pretty good. So yeah, I'm still active but I'm not—I don't own the farm equipment any more and I'm not out there as far as some of the risks that way.

DePue: What happens to your farm, the property that you own, for the next generation?

Parrett: Well that will be an interesting question. I think financially, my kids—well let's back up. I had a sister. My sister died when she was forty. My sister had had a problem with some medicated drugs, prescription drugs. She has two daughters, and they both live away, one in Peoria, one in Michigan, and some of the land belongs to them. They're young, with families, and they could use the extra income, but they absolutely have told my brother and I that you know, we will never sell this farm until you guys want to sell the farm. So that generation is comfortable with the family farm, stays there. I anticipate at some point, we'll need to evaluate the farm, so they can have their property to do whatever they want with, to separate it off.

My brother and I are perfectly content to continue with what it is, but my brother has no children. My brother and his wife don't have any children, so I have two children, so my brother has deeded half of his interest in the property to my children, and we'll pass it on to my children, which you know, because he wants most of it to stay in our family name. I'm not sure. I often have conversations with my twenty-six year-old son about, oh he said, look at the opportunity to develop, we could trade it here and we could do this and do that. And I said, "But it's our farm." I think I feel pretty comfortable. I know my daughter is very comfortable with that. I think it will survive one more generation. I don't know exactly the process. I guess to answer your question, I'm not going to set it up legally where they can't sell it, when it's passed on to the next generation. That will be their decision. I hope to be here long enough that their passion for the land will continue to grow, and their children will have an opportunity to maintain it in the family.

DePue: But I assume this is a centennial farm?

Parrett: Absolutely.

DePue: It's been in the family since 1837.

Parrett: That's right.

DePue: So long, long ago, this passed from being just a financial decision of what to do with that land.

Parrett: That's right. We have conversations that evolve. Two Sundays ago I'm walking out there and relating some stories to my son, and at the end of the time he said something to the effect, I'm glad to know this. There's a feeling out here. And I said, "There is a feeling." Our land borders Interstate 74, and across the interstate

are subdivisions, and there's a bridge right on our property that crosses over the interstate. So Mahomet is a community that is growing, it's the growing community, you know it's kind of a suburb of Champaign. Right now in my lifetime, Champaign and Mahomet are growing together, and we're on the west side of Mahomet, but it's only a natural progression for people to think, there's the next piece of property to build houses on. So things change. We have offers, ridiculous offers I think, from a value of land standpoint, but we're lucky we're comfortable enough and we don't have to sell. Now, there could be tax law changes that might cause different consternation or pain, you know when my generation passes on, but I hope that I'm laying the groundwork that mentally, there will be a good acceptance, my son and daughter, for the property that they own, and it can be passed on.

DePue: Do you want to say any final words here in terms of your own life and the journey that you've made through academia and agriculture, before we kind of change gears and talk a little bit more about the University of Illinois?

Parrett: Certainly. There's a couple of important things that have evolved. I told you, I think I made pretty clear, that I've enjoyed my lifestyle as a professor. That evolves around every fall, I stand in front a lecture room with 200 freshman students that absolutely emit enthusiasm and excitement for being at college. I get a chance to watch these students evolve over four years or five years, and it's a renewable process. So I think my wife always, she kind of kids about it. She works in an upscale retirement center, and how dynamic and exciting people are that are in their eighties but had careers and professions that are just amazing, and I work at the other end of the life spectrum, with eighteen year-olds that are just getting ready to create and develop their own lives. I think both of us benefit a lot from that. So I've had an enormously rewarding profession.

Now the other thing that I teach as far as beef cattle production, but for fifteen years I coached livestock judging teams. Livestock judging teams are an ongoing activity, though not quite as numerous or probably as many students doing it now as they have in the past, where students learn how to evaluate cattle, pigs and sheep, and in our department we also have horse judging and dairy judging and poultry judging. You get a group of students, say fifteen students, that work four or five afternoons a week, usually most weekends, travel to places like Baltimore, Maryland, Harrisburg, Tennessee, Kansas City, Denver, Fort Worth, Houston, and compete in collegiate competitions. In a judging contest, they'll bring in four bulls, the students rank them from best to worst, and then they have to give a reason presentation, an oral presentation of why bull A beats bull B; more muscle, sounder on its feet and legs, less fat, all these different individual animal characteristics. They're scored by a group of producers or other university people who serve as officials. But when you travel in a van, with fifteen students, for all those hours, there are challenges. You're a tour guide and you have college students who don't always behave exactly like you want, but you get to know students really personally. We had a judging team reunion every year. We have about 800 alumni

from our animal sciences judging team, from livestock and meats judging. And so here are people that you create a bond with, that you maintain a lifetime, and they've evolved into leaders. One of our former judging team, he was vice president at Elanco. Two of them are vice presidents at ADM. They're school teachers, they're Ag teachers, they're in Ag industries, they're farmers, they're livestock producers. And so for the last forty years, I've built a pretty personal connection to leaders in agriculture throughout Illinois and nationally too.

So the livestock judging competition and to work with those type of people has been really valuable. The other side of it is, that we're going to talk about later in the interview, is with research. Being involved in paradigms that change and discoveries that actually change and improve agriculture and animal production, has also been very rewarding. I hope I sound like I'm someone who has really enjoyed my job, because I have. Academics at the university, it's so bad now that we have to raise tuition so much, to pay the bills, because from a state funded standpoint, as many agencies, your agency, or throughout the state of Illinois, money is tight. The state is broke. We need more income from some source, and we need better spending decisions as maybe as far as an income. So like at the University of Illinois, we talk about being a state assisted institute now, because funding has gone, from when I started, over half of the financial support of the university, to under 20 percent now. So we you know, when your challenged educationally, with reduced funds or restricted funds, to do the job that you think is very important. Education is a very important profession, and so when you have challenges, you overcome them, you know every time there's a challenge there's an opportunity, but it's become harder to do as much as you want to do.

DePue: Okay. Well I think what I'd like to do here is take a break. When we come back together again, we'll talk a little bit about the history of the University of Illinois, and your particular college and department, and we'll pick it up from there.

Parrett: Good. Am I doing all right?

(end of interview 1.1)

Interview with Doug Parrett

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Interview # 2: July 22, 2008

Interviewer: Mark DePue

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DePue: This is Mark DePue. I'm with Doug Parrett, for the second part of our interview today. Doug, what we'd like to talk about in this portion, is find a lot more about the University of Illinois, and especially the College of Agriculture. So, I'm going to put you on the spot here a little bit. Tell us a little bit about how the College of Agriculture and the university itself got started in the first place.

Parrett: Well the university, they use the year 1867 as the beginning of the university as far as—and it's a land grant university. For people who might not know, land grant universities, there's twenty-three or twenty-six of them throughout the country, but they were established federally, as institutions to take technology back to the people, and that technology was through schools of engineering, the other general education, and also agriculture. So the land grant schools have always had a mission in discovery science and improvement as far as agriculture is concerned.

DePue: The land grant suggests the way that they initially financed it?

Parrett: Absolutely, with the federal funding, and in some cases, it is actually donated land or purchased land for the additional parts to the university. In most cases it was just a federal funding line of budgetary support to establish those things. Agriculture at the University of Illinois, began in the late 1800s. About 1886, a college of agriculture was actually established. The original university, if you go down to the quad, there's a hall named Davenport Hall, after [Eugene] Davenport, who was the first Dean of the College of Agriculture, and it was one of oh, a half a dozen buildings at the University of Illinois. The turn of the century is when most of the college developed as far as individual departments. Animal husbandry, which has evolved in animal sciences, which I am now, but animal husbandry was one of the early departments, along with a crops division, crop production, crop science division. So all those occurred, and then it evolved to what we would know as home economics, you know home and family development as far as nutrition, economics and foods and processing. So originally there was crops, animals, and then home development, were the original parts of the College of Agriculture.

I can take you through exactly, like animal sciences. We were animal husbandry, and then in 1902 we split off to be animal husbandry and dairy husbandry, because most farms had dairy animals too, so we had two separate divisions. Then they evolved to about the 1920s. In the 1920s, the division broke off as far as pathological and veterinary sciences, which become the veterinary school in about 1940, and then we had animal husbandry and dairy husbandry, which evolved to animal sciences and dairy sciences. Then we merged those departments about twenty-five years ago, and they became one, Department of Animal Sciences.

So our Animal Sciences Department includes all of the food animals, including dairy, so beef, swine, sheep, poultry and dairy, and horses, and then also our Department of Animal Sciences had the first, and now has the largest, Companion Animal Department. So it's a food animal department and also companion animal.

DePue: But not veterinary sciences?

Parrett: But not veterinary medicine. Veterinary medicine, in the forties, became a separate college. So actually animal sciences deals with the genetics, the nutrition, the management of raising animals, and veterinary medicine deals with the health issues. Now, it's only natural the two are very related. I mean, because problems from illness or health problems often times can be related to production problems. We evolved basically as the department that did everything to raise animals more efficiently and end up with better food products, and then veterinary medicine was different.

DePue: Can you give us a sense, when the college was first founded, when the university was first founded, how much of its identity and the atmosphere was dictated by the College of Agriculture or the Engineering School, and how that has evolved over time as well.

Parrett: That's a very good question. I think it kind of follows the timeline of how many people are involved in agriculture. You would know the statistics better than I do, but the amount of our population involved in production agriculture at the turn of the century, was probably 40 percent or 50 percent. Somewhere around half our population was actively involved, and now we're down to 2 or 3 percent. And so if you look at the colleges at the University of Illinois, the Agricultural College was the primary college at the campus at the University of Illinois. Now, probably the number of students wasn't a lot different than just regular, general education students, but engineering would have been smaller. Now the roles are reversed. The Engineering School has over like 6,000 students, and our College of Agriculture has about 2,500 students, on a campus where there are 30,000 undergraduate students. So the College of Agriculture is about 10 percent of the university, where initially it was half.

Now we need to stop, Mark. We need to talk about—I'm using the term college of agriculture. Actually about twelve years ago, we changed from the College of Agriculture to the College of ACES, a nice acronym. ACES stands for Agriculture, Consumer, and Environmental Sciences. Now why did we make a change? It was agonizing for some of our older alums, particularly those deeply involved in production agriculture, to change the name to something different, because of all the history and all the tradition with it. But actually the change was evoked, because if we think about who we're dealing with now. We talked about politicians and budgetary issues. We talked about who are our consumers in the state of Illinois now, who are the people we're working with? And it's become science based, and not necessarily just production based. So we have Agriculture,

Consumer and Environmental Sciences, and I think we were visiting earlier, we have seven departments in our college now. We have animal sciences, then we have crop sciences, so two of the basic core departments are there. We also have an Ag Economics department, it's agriculture, consumer economics, and animal sciences and Ag Economics are actually the two largest departments in the college. Then we have a department—and we said crop science—natural resources and environmental studies, foods and nutrition, human and community development and Ag and Bio Engineering. So we have seven departments in there that kind of take the breadth of everything that you think about involved with agriculture, how it's branched off into the sciences, affecting humans and Ag products.

DePue: The one that you mentioned, human and community involvement?

Parrett: Human and community development. It would be similar, when we think about many people in my generation and old were growing up, we had a home economics class in high school, and they would teach you basic bookkeeping, cooking skills, and just managing a home and raising a family. Human community development, the people in that department would probably not want me to describe it with that comparison, but it still deals with human issues and development. We talk about food science, and we're talking about all the things as far as nutritional preparation of food. We're in an age where we're looking for foods to help provide health to the human population, and so we look at all those things; the processing and development of foods that benefit society.

Human development, family issues, are still important. Where we used to think about, at the turn of the century, cooking and canning of vegetables, now we think about, how do you raise a family and avoid drug issues? How do you finance economics of a home when you're on a limited budget? What do you do with children who spend all their time playing video games? And so we have issues like that, that fit our society. They're quite different than they were then, but the topic human, family, community development, are still big issues. A lot of small business support.

A totally different issue that our college spends a lot of time on; what's happening to rural communities? The populations have certainly left, a lot of businesses have disappeared, and how do these rural communities actually sustain themselves. We put a lot of energy into devoting, studying and development of strategies to maintain themselves.

DePue: We've discovered, doing a lot of these interviews, the emotional impact that school consolidations have in some of these smaller communities as well. That's just an example I would think.

Parrett: Exactly.

DePue: How about the—I'm probably going to get this wrong—Ag marketing or Ag economics?

Parrett: Ag and Consumer Economics, ACE is the acronym for that.

DePue: But one of the subcategories, one of the sub-departments was dealing with economics?

Parrett: Yes. Actually, each of our departments has what we call different concentration areas. Now for animal science, we would have preparing to go to veterinary medicine or to graduate school. We would have something that applied animal production. Now we have another concentration area that's animal processing and food and product development. So we have those areas, but each of them have a general curriculum and then a more specific course. Now Ag Economics, they have different areas too, and I'm not sure of these all exactly, but they have marketing options, whether you want to become a CPA, they have joint business school development. They have a lot of strategies as far as business development, whether it's an Ag business or just in general business.

DePue: And that suggests that if you're going to be a successful farmer today, or involved in agribusiness someplace, you can't just understand the animal science end of things, you have to understand the marketing part as well?

Parrett: A good example of that is we have a greatly reduced population of students in animal science that actually come from a farm where they raised animals. Now let me back up. When I started in Animal Science 100, as a student, 80 percent of the students in the class were male, and 80 percent of the students came from a farm that raised pigs, cattle, sheep, poultry, dairy cattle, horses, something like that. I just put together my survey of my class this fall. There will be 200 students in Animal Sciences 100. Eighty percent of them will want to be a veterinarian. Now they won't necessarily want to be a veterinarian to work on cattle, pigs, sheep, food animals, but they had a dog, a cat, a snake, a gerbil, and they love animals, and so they think being a veterinarian and taking care of animals is a noble profession, and it is. Now, veterinary medicine is very competitive. There's only twenty-three schools of veterinary medicine, and only about thirty to forty of my 200 students will actually get into a school of veterinary medicine. Now a lot of them will go on to graduate school, because they're bright students, but in this class, there is only about 15 percent come from farms that actually raised cattle, pigs, sheep, poultry, dairy cattle, from production animals. I always wonder where are those students and what's evolved?

The generation of students that we have now, whose family are involved in animal production, their dad and mom say, go to the University of Illinois, but become an economics major or be a crop sci…—you know, we're mainly farmers that grow crops. Learn about herbicides and genetic hybrid seeds and remote controlled tractors and GPS, you know, satellite-controlled application of different herbicides and fertilizers. We can teach you about raising animals at home. Go learn the other skills that are so critical to success in farming.

When I grew up, and I think of my dad, he was a marketing person, he was an economics person, he was a crops person, he was a fertilizer person. He knew a little bit about everything, and enough that he could work with different companies. He had a broad understanding. Now, production agriculture has become intensely detailed, from a science standpoint, that it demands too much time for any one person to understand all of it.

DePue: Tell us a little bit more about some of the other aspects at your particular department, the Ag Sciences Department, does.

Parrett: Well animal sciences, the evolution that has occurred—let's talk a couple of things philosophic at a university. Funding is always critical for any place to be successful. We like to think we provide the best education as you can get at any public institution, regardless of where you are, in what department or college, at the University of Illinois. The reality is, we're a very strong basic research institution. We're different than Western Illinois, Southern Illinois, Illinois State. One of our primary missions has been research. Now all of those places do research, but they would have more faculty time committed to just teaching and applied development, then as much as far as research. We're the largest university and we have the capacity to do more research.

When you a research project at the university, a little over half of the money from a research grant, is kept by the university to support the operating costs. If I get a $10,000 research grant, 54 percent goes to the university because they provide the buildings, the heat, the lights, the labs, the infrastructure for me to do research. That's the way the system has always been. Now it evolved from probably the sixties, through the seventies and early eighties, that maybe doing research here has a higher priority than say teaching. We were still good in teaching, but you know it drives the system, it creates income, it allows the system to continue to operate. So researchers have been enormously important to this university.

Now I come from a background that's primarily teaching, and I also do extension work. Part of my appointment is teaching producers, beef cattle producers, out in the state, and working with beef commodity groups. So I'm more on the applied side and a little less on the intensive research, but research is important. It makes the University of Illinois different, it makes it successful, and when I teach and I can say, we discovered this last spring. We have a new technology. Our students learn on the cutting edge, and so we're a discovery science institution.

DePue: You talked about the challenges of the diminishing amount of the budget for the school coming from the state, and you've mentioned grants. Where is that grant money coming from?

Parrett: Well, a lot of the grant money is federal, federal agencies; the National Institutes of Health, USDA. There's a myriad of federal agencies that support agriculture research. It's getting tougher though, you know the Ag part of the budgets in federal

research are getting more limited. And then there's private companies as far as product development. For example, the seed corn companies historically have always provided funding to test and analyze different seed varieties, and herbicides and pesticides. So fertilizer, seed varieties, those things.

Where does marketing research come from? Again, it's different commodity groups, a Cargill an ADM, different marketing. They support different research and different projects. So it's been probably equally private industry and federal and state agencies.

One of the most exciting things that ever happened in Illinois was about fifteen years ago. The state budged appropriations called CFAR, Council for Agriculture Research, and it grew to a $15 million research pool. That was a state funded project, and it was really used for applied research, not basic science, but it was accrued all Ag commodities, including grapes and different type of orchard projects. Anything that would benefit agriculture and have pretty immediate direct impact, was funded—not anything, but those were the types of projects that were funded. So whether it was an educational program, applied use of a feed for animals, some type of herbicide program on different types of orchard crops, the things that would you know, have a quick impact, that maybe wouldn't be funded by private industry or federally.

Now the CFAR program, like a lot of Illinois state programs, has come under the budget crunches, with lack of funds. CFAR is about $2.5 million currently, and so we rode about a ten year wave of having a nice resource pool from the state of Illinois, to be used in our Ag college, in combination with the Ag colleges throughout the state, got a lot of projects applied that were $40,000 projects, $100,000 projects, but were studies on things that really applied and had quick effect and quick impact on agriculture products in the state of Illinois. But it went away, and so we've had to look to other resources and maybe change the types of products that we're doing.

DePue: It makes great sense that you have a lot of the agribusinesses, that many of them are based right here in Illinois, who are generous with grants as well. Does that pose some challenges to you though?

Parrett: I think the issue forever, when you do research, is the moral or ethical approach you do to research. I have always been extremely impressed about the ethical approach to research at the University of Illinois. I mean the responsibility, that if you test a product, you test it fairly and give the results. Now there are companies that will write research grants and do joint research projects with us, to test their products. Their product might be better or it might be worse than another product that's commercially available. Often times, we submit the results and they paid and paid dearly for these results, we aren't allowed to necessarily release that product A was terrible. Now if product A was good, the company is going to come forth with it, and they'll be promoting it themselves. So lots of times our research, we'll publish

research results and say, this product of this chemical compound, of this type of nature was tested, and the results say it didn't work. We won't say that a specific company's product was tested and was bad, but we'll put out in literature and say, if you use this chemical compound or this type of feed or something, it doesn't work. We make that available. We won't necessarily say this product was tested by company A, and we found it to not be very good. We don't necessarily take that route, but we will publish the results. Sometimes we sign agreement to do research, where part of the agreement is if the product turns up to be negative or not desirable, we won't put that in our publication, but we'll use their money to fund other parts of our research. And so there is some give and take like that. The university, a professor always has a challenge to approach it in a fair fashion. I can't think of hardly any circumstances where that's been breached.

DePue: Well I'm curious though, if the grant is there, you're a research institution, you're finding out information, you're advancing knowledge. Part of that advancement of knowledge is what doesn't work, and yet there seems to be some restrictions on making that available to the rest of the research community or the rest of the scientific community.

Parrett: That would be very limited. Now I think immediately, people would start to think about health issues, human health issues, testing of drugs and things like that. I think those products, you know most of the time if they fail or don't work, it's public responsibility to make that available, and it's public responsibility if a company goes forward to advance a product, and they advance it with saying it does something that doesn't happen, then the university steps up or the research steps up to say that's not true. So there is a responsibility. If the company said, we're never going to use that product, then the results just kind of die away. There is some checks and balances there.

DePue: I want to ask you. I know you told me the story earlier, about the University of Illinois and China, and I thought that was a wonderful story to illustrate the kinds of things that you get involved with.

Parrett: Well, from a personal standpoint, I'm a beef cattle guy. One of the areas, we talked about judging teams in an earlier part of the interview, where we go out and we look at animals, decide which one is the best. Now, at the turn of the century, the County Fair and the State Fair and national shows, you were a master breeder or you're a master producer. You know, if you were judging at the Chicago International Show or the State Fair, you were considered to have the eye of the master, if you could tell this bull is better than that bull and talk about why it is. So we train students on that. Now it's evolved quite a bit in the last thirty years. We also have more objective performance measures. A dairy farmer, you know they measure the pounds of milk a cow produces and the amount of butterfat in it. A beef producer measure rate of growth and type of meat quality. Swine producers, the fatness and the leanness of the product, and lots of measures.

So when you're judging now, a lot of times on a national basis, that we're selecting breeding animals, we use a lot of objective weights and measures of performance, other than just looking at the animal. So if you go to your local county fair, there will be someone there just standing and looking at them, and ranking animals from best to worst based on the amount of meat and amount of fat, and the way they walk and move, and there are characteristics that are important. Well I've been fortunate to be involved in judging shows nationally and in Australia and Canada, and part of my demand to be involved in those activities is the ability to describe or give oral reasons about the different shows.

I'll relate a quick story. In Australia, I was judging over there. I was the first judge twenty years ago in Perth, Australia, in Western Australia. Usually to judge in Australia, you had to be past sixty years old, and so I would have been in my mid-thirties. They never gave reasons. A judge would place them and sit down, and the next class would come in. So I'd place a group of animals, I'd get a microphone, and I'd describe the animals and give reasons why animal A beat animal B. I noticed there were three or four people watching me. They'd stand there right by the announcer stand, and then when the animals would be walking out to the ring, they'd run to the ring and then they'd run back to the announcer stand, and I couldn't figure out exactly what they were doing. So after about an hour we broke for tea, and I asked them I said, "You guys keep leaving and coming back here. I'm just curious of what you're doing." They said, "Well, we're not used to a judge describing the animals and sometimes, you describe animals that are no longer in sight, and we couldn't believe you would do that, so we run over just to see if you were being accurate, and by God you were. You were doing a nice job." So that was kind of a compliment.

Anyway, so I have some national—I've had a chance to nationally and internationally be involved in different activities as far as judging. One day, about, it would be probably ten years ago now, we got a call in our office from a Mr. Pritzker, and if you've been in the Chicago business circles, you know the Pritzker family is one of the wealthiest families in America and probably the world. They own the Hyatt Hotels, but they also own a huge international shipping business, and containers on ships throughout. Well he wanted to know if he could buy a bull from the University of Illinois, and so the call came to me. I asked him what for and he says, "Well, I want to make a gift to the Premiere of China, who is visiting America." I said, "Why a bull?" "Well," he says, "I'm having a hard time thinking about what gift to give the Premiere." First, the Premiere is controversial. Our relationships with China are strained, with Taiwan, and those issues are strained. And secondly though he says, "I thought if I gave an agricultural gift, that would be considered okay by all the political parties in the country, and it would be politically neutral." And then that was when Michael Jordan and the Chicago Bulls were winning NBA Championships, so he wanted to give him a bull. He said, "What do you think of my idea?" And I said, "Well what else do you want to accomplish?" And he said well I'd like, if you have a good bull, we can send the bull over there. We could improve the quality of beef production in China, and so I think it's a good

idea. Now later he explained that they had agonized, he and his public relationship department, had agonized days and days, trying to figure out what gift to present him that would be meaningful but not controversial.

The funny part of the story. I said well we have a bull. We have lines of cattle, genetically supervisor for meat quality and things like that, and I said, "But you're going to have a hard time getting an animal imported into China because of disease and health restrictions in both countries." But we did figure out a way that we could give him the ownership of the bull, and then export semen, so they could artificially breed cows in China and have impact on changing the cattle in China. So the story from a science and Ag perspective made good sense.

I do have to tell you about pricing the bull. I'm dealing with one of the richest men in the world, and he wants to know how much it's going to cost him to buy the bull. I really didn't know. I mean, we normally at that time, would sell bulls from $2,000 to $5,000. And he said, "Well how much will it cost me?" I said, "Well I'm not sure." He said, "Well can I get the bull bought for $15,000?" I said yes. And so I thought that was a perfect transaction. He thought it was a fair price and I certainly agreed, and as far as running the beef farm, they were happy because that allowed us to buy a new pickup to be used at our beef farm that next fall.

So we made a gift of the bull to the Premier of China, at Pritzker's farm, which was north of Chicago. I took my son with me, took the bull up to make the presentation, and of course the security was—I mean, we've watched movies about the black suburbans and the FBI and law enforcement and things like that, but about three miles from the property you get stopped, you get checked, your vehicle gets checked, and I've got a trailer with a bull in it. They're having a discussion, who is going to get inside the trailer to make sure there's not a bomb or something not safe, with the bull in there, and they decided none of them would step inside the trailer with the bull. And I said, "Well I'll go in." Yeah, but you brought the bull, that won't accomplish anything. I said, "Well I'll go in and I'll hold him while you guys look." Okay. So it was an interesting reaction.

So we went to the thing and I was assigned a Secret Service Agent. The press, and the Chicago press, you can be assured, there was about sixty of them that were bused in, with a viewing stand, and I was asked to give about a ten minute interview with him, about the bull. I thought, well this will be exciting. So I have all the Chicago and national press there, and the first question is well, tell me about the bull, of which they had no idea, but by about two minutes, we got to, does this mean the University of Illinois has a certain political stance with the Republic of China? I said no, this means that Mr. Pritzker wanted to purchase a bull for this. Oh, does this mean that the number of Chinese students are going to increase at the University of Illinois, based on this gift? I have no opinion on that. Actually, I'd been prepped a little bit by the university people. The issues were all about politics, and they didn't care much about the bull other than they were enamored with a bull

being given and the Chicago Bulls' prominence at that time. So it made for an interesting story.

The Premiere came and he visited a couple of different people, came over to the pen and spoke to me in English about the bull and appreciated the gift. I gave him a quick summary about how the bull could help, and he thought that was a great gift. Then he stepped away to the microphone to take questions from the reporters. When he answered the questions, he did it in Chinese, through an interpreter. Now, minutes before he had spoken perfect English with me, one on one. And so I asked someone about that and they said well, when you work through an interpreter, you always have time to think about your answer, and you can actually converse about how you're going to answer the question without actually giving an answer, instead of if you do it in English, you might actually use a wrong phrase or something like that. And so I thought that was kind of odd.

The other thing that I did that my family really appreciated. Once I spoken to the Premier, I was supposed to step back to a different spot on the farm, and I thought you know what? This is my one chance to be on the WGN News, out of Chicago, so instead of stepping back, I stood right next to the Premier, and that night on the WGN News, I was right there, live in color, on the TV. Not any part of our discussion but a little old university professor from Mahomet, made it to the big news.

DePue: Great. I wanted to talk a little bit more about how the cattle industry in particular, has evolved over the years. We were talking, when we were not on camera, about the various different hybrids that had been involved with that. Can you talk about the last fifty or sixty years, of the kind of cattle we saw sixty years on the farm versus what we see today.

Parrett: You bet, and I hope I don't get too long, because this is the topic I spent my whole career about like that. We raised cattle through the forties and fifties and early sixties, that weren't very big. They had tremendously high meat quality, we were feeding them a lot of corn and selling them with an inch of fat or more than an inch of fat on them. Now, that makes steaks that are really juicy and flavorful. In the sixties, we decided that we needed cattle to be leaner. We needed to make our meat products with less fat on them. Society changed, we became way more health conscious, and we found out that cattle that are leaner and hogs that are leaner, would grow faster, and when they start to fatten, they actually grow slower. It takes twice the amount of feed to put on a pound of fat as it does a pound of muscle, and so it's not as efficient to grow animals when they're getting fat.

I actually got to the university at the peak of the type change. We went from cattle, we used to call them belt buckle cattle. Pictures of me showing animals that at two years of age would weigh 900 pounds and be about waist high. But in the late sixties, people started to look to other sources for breeds of cattle, and we went to what we called the exotic breeds. The word exotic means different from. We

wanted something different from our traditional Angus, Hereford, Shorthorn cattle that had come from Great Britain 200 years ago. So we went to Continental Europe and found breeds of cattle like Charolais, a big all white breed, and Simmental and Maine-Anjou and Chianina; breeds that had been used partly as draft animals and partly for milk production or a beef/dairy cross, but they were much larger than American breeds of cattle, and we brought them to America.

I remember, when I was on our judging team at the university, I saw the first half blood Chianina. The Chianina was an Italian breed that were about over six foot at the withers, weighing 3,000 pounds, and I thought, this is the biggest beef animal I'd ever seen, and it's the answer to all the problems we have in America. Now, that's an interesting thought process, because I started on my PhD research, and my research was, what is the composition of beef animals when they're half these continental European breeds and half the traditional American breed. Now the quick summary of it is, they are just a lot less fat. Most animals would only be two tenths, three tenths, four tenths of an inch of fat, instead of an inch or an inch and a half of fat. Instead of weighing 900 pounds at two years of age, they would weigh 1,500 pounds. And we improved them since then, to where they'll weigh 1,300 pounds at a year of age, with the proper amount of fat on them. So I was right at the heart of that evolution of type change, from little ones to big ones.

Now if you saw pictures of the cattle I judged, when I was showing in the late sixties, they were about waist high. When I judged my first national show in Oklahoma City in 1984, I couldn't see over the back of the animal. So I was one of those darn university guys that, what the heck are they choosing, because we went from little old fat ones to great big ones. Now it wasn't without cost. When we made cattle bigger, all of a sudden we had some calving problems. You know, if a cow is going to be big later in life, they start bigger, and so cows had trouble giving birth to these. A man who is used to feeding a thousand pound beef cow, now he's feeding 1,400 pound beef cows, has to buy more feed. Well buying more feed was okay if your calves weighed 600 at weaning versus 400 at weaning. But if you lost a few dead calves, you spent a lot more for feed cost, maybe the benefits didn't totally offset all the extra costs. And so in my career, I've gone from helping evolve from the little dumpy fat ones, to the biggest cattle, to applying some economics and typical management, until we had it moderated. We've kind of come from little to huge, back to moderate, and then among the moderate population, we've actually selected for more growth and efficiency within moderate sized cattle.

DePue: How about the flavor of the meat, the quality of the meat?

Parrett: The beef cattle industry has always been a challenge, because we sell a high quality product. Not that other meats aren't high quality, but people pay a premium, have always paid a premium for beef, because they like the taste. When you think of beef you think of the steakhouse. Now, we've been enormously successful in the beef industry because half of our product is ground up as hamburger, and the ultimate fast food chains are McDonalds, Wendy's, Burger King, all those places that sell

hamburgers. So we have a great outlet for the lower quality meats, and the steakhouses for the top quality meats.

For pork and poultry, we typically market those animals when they start to get fat, because they're marketed at young ages. Pork are marketed at four months of age or five months of age, and so they're young, they're tender, and the meat will be juicy, and you just don't want it to get too fat. Now cattle we sell between a year of age and say eighteen months of age. In the last ten years we've gone from the average market animal age of two years of age, down to about fourteen months of age, by selecting lines of cattle, genetics for cattle will actually grow faster, and feeding them diets and rations that are in tune with these superior growth genetics.

Now one of the things people don't know about beef. We could sell beef totally lean tomorrow. If the public said, all we want from beef is an extremely lean product, we could market it tomorrow. But we feed cattle, we typically raise beef and feed them on high energy diets until they start to fatten a little bit, to put extra marbling, the fat, the juice, the flavor in the meat, because the American public still demands way by far, a flavorful meat product. Now if that changes; we hear about lean diets, we hear about changes in diet, we can adapt to that pretty fast. Maybe now, with seven dollar or eight dollar, ten dollar corn, we're going to have to change. It's like all American food products, if you take the fat out of the product, you lose a little bit of taste. Taste that we perceive the juiciness, the flavor, comes from fat.

DePue: Well you led right into my next question then. What is the impact of these much higher grain prices now, on the cattle industry?

Parrett: I don't know in my lifetime, if I've ever been more afraid for the cattle industry, and all the food animal production industry. Large feed lots, large swine facilities, the large poultry facilities, were always based around two dollar corn. And if you think back from about 2002, back to 1945, corn was always two dollars. Now, we've raised a lot more corn, and in draught years we might have corn at $2.80 or $3.00, but most years, $2.00 to $2.50. So the economy of those livestock industries was based on very affordable, low price feed costs. Now we've taken feed costs what, 400 percent higher, and so you have an economy in swine, poultry and beef, that are based on cheap corn and now corn is not cheap. Now food prices are higher. Food prices aren't necessarily higher because corn is higher. It's because the labor costs, fuel delivery costs, packaging costs, marketing costs, all those costs. You know, the corn price affects the producer's profits, not so much the price that's in the store. The producers can't just say, I need to have a higher price, because the market for meat is based on supply and demand. The industry adage is, if you don't sell it, you smell it. So if you raise too much meat and you can't get rid of it, then it's just a perishable product.

DePue: Which was the problem a few years ago, with swine especially.

Parrett: With especially swine. Right now in our industry, we worry about two things; high priced feed cost to produce animals and high priced food costs. Will the public actually stop buying as much food or as much meat? Meat is kind of a luxury item. Let me give you an example that I worry about. I go to the store last week and the price I pay for two fillets to cook on the grill is the same as I can buy a whole pork loin. So will I buy two fillets or will I buy the whole pork loin, which is three or four dinners? Well I buy the fillets, but that's just because I'm going to do that. But you know, we can see those kind of decisions being made. The reality is, if you've got grass and you've got a few cows, and you don't have any alternative for that grass, cattle are still a viable income. But if you're a large western feed lot, where you have twenty, forty, fifty, a hundred thousand animals, and you're feeding them now, seven, eight dollar corn versus $2.50 corn or $3.00 corn, you've got some production costs and there's a real concern, can you survive. I worry that the whole thing could just break down because of feed costs

DePue: But don't you have at the same time, a growing market for a lot of this beef overseas? I mean some of these new economies, China and India, or China especially, as they're getting richer, they're developing a taste for meat that they never had before.

Parrett: Historically, when countries become more economically developed, one of the first things they do is buy more meat products. Meat can be part of any healthy diet. It has the same amino acid profile as the human body does, so it's great as a protein source, with all the micro minerals and magnesium, the B vitamins and on and on, you know meat's fit. What you don't need to do is have a daily diet of fat bacon and over-fat steaks that are eighteen ounces. I mean, you could consume them, but I think the diet issues in America are mostly we consume too much and we don't eat enough different choices of food. But you're right about that. The problem with international markets is probably based around the political economic environment.

It's interesting, when I traveled in Australia last year giving seminars, two or three times they asked me, how does an American cattleman develop such a powerful political lobby in Washington? And I said the American cattlemen have no voice in Washington. We're one of the lowest rungs of the ladder in Washington, but to an Australian, who export 70 percent of their beef, any beef we export interferes with their market. But they thought we were exporting.

The Japanese market is a huge market for American beef. The Korean market, if we get it open enough, is a huge market. Economies that have money, they're willing to pay for high priced beef products. So we figure that if the average market beef animal today is worth about a dollar a pound, about ten cents of that dollar a pound is due to export markets, and if we keep growing it, it has a huge impact on the market. But the decisions aren't necessarily made to benefit the animal producer. It's whether we import cars or export cars, we import radios or export radios. I think there's a lot of other items that are higher up on the decision part of that, rather than just agricultural products.

DePue: But I still would think there's a tremendous potential for growth in some of those markets, especially in Asia.

Parrett: Absolutely. We've got our fingers crossed, that we can get those markets open, because they are a direct impact to the prices that producers can receive.

DePue: Well let's change gears just a little bit, but it's affecting the market I think. I wanted to talk to you about animal growth hormones, technologies in that respect, and where the United State is on that right now, where the university would be on that.

Parrett: Universities are about discovery. Universities have always been about measuring products and their benefits. When we talk about research, one of the issues we want to talk about here in a moment is, how much animal research is benefiting humans. In fact, a lot of our animal science research actually delves into human medicine. But as far as feed additives or implants or compounds that we add to animals to enhance growth, they're like most products. I think there's a public awareness. A lot of the problems we have with things we do in agriculture is the public has no connection to agriculture. They have no idea what production of agriculture is, they don't understand the process. Even our students are basically of that type when they enter animal sciences. We have compounds that are hormone like compounds, that we give to beef animals or dairy animals. We can give what we call beta antagonists to swine, that actually work in the animal's body, to change the body processes to produce less fat and more muscle. Now these are not compounds that are like the steroid scare, are compounds that actually show up in the meat product or the milk product that consumers have. They're compounds that actually alter body function, that then results in more lean and less fat tissue, and so it makes the animal more efficient, 10, 12 percent more efficient in growth as far as the food they use and the product they develop. Constantly, we test these products, or the FDA always tests these products, to make sure there's no detectable, any residue or anything that would be harmful, and so the products are safe.

I just dealt with an issue last week about bST in milk. Now bST is Bovine Somatotropin. There's an analog of bST that's similar to human growth hormone, and so we deal with issues where the public reads an article and says oh my God, they're giving cows human growth hormone, I'm going to get it. When I drink the milk, it's going to make my kids grow up with large heads or too much hair on their body or something like that. And actually what happens is, milk glands, in humans and animals, are developed as a part of circulating human growth hormone. Bovine Somatotropin is a different analog of human growth hormone. If we give dairy cows this bST, they actually will develop more mammary glands, and so they'll have more mammary gland tissue, produce more milk. Now if you take a sample of milk this week, last week, twenty-five years ago, it will have a little bit of this bST in it. It always has, because it's a byproduct of mammary tissue. A cow that's been injected with bST, that produces 7, 8 percent more milk, in her milk, the amount of bST is the same as the cow that doesn't have an injection of it. So as a dairy farmer, if you use a compound that enhances the amount of milk, 6, 7, 8 percent, where the

milk doesn't have any residue, doesn't change what the milk is made of, it seems like a reasonable compound to use.

We use the same thing in cattle. We have estrogen-like compounds that result in the body producing more lean tissue, and the estrogen in a normal meat cut is the same as it is in a non-implanted animal. Now, the estrogen in a normal meat cut is less by about a thousand fold, than the estrogen in a spinach salad. But we have groups that say oh, they're given these compounds and I don't believe the FDA, because I think there's more estrogen in there because young girls start reaching puberty sooner and they ate meat. Well that's a scenario that you can create. That's a scenario that on the internet, can spread like wildfire in today's time, but it's a scenario that's not true based on science.

And so our challenges aside, when we test products, we have absolute responsibility. The Federal Government puts an enormous amount of testing through their agency, of any of these compounds that private industry would develop, and so we use compounds that enhance product development and we're very assured that we do it safely.

DePue: There are places in the world where there are other things that are being used, that does affect the human population down the road as well?

Parrett: I don't think so, but the problem is we don't know. We don't know the regulatory, the inspection, the amount of use. You know, any producer can take one of these compounds and misuse it.

DePue: Well let me take something right out of the—these flies are getting persistent now—but right out of the front page. We're about a week or two away from the China Olympics to begin, and now American athletes are afraid to eat food in China because they're afraid that they might test positive for steroids.

Parrett: Yeah. A lot of that I think, and I'm not familiar with that exact article, but we have—let's use an example of some of the herbal teas, like green teas, and this is not an area where I'm an expert in. There is a craze, where we thought if we take some of these herbs as medicine, it will give us antioxidants and prevent us from getting cancer, reduce things, because people say oh so and so did this and their blood pressure went down, and things like that. But these items are not tested or approved for medical purpose, but there became kind of cult use of a lot of these different compounds. I think cultures like the Chinese, we've all read historically, they use different plants and compounds to treat diseases and ailments, but nobody's documented with extensive testing, what the results could be. All of the results that we have on our compounds, go through a five, six, seven year testing.

Now in our society, we have issues like should we use different kinds of compounds? Why does it take so long to develop these compounds? Why does medical research take so long to get a compound? You know, we read about it's approved, it looks like it will fight cancer. We'll let you know in eight years, after

we've tested it on enormous human populations and gone through enough periods to know the after effects. We've set up this to make sure there's no quick application and there's very thorough testing. But you're right, in the rest of the world, where we don't know their testing procedures, absolutely there could be some compounds that would cause reactions that we're not sure of.

DePue: One of the challenges that the American beef industry has had lately, is with some of the diseases. I'm thinking especially of mad cow disease, but there are others as well. Can you talk a little bit about mad cow disease and that impact, not just from a pathological sense but from the marketing side as well.

Parrett: Let's start real quickly. BSE, Bovine Spongiform Encephalopathy, we like to say BSE instead of mad cow because mad cow creates that bad connotation, it's an infection into the nervous system. Now it's not a virus, it's not a bacteria. It's caused from a mutated protein. When you think about a protein that takes an abnormal shape, that ends up in the brain, and because of this abnormal shape, other proteins will attach to it. What it does, in the simplest form, it creates space then, between nerve endings in the brain, and so you get malfunction of the nervous system. They call it mad cow because a cow that had this disease, typically would be an animal that couldn't stand or was real shaky, her head would move side to side. It was neurological malfunction. So it's not something like an infection or a bacteria you would get. You would have had to actually eat contaminated nervous system tissue from an animal with the disease, to get this disease. Now, BSE is similar to Cruetzfeldt-Jacob Disease that we see in humans, that occurs as a mutated protein, in about one in a million in the population. Cruetzfeldt-Jacob was in one of the South Pacific Islands, had a population that suffered from the disease, but they were cannibalistic, they ate the brains of humans, and so they spread the disease because they ate nervous tissue that way. Well the BSE, mad cow, kind of was an outbreak that took place primarily in England, and they got it from cows who had eaten contaminated feed that contained ingredients from animals who had been harvested, and their products went back into the feed. Now let's start at the beginning of that chain.

One of the byproducts when you harvest animals is you have some meat and bone meal and blood meal that's left over, that used to be mixed together and used as a protein supplement to animals. And so some of the contaminated nervous tissue got into this feed, in a certain locale, and it developed in these mutated proteins in cattle in Great Britain, and over a course of years, it got to be a lot of animals with the mutated protein, some passed on from generation to others, some didn't. It took them about five or six years, when they had these odd animals, to really identify that they were having an epidemic. I think at its peak, about 1,700 lives were lost due to BSE. Because they were slow in making changes, that trickled on, and last year in the world, we had three deaths due to BSE. I often think about how many people died on our highways last weekend, but we're at a zero tolerance level. We want no deaths due to this problem. In the United States, we ten years ago quit feeding any animal products in animal feed, which should eliminate the problem.

The disease, typically animals would live—the disease would show itself when the animal is five to eight years old, and so we've been ten years past that. We've never imported animals now, from England, since this all started, and in Canada, for a while we didn't import from Canada. Now we only import meat from Canada when they can document the animals come from them tested and cleared. Canada, because they had a few identified cases, actually reduced their whole beef population by 80 percent, and they're now rebuilding it through herds of animals that have detailed testing. We increased our testing, random testing of animals, by about tenfold, in this country, and any animal that has any signs of being suspect like this, is eliminated from the food chain. So we have an extensive testing period system. Harvard did a test on this and thought our chances of getting BSE or mad cow disease from American beef, by American, was equal to the random one in a million that occurs in humans. So we think we have a safe food supply.

Now it has been a challenge internationally, to convince the rest of the world that our beef is safe, Japan particularly has been kind of doing that. We have a rule now, the beef we export to Japan comes from animals that are 20 months old or younger, which the illness, the mad cow disease never professes itself, never becomes a problem until the animals are five, six, seven years old. So we think we have a really safe product. We're working really hard to make sure we test. Nothing would be more deflating to our economy in the beef industry, to have an outbreak of that.

DePue: I understood that cultures like China and Korea—not China and Korea, Japan and Korea, because they're eating more raw beef products, that that was one of their concerns.

Parrett: Yeah, it is a concern, but there's no validity to that. One of the other things we fight in the beef industry is E. coli contamination. E. coli, in my beef class, I serve them burgers on the first day. Class is 11:00 in the morning and they like burgers. About ten minutes into it I say, "Oh by the way, half of you are eating hamburgers from E. coli contaminated beef." And all the eating stops in the room. And I've explained to them that if you cook beef to 158 degrees, E. coli is dead. So I guarantee them they're cooked that well and it's safe. Well do you think they'll start eating? Not a chance. So you know, hamburger that's mixed and packaged, and so it's exposed to all the toxins that are in the air, all the bacteria, those kind of problems, so we fight those. We have the best food inspection service in the world. I mean, if you've ever traveled internationally, you're amazed at the way they present some of their food, particularly these developing countries, in outdoor markets. We have a society that wants zero tolerance, and I don't think the public really is concerned when they go to a store, about the quality of their food and the safety of their food, but they'd better cook meat to a safe temperature and they better wash their hands and better wash their food products before they prepare it. I mean there is simple basic hygiene that needs to occur.

DePue: Yeah, sure. I want to ask you just one more question before we begin to walk around and see some of the things up close that you've been working with, and that question is about the tracking of beef. I think you had mentioned before, there is some resistance among American beef producers to do that.

Parrett: We have a national program to identify every animal individually, and also to identify every premise that is raising food animals. I personally am a person that's totally in favor of that. If we're raising a food product, we shouldn't be afraid to document that we're doing it in a wholesome, safe fashion, which we do. But there is a different opinion among agriculture and conservative people out there, it's I don't want big brother watching me. I don't want the Federal Government knowing everything about me and everything to do this, and while they're doing it in a safe, wholesome practice, there's a resistance until it's mandatory, to do that voluntarily, though we're pushing it and we're seeing progress in that.

Australia and some other countries of the world require mandatory individual animal ID, and they laugh at us because we don't do it, because it allows them into international markets with more ease, because they can document every animal, where they came from, and track it if there ever is a safety problem. So we're going to get to that, but again it's a political feeling; I don't want the government to know too much about me.

DePue: Well let's go ahead and break, and we'll start up again and take a walk around the round barn and then elsewhere as well.

Parrett: Absolutely.

DePue: Thank you, Doug.

(end of interview #2)

Interview with Doug Parrett

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Interview # 3: July 22, 2008

Interviewer: Mark DePue

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DePue: We're out here, outside the round barn now. My name is Mark DePue. I'm still talking to Doug Parrett. Doug, why don't you explain what we're looking at behind you here?

Parrett: Well as we talk about agriculture in the University of Illinois, we're at kind of where the old farms were. We've been very fortunate that our Ag research farms are actually real close to campus. Now as you can see as you look behind me, the campus is expanding, the campus is moving. We're on the south edge of campus, and you can see some of our athletic facilities. We recently moved our poultry farms that were over here, as we're expanding a tennis facility, and we moved out hundred year-old poultry buildings into a new facility. Now, we all like the historic nature of buildings, and campus has done an excellent job in actually saving and preserving important historical sites. From a practical standpoint though, we've been very fortunate that at a time when we're doing research that's very detailed, very specific, very well governed, that we have new facilities. So now we have a new poultry facility that allows us to do things that we could never have done in our old facility, and we're going to be later, looking at our new beef research farm. There's a concept that we can measure and evaluate and test things that we never had an opportunity to before.

Here, on the very south end of our farms, we're going to walk up into our national historic landmark of our round barns. These barns were built in the early 1900s, this barn specifically in 1912. What these barns represent are one of the eras, one of the changes in the early 1900s, of looking for a more efficient way to produce dairy cattle. Where we had a traditional barn that would be oblong or rectangle in nature, the concept of the round barn became one of the designs that we looked into. It's set up in a round fashion, as we'll look upstairs and we'll go downstairs. We're trying to find a way that one person or fewer laborers. How could a person or a family become more efficient in their own labor use, in the dairy business.

DePue: The thing that strikes me when I first walk in here is looking up and seeing how huge this space is.

Parrett: Well the design of the barn, and we've rebuilt it. We don't use it very much right now specifically, but you can see they were designed with a big silage silo right in the middle of the facility. Now originally, the barn, with its roof so high, was because we stored hay in a loose fashion. We'd gather it in big loose mounds out in the field, and bring it in and dump it, not in bales, but in loose fashion, and so you had this enormous capacity here, to stack hay for a winter supply, to feed your dairy cattle. You can see here now, we have large, square bales of hay, and we won't stack them to the ceiling because as a bale, they're condensed and they're heavy, and the floor will only support so much. But you start to get the concept of the round barn. You have a silo in the center that's a supportive structure, where we put corn silage in, and then you'd have all this loose hay. So the feed is all located up

here on the upper level, but it's in a round fashion. You can start to imaging how a person below us, where we'll be headed, one person could go around in a circle and feed all the animals with a minimum of walking and quite a bit less labor use.

DePue: Well I think we can see that better downstairs, can't we Doug?

Parrett: Absolutely, and we can look at the setup down there. It is an enormous facility as far as this old, grand structure, a roof and the round barn concept.

DePue: Okay. Let's head on downstairs. Doug, we're inside the basement now, of the round barn. Tell us a little bit about what we're looking at here.

Parrett: Well, now let's think in concept, of a round facility. So we started with the silo in the middle, so the feed is available right here, out of the center aisle, and there were carts that you could push around and shovel around the feed. The cows would come in the doors and each cow would find a stanchion. One of the early concepts of the round barn with this was individual feeding. And so if a cow produced more milk, we could actually feed her a little more, to sustain her while she produces more milk. It's kind of a neat concept. The cows come into their own stanchion, and they stand there with their feet back here, and then any waste or manure they have would come out here, and we can see down here, the old bucket is still hanging there, that we would use to go around and just pick up, so we can maintain a sanitary environment. Then as the cows got done with their eating, we would send them around the corner to a dairy parlor, the milking parlor, and they would go in there, it's a six stanchion milking parlor, and of course they were milked by hand during those times, originally when they were in here. So the cows knew when they came in, they were going to eat, they were going to walk and be milked, and they would return, after the loop, to the other side, where they had a loafing barn back there. The main concept was we compacted everything to one location, and we compacted it in a fashion where the feeding, instead of hauling hay down a long barn, you cut your steps in half or even by two thirds, by having the feed right here and available. So a person on the inside would do the feeding, the cows would eat. You can see they had their own individual waters, right here. Every cow could just push her nose down, and the water would come down, so they had their own individual waters and stanchion, and then somebody would go around with the bucket and clean up the manure so we had a sanitary animal. Then they'd come out of the stanchion and they'd walk around to the milking parlor, where milking occurred, and then back out the other side. So this got them in a rotation, cows coming in and out.

DePue: For the person who is working on the inside providing the feed, are we talking hay and silage?

Parrett: Yes.

DePue: No grain?

Parrett: Sometimes grain, it depends on the production factor. Absolutely, there's always a little toppage of grain. We could see on the other side—it's no longer up there—there would be a grain storage bin with an auger, or just a regular gravity flow into here, that you could mix in with the silage that we're giving them, but most of the time good corn silage. Good nutritionists would know that corn silage is about half corn, on a weight basis, on a dry matter basis. So you get a lot of energy out of what people look at corn silage, think it's wet, mushy corn ground up, but actually there's a lot of corn in it, and then the hay would be the high quality feed to add protein to the diet. But most of the design, I think it was unique because it saves steps, makes labor more efficient, and cows get trained pretty fast, to where their stall is, for where they want to eat, and then moving through the mark.

DePue: It still sounds though Doug, like the guy who is on the inside providing the hay, is working hard.

Parrett: The guy who is providing the hay is working hard. Actually, a more modern design, and that's why a lot of people went to a long, more rectangular shaped barn, is the advent of automated augers. So the feed storage is at one end of a facility, but there's augers that carry the feed down through the barn, to the other end. And so this is turn of the century, this is 1900, and so we had a lot of extra power and auguring and there's a lot of equipment like that. I mean it was still—being a dairy farmer was hard work. It's still hard work. It's work that has to occur every morning and every evening, but we've automated it where it's tremendously more efficient than it used to be. I'm not so sure, from a construction standpoint, the cost to build the roof in circles, and the structure in circles was way more expensive than building a rectangular shaped barn. I think that cost probably overrides the added benefit from just looking at it or maybe the efficiency in labor saving.

DePue: Okay. What's the chance we can see the milking operation silo?

Parrett: Well let's wander down there and take a look at it.

(pause in recording)

DePue: You say this is a historic building, but they obviously don't spend a lot of money maintaining it.

Parrett: It can't be torn down but it doesn't say it has to be kept up.

DePue: Okay, there's a couple of low doorways here, for our cameraman to watch out for, but we have now arrived at the milking operation site.

Parrett: We're in the old milking parlor now, and actually from your camera perspective, you're where the animals would walk in, and you can see the one, two, three four. I said six but there's four stanchions, where a cow would come in, and you can see that a person down here has access to milking from the proper level. Instead of bending over all the time, the cow is up above, and then the actual milking occurs.

You can see the remnants of the old tubing, where all the milk is actually collected in more modern times, by suction, and then taken out to storage tanks, before it's picked up in large quantity trucks.

So the milking parlor, a four stanchion stall, the cows come in, a person works back and forth and milks all the cows, from hand milking to eventually some suction method, more mechanized method, and now our standard milking parlor is at a dairy where there's two or three thousand cows, we'll have about twelve on a side, or even up to twenty on a side, when you think about having to get that many cows milked. The facility is really unique. It was a period of time where it was not only just historic from a historical perspective, it was something to look at, it was a change. It was an effort to make things more efficient and more advantageous, and then we moved on with more mechanization and the different types of structures.

You asked the question earlier about, these are national historic landmarks, the three dairy barns here on the campus at the University of Illinois. Keeping them maintained though, is nowhere in the budget, and we're continually looking for private donors that went to step up to help refurbish this. Actually our college has a plan. If we can ever shift out of current fiscal kind of times of stress, we have a plan to make kind of an agricultural history museum in this corridor here, which would be from our old horse barns, actually through our round dairy barns, down to our veterinary college, and then an arboretum that is part of our college, through this corridor, which would make a nice transition from hotels and people around the university for athletic events. As they come through, they could get a taste of Ag history while also doing that.

DePue: At one time, this was state of the art wasn't it?

Parrett: Absolutely. It was a spectacular building, it was the center of attention in the Midwest. You'll see a few round barns still around in the state of Illinois and throughout the Midwest, but most of them have gone away. These were probably the biggest and the leading technology in the early 1900s.

DePue: Okay, great. Let's go ahead and conclude here and we'll pick it up outside.

(pause in recording)

DePue: Good afternoon. We're out here with Doug Parrett. Doug, what I'd like to have you talk about, is a little bit more about the extensive property, the land that the university has here for a variety of different purposes.

Parrett: Well we're located out here on what we refer to as the south farms, and really at our time now, the south farms, we're starting a process of moving even further south. But you can see in the background, we've got horses that are part of the Animal Science Department. The horse facility can maintain about fifty to sixty mares each year, and do a lot of research in horse physiology. If we can pan around and move from the horses, we come into our crop science area, and you can see the beginning

of the test plots of the university out here, from a crops and science research standpoint.

Illinois is a state that really has strength in corn and soybeans as major crops. We have national preeminence in those types of crops. You can see the different test plots. I think what you have to remember is the basic mission of the university is always to substantiate and discover new types of things that influence the output of our Ag commodity. So it's not just the biology of animals, but on the crop side, you can see all these plots. Now it's probably of interest that the University of Illinois has several thousand acres of land in a north/south corridor here, off the main campus. So for a while, our original south farm facility was located a half mile from campus, and now campus has come to the south farms, so we're relocating the south farms further south here.

DePue: But all land that the university has owned all along.

Parrett: All the land has been owned. Now historically, there have been some private properties that the university has purchased primarily. Once in a while they use eminent domain to take some property that's adjacent to or attached to the property.

DePue: Okay.

Parrett: And one of the transition things, like if we look at a corn variety test lot across the road here, or the soybeans and other crops here, as they relocate these, they have to be in new sites for two or three years, to get established soil, weather conditions, so that variable is kind of understood, before they actually can get substantial accurate research on these different crops.

DePue: Well this is an unfair question for somebody who has been working his entire life in animal science, but can you give us some flavor of the kind of experiments they conduct with these small plots?

Parrett: I think anybody that's been involved in agriculture would know that the first thing that's obvious is the tremendous yields that we've done as far as improving the output of our corn and soybean varieties. So that means there's been a tremendous amount of genetic work done in developing hybrids of corn that will withstand weather conditions, respond then to different types of fertilization, and do it on a very specific basis. And so I think if you look at one factor; the increased yield of two or three or four hundred times capacity of what it was fifty years ago, that's just an awesome response.

Then we look at making these crops more specific as to how do we get different weather conditions in the crop (genetics?). Let's take an example, the year 2007, when right here in this location, from the end of May until about the first part of July, there was seven weeks with almost no rain, and yet we had record yields last year. So it's because of the strength of the hybrid crops that we have. So yield; how do we do it with less fertilizer, how do we do it with less mechanical need, no

till farming, things like that. So varieties, the fertilization, the herbicide, the pesticide, all of those things are studied, and then we talk about how can we produce a product that's more adaptable for different things we need in society, not only just food but also ethanol.

DePue: Okay, let's take a quick break here.

(pause in recording)

DePue: Doug, could you tell us a little bit about what we're looking at right to our front here, that structure that looks like it's just kind of scaffolding.

Parrett: Well again, I'm not a crop scientist, but what I understand is this is a wired hoop structure that actually has a curtain that goes up and down, and so what they're doing here is trying to monitor light flow, and sunlight availability to different types of crops. I think it all goes back to the basic principle of how does a plant grow? You know, we have nutrients from the soil that are affected by temperature, are affected by rainfall and affected by sunlight, and so well, can't the normal weather just take care of itself? Well, we've developed seeds, from different crops and different varieties, that we're trying to even fine tune them to differences. What often times, as people get more and more data on their location, whether they're in the north, the south, the east, the west say, of the state of Illinois, there are different amounts of these ingredients year in and year out. So science enables us to measure ambient change, along with certain different types of soil type with different fertilizer applications, to try to maximize yield production. And so it's just an example of let's try something different. Let's look at something other than normal sunlight or amounts of sunlight, fine tune the success we can have as a farmer.

DePue: And that really emphasizes the research aspects of what the University of Illinois' program has.

Parrett: I think that's right. I think what people sometimes forget is, what we're investigating today may not have returns for two years, three years, for five years, but it will have enormous results. I think the classic example is things that were discovered or manufactured or developed when we took flights to the moon, or NASA did this, or what the military discovers with GPS systems. All the things we use in our cars with GPS and things like that, all evolved from military applications. So basic science in corn. The yields we have today are probably from seeds that were developed three years ago and five years ago, and so it's a slow process, it's not ever a quick fix, but we refer to it as discovery science. Discovery science and then application and then real benefit.

DePue: Would you have an idea, in terms of national reputation, where the University of Illinois' college of education would stand?

Parrett: I'm not sure about education but I am about agriculture.

DePue: Excuse me, yeah agriculture.

Parrett: Our college of ACES. And I am not a totally unbiased, probably reference like that, but if you look at national surveys, at many times they're just kind of popular opinion polls, you would find this college at the very top. I know in our Animal Science Department, we are the number one animal science institution in the world as far as research publications each year, amount of research money generated, as far as award winners in national societies. About any way you want to measure it, the Animal Science Department here is the number one department in the world. Now, are we number one in each category? Maybe not, but if you look at the conglomerate of the way the department meshes together, we're outstanding. And I think if you look at our land grant schools most of them are very strong public institutions.

One of the questions—as soon as we say boy, they're all going a good job, one of the questions is that we start to ask ourselves as we evolve in the future, Do we all need to be doing everything? For example, if Wisconsin is the home of most of the dairy cows in this country, and they have a faculty and staff really dedicated to the dairy industry, does Illinois need to do it? Let's say Iowa is the best corn state. Should we do corn? Well it's important here, but should we do corn and soybeans? How do we make that mix? Should different institutions do each of these ingredients? So we're going to evolve, we're going to have changes. Our goal at Illinois is to be locally important and to be international preeminence. That's our motto.

DePue: Okay, I think that's a good place for us to segue. I think next, let's take a look at that dairy operation you were just alluding to.

Parrett: Absolutely, that will be a good stop.

(pause in recording)

DePue: Doug, we brought you out here so you could tell us a little bit about one of the things that's evolving on the university farm system, and this is the dairy operation behind you. Could you tell us a little bit about that?

Parrett: Well I think one of the things—we're going to see both ends here, and this farm and then as we go to the new beef farm in just a few minutes. All of the structures at a university, whether it's classroom facilities or whether it's a research lab, they evolve, and sometimes it reaches a point where it's not new. If you look at our dairy farm facility here, you'll see barns that are seventy-five to a hundred years old. And if we think about in their day, they were the state of the art. We were at the round barns earlier today, and it was a state of the art, new concept facility. Now we've got barns and facilities for cows that actually are kind of a challenge to raise, and actually do the research that we want. Now current research, I think it's good for the public to know, is we want to do things that are applicable to the industry, but when you do research, you're governed by animal care guidelines that very specifically talk about animal space, animal temperature, how animals are controlled and

guidelines on nutrition and care and management. So when we measure things, we want to measure them in a real world environment, under animal care guidelines. Then when you have facilities that are seventy-five years old or older, it makes it hard to meet all the qualifications to do really good research. So now we're at a point, we have a new beef farm, we have a new poultry facility. Things evolved where we were able to do that. We have swine facilities that are very old and a dairy facility that is very old, and so that limits the type of research that we can do. The university and the fiscal climate in the state of Illinois of course, is pretty tight right now and has been and looks like it will continue to be, and so we're trying to figure out, how do we improve on these things. As an Animal Science Department, we mentioned we were unique because we have a companion animal curriculum, and so we have a curriculum that addresses human/animal interaction, and nutritional and management needs of pets, but we're primarily committed to food animal production, and that includes dairy. As a department, we want to continue to address issues as far as the dairy industry. So where do we get the money to change our facilities and improve our facility, and this is—we're at kind of a standstill.

Historically through the years, prices of swine or beef have gone up down, and some years the farmers make money, some years they lose money, but as a whole, we're able to sustain ourselves. Now we're in a time where the swine prices have been low, the dairy prices, we've had trouble with this facility, making money or at least breaking even year, and the only way to improve it really to address and get a new facility. We're talking about twelve, fifteen, twenty million dollars, to build an adequate facility. Our student population as far as interest in returning to a dairy farm, is not real big. We'll talk about probably twenty students or less each year that really think they're going back to a dairy production scenario. The number of faculty that use dairy cattle are a handful; five, six, seven, eight, and so we ask our campuses to animal science. Dairy is important to you, you have a limited number of students, you have a small group of faculty. How do you justify the campus paying for it?

So those are real issues. We as animal science say dairy is an important part of animal agriculture. Drinking milk, milk is an important food group. It's important with a science based, the science power that we have here at Illinois, to include dairy into that. So we're at an impasse. We need something, we don't have the money, the state doesn't have the money, private industry has not stepped forward, and so we spend a lot of time working on how to manage this system. We still get pretty good science out of it, but we're really limited in what we get.

DePue: So ideally, you'd have a new dairy operation, but it looks unlikely in the near term doesn't it?

Parrett: I think in the near term, that's right, but we're trying other avenues. I think we're in a time as universities, and it's nothing new, we're looking for private industry partners. We're looking for some way that private industry can capitalize on the research potential of the university, and still join us and satisfy our teaching

requirements. It's important for our students, even in a facility that looks like it's kind of old fashioned and not updated, we have parts of it that are really unique. We test things like lighting and feeding systems and types of feed and handling, but it's important out students can come out to the farm and experience it. If they want to study cell biology or DNA and genomics, if they want to study some kind of animal health and nutrition, all those relationships, they need to have a background in how we actually raise and produce animals and the products they produce.

DePue: Would it be fair to say that when you're competing for grants, for operations like this, you're also competing with institutions like the University of Wisconsin?

Parrett: That's exactly right. I mean, it begs one of those questions we talked about earlier; Can every land grant university do everything? Maybe we should have a national dairy center at Wisconsin or at Iowa or somewhere, at Iowa State, one of the land grant schools that emphasize it. Now, thereare topics like corn and soybeans, that could be at multiple institutions, but maybe there's a way to jointly, Illinois and Wisconsin, expand their total dairy program and have students maybe at both campuses. We're starting to talk about that. Actually, we're doing an investigative study in a four state region; Minnesota, Wisconsin, Illinois and Iowa, how to address some of those issues so not one place does everything but between the four universities, everything gets done.

DePue: Well let's go and see a more modern operation then.

Parrett: It should be good.

(pause in recording)

DePue: Doug, why don't you tell us where we're at now.

Parrett: We're out here and we're very happy to be out here, from my perspective as a beef guy. We're out at the new beef teaching and research unit, and this facility was opened in 2002. What we have here is what we like to think about as the state of art beef research facility anywhere in the country right now. Now part of that is, very few institutions have actually built new beef research facilities, I mean there just hasn't been funding for that for anywhere in the country. But we were located previously, up by the Assembly Hall, and Memorial Stadium and the athletic department, had a real need to you know, expand their operations. And so why we were just at a dairy farm, looking at seventy-five year-old buildings, the old beef farm had similar buildings like that, seventy-five, eighty years old, costly, reduced capacity, and we decided to make the move from that land. We were in a climate—now we're talking about five, six, seven, eight years ago, a fiscal climate that actually, there was more resources available, and the university went ahead and bonded itself to generate the income, sold bonds to generate the income to build this facility.

DePue: Would it be right to say that it would not have happened had the athletic department didn't need the extra space?

Parrett: Well I think, in a long range, fifty year plan, the relocation of all of the College of ACES research facilities to the south, was in that. The timing was based around the urgency and need from some of the athletic facilities. So we actually think highly of that. We think that we have a new, state of the art facility because athletics needed some more space to expand, plus our research park. In the concept, the model where we cooperate with private companies on research, that helps fund research and generates more capacity for research, we ended up with a new beef farm, and we're pretty excited about it. Now the relocation here, we're about a mile south of where we started, in the round barns and some of the other farm, and again the university has several thousand acres out through here. So we're located on the south end of south campus, but we've established kind of one of the models for our new research facility.

Now, I would warn people that view these tapes, if you're a farmer raising beef cattle, you cannot afford to build this facility. This facility is designed up to the latest animal care and research guidelines. We also have a capacity and design here so we can handle all of our animal waste, so we don't smell and we don't offer any pollution or discomfort to our neighbors. So we're a good neighbor in a state of the art research facility, but it's not what I would necessarily recommend. The concepts are good, but the amount of pen size and equipment and housing is probably more extreme and more than necessary for the average beef cow.

DePue: Right.

Parrett: So here, we're in the feed bin. What's exciting to me and my coworkers in beef research, is never have we had an opportunity to be so timely with our research. The biggest issues in the beef cattle research area right now are cost of feed due to the high price of corn, and improving animal genetics, and measuring the efficiency of converting feed to animal protein products. So as we're going to see in this facility, we have a capacity to measure both of those and measure it more than anybody else. Now we've started here at our feed bins. These bins are like you would see in a lot of large feed lots, and so you have a capacity here to several times a week, get in feed ingredients that you can feed to the more than six, seven hundred animals at any one time, that are in this facility.

Now what we have here in this pile is just simply ryelage. We planted rye this spring and then we harvested it in early June, and by harvesting it early, it gave us feed that off the land, we were able to go back and replant corn that this fall, we'll harvest for corn silos. So we double cropped that piece of property, and it actually gives us you know, so we consider this to be mostly free—not free, but very low cost, because we could double cross it.

DePue: Was there advantage to the soil, of putting in rye before the corn?

Parrett: Not much. From a compaction standpoint, fertility standpoint, it actually will take out a little nitrogen when we harvest this off, but we can readdress that and put nitrogen back in. Now this isn't great feed though, just to feed it as itself. It's about like eating potato chips. It tastes good, fills you up, but doesn't do much for you nutritionally. But we have an advantage at the university, and many producers now, are using ethanol byproducts, or as we talk about, different co-products from the production of ethanol. When you process corn and take the sugars out of corn, you're left with this mushy kind of a product. This is wet, about 40 percent moisture, from the kernel of the corn, but it's pretty high energy and it's really high in protein. Now there are all kinds of ethanol co-products. This is just kind of a standard. And there are some issues as far as the sulfur levels and different vitamins and minerals, but we can supplement those. The University of Illinois, Dr. Larry Berger(??), has been the lead. He's probably the national expert on ethanol byproducts as far as cattle feed.

DePue: And the secret is the amount of protein that it's got.

Parrett: Well, the secret is the protein actually, yes and no. I mean, the secret of the protein is real good, because the rye we just looked at doesn't have hardly any protein. But beef cows don't need much protein, and if we think about nutrition, cows are ruminants, and that means they have a four compartment stomach with microorganisms, so they can digest. Cows eat grass. Humans, chickens and pigs don't eat grass. And so cows can break it down and actually generate and create some of their own protein. So their protein requirements are not as high as some of the animal species, so this feed actually probably has more protein than we need, but it's a relatively cheap protein source, and with the energy you get from it, it's a great feed. You can feed it in a diet up to about 40 percent of this product by itself, and then you need to add a fiber product with it.

DePue: What you're standing in front of then, would be even better as a feed for swine and poultry then?

Parrett: No, because it is high fiber too, so they can't utilize it to extreme levels in their diet. They can only use a very small amount. So here we have the discussion about ethanol byproducts. When we first processed corn to ethanol, they were trying to get rid of the byproduct, and beef producers could buy it really cheap, and boy it made for a great, inexpensive diet. Now, as beef producers have been more demanding and trying to find more cheap feed, they have raised the price of the co-products along with it. So it's cheaper than straight corn but not necessarily great—you know, not a great savings. Plus, when we think about trucking, from a processing plant to your farm, when gasoline went from $2.50 to $4.00 or diesel to almost $5.00, all of a sudden that limits the advantage in a lower priced product with high priced trucking costs, no advantage over corn and your diet goes back to being high.

One of the interesting concepts people don't realize at the university. All of our farms have to make money. Now, they don't have to make a lot of money, because they have to make enough money to pay for their staff and then break even. We can't lose money. Nobody bails us out if we lose money. So we work with companies, to research their product on correct amounts, correct vitamin mixes, protein mixes, what other ingredients can we mix it with. So the companies that have byproducts, have been very good about giving us a low cost product to help fund our research, and so it's kind of a win/win situation.

DePue: We've been talking a lot about cattle, and all of these different aspects of raising cattle. Let's go check some out.

Parrett: Let's go look at some cattle.

(pause in recording)

DePue: Doug, I think we've arrived at the heart of your operation here. Why don't you tell us what we've got here.

Parrett: Well what we have is, what makes this beef research facility unique is, we have the ability to measure individual animal feed consumption on about 900 head, at any one time. Now why is individual feed consumption? Well what we're trying to do is determine which animals grow and gain more efficiently. Who can grow while eating less feed, or who can grow faster while eating the same amount of feed? We've always assumed if animals were bigger and grew faster, they were more efficient, but we never had the opportunity in large scale, in history, to measure that kind of intake. Now part of that is a couple of electronic discoveries, or things that were made for research.

This is a Gross A feeding system, and it's pretty simple in design and pretty intricate as far as the electronics to it. These tubs are surrounded with electronic sensors to these bars, and so what we have is a space for one animal to come in individually and consume feed. So each of the animals, if you look out at the animals, you see they have an identification tag, and in their left ear there's a little, small, white electronic transducer tag, an RFD, a radio frequency tag. And so when the animal comes into the bin, it sets off the computer and it weighs his feed bunk every second. And so we have the capacity then, no matter what feed we're feeding, what animals are in there, we can measure how much feed they eat. It's our goal here, is how do we identify animals that can grow fast, be efficient, and actually do it on less feed. It's bragging a little bit. We were fortunate, when we made the decision to put this in, that we have capacity for about 900 head at one time here, on feed efficiency. The next largest capacity for feed efficiency in America is about 112 head.

So we talked about being at the right time for the right issues. We're using ethanol byproducts, we're using individual animal feed efficiency, and so we're not only finding the best feed that's efficient, the best mixture of byproducts and feed

that are efficient, and now we're starting to look at genetic lines. All the cattle you see in here now are part of a project with the American Angus Cattle Association, and they're the nation's largest beef breed by about three times other breed. All these animals were produced by known sires, and we measured their traits as far as calving ease in birth. We'll have all their growth traits, we'll have their feed efficiency traits, then we'll harvest the animals, we'll get their carcass traits, their tenderness of meat traits. We measure things like hair coat, we measure things like behavior, and all this is gathered. Then on the side, we take in the DNA, and we're working with our own individual genetics researchers, analyzing DNA and combinations of DNA. What makes this animal better for different traits? And so it's a five or six year accumulation of thousands of head of animal data that nobody else has, but we're going to dive into it and see what it tells us.

DePue: Well that gets into a flood of different kind of questions, but I want to start with this. With all the research you've done, what have you found to be the most efficient feed mixture to put on weight quickly and to get them to market quickly, with quality meat?

Parrett: Well unfortunately, the feed that does the performance, you can't beat corn. High energy corn still provides production and gain. The questions we're addressing now are what can we do that's cheaper than corn, but will give us similar performance. And that's why we're looking at all these corn byproducts. Is it 10 percent, 15, 30, 40 percent optimum? What are the problems in the rumen environment? Do you have, in layman's terms, upset stomachs if you do too much of this. What are the vitamins and minerals, how will animals perform? Will different animals perform, male/female, different genetic lines? So we're still in discovery on that. We know corn is the standard.

DePue: How about soybeans? Is that not an option?

Parrett: We use soybean meal as a protein supplement. Now, with ethanol byproducts and their high protein content that we identified, we're replacing soybean meal with a cheaper ethanol byproduct right now. So we're getting there.

DePue: Well let's go ahead and swing around and get a shot of the cattle again, and then ask you some questions about the genetic sides of things, because I know you have discussed some pretty innovative things about genetic splicing and that kind of research.

Parrett: Well genetic research is a topic that more and more people are getting comfortable with, but more and more people fail to understand exactly what is made. These animals, you know we know the sire and we know the dam. We have on record, their parentage. We know they're Angus cattle, and so we kind of know their breed and genetic make. So we haven't done anything to alter it. We're taking the population and trying to find the superior individual. That's pretty traditional genetics.

On the swine side in our department, we've done research where we've investigated transgenic animals. Now this would be taking genes. For an example, we did some of the landmark research where we tried to identify the genes that produce milk in pigs, and we took Chinese pigs that produce a lot of milk, and transferred them to a typical American swine line, so we could have our sows and our swine industry produce more milk and provide more nutrition for their litters of baby pigs. Now, what's the downside of that? Well, there probably wasn't any downside to that except those transgenic animals had a little less growth rate and a little less muscle and maybe more fat. So it was a tradeoff of some of those things.

It's like should we take something from—in the crop side, we look at some kind of coloring from a tomato, and take the red color to put it in an apple, to make a more appealing, red, colorful apple. That seems pretty harmless, but we don't know for a period of time, what other genes are affected. And Mark, I'm going to beat you, because I think your next question is probably on cloning.

DePue: We can go there, but I did have one question. Can you take a gene from one species and put it into another completely different species?

Parrett: They will say we're not sure. They will say people are trying it, but they will say we're not sure. I mean it's been done, and it's been done with some success, but we're just not sure if that's a commercially applicable kind of thing in animals. I'm not sure when we talk about vegetables or other types of crops, is there can't be some of that.

DePue: Okay. Well let's go to the cloning issue, and then we can get into the ethics of all these things as well.

Parrett: We know how to do cloning. Cloning is not new science any more. Cloning can be successful. Now, does cloning create an animal that could be harmful to a human when we think about consumption? We don't think so. The cloned animals that have been out, as far as processes, as far as meat product or milk, we have found nothing wrong with them. It's not commercially available yet. The problem with cloning is the expense and the low viability of those animals. It seems that the extreme costs to go through, to create a cloned animal, and then you have a high percentage of those animals that have weakened disease resistance, or have some other kind of improper development of some organs or tissues, that the longevity or full development of some of those animals is a little bit limited as far as commercial swine, cattle and other meat animal species.

As an animal breeder and selection person, cloning offers you no advancement in genetics. If you have an animal that's really superior, and you think we should clone that animal to have two superior animals, what we'd rather do is take the superior animal and mate it to the next generation, to make a more superior animal. So a lot of cloned animals are stagnant as far as genetic improvement, so we don't make any progress. And so the lure and advantage from a breeding improvement and production standpoint, with the cost, is not that attractive. Now, if

I had a thoroughbred horse that I wanted to have a clone to that horse for some reason that is not based on just a pure production enterprise, that might be good. Actually we know of a lot of pets being cloned. We know of a lot of people investing in getting their favorite pet to be cloned, at tremendous cost, ten to a hundred thousand dollars and very little success. So all of that technology is coming. I think the amount of cloned animals in the food supply will be nonexistent, because there's not economic incentive, there's not actual production incentive to do it. The exception is, if I found a dairy cow, for example, who had a protein in her milk that cured cancer, would we clone her? As fast as we could, because there would be an absolutely justification to try to solve it. And ethically, that's one of the questions we throw out to our students. If we're cloning someone or some animal or some pet, most people think there's a limitation that we should do that, but if we could clone that cow that would produce milk to improve cancer, most of us think boy, let's do that. So how do you—you know, when we discover the science, we're going down the path, and then when society decides the use, that's where we get into debates.

DePue: Well, as a research institution, you're on the cutting edge of the science and the technology that's being developed. Do you find yourself sometimes out there too far ahead of society perhaps, on the ethical issues as well?

Parrett: Well absolutely. I think a lot of our research, not only in animal science… We passed over a little bit. You know, animal science does a lot of research on human issues. Let me give you an example. We have a researcher who grew up on a hog farm, does research. He was looking at brain proteins and how the amount of these different proteins affected a pig's appetite. Certain proteins resulted in more appetite, pigs eat more, they grow faster, you make more money. But it was the same protein that's associated with Alzheimer disease, and so now this researcher, who is an international expert on this brain protein, is working in Alzheimer's research, and a byproduct has improved swine production research. And so animal science transcends a lot of those issues, a lot of the issues we discussed.

Research with dogs, with fiber digestion, is applicable to humans, and so we do a lot of those things. We're rapidly approaching and we're there, on some of these DNA manipulations, because the technology we use is applicable to humans. So that's the jump, that's the step that seems to be a problem. Most scientists will tell you, boy if I can discover something, let's discover it. But then we sometimes are going to get to a point where now, how do we use it, and then the debate begins.

DePue: Is there some mechanism in place, a system or a board, that discusses these kinds of issues?

Parrett: For all research projects that involve human subjects or human applications, there is intensive debate and discussion about them. There is only formal processes when you're doing research, as I understand it, with live humans, and so using humans as

subjects for research is where there's a way more formal process than using animals, but animals are the model for a lot of human results.

DePue: The next step I believe, is to see the computer technology side of what you're accomplishing here. So let's move on to that.

Parrett: See how we put it together.

DePue: You bet.

Parrett: That will be great.

(pause in recording)

DePue: Doug, it looks like we're at the brain center, if you will, for the grow safe operation. Tell us a little bit about what we're looking at.

Parrett: Well what's interesting is we're at a time in research, when we can gather an enormous amount of information. We just looked at Gross A feeders. We talked about when an animal is in there, measuring their consumption by the bite, or every second, and so you have 900 animals, twenty-four hours a day, every second they're eating, and we record it somewhere in the data. Now, when you get a lot of data, then you can actually start to think wow, what can I do with all this data? One of the good things is, if we go here and look, you see every animal and how they've eaten over a twenty-four hour period. Animals take a distinct eating order. They have a dominance and recessive. Some animals eat at daylight, some animals eat in the middle of the day, and some animals eat at different times, and at the end of the twenty-four hour period, they all should have consumed similar amounts, not the same but similar amounts of feed. But when you start each day, what we learned from our pattern of consumption is, there will be an animal, if you go through here, that hasn't eaten. And then you can say all right, animal number twenty-seven, in pen number seventy, you need to go look at it because it's probably sick or getting sick, or something's happening that it's not consuming, or the equipment is not measuring. Maybe its ear tag is wrong. But you can just sit here in the office before you start your day, and identify animals that might have a problem. Now most production facilities, they have what they call a pen manager, who goes through and looks for all these problems, whether it's sick animals or some kind of identification tag that's not working, things like that. But here we have this.

Now, the next frontier for research is, particularly when we think about genomics and DNA related research, what do we do with all this information? What do we do with this enormous amount of information? What are the combinations that we can put together, that actually will help us solve problems? And so this bioinformatics, using biological information to solve problems, is going to be the next hurdle. We're gaining and gathering more information than we can actually produce and resolve right now, but we're putting it away somewhere, and computer capacity does that.

DePue: What's the difference between the red bars and the green bars?

Parrett: Well the green bar would be an active consumer. So that's an animal that's actively eating right now. The red bar would be just an accumulation then, of consumption during the last—you know, through this current twenty-four hour period.

DePue: And the animals we were just looking at, how old were those animals? How much do they weigh? How much larger are they going to be growing?

Parrett: Those animals out there in those pens weighed about 600 pounds. They would be animals that are about nine months old, and they've been on just before, they were weaned and then have just been on a grass diet to now. And then we're actually finishing them now, and for a period of time we're feeding them on mostly a forage or grass diet. One of the questions we're addressing; traditionally, we have fed cattle high corn diets, high energy diets, and now we're using corn byproducts. High energy diets beget rapid growth and high quality meat. Now we're asking the question, what about cows, producing cows that end up spending their life just eating grass. Are they animals that were efficient, in this case the steers, the males, efficient on grain, are their half sibs, animals sired by the same sires, are they also efficient but on a forage diet? So it's a very practical question but a very important question.

Again, I can't reiterate enough, all of the DNA is collected on these animals, and we have people diving into all these myriads and profiles, and looking at these assays of hundreds and thousands of sets of genes, and how do they influence animal production.

DePue: Well we've had a very interesting day. A lot of wonderful information you've been passing on to us. I don't want to finish off unless I ask a couple broader questions, and ask you to reflect on some things, and obviously, reflect on the future of the University of Illinois agriculture, let's start with that.

Parrett: Well, agriculture is Illinois' biggest business. I think it's safe to say, society always wants to eat. They want a safe, high quality food supply, and right now they're beginning to think we don't want it to be too expensive. Well, I mean all of that just lends itself to funding and support of more research. I think what the research now is, we're moving quite a bit from the applied easy solutions, back to what I call discovery or basic science, which often is at the cell level. Maybe this will lead to some of that DNA manipulation we've had, particularly on the crop side, where you can get controlled responses and measurements more than animals. But I don't think the strength of America is in that we have a constant and safe food supply. If you think about every time you want to eat, you can go to a store and it's filled with food. I'm not sure anywhere else in the world you have that luxury, and I don't think we're a society that will ever get away from that, but that's going to require more research to continue to make it safer and continue to make it more affordable.

DePue: Well, you were born and raised on the farm, a family farm, the traditional family farm. What's the future of that institution?

Parrett: You and I had this discussion, and I've talked about it with others. There's a deep passion, it may be irrational, within our family, to sustain the tradition, the inheritance of our farm within the family. It may not be based on the most economically efficient decision, but whatever made the family, in 1837, pass it on to the next generation and the next generation was easy, because they were all farmers. They loved the farm, they had family that was going to continue the farm. I'm from probably the first generation that has moved off the farm and make a living, even though I'm in agriculture, off of the farm. I am certain my kids will not have a farm related activity in their career, other than at some point in their lives, they'll own some farm ground. I'm pretty comfortable that my kids have a passion and an understanding of the land. My brother, in our family, he and his wife don't have children, and some of that land will transfer to my family and some of it will stay in his wife's, my sister in-law's family, and I'm not sure where it will go, because it will go to people who have no attachment to the farm. So I'm confident one more generation Mark, but I don't know about two generations.

DePue: And here's the final question for you. A young man approaches you, one of your students, to say I really love the farm life, but I'm torn between a couple of different options. What do you tell that person?

Parrett: Well you know, I always tell students to pursue your dream. If you work hard enough and you're smart enough, you can reach and attain the goals you set out. But don't assume you're going to get there tomorrow. The road to the end point often has many curves in it. If they want to be involved in agriculture, many of our students work for all of the Ag support companies, whether it's seeds, herbicides, the meat industry, food product production with animals. There's lots of segments, it's an expanded industry with lots of different support industries. Or in my case, where I have a lot of students that like to raise purebred cattle, and they have a passion for raising purebred cattle. Often I tell them, get a good job, where you can live in the country and have enough income to support your hobby, with your purebred cattle, which brings you the lifestyle you want. It's more of a challenge. Farming, like all other business, is becoming larger, smaller producers, and if you're going to compete, you have to get technical education. Farming is longer a business where working hard will make you a good living. There's a lot of science, whether it's marketing, equipment, seeds, all that has to go in, plus hard work and good decision making. So it won't be as easy to get involved with farming. It's become a high capital enterprise, but it is a great lifestyle.

DePue: Well Doug, thank you very much for allowing us to be your students today, and learning from the master, if you will. Thank you again.

Parrett: I enjoyed it.

(end of interview #3—#4 continues next page)

Interview with Doug Parrett

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Interview # 4: August 7th, 2008

Interviewer: Mark DePue

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DePue: Today is Thursday, August 7th, 2008. We're here back with Doug Parrett again. Doug, you're going to explain to us what you're looking for when you're judging sheep. So I think I'll just turn it over to you and let you take it from there.

Parrett: Well what we're going to go through here is at the State Fair, which is kind of the culmination of lots of 4-H and F, young people in Illinois showing their prized livestock at the fair. Many people have questions about what is a judging experience mainly. All the animals look the same to most of the people. And what we're trying to do is identify what a judge looks at and how it really affects their life as consumers of animal protein. So we'll start with sheep, then we're going to look at some cattle, and we're also going to look at some pigs.

Livestock judging is something that's beyond just looking at animals. We're in an arena here, where we have lots of 4-H youth, who are competing to make the Illinois State Forage Judging Team, and with that they get to compete with youth throughout the state of Illinois, and then they're selected and get to compete in a national judging contest. But by judging, they're actually learning how to evaluate animals for economically important traits. That typically is growth rate, which is how big and fast-growing, how economically efficient they grow and produce meat. And then we're looking at muscle traits, just the pure amount of muscle, the amount of meat product. In all of our species, we're trying to get rid of fat, trying to reduce fat and waste, and so we try to that. And then animals have to be functional. You'll see them leading them around and walking them around the arena. Animals that are sound, that means walk and move correctly, are more efficient than animals that are stiff jointed, stiff legged, that have trouble getting to the feeder and getting around in the lots and the bins, and so they're not quite as efficient.

Now when we start here with this specie of sheep, what we've got are two yearling ewes. Immediately, when you look at them at first glance is, they're pretty similar. They're about the same size. There are two sheep that are about the same age, so there's not a lot of difference in their just overall first glance. But to a

trained judge, one of them is better and one of them is not quite as good. If you look at two people, if anybody would look at two people you'd say now what did they look like? And most people would say, well one's tall, one's short, one has a big nose or a small nose, one's stout and stocky and one's thin, and so we use those same type of terms for animals, but we equate them to production terms.

Now when we look at these two ewes, the biggest difference in these ewes, is here in the hind saddle or the rear portion of these sheep. If you look in the leg of the sheep, you can see that there are a lot more thickness and fullness to the shape and dimension of this ewe here on the right. A lot of times a judge will actually grab them and feel if that's actually full of muscle, because a lot of time sheep are shown with wool on them. They'll trim them to make them look thick, but when you reach in here and grab, you'll get some sheep that actually are real well muscled. And if you look at this ewe, I mean this is the way she typically is. She's a little flat and kind of concave in her muscle shape here, and notice how she always tends to stand kind of narrow behind, and that's her narrow stance. So we have a thick, well muscled ewe, who has got a lot of muscle development, some squareness here at her dock, some width at her top, and full of muscle in her leg. Now the other thing, they're about the same height—but Travis, if you could back her up just a little bit, and I think if you come around Mark—you can see, from a side view—that's good right there—this ewe is really long hipped. We talked from the hook or hip bone, back through her dock or back in the pen bone region, there's a tremendous amount of length of body here, and if we look at this other ewe, find her hipbone here, you can see the dimension, she's not as good. Now why that length is so important: These are the high priced cuts, the leg of lamb, and then we get into the loin and the rack region. So you have a lot more dimension of muscle, a lot more product development there. So you have a little lighter muscle, shorter hipped ewe. Then you'll see a judge put his hands on them and talk about width of top, and this is where the loin chops, the lamb chops are, right down the back of the animal. So here we have a full, deep loin and rack on a ewe, and here one is a little flatter, not quite the depth of muscle when you feel there.

Now these are breeding ewes, but they're going to produce market animals, and so the same traits are kind of important. Now as breeding ewes though, we also want them to walk and graze in pastures, to mate and breed and sustain themselves. So you can see this ewe sets down fairly square and correct on her hind leg, and this ewe will be more crooked in her hind leg, and have more angle and set to her hind legs, so when she walks, she'll walk under, and she won't—so she's not quite as sound. She's acceptable, but this is more ideal. And the other thing you like this ewe much better as far as (unintelligible) She'd eat grass. You like a lot of capacity where they can ingest and grow and gain, and so this ewe has the advantage in capacity and soundness, and she's a heavier muscled ewe that has an advantage in dimension and muscle shape as far as the high price cuts.

DePue: Now how did you notice that this one that you're standing next to is better for production, just because of the width on the top?

Parrett: Yeah. The production is, we're talking about this rib end capacity, you know depth of side here, or rib shape, and then when you look down her top, you can see bold sprung in her rib, wide and bold sprung in her rib. This ewe is a little narrower right there. It's just a little different, because she's not bad here, but she kind of runs out of gas down her top.

DePue: Do you judge at all for wool production, or is it strictly for meat?

Parrett: Most sheep breeds are judged for meat, but there are wool breeds. Right now there are several breeds that are specifically wool breeds. They have longer fleeces and a less dense or a finer fleece, which is a higher quality wool. But you know, wool is not a big income product. About 80 percent of the value in the sheep industry, from sheep and lamb, comes from the meat sales. And so wool now, as we've evolved with synthetics, since World War II, where wool was a big item, now it's kind of a luxury item, and so most sheep are selected for their meat products, their growth and efficiency, and lesser on their wool, except in those wool breeds.

DePue: If we were to look at sheep that you'd be judging fifty years ago, what would have been the differences?

Parrett: The biggest difference. They'd have been about this size. The biggest difference, they'd have been half as long and had half the growth rate. What we've done in sheep is make them from little sheep to big sheep. Sheep consumption has gone down in the last fifty years. Now there's lots of reasons for that. Sheep are low maintenance, they eat grass, and they're pretty easy to raise and grow. A lot of 4-H youth have sheep projects because they're just easy. You can see these young guys that are students at Illinois. It's easy to be around sheep, so a young 4-Her can get involved with them pretty well. For the size that they are, there's not a lot of meat. You get about half of the weight of an animal, market cheap animal, in saleable meat product. And so when you think about the cost of harvest and the amount of product you get, the return isn't very big, and so we have less consumption, the price goes up, and it's been a vicious cycle of people eating less, it becomes higher priced, they're producing less.I It's just become more of a delicacy than a lot of consumption.

DePue: In terms of the efficiency sheep, hogs, cattle, how would you rate them?

Parrett: We usually, on an average daily gain basis, cattle are three to four, sheep are two and a half usually, and sheep are about a pound a day. Now the advantage in the place of sheep is they eat grass. And we raise sheep environments, the western range lands, the mountain lands, where there's hardly enough grass or feed to support cattle, but sheep are still a viable alternative. The sheep industry has shrunk quite a bit, and so they become our minor specie as far as meat production. Most of the consumption now is by different ethnic groups in large cities, where sheep and lamb have been a big part of their diet.

DePue: Okay, thank you very much Doug.

Parrett: Excellent.

(pause in recording)

DePue: Well Doug, obviously we're checking on a different animal here. Tell us a little bit of what we're looking at.

Parrett: Well probably nothing goes through more changes than the swine industry has. We've got a couple of market hogs here. They're both crossbred market hogs, and that means we've taken a couple of different breeds and mated them together, to try to make a more perfect or more ideal market animal. Now when we look at the market animals, again it's how much consumer product or amount of muscle and amount of meat, and can we produce it lean. Now, remember pigs are harvested when they're five to six months old, at a weight of somewhere, 260 to 280, 285 pounds. So we're worried about how pigs grow, how fast they gain, and how much lean product they produce.

Now if we watch these two pigs going around the ring, it's really important to watch them walk away from you. If you look at the pig in the far corner, you'll see a pig that's pretty big-framed, pretty long-sided, gained real well, but we'll circle and now let's switch to this other pig. Look how tremendously thick that pig is. Look through the center of the ham versus the width of the pig on the left; it's a pretty dramatic difference, and that automatically, from a market standpoint, a judge would say, well they're both really nice, they're both good barrows, but I want this pig that's really got the most amount of meat that would be desirable.

So we describe a pig here. He's kind of a moderate size pig, but he's got a tremendous amount of width and shape to his top and a real muscular behind. This pig on the left here, we want them big frame and growth, and they're both fairly lean, but you can see he's a little plain, and by plain I mean he's kind of smooth in his appearance but he's not defined by leanness, he's not defined by lots of muscle. This barrow right here, you can see the creases of muscle in his ham, and up through his rump and top, almost a butterfly shape. That means a real bold, deep, expressive shape of muscle on his top. If we drive in a pig that's small and short and fat, they would be discounted pretty hard. If we drive in a pig that's real tall and lean but without muscle, they'd be discounted. So both these pigs are acceptable, but you've got a pig coming around on this side that's got a huge muscling advantage. Now, we've changed the types of pigs. Mark, you and I were visiting earlier about the generation cycle in pigs.

DePue: Right.

Parrett: You know, once pigs get into production at a year of age, they can have a litter of pigs about every three to five months, you know actually three months, three weeks, three days is the gestation length of pigs, and so a couple of times a year, they can start having pigs. A sow will lay down and have a litter of pigs, so she'll have eight, nine, ten, eleven, twelve pigs in a litter. So you have selection within a litter,

you can have multiple litters or farrowings every year, so the change in types of pigs happens really rapidly.

DePue: What kind of changes have we seen over the last fifty years?

Parrett: Well, we all can think about the image of the pig in the fifties, we called the lard type pig: pigs that grew and were real deep and just really full of fat. Then we, as a society—rightfully so—decided we need leaner meat products. And so we went to extremes and started selecting for extreme leanness and great big-framed pigs. You can a pig here on the left, it's bigger framed. When we got those big pigs that were really lean, they didn't do very well in a confinement hog house. They just didn't grow or gain very fast, they were restrictive in their body capacity, and maybe not sound on their feet and legs. You know, a confinement hog… If anybody comes to the fair, they're going to walk around on asphalt and concrete, and their knees are going to hurt and they're going to get tired. Well we raise pigs in confinement all the time too, and so what we're trying to do is find pigs that are sound, wide body, grow and gain efficiently, with extra amounts of muscle and still lean. It's hard to get a pig that's really good in those categories. This pig right here is really good in a lot of categories. Here's a pig that would be real competitive in the fair if it was just a notch bigger-framed. He's a little bit moderate-sized, but he's tremendously wide, tremendously muscular, and that's really important and real sound.

DePue: So would it be fair to say that the changing tastes of American consumers is what's been driving the evolution of the hog?

Parrett: Two things typically drive changes in our meat animal species. One is the economy and production. What type of animal can we produce the most efficiently and the most pounds of product? The second thing of changes in the type of animals is what's the consumer want, and the consumer wants lean products with just a lot of lean protein.

DePue: Is it important to be able to watch the animals move around when you're judging?

Parrett: Yeah. It goes back to function and efficiency. Here's a barrow that's really sound on his feet and legs, just easy tracking, just gets around the ring with no shortness of stride, no stiffness or tightness. You think about raising animals in big groups, and they walk into the feeder, how they get along in a big environment. Those that are sound always get up, go eat and walk around and just function very well. If you're stiff jointed, you slip and fall and can't function well, and you're always straining in life, and so your efficiency goes down. So soundness is one of those basic ingredients to a real efficient animal.

DePue: How old are these animals?

Parrett: These animals will all be about six months old.

DePue: Does that mean they're ready for market?

Parrett: They are ready today. They are ready to go. They're at ideal market weights, they're a little on the heavy end but they're just ready to go. Great pork chops right here in front of you.

DePue: Typically, the kinds of animals that you see at fairs, are they for breeding purposes or are they going end up in the market?

Parrett: Two separate categories. You'll have breeding animals. We looked at breeding sheep earlier, and then market animals. So half the show animals are here strictly for market purposes. Half of them will be returned back to the different breeding environments to produce them. But all breeding animals, besides soundness and fertility, they all are trying to raise these ideal market animals.

DePue: Anything else we need to know about these?

Parrett: No, but let's go look at some cattle.

DePue: Okay, thanks Doug.

(pause in recording)

DePue: Doug, what breed are we looking at here?

Parrett: Well we moved over to the cattle side of the arena, and we've got a couple of crossbred steers here. We've used the term crossbreeding a lot when we talked about our different species. In mating, we have purebred lines of cattle, pigs and sheep, and each breed excels for a certain trait. Maybe they're a better reproductive breed, maybe they're a better muscle breed, the meat quality might be higher or different kinds of traits, so we crossbreed to try to put breeds together to make a more ideal animal. And so we see a lot of crossbreeding. It's just a more efficient way to raise a lot of these cattle.

They're both black, but they might have different base genetics, because the black color from Angus tends to dominate any kind of red or white color. So you'll have black animals that might actually come from a couple of different types of breeds of cattle. These are market weight steers, and like we've been talking about with all the species, you'll get different sizes and shapes. Here we have a moderate-framed steer that's kind of big-bodied.

DePue: So the one on the left of the camera?

Parrett: On the left here. We have a moderate-framed steer and we can actually look at you know, he's got some muscle in his quarter, he's pretty broad in his top, and he's got a lot of capacity or spring rib. We use that term capacity; it's not a food term, but it means an animal can—the sisters that are in production or animals, these can kind of grow and gain real well. So we have a moderate size, heavy muscle, big-bodied steer we'd say, and then we've got a different body type here. We have a steer that

you ought to be able to see is a little taller, he's a longer bodied steer, and he's a steer that's leaner. If we just go in and we'd handle him, you can see a little less finish over his ribs. So he's a leaner animal that's got more frame and got more length. Here's a steer that's probably a little fatter. You put your hands on to see how they finish. This is where the rib eyes and the loins and the steaks are, and these are the big, round steaks, and it's here. So we've got a leaner, longer-bodied steer, a little thicker, wider based steer with a little more capacity.

DePue: And I'm assuming that the one on your right is the one that you say is the superior animal?

Parrett: Well, I don't know if superior so much. This one would be more market ready today. That's one of the things that people with their show cattle always have weight. The fair is held this week and it's hard to get these animals that are 15, 16, 17 months old, to get them just right for the fair. As a judge, what he's going to say is these are both good. He's going to say these are both desirable animals, really sound, really long pattern. From a quality standpoint, as far as quality grade of meat, he's going to be leaner but maybe not have as much marbling, which would get him to a higher quality grade. Actually just leave him staggered back, just like that. This one's probably more market ready from a quality grade standpoint. Now that's a little different than we've talked in the other species.

Cattle are fed so they have a little more fat on them when they're harvested, than pigs or sheep. Pigs or sheep, we like to send them when they're really lean. But steaks and beef are kind of based on a market product that has a little bit of fat to it, and that adds that flavor, that choice flavor and that prime flavor. The American public is determined—we we pay more for beef—but when we eat steaks and roasts, we want them to have a little extra juiciness and flavor. So we, at market time, like them to have a little more fat on them, but we never want them over-fat. Now we have an animal that's maybe a little leaner, which is still pretty acceptable because we're going to have a lot of lean cuts. Our yield from this animal is going to be really good, the quality grade will be a little better here. I suspect the judge, if these two ended up in the same class, would say I like a more moderate steer that's a little more market ready and finished, maybe a little more shape in quarter. Some judges would say oh, I like these lean, long bodied steers that are really lean in their shape, they're really long hipped and good legged. But I would probably put the two together to make an ideal market animal. You'd get a steer that's probably just a little more finished, and one that's just a little longer and a little leaner. One of these two might be ideal, there might be a more ideal one out there, who knows? We'll find out in the judging on Saturday.

DePue: Fifty years ago, what kind of an animal would we be looking at?

Parrett: The same transition we've talked about. In the fifties, cattle went to market at thirty months of age, weighing 900 pounds, and now we have steers that are weighing almost 1,400 pounds at twelve, thirteen, fourteen months of age. We have

increased gain and efficiency enormously. Thirty, forty, fifty years ago, the market cattle were an inch fat, and you would cut that off. Now we've got cattle—ideal fat is about three tenths or four tenths of an inch of fat—and we've done it though, retaining the marbling or the flavor in the meat. We genetically doubled the rate of growth and we've sustained our quality grade, so we think efficiency and quality has really been improved.

DePue: I remember in a previous discussion we had, you talked about how the animals were a lot taller, and then you decided there was disadvantages to that.

Parrett: If you look at some pictures and happen to see Doug Parrett judging, you would see cattle that I couldn't see over. Now what we did in these cycles—you know when you change cattle type, it takes four or five years to really change themin the cycle of judging and selection, sometimes we go to extremes, and to get out of these real little, small, fat ones of the fifties and sixties, we went to these giants in the early seventies and through the eighties, and they weren't practical to raise. They didn't grow fast enough, the meat quality wasn't very good, producers couldn't maintain elephant sized cows. So now we moderate it out. These steers would be as big as we want them, they're growth is fast and they've ended up at a real good market weight.

DePue: I notice that the handlers here keep repositioning the feet. What's going on with that?

Parrett: Well, they're trying to impress the judge. They want their animal to look the best it can. You can see they want them to stand wide behind, so they give the appearance of all the muscle they've got. And then you'll see, they get a hind leg back; this animal is real well trained, the hind leg is back, so from the side it looks really long bodied. They hold the head up because it gives a balance of appearance. And you can see them scratching their bellies and underside, that's kind of like petting the dog. That just keeps them kind of quiet and kind of calm; you can see they're both really well behaved.

DePue: With all the evolution of the cattle that you've had over the decades, has breeding and calving changed as well?

Parrett: Yeah. It's always the purebred breeders are using a lot of performance records. We have performance records and measurings of growth rate, carcass characteristics, the efficiency of growth. We measure all of these characteristics, so our breeders have actual objective performance data. Then we hope we change the animal types, to have a functional animal that yields the right meat product. We can't ever let market type get out of bounds that it's hard to produce it, and we can't ever emphasize just production traits that don't give us a market trait. So we've heard phrases, the eye of the master or the balanced traits and all those kind of things You have to keep everything in balance or mother nature will say, that doesn't work, and then you lose all efficiency.

DePue: Would it be right to say though, that come calving time, human beings have gotten involved much more than they used to?

Parrett: No, I don't think so. They would be involved only because they're around and they're available. Calving traits: if you're using bulls on cows, where they have trouble giving birth, you'd better switch bulls. Almost all breeders of cattle select for moderate to low birth weights, no calving problems. Now, as we make them bigger and more muscle, you're challenging mother nature. You're trying to say, if you make them big, at some point in their life, they usually start bigger. So there's always checks and balances. I want to have them big and growthy, but I don't want them to start too big; that takes years of selection, to get that combination.

DePue: And how would judging livestock like we've looked at today, differ from judging horses?

Parrett: All of the livestock we've looked at are food animal species, an animal protein meat specie. And so everything we do here comes back to quantity of animal protein, quality of animal protein, and a functional shape in their environment they're in. Now horses: the goal of the horse is possibly a pleasurable ride or pulling a cart or a wagon or something like that. So they have to be sound, they have to be very functional on their feet and legs. But it's almost more of an art form. The balance, the look, there are some traits and characteristics that aren't necessarily related to an economic or meat production form, but are more the specie has evolved into almost an art form versus food production.

DePue: Last question for you Doug. You've been judging livestock for almost your entire life. Why do you love it so much?

Parrett: Well, you have a passion for livestock, because animals, perfection, the targets out there for high quality, efficient production, so there's some reality to it. But you can look at these young people and the other ones we've seen and worked with this morning, I mean that's the passion for all this. As an educator, you're in the classroom, but this gets you out with young people that have desire to be involved in agriculture. There's nothing more reinvigorating or nothing that sustains you more than seeing young people and their goals and how bright their future is, and just trying to be part of it.

DePue: Well again Doug, thanks very much for allowing me to be your student. I've learned an awful lot over these last couple weeks and I've really enjoyed it.

Parrett: Well it's been a good story and we're glad to share. Thanks.

(end of Parrett interviews)