

Welcome to Oklahoma

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Dr. Boger, left, with Dr. Jenks Britt and Dr. Glen Hoffsis.

It is good to be here and it is good to have this 16th Annual Meeting in the state of Oklahoma in Oklahoma City. I do regret that we do not have the kinds of facilities on the Oklahoma State University Campus that would permit the conducting of a meeting of this size and complexity at this particular time of the year. I have noted, however, that some of you will have the opportunity to visit the campus and I hope you take advantage of that. We are very proud of some of the things that are going on at the University and would welcome the opportunity to let you see some of those things first hand. We have tremendous veterinary facilities and our Veterinary Teaching Hospital, as most of you know, is of recent vintage. It has proved to be a tremendous asset, not only to the University, but a service to the people of the state of Oklahoma. We have hooked with it, of course the Animal Disease Diagnostic Laboratory, again, a relatively new facility serving Oklahoma agriculture and the animal medicine people of this state very well. In addition, of course, we have an Animal Science program that is tremendous, and it contains some new facilities which have been operational about two years. So, if you come to the Campus I think you will see a tremendous set of facilities serving animal agriculture and, especially, the bovine population very well.

I am not going to take much time because I understand my role is only to visit with you until it is time for lunch, and that is not very far in the future! But I want to say just a word or two about the kind of world in which we are living, how fast paced it is and some of the resulting obligations that we feel here at Oklahoma State University. I am sure land grant universities across this land feel the same obligations. They offer tremendous challenges as we look to the years ahead.

You all know that we are in the midst of what I refer to as

silent revolutions. But they are the kinds of revolutions that touch your everyday living and operations in a very significant way. I read the other day, for example, that in the area of electronics and computers we now have more computers in the world than there are people. Four billion people, five billion computers. In your households I am sure you could add them up if you took the time to think about the computer in your microwave oven or your electronic range or in the radio in your bedroom, on your wrist, wherever. It is a sign of the times and the computer is here.

I visited our engineering college the other day. At the end of the program they presented me with a chip. The chip was the size of my thumbnail and wafer thin. That chip, they said, had the power of a computer and the memory of a computer, that represented 400,000 transistors. In my generation, that represented 400,000 vacuum tubes. It would take a room this large to have 400,000 vacuum tubes and the air conditioning equipment just to handle that. So we have a computer revolution.

We have a communications revolution. And I think you're aware of some of the modern developments in communication. Computers and communications are being linked. On our campus, next week we will flip the switch on a ten-meter dish that will permit us to transmit signals through a satellite 22,300 miles above this earth. And then, any institution or individual with a dish, can access the satellite and receive programs transmitted from our campus. Now, this came as a result of an experimental effort begun two years ago last August as we conducted a program for veterinarians in this state. We leased a portable satellite dish from the Public Service Satellite Corporation, and transmitted the television signals up. The signals were received in seven different locations around this state, and 2/3 of the practicing veterinarians in this state participated in a four-hour program in the interactive mode—receiving the signals that were transmitted from the campus. A telephone hookup enabled them to communicate verbally with those who were conducting the program, performing the surgical techniques, and so on, on the campus. That's the kind of ongoing capability we will have. Now, that means for our university that we will be able to access homes, cable television networks, anywhere in the hemisphere. We're not going to invade the OSU of the east with our signals, but they'll be there. We did this to better serve the people of the state of Oklahoma. Through our Cooperative Extension Service, we can conduct meetings with our own staff. We can conduct programs that can be received by people where they live and where they work, without the travel time and trouble necessary to assemble on the campus in Stillwater.

So we can serve veterinarians, we can serve farmers and ranchers, we can serve dieticians in hospitals, we can serve school teachers, and on and on.

Another revolution that you are all quite familiar with, I am sure, is what I refer to as the biological revolution. I think we're in the midst of the greatest biological revolution ever known on this Earth. It's in the beginning stages. My feeling is we'll see more change in the next 20 years in the world of biology and the application of science to biology than we have seen in any similar period of history and probably three times as much as any similar period in history. You know something of this because the payoff is already in the test tube, in the laboratories on campuses like Oklahoma State.

We, of course, can clone plants. I didn't bring it with me today, but sometimes I carry a test tube one inch in diameter and six inches tall and in a one inch cloudy portion of that test tube there are contained 70,000 cloned cotton cells—each one of them capable of producing a mature plant, each one of them genetically identical to the other. And if one is resistant to disease, 70,000 cells are resistant to that disease, or to an insect, 70,000. We can go on in the plant world because you know that is just step one. If you peel the outside of those cells off then you can fuse them. When you fuse them that's hybridization. Now you can cross disease-resistant plants with insect-resistant plants and hopefully have the combination of the two. And that can go on. You also know that with these techniques, you can fuse cells of different species of plants. So, you can fuse the cell of a drought resistant plant with the cell of a wheat plant, and perhaps, get drought resistance in wheat. That can be extended. People say, you can do it with plants, can you do it with animals, and the answer is, yes. You know that.

In the area of health and medicine, I think the new techniques are going to pay off tremendously and that means animal health and medicine and it means human health and medicine.

At Oklahoma State University I mentioned in the Extension arena we are going to turn the switch on this tremendous device and be able to transmit signals...we already have the frequency that permits us to access an educational satellite at will. To me, that's the most significant development in our outreach programs since the passage of the Smith-Lever Act in 1914.

In the research area, we are fortunate enough in this state to have a legislature and a governor that had the vision two

years ago to launch a program that will greatly enhance our capability in research in agriculture and renewable natural resources areas. So that's plants and animals and water and conservation of resources and protection of resources and alternative energy sources...a five point program.

But the major emphasis is going to be on 21st century plants and animals. The legislature made available 15 million dollars to be matched by private gifts of 15 million dollars to establish the 21st Century Center for Agriculture and Renewable Natural Resources. We're very proud of this development and we think that it will make us one of the truly distinctive research establishments in these program areas in the United States, and yes, perhaps the world. I mentioned dollars and if you're reading the papers and watching television you know that we just do not have dollars running out of our ears in Oklahoma these days! In fact we're scratching around to find dollars to fund the budget. Fortunately the appropriation I'm talking about occurred the year before last when we were running some surpluses. That's money in the bank. On the way down I heard the legislature had adjourned and gone home, so we're not going to get a special tax program in a special session. We're going to have to wait for any further discussion of that until January. But even with difficult times I'm sure that some way, some how we'll figure out how to move these tremendous programs forward and capitalize on the opportunities that are ours.

I want to close by saying that like most of the institutions that you're familiar with, we pride ourselves on looking ahead and trying to stay abreast of the times or ahead of the times. There is a quotation in the Bible that says, "Without a vision, the people perish." Father Hesberg at Notre Dame in a very brilliant article referred to that quotation from the Bible and then extended it to say that, "Without a vision the people perish, but so does the academy." The academy is represented by, say, Oklahoma State University. And I think that is so true. Someone else said, however, between the time that was written and the present, that our task is not really to try to forecast the future, it is to enable it. We hope at Oklahoma State University, in this great state of Oklahoma, that we will conduct the kinds of programs that will enrich the lives of millions of people here and elsewhere around the world and that we will serve mankind in a positive way. Good to have you here.