

# UNITED STATES DEPARTMENT OF AGRICULTURE

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In the matter of:

NATIONAL CONFERENCE ON  
ANIMAL PRODUCTION FOOD SAFETY

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## **HERITAGE REPORTING CORPORATION**

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BEFORE THE  
UNITED STATES DEPARTMENT OF AGRICULTURE

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In the matter of:

NATIONAL CONFERENCE ON  
ANIMAL PRODUCTION FOOD SAFETY

Grand Ballroom E & F  
Hyatt Regency  
One St. Louis Union Station  
St. Louis, Missouri

Thursday,  
September 7, 2000

The conference reconvened at 1:30 p.m.

BEFORE: DR. LESTER CRAWFORD  
Moderator

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1

P R O C E E D I N G S

2

DR. CRAWFORD: We are going to do this  
3 afternoon's session two ways, which is represented by the  
4 program. One is the first series of presenters from the  
5 workshops this morning will be addressing education and  
6 animal production food safety. They will be the ones that  
7 met from 8:00 to 10:00.

8

And then following them, there will be feedback  
9 from the break-out sessions to identify gaps in research to  
10 address food safety at the animal production food level. As  
11 you would know, they would be the ones who met from 10:30 to  
12 12:00.

13

We'll begin with the first presentation, which  
14 will be given by Dr. Chuck Hofacre of the AVMA. And his  
15 title is Third Party Certification of Animal Protection  
16 Programs.

17

Dr. Hofacre, please. Either way you want. Do  
18 you want to sit down? Would it be better?

19

DR. HOFACRE: It doesn't matter.

20

DR. CRAWFORD: Okay. Have a seat.

21

DR. HOFACRE: All right. Thank you.

22

I wanted to thank Sal Cirone for helping with the  
23 recording, and also the 51 attendees that came to our

1 session. They -- the input was great. One of the -- we  
2 started the program, our thought was with third-party  
3 certification, many of the people within the audience may  
4 not have any experience or knowledge of where some of the  
5 programs had gone. So we had an initial presentation by  
6 Larry Miller of the Swine Futures Project, and then also  
7 Dave Pyburn of the Pork Certification Program, just to give  
8 us the feel for what other programs that were up and running  
9 had done with third-party certification.

10           We then launched into the four questions that  
11 were suggested to us by the organizing committee. The first  
12 was: Was is the state of animal production food safety  
13 education from all sources? And we had a little bit of  
14 difficulty trying to work the four questions into third-  
15 party certification, so we just answered those questions and  
16 then moved on into the third-party certification.

17           So to answer the, What is the state of the animal  
18 production food safety education programs, it's fairly  
19 variable. That the food safety programs were pretty much  
20 alive and well in all the commodity groups, but education  
21 needs between the commodity groups differed. And there's  
22 not one model that applies to all of the systems. Even  
23 within a commodity group, the educational requirements may

1 vary by the region of the country.

2           The second question was: How can federal  
3 agencies improve education in animal production food safety?  
4 And we discussed this one at length. Successful education  
5 should be science-based, but unfortunately, on-farm food  
6 safety programs, addressing many of the foodborne pathogens,  
7 there are significant data gaps, and that it -- we requested  
8 of the federal agencies that funding be increased, or  
9 continued, at least, at the levels they are, so that we can  
10 have additional information on what needs to occur, what  
11 things are successful for on-farm foodborne pathogen  
12 control, so that these can then be turned into educational  
13 programs.

14           Another point to this question was that the  
15 agencies need to facilitate industry workshops to share  
16 information between the commodity groups. One of the things  
17 that having the pork programs presented highlighted to the  
18 other commodity groups that, gee, there's a lot of  
19 information and knowledge out there that other people have  
20 found that, if we would be in a room together like this a  
21 little more often, we might be able to trade ideas and not  
22 reinvent the wheel. So it was suggested that perhaps the  
23 agencies could facilitate some of these types of meetings at

1 regional, state, and local level.

2           Another portion of that second question was that  
3 the federal agencies can serve as a credible source of  
4 information to the consumers regarding existing animal  
5 production food safety programs that are currently  
6 established by the commodity groups that are in cooperation  
7 with the federal government, and that FSIS and AFIS should  
8 continue the funding that's -- or should fund more programs  
9 available to states and the commodity groups for educational  
10 programs in regard to animal production food safety.

11           The third question of: How can FSIS best  
12 contribute to improvement of education in animal production  
13 food safety, our committee discussed and recommended that  
14 FSIS, who has had those type of educational programs -- or  
15 funded educational programs at the state level in the past,  
16 that to continue to fund those, and that they were quite  
17 successful, and that FSI should establish a website that  
18 serves as a central clearing house for the latest  
19 information regarding foodborne pathogens and other  
20 foodborne hazards.

21           This should include a data base of research,  
22 ongoing research, and some of the latest results of research  
23 that hasn't totally been completed yet. This website

1 should be -- should also include information on the various  
2 commodity quality-assurance programs, and this perhaps could  
3 be linked to the different commodity groups' websites where  
4 they would have their quality-assurance program in more  
5 detail.

6           The last question of what would -- what we felt  
7 would be successful outcome -- what this break-out group  
8 thought would be a -- constitute a successful outcome for  
9 today was -- we broke that into what we'd like to see as  
10 some immediate programs or successes, and then also some  
11 long-term.

12           And on the immediate successes would be the  
13 establishment of definitions of terms currently being used,  
14 such as: verification, audit, certification, assessment,  
15 and education. It was thought -- it was felt that many of  
16 the terms that we were throwing around in the room --  
17 everyone had a different definition for some of those terms,  
18 and there was confusion when someone talked about a  
19 certification versus auditing or assessment or any of the  
20 definitions that would go across all of the different  
21 programs.

22           It was also suggested that we look at the Codex  
23 and the ISO definitions and see if they haven't defined some

1 of these that could fit and be used as the different  
2 commodity groups put together their QA programs.

3           And it was emphasized, though, that this process  
4 of establishing these definitions needs to be a partnership  
5 between the industry, the state, and the other stakeholders  
6 within the commodity groups so that there is a uniform  
7 understanding among commodity groups and also the consumers.  
8 And it was recommended that this be -- this process of  
9 establishing these definitions be completed within one year.

10           The long-term successes that we would like to see  
11 would be increased and sustained funding of educational  
12 programs regarding animal production food safety, and also  
13 maintenance of the working groups that cross the commodity  
14 groups, even -- you know, we bring people together and we  
15 discuss it, and then we wait for a long period of time and  
16 don't come back together. So maintain the dialog between  
17 the different commodity groups; don't let that fall to the  
18 wayside, so that we can continue to gather and share  
19 information; also the maintenance of the website, so that  
20 the information is current, and any educational programs or  
21 research or new ideas on the quality-assurance programs that  
22 one commodity group may have gets on there, so it's  
23 available to everyone.

1           Lastly, our discussion then turned to the third-  
2 party certification, and there was pretty good consensus in  
3 the group, and it didn't take long to arrive at that. I  
4 think everyone had an idea of where things should go, but  
5 weren't really -- when given the opportunity, the ideas  
6 started flooding out.

7           The third-party certification program should  
8 include veterinarians, perhaps practitioners or state or  
9 federal veterinarians. Most of the commodity quality-  
10 assurance plans that are already in place do include  
11 veterinarians in some capacity.

12           Since this is resource-intensive, it was felt the  
13 government should provide the resources to train the  
14 trainers; for example, to train accredited veterinarians to  
15 provide audits or to train the states to provide uniform  
16 certification of the programs, and allow for spot audits by,  
17 say, AFIS.

18           The type of third-party certification would --  
19 this part of third-party certification, where you've got an  
20 accredited veterinarian or a AFIS veterinarian and some AFIS  
21 oversight would add a lot of credibility, it was felt, in  
22 the consumers' eyes and international consumers as well, and  
23 also should be more easily accepted by the commodity

1 industries.

2                   And that was our report.

3                   DR. CRAWFORD: Good. Thank you. And thank you  
4 for staying on time.

5                   (Applause.)

6                   DR. CRAWFORD: Okay. Our next presenter will be  
7 on delivering Food Safety Educational Messages to Animal  
8 Producers, and this will be given by Dan Connor of the  
9 Federation of American Science Societies -- Federation of  
10 Animal Science Societies.

11                   MR. CONNOR: Thank you. I'd like to also thank  
12 the recorder for our group, who was Barbara Glenn [phonetic]  
13 from the FAS office in the Washington, D.C., area.

14                   We had a very active group, lots of  
15 participation. Our participants represented a very good  
16 cross-section of the commodities and a good cross-section of  
17 the different geographical areas.

18                   We were given the same set of four questions to  
19 address. We took a little different tack on ours. We went  
20 to the last question first of what would constitute success  
21 for the break-out group today, and essentially that got us  
22 into some of the key issues that needed to be addressed in  
23 terms of delivering education materials into the -- to the

1producers.

2 I guess the key issue was coordination of efforts  
3to deliver a message, and that there is a need for a good  
4core message, such that we're all delivering the same  
5message to our producers; and also the issue to make sure  
6that we are delivering the right message to the educator and  
7trainers that are going to be delivering this message have  
8the right information to give to the producer.

9 Also, there's a need to know what works and what  
10doesn't work, in terms of delivering message to producers.  
11And we felt like there's a need to have our audience, the  
12producer, be hungry for information. That would be the  
13ideal situation.

14 And the issue of inclusiveness, that we're able  
15to get to all commodity groups and all producer groups.

16 That led us into our second question: What is  
17the state of animal food production -- food safety education  
18delivery from all sources. We felt like there is a fair  
19amount of good information and science out there. It's  
20being delivered, for the most part. The QA programs that  
21are existing have been quite effective. However, there was  
22a feeling among the group that there's a lack of follow-up  
23and also a lack of information in terms of addressing the

1 pathogenic microorganisms that we're going to have to  
2 address in terms of food safety. Most of the QA programs  
3 target chemical residues, physical hazards, but we don't  
4 tend to have enough information to deliver in terms of  
5 foodborne pathogens.

6           Felt like that in many cases, there is a good  
7 network in place to deliver messages. These tend to be on a  
8 state-by-state basis, so there is some variability in the  
9 network that exists out there. But certainly when a  
10 producer has a question, they're going to go to probably  
11 their local extension specialist or extension agent for that  
12 information. So there needs to be that network out there so  
13 people can easily go to someone to get the information.

14           Did feel that our audience is not quite as wide  
15 enough, and particularly in terms of youth and probably our  
16 university graduates; that we need more information for  
17 those two groups to broaden our audience.

18           Probably the biggest issue in terms of the state  
19 of delivering the message is this issue of motivation of our  
20 target audience, is that we are lacking incentives, as a  
21 producer always asks the question of why I should change or  
22 do something differently. And whether or not that's  
23 economic from a positive or negative standpoint, we just

1 felt like probably the incentives at this point in time are  
2 lacking.

3           Questions 3 and 4 were -- How can federal  
4 agencies improve education delivery, and 4 was, specifically  
5 FSIS. And we addressed those two questions jointly, because  
6 we felt that FSIS cannot really act in absence of the other  
7 agencies that are involved in food safety issues.

8           Certainly, what we need to do is broaden our  
9 audience. There are a number -- and also -- let me get my  
10 notes straight here -- we feel that there will be a need, as  
11 the first group indicated, for federal dollars for support  
12 of programs. But also, coming back to the coordination  
13 effort, there needs to be some coordination within the  
14 federal agencies. I'll come to that in just one minute in a  
15 little more detail.

16           We also felt that there needs to be a  
17 clearinghouse or a database of programs that are available.  
18 This would include not only scientific information, as the  
19 previous group had suggested, but also information on  
20 programs that are working and are effective, so that when  
21 people have questions, they can go to that and look and find  
22 effective delivery methods, in addition to the information.  
23 And we felt that, you know, a web page of some sort would

1 definitely help fill that gap.

2           And that information probably should be targeted  
3 toward the educators, the people that are going to deliver  
4 the information. Again, probably the producer is going to  
5 want to go to someone within the state, a local person, to  
6 get that information. That's where that network and those  
7 contacts lie.

8           We feel like that extension is going to be the  
9 key deliverer of this information, therefore, feel that  
10 there has to be support long term for extension efforts.  
11 That's probably through a variety of financial and other  
12 resources.

13           One of the things could be some kind of cost-  
14 share type of programs. One of the issues that was raised  
15 is that implementing these changes on the producers' side  
16 usually incurs some expense on the producers' part;  
17 therefore, cost-share programs should probably be  
18 investigated.

19           So I think that, overall, we have to look at  
20 motivating producers to do the right thing. And one of the  
21 issues that was raised in terms of extension is there seems  
22 to be a lack of outcry in terms of needing the extension.  
23 Several things, specific things, have been -- are being

1 phased out, such as the FARAD program. Many people thought  
2 that that was a very useful program, yet it's being phased  
3 out. And there's some things we can do to write people  
4 involved to see that that does not get phased out.

5           Going back to the point I made on FSIS not acting  
6 alone, feel that there's got to be coordination of the  
7 federal agencies, and there's got to be -- for example, we  
8 feel that there's got to be good support for research and  
9 extension efforts at the universities. That's a CSREES  
10 issue; therefore, FSIS must communicate to CSREES what the  
11 importance of these extension programs are in producing a  
12 safe food supply.

13           So I think with -- there has to be some  
14 coordination among the ag constituents; that means within  
15 the agencies, within the ag community, and within the  
16 industry. And what we want to do is ultimately have some  
17 unified voice such that we can deliver a consistent message.

18           DR. CRAWFORD: Thank you, Dr. Connor. And thanks  
19 to the Federation of Animal Science Societies.

20           The next presenter will be Dr. Rich Breitmeyer  
21 from the U.S. Animal Health Association. And he will be  
22 discussing developing state networks.

23           Dr. Breitmeyer.

1 DR. BREITMEYER: We've got a few overheads to try  
2 to keep your attention, keep you awake here for a minute.

3 I'd like to begin by thanking the group. I think  
4 we had a really very productive, very active group. And I  
5 think it really emphasized why we need partnerships, because  
6 we had excellent representation from industry, from  
7 academia, from government -- both state and federal  
8 governments, both public health and ag departments. So I  
9 think we had microcosm of the real world out there, and it  
10 really, I think, came out in our discussion.

11 We took -- we wanted to address the partnership  
12 issue; then we addressed the four questions at the end. So  
13 just real briefly, we're going to touch on what we  
14 recommended.

15 First of all, we talked about why in the world do  
16 we need state partnerships. And we had such ideas as to  
17 implement national programs; uniformity -- lot of discussion  
18 from industry about the needs for uniform programs, because  
19 products move across state lines; we don't just deal in  
20 states.

21 We need partnerships to address trace-backs. And  
22 I think we kind of got to where we were emphasizing both  
23 preventative- and then kind of reactive-type activities.

1 Consistency -- again, the integrators are multi-state.

2           We talked a lot about the top-down versus bottom-  
3 up type programs, and I think we reached consensus that,  
4 really, for good implementation, the bottom-up programs are  
5 very effective and probably address the immediate needs.

6           The need for public information, that these  
7 programs need to be market-driven and really serve the  
8 industries.

9           I'm going to skip over some of these; they're a  
10 little generic.

11           Implement best-management practices on the farm  
12 and try to raise the bar in the field. I think that's the  
13 real -- it's easy for leaders to come together, but to  
14 implement it down at the farm is entirely a different issue,  
15 and we really need a lot of partners to get that done.  
16 Clearly, these are not federal programs. Federal government  
17 is not going to implement these alone. We really need all  
18 the partners.

19           And then at the end, we added: to address a  
20 crisis that occurs; a trace-back, a foodborne outbreak, we  
21 really need good partnerships to address those.

22           Then why develop a program? We got into the  
23 preventative quality-assurance, food safety, on-farm type

1 programs. I think there was consensus that these would only  
2 happen if there were market-driven incentives. And examples  
3 of niche markets, international markets, and access to the  
4 market place, I think, is becoming more and more required  
5 that programs are documented.

6           Good business practices -- an important one we  
7 talked a lot about was to prevent additional regulations. I  
8 think there was consensus that if industry is seen as doing  
9 the right thing, then there is not a need for additional on-  
10 farm regulations.

11           Improved profitability and improved quality of  
12 product -- again, while it'd be nice if there were  
13 incentives out there, I think we talked a lot and realized  
14 there probably are very few economic incentives currently  
15 out there, and those would move programs much more quickly.  
16 But continued access to the market is probably much more  
17 common than actual economic and profit incentives for  
18 implementing on-farm programs.

19           Then we kind of just wanted to list together of  
20 who should be at the table. And clearly, depending on the  
21 issue, depending on the commodity, this list might change a  
22 little bit, but this is kind of a who's who. I think it was  
23 really important that we all agreed that the industry really

1 needs to drive this. And a state commodity organization and  
2 the leaders of that organization are probably going to be  
3 key, working very closely with state animal health  
4 officials, state veterinarian's office, and state and  
5 federal public health officials being very important at the  
6 table. Again, communication/information flowing both  
7 directions.

8           Local veterinarians and the state Veterinarian  
9 Medical Association, very important. Then the academic  
10 community, including researchers and extension people.  
11 Again, I think we're repeating a lot of the same themes that  
12 others have talked about. The diagnostic labs, somebody to  
13 get the message out. If it's not extension, then who? That  
14 somebody to communicate information is really effective, and  
15 we really need effective communications.

16           Even included the state feed control officials,  
17 environmental officials, even natural resources. We had  
18 quite a good discussion about whether consumers should be at  
19 the table, and I think most in the group agreed, yes,  
20 they're the customers; they really need to be at the table.  
21 I think there was some concern that if you bring them in  
22 right at the beginning, are you going to have industry  
23 really kind of let their hair down and talk about very frank

1 issues with consumer advocates present. And I think that  
2 was a very good discussion, but clearly they need to be part  
3 of that discussion.

4           And then how do you get a program off the ground;  
5 what partnerships are needed. Clearly, again, if it's not  
6 industry leading it, it's not likely going to happen.  
7 Government's not going to drive it if there's not an  
8 economic reason or some market-driven reason for it to  
9 occur. So industry leadership is very key. But they felt  
10 that they really needed the state animal health officials to  
11 assist in that facilitation.

12           Talked a lot about facilitation, industry  
13 commitment, dedicated resources and dedicated functions.  
14 And while it might not be a dedicated person, it's really an  
15 entirely new job that somebody's got to carry out, so there  
16 really has to be commitment and resources, both personnel  
17 and economic resources, to support that.

18           Then what do we hope to accomplish with these  
19 programs and with these partnerships? I think the group  
20 felt it was important to have some measurable results, such  
21 as how many producers are currently under the program; what  
22 percentage of the commodity is being produced under that  
23 program.

1 Continued access to markets is a big reason, and  
2 important to get consumer education. Identification of more  
3 niche markets -- I think there's more opportunities, that  
4 these programs do open up marketing channels.

5 Reduced liability in the event of a foodborne  
6 outbreak -- if you're doing all the right things, would that  
7 help to reduce a producer's liability.

8 There's hope that these programs would enhance  
9 profitability if these good production practices go hand in  
10 hand with animal health programs. Meet the consumer and  
11 market demands, which we see ever increasing.

12 And a goal would be to promote minimum standards  
13 for all producers. And there might be producers that have  
14 an economic advantage because they are cutting corners and  
15 maybe implementing risky practices, and if the level of the  
16 entire industry could be raised, it would create more of a  
17 level playing field. And especially the industry folks at  
18 our discussion felt this was very important that there be a  
19 level playing field out there, because these programs don't  
20 come for -- don't come free.

21 And then address problems or issues that cannot  
22 be resolved by individual entities. And again, I think --  
23 with lack of resources these days, I think we all felt that

1 these partnerships just make a lot of sense.

2           Then we spent just a little bit of time talking  
3 about if you had a crisis, if you had a trace-back, who  
4 should actually be going out to the farm. We've heard from  
5 FDA; they clearly have authority. We know our state public  
6 health officials have authorities to go on farms. State  
7 veterinarians have authorities for certain reasons, but  
8 maybe not for the food safety issues.

9           So there was consensus that both state and  
10 federal officials do have authority to go on the farm, but  
11 there was a sense that local veterinarians and veterinarian  
12 medical officers and those inspectors that are already on-  
13 farm, like milk inspectors, like state veterinarians that  
14 have relationships with producers, that the relationships be  
15 established and public health officials utilize these  
16 professionals who already have those, and try to make these  
17 visits and these investigations in as cooperative a manner  
18 as possible, and really build those partnerships before the  
19 crisis. That's very important.

20           And then we were probably running out of gas a  
21 little bit when we got to these last questions, so our  
22 answers are probably not as extensive but, I think, mirror a  
23 lot what's already been said before.

1           What is the state of animal production food  
2 safety education from all sources? Again, extension,  
3 personnel, and private veterinarians are seen as probably  
4 the most important, along with commodity organizations, then  
5 coming a little farther behind, state regulatory officials.  
6 Even buyers and packers were seen as a place where  
7 information could be disseminated through checks, through  
8 markets, through things like that -- so other sources of  
9 information.

10           How can federal agencies improve education in  
11 animal production food safety? Money. That came out loud  
12 and clear, that funding resources really are critical. And  
13 again, we've heard this, I think, by every speaker: Support  
14 extension positions. We're seeing critical declines in  
15 extension agents that are available to assist throughout  
16 the -- at the state level, and I think most everybody  
17 recognized that these are the key individuals that are going  
18 to assist with the education delivery of these animal  
19 production food safety programs. So we can't say we support  
20 these programs on one hand, then not support those kind of  
21 key positions on the other.

22           Share success stories. There's a lot of great  
23 models out there, and I know with the partnerships FSIS has

1 developed, there's a lot of good models out there, but  
2 they're probably not being communicated as well as they need  
3 to be. We can learn from each other, and we really need to  
4 do that. And then, of course, support research.

5           Then how can FSIS best contribute? Again, these  
6 resources, they do a tremendous amount of surveillance.  
7 They can assist with identifying animals at the slaughter  
8 establishments and getting that feedback back to other  
9 regulatory officials that need them, and also back to  
10 producers, which would be very helpful, and provide time-  
11 sensitive, time-accurate information, better feedback on  
12 both residues and bacterial counts, but really do it on it a  
13 need-to-know basis.

14           I think there's some concern about putting it on  
15 a general website where it could be interpreted by anybody  
16 and everybody and maybe not in the most appropriate ways.

17           Then what would constitute success of this break-  
18 out session? There was feeling that this report really  
19 needed to be widely distributed to include state  
20 veterinarians and the key commodity organizations, just as  
21 a -- kind of a network on how to begin forming these  
22 partnerships.

23           And I think that's pretty much it.

1 DR. CRAWFORD: Thank you very much, Rich.

2 And now we will hear from Jim Hodges, who will be  
3 talking about his session on measuring the impact of  
4 industry quality-assurance programs. Jim, as you know, is  
5 from the American Meat Institute.

6 Mr. Hodges.

7 MR. HODGES: Thanks, Lester.

8 The objective of the session on measuring impact  
9 of industry quality-assurance programs was to identify the  
10 current level of understanding regarding animal production  
11 quality-assurance programs, to look at the future needs of  
12 such programs, and potential obstacles to their development  
13 and implementation.

14 Regarding the state of animal production food  
15 safety, it was generally agreed that the producer quality-  
16 assurance programs have done a good job for what they were  
17 intended to do. They have historically focused on producer  
18 education, and those programs continue to be the best  
19 vehicle today to improve on-farm management practices,  
20 particularly in the area of preventing physical and chemical  
21 hazards.

22 Two examples of that are significant reductions  
23 in injection-site blemishes, lower antibiotic residue

1 levels, and other case examples that document that those  
2 programs have been successful.

3           It was also suggested and agreed upon that  
4 producer buy-in to these programs is essential to assure  
5 their success; therefore, a continued emphasis on a  
6 voluntary on-farm approach was to be encouraged. But that  
7 voluntary approach clearly would be defined by the market  
8 place, the demands of the slaughter segment, processing, and  
9 consumer groups, and also the structural needs of the  
10 various industries. Obviously, a vertically integrated  
11 poultry industry has quite different needs than a very  
12 diverse beef industry.

13           Producer quality-assurance programs or other more  
14 targeted types of programs will increasingly need to focus  
15 on prevention of biological hazards. Biological or  
16 microbiological hazards have typically not been addressed in  
17 as much detail as residues have on the chemical side or the  
18 physical side, as I just mentioned.

19           But there it was generally agreed that there  
20 needs to be additional hurdles put in place at the producer  
21 level to reduce the probability of virulent pathogens  
22 reaching the consuming public. But an obstacle to doing  
23 that is having the available technologies that have been

1 documented to be successful, because you cannot go to the  
2 producer segment without having the available tools to  
3 accomplish that objective.

4           One of the things that will drive this area of  
5 looking at on-farm pathogen prevention is packer  
6 requirements are expected to increase, whereby they would  
7 require certification of the status of livestock entering  
8 slaughter facilities, to reduce the likelihood that we have  
9 some hazard that results in undesirable public health  
10 outcome.

11           Also, commensurate with that is that slaughter-  
12 inspection procedures would need to be adjusted, based on  
13 the status of the animal entering the facility, and focus  
14 the resources where they are most needed. This will also be  
15 occurring in the international arena, and to comport with  
16 changing international requirements, there will be a  
17 continuing emphasis on looking at changes in our inspection  
18 program.

19           The second area regarding obstacles, there are  
20 several impediments that were identified to making these  
21 programs as successful as they could be. There are  
22 regulatory impediments that inhibit progress. Our current  
23 plant has a -- programs that are imposed by USDA are based,

1 in many cases, on public health goals, and not necessarily  
2 based on sound science, and are undermined by that lack of  
3 sound science.

4           Everyone agreed that there was a desire for  
5 consistent uniform enforcement, as we heard earlier, that is  
6 fair and equitable and is measured by the success or failure  
7 of the programs based on public health outcomes. And that  
8 is needed in order to create an environment of trust and  
9 understanding that will encourage the adoption of these  
10 voluntary producer programs.

11           Regulatory programs should also be designed to --  
12 where they are applicable, to encourage finding and solving  
13 problems and not designed to penalize the entity that is  
14 aggressively seeking to diagnose and solve the problem.

15           Other regulatory impediments exist regarding the  
16 approval of innovative technologies, both on-farm and at the  
17 plant level, such as competitive exclusion. That was an  
18 example that was highlighted in a poultry operation. More  
19 regulatory cooperation is obviously needed to bring these  
20 types of technologies to commercial reality and, at a very  
21 minimum, open that to further testing.

22           Research is key. We talked a lot about research  
23 and how that could best be coordinated. Clearly there's

1 more cooperation that's needed between the industry,  
2 government, and academic entities regarding research. A  
3 more comprehensive research database based on a commonly and  
4 widely accepted research agenda is needed. And continued  
5 funding for the Joint Institute for Food Safety Research and  
6 the National Animal Health Monitoring System is needed to  
7 support these kinds of efforts.

8           Lastly, regarding future needs, the development  
9 of on-farm GMPs to reduce pathogen loads on the livestock  
10 entering slaughter facilities should be looked at carefully.  
11 And if there is available technology developed by the  
12 industry, additionally a more sustainable animal trace-back  
13 system is needed to provide a mechanism to evaluate the  
14 effectiveness of these GMPs that could be implemented.

15           As far as the government's role in future  
16 needs -- more accurate risk assessments are clearly one of  
17 the things that was highlighted as being useful that's an  
18 appropriate function for the federal government, but these  
19 risk assessments, it was recommended, need to be more open  
20 to industry participation whereby there is continual dialog  
21 to assess the data, risk, and critique the methods used in  
22 these risk assessments.

23           And finally, as recommended by the consumer

1 representatives in our group, there needs to be clear  
2 communication to the consuming public of measurable outcomes  
3 of these programs, to evaluate their success or failure.  
4 Those communications to the public is needed to maintain  
5 consumer confidence and should be clearly documented and  
6 widely disseminated.

7 DR. CRAWFORD: Thank you very much, Jim.

8 Now Fred Troutt is going to wrap up the morning  
9 session with a discussion of the importance of animal  
10 identification to addressing food safety. Fred, as you  
11 know, is representing the National Institute for Animal  
12 Agriculture.

13 Dr. Troutt.

14 DR. TROUTT: Thank you, Dr. Crawford.

15 As Lester said, we examined -- our group examined  
16 the key questions in education and research from a  
17 perspective of animal identification. And I would also like  
18 to thank the group that participated. They were candid,  
19 thoughtful, insightful.

20 And in particular, I want to acknowledge the  
21 assistance of Neil Hammerschmidt and Glenn Slack for taking  
22 notes and recording the sessions. If everything goes right  
23 with the presentation, it's indeed their responsibility, and

1 they should get the credit. If anything goes wrong, it's  
2 their responsibility, and they should get the credit too.

3 DR. CRAWFORD: You sound like Bear Bryant.

4 MR. TROUTT: With regard to education, the  
5 overall state of the education, the group felt that with  
6 regard to animal identification, the educational process  
7 that's occurred across the United States in the recent past  
8 has been pretty good; that quality-assurance programs  
9 underscore the need for animal identification; that trade  
10 journals have had numerous articles on animal  
11 identification, the types of animal identification  
12 available, and how it may be employed; and veterinarians  
13 have placed emphasis on animal identification as a component  
14 of production medicine practices.

15 However, the state of that educational process  
16 can be enhanced. With this -- in this regard, the group  
17 felt that there needs to be more information on the need  
18 benefit to the producer. Producers need to be advised and  
19 understand the benefit that they will achieve as a  
20 consequence of animal identification in terms of economic  
21 return. The group felt that producers generally would be on  
22 board when the need and the return is well documented.

23 Additionally, producers need to receive

1 education, but so does a broad area of regulatory agencies,  
2 on the fact that probably the greatest obstacle to animal  
3 identification is a producer's concern about the risk that  
4 identification brings with regard to liability, and that the  
5 solution to this general concern for liability is that,  
6 while attorneys may maintain that producers have less risk  
7 with a liability when adequate records and identification  
8 are maintained, producers probably would prefer, and  
9 probably should have written in the legislative assurance,  
10 that if the producer follows best-management practice, they  
11 will not be held "hostage" for a food-safety problem that  
12 they have had no control over.

13           So the question of liability, especially when we  
14 now begin to discuss animal identification in terms of  
15 pathogen reduction and the on-farm presence of pathogens,  
16 but pathogens that may be introduced into the system almost  
17 anywhere along the chain becomes of paramount importance  
18 with animal identification systems.

19           How can federal agencies improve education in  
20 animal production food safety? The group felt that federal  
21 agencies need to set standards, be able to thoroughly  
22 enunciate and justify the rationale for those standards, and  
23 that state agencies then could serve as the third-party

1 verifiers.

2           Over and over, the group produced the thought  
3 that producers need to understand why and what government  
4 needs are for identification, and that how this  
5 identification system that may be suggested or attempt to be  
6 imposed is going to facilitate accomplishment of their --  
7 meaning the producers' -- missions.

8           The group that discussed animal identification  
9 placed a great deal of emphasis on the need for animal  
10 identification for production systems in order to enhance  
11 more efficiency of those systems, not only as an element of  
12 food safety, but food safety became one component of the  
13 need for identification system.

14           We felt that -- under this context as well, that  
15 education is a two-way street. Governmental personnel need  
16 to be educated and understand the issues relative to food  
17 animal producers. They need to be thoroughly aware of  
18 contemporary management practices. They need to know how  
19 animals are raised, the scope and magnitude of our  
20 agricultural endeavors. And they need to be aware that when  
21 they establish procedures, those procedures could  
22 significantly conflict with day-to-day management practices  
23 at the farm level.

1           So the message the group wanted, I think,  
2 expressed very loudly and clearly is that there is a concern  
3 that employees within federal agencies may not fully  
4 understand what happens at the farm level on a day-in/day-  
5 out basis, and that as our farms become more complicated in  
6 size and scope, that it becomes essential for them to be  
7 well aware of what happens at the farm level.

8           Another concern was that with -- if the context  
9 of animal identification is in the realm of food safety  
10 identification, then country-of-origin labeling must also be  
11 established before we require -- if we would move to  
12 require, before we require identification records on simply  
13 the domestic sides.

14           Drugs are sometimes used in other countries that  
15 are not approved for use in the United States, but the  
16 product from animals entering the system or the product  
17 derived from the animals without proper identification when  
18 we force identification here, if that were the movement,  
19 would be improper.

20           How can FSIS best contribute to improvement of  
21 education? There was quite a bit of discussion on this, and  
22 one thing that came out loud and clear was that -- strong  
23 encouragement for FSIS to work through with an interagency

1 mentality and zeal, working with other agencies that are  
2 most knowledgeable and active at the farm level and that  
3 also CRESEES should use commodity groups, trade journals, as  
4 a continuing delivery of information for animal  
5 identification.

6           But overall, we need to provide information to  
7 the producer on an assessment of the value of animal  
8 identification to the U.S. livestock industries.

9           What would constitute success for this break-out  
10 group today? With regard to the educational parameters, a  
11 validation of animal identification for production; a  
12 discussion and some workability with regard to liability,  
13 particularly with regard to liability for the producer  
14 concerning trace-back; and the need to educate federal  
15 agency personnel on the producer perspective, working in an  
16 interagency arena.

17           With regard to research, similar four questions  
18 were considered, and so far as overall research need was  
19 concerned, a gap that was identified -- which is kind of an  
20 esoteric gap, but when you think about it, may be very, very  
21 real -- is that when you consider how government -- we  
22 recommend that government policy should always be based on  
23 science, and that government policy should not move ahead of

1 the scientific information relative to the formulation of  
2 that policy, else conflicts would almost always accrue.  
3 Therefore, government should rely, in establishing policy,  
4 on science.

5           There is a need, also we felt, that  
6 identification be incorporated -- research regarding animal  
7 identification should focus on management practices that can  
8 be applied to produce a safer food product. But the  
9 management practice should be incorporated into the overall  
10 workings of the agricultural environment, the farm.

11           And we need to test and evaluate what  
12 identification systems really work and are practical. We  
13 need more projects like the FAIAR Project, the Farm Animal  
14 Identification and Records Project.

15           We need to institute research on other  
16 identification technologies, such as biological  
17 identification, referring specifically to DNA, DNA markers.  
18 And also, with regard to electronic identification, there  
19 is need for better detection systems that will actually  
20 determine in a wider area the animal identity.

21           Currently, now, we're talking about transponders  
22 and associated antenna that can pick up at six to nine  
23 inches. And for some of our agricultural units, the group

1 felt that they need much wider range to appropriately  
2 identify.

3 I think it's safe to say that there's varied  
4 opinion based upon the species that someone works with, that  
5 what -- one size is not going to necessarily fit all here.

6 This may not be totally researchable, but the  
7 need for an understanding of the information systems.

8 And what could be achieved from this meeting?  
9 Government research focus should be on the assessment of the  
10 value of identification specific to the merit, the economic  
11 merit, for that identification system. In other words, cost  
12 benefit and returns. And also research that promotes  
13 partnerships within government, industry, and academia.

14 Thank you.

15 DR. CRAWFORD: Thank you, Fred, very much.

16 (Applause.)

17 DR. CRAWFORD: And now we will have -- we'll move  
18 on to the research gaps presentations. These were the  
19 second presentations of the morning. The first one will be  
20 on beef and veal, and it will be presented by Dr. Gary  
21 Cowman of the National Cattlemen's Beef Association.

22 Gary, you're looking better all the time.

23 MR. HANSON: Lost all my weight and got taller.

1 I'm not Gary Cowman. I'm Don Hanson. Gary had a  
2 plane to catch, and I happened to be the last guy out of the  
3 room, and so I agree to do this.

4 DR. CRAWFORD: I was just about to say, it looks  
5 like Night of the Living Dead out there. So you better  
6 hurry.

7 MR. HANSON: Okay. We had different questions  
8 than the morning group. Just to bring you up to speed, it's  
9 definition of research gap, and then consider  
10 researchability of the problems, consider benefits,  
11 recommendations, and then try to address relative priority.

12 And so, given that, and I will be brief, we  
13 looked at one priority. We needed to have documentation for  
14 the benefit of specific management -- on-the-ranch  
15 management methods, practices, whatever you want to call  
16 them, on the rancher-farm that reduced specific human  
17 pathogens on the carcass. That was one that we came to.

18 The other, the second one, we talked about was  
19 we -- based on information we heard yesterday and an ongoing  
20 concern that we all have for discovering epidemiology of E.  
21 coli 0157, we want absolutely to encourage continual  
22 development and evaluation of tests for E. coli 0157 that  
23 include verification methods, so that the research coming

1 out will be as meaningful as possible.

2           Then we moved to another area. We needed  
3 research to assess the value of these intervention methods,  
4 somewhat on the same line as the identification value to the  
5 producer, but we also thought that research should be a  
6 value to the consumer. So we're encouraging research that  
7 includes a risk assessment. In other words, if we perform a  
8 Practice X on the farm, on the ranch, that should be a  
9 certain amount of reduced risk to the consuming public.  
10 What is that -- what is the value of that, and what's the  
11 value to the producer, besides the obvious aesthetic value.

12           Then we moved to two other areas. One, to assess  
13 waste management practices that reduce the risk of specific  
14 human pathogens; and then assess water management practices  
15 that reduce the risk for specific human pathogens. There  
16 was quite a bit of discussion on those two areas also.

17           Looking at new EPA regulations and the  
18 implication for waste management and water management in  
19 food-safety issues, we thought that research should move  
20 ahead as much as possible.

21           Then, what I consider taking my hat off here for  
22 just a second, just being a person in the room, the ultimate  
23 answer to it all, and that was research to develop economic,

1 feasible, and acceptable method of removing specific human  
2 pathogens from the carcass. Square one.

3           Then there were two -- I only have one remaining  
4 issue. It came from the veal industry. They need some  
5 assistance, would like some research looking at the level of  
6 hormone residues, if any, in veal calves that have been  
7 implanted before harvest. That's an issue with them.

8           And the other issue that I have remaining on my  
9 sheet in front of me has already been thoroughly covered by  
10 Fred Troutt and Fred Troutt's group, and we didn't know  
11 that. We suspected it might, but just in case it didn't, we  
12 put in some recommendations to show the value of  
13 identification systems, et cetera.

14           And then also the last piece I had was we felt  
15 that there needs to be ongoing research to show the  
16 effectiveness of ID systems throughout the entire production  
17 channel on a regional and national basis. And you might  
18 think for a moment, What does that have to do with food  
19 safety? But we all know that's vital to it, and that's a  
20 link that still needs to be addressed.

21           And pardon my brevity, but that was kind of what  
22 we did.

23           DR. CRAWFORD: That's wonderful. Thank you, Dr.

1 Hanson.

2                   And now we will hear about the research gaps for  
3 dairy. And I believe we also have John Adams reincarnated  
4 here.

5                   MR. HUGHES: Is there anyway I can use the  
6 overhead?

7                   DR. CRAWFORD: Yes. Just turn them on. There we  
8 go.

9                   MR. HUGHES: My name's Jeff Hughes. I'm from New  
10 York. I want to thank you for staying. Either you're very  
11 interested in this, or you have late flights out. So I'll  
12 try to be brief, but we did want to point out that in  
13 dairying, we do have some unique problems that are not  
14 shown -- that are common to some of the other production  
15 groups.

16                   And the main one is the fact that dairymen are  
17 not producing meat as the primary product, and they view it  
18 as a byproduct, and it's treated as a by-product, and it's  
19 not treated as something of great value.

20                   The other problem we have is that when -- in most  
21 parts of the country, and certainly in the Northeast,  
22 animals are not marketed in any way in which, if you have a  
23 poor animal, you get docked for that immediately. They go

1 through several different hand before they reach market. If  
2 they're found with a drug residue, they're not going to be  
3 found to have any less value.

4           Okay. We kind of -- and I took the liberty of  
5 trying to group together a lot of the session's thoughts,  
6 but obviously, we came up with -- and since we were supposed  
7 to be talking about research, we didn't quite spend all the  
8 time on that, but talked around it.

9           But number one, is basic research. And I'm going  
10 to just go through these real quick. I have an overhead for  
11 each one.

12           Basic research, the need for the coordination of  
13 research projects, the testing of research ideas on real  
14 farms, and the dissemination of this research knowledge,  
15 which we -- obviously is just as important as the research  
16 itself.

17           And I think they mentioned in the beef about E.  
18 coli, where some of the research that was presented  
19 yesterday was new to me, and I believe new to a lot of the  
20 participants, and we don't know as much as we thought we  
21 knew about some of these enteric organisms especially. And  
22 we view that we have to back to the drawing board and,  
23 before we find on-farm intervention strategies, we really

1 have to understand the organism itself, the viability in the  
2 environment, the characteristics, the ecology, of the  
3 organism. And that's got to be done from square one.

4           Along with that, again, yesterday they presented  
5 a very good paper on the fact that some of our sampling and  
6 culturing techniques are not optimal. If, you know, we have  
7 a false security thinking we have a very low rate of E. coli  
8 just based upon the fact that we're using flawed technology,  
9 we really need to know that before we start going into  
10 research projects on on-farm intervention. So we need to  
11 see, as part of the basic research, how to culture these  
12 organisms and how to identify them.

13           And we also brought up the fact of antimicrobial  
14 resistance. Although there's a lot of research being done,  
15 there's a lot more we need to know. You know, we can sit  
16 all day long with the human health authorities and argue  
17 where the resistance is coming from, but we -- you know,  
18 whether it's from animals or from MDs overprescribing, but  
19 we need more research on that also.

20           Okay. Secondly, the research -- there was a  
21 consensus in the room that the research that's being done  
22 needs to be coordinated, that there's obviously a lot of  
23 federal agencies interested in food safety. And these are

1 the major ones, and you've all seen the large number of  
2 agencies that are involved in seafood and other things that  
3 we don't normally think about. Obviously, the USDA agencies  
4 are working through both ARS and CSREES, and, you know,  
5 there's a whole spider web of funding for these projects.  
6 And you add on to all these federal agencies and what  
7 they're doing, besides CDC and Health and Human Services,  
8 the fact that states were funding research projects, the  
9 universities are doing research on their own, the ag schools  
10 and the vet schools, and everybody's doing some research.  
11 And there needs to be some coordination so that the efforts  
12 aren't duplicated and we get -- you know, instead of having  
13 two small projects that are inconclusive, we need one larger  
14 one that might give us better results.

15           And this was a point that was brought out several  
16 times is the fact that we need to use real farms to test out  
17 these best-management practices. And again, yesterday we  
18 were given examples, such as palletizing feed for  
19 Salmonella, where intuitively, you can take some basic  
20 research and say this is a good practice, but when you look  
21 at it in a real situation, it may not have the desired  
22 results.

23           So instead of just jumping from basic research

1 where you only have a limited number of animals in a  
2 research situation, we need to actually have test farms and  
3 pilot farms. Discovery Farms in Wisconsin I'm not familiar  
4 with, but it's obviously a pilot project where they try on-  
5 farm intervention for different things.

6           But we need to test these things out before we go  
7 out and recommend them to all our producers. There's a  
8 credibility problem if we go out there recommending  
9 practices, such as washing animals or, you know, whatever --  
10 even washing your -- you know, there's a recommendation,  
11 wash your water trough twice a year or whatever -- and it's  
12 not going to have any effect, and we're wasting our time,  
13 and people recognize that.

14           So again, these things also have to be cost-  
15 effective. A lot of things we can do in a research lab;  
16 when you try to do it on-farm, it's not going to work.

17           And the other thing is, when you're actually  
18 using real farms, you have a lot of environmental influences  
19 you don't have in a research lab. You have environmental  
20 influences that actually will bring in the pathogens. And,  
21 you know, you might be able to control a pathogen, but if  
22 it's being continually reintroduced, you may have no effect  
23 on that level. So you have to be able to recognize the fact

1 that there's a lot of other factors on a farm situation than  
2 maybe what we've studied.

3           And also on-farm, obviously, there's  
4 environmental factors where we're disseminating the pathogen  
5 in different ways than we may in a lab. And there was  
6 concerned about research on manure management and how we're  
7 disseminating pathogens through the ways that we are  
8 managing manure.

9           So a lot of these influences may affect what our  
10 recommendations are, and they need to be studied before we  
11 make these blanket recommendations.

12           Okay. And this is kind of a -- we started  
13 this -- you can pull that up a little so they can see the  
14 top -- or see the bottom. And again, there's a whole bunch  
15 of agencies I didn't have time to put in here. But one of  
16 the things we emphasized was there's not enough  
17 dissemination, real dissemination, of this research on food  
18 safety; that you have all these different groups doing  
19 different research projects, and the flow of information is  
20 very slow between groups, and nobody knows what other people  
21 are doing.

22           So our recommendation is to take these groups and  
23 other groups, a state university system, obviously the USDA,

1 and also, you know, some of the people that are looking at  
2 food safety from other viewpoints than we normally do, and  
3 bring them through an organization such as ADDS, which I was  
4 not that familiar with, although we did have the dairy disk  
5 in the office. A cooperative extension introduced us to  
6 that. But it is an organization that's there; it's on the  
7 ground; it's working. Their representative was in our  
8 group, so he gave a good defense of what he was doing.

9           And I think it's an organization we need to  
10 utilize to disseminate, and bring all the research into a  
11 central organization so people know where to find it.

12           Okay. And we need the resources at the local  
13 level for delivery, especially in dairy where we still have  
14 a lot of small farms, and people need to go on the farm to  
15 do this.

16           We need more experts, people that know about food  
17 safety. A lot of the extension, this is new to them.

18           One of the disappointing things that we're  
19 running up against is we do have an excellent system in  
20 FARAD for food safety, and yet, for whatever reasons, the  
21 federal government is having a difficult time finding  
22 continuing funding for this organization, which I think most  
23 veterinarians and most producers would agree is a worthwhile

1 organization.

2           And finally, we need not just a bigger portion of  
3 the research pie in ARS or in agriculture; we need a bigger  
4 pie. The comment was made that researchers at our colleges  
5 are looking to NIH for grants and not to agriculture. And  
6 realistically, my own idea is this is an NIH problem. And  
7 it needs to be funded through the federal government through  
8 human health, because E. coli is not an agricultural problem  
9 except for a marketing problem with it. So we need to look  
10 for NIH; they got the big pockets, and hopefully they can  
11 give us some of the money to find the answers.

12           Thank you.

13           DR. CRAWFORD: Thank you very much.

14           Okay. The next --

15           (Applause.)

16           DR. CRAWFORD: Okay. The next presenter will be  
17 Beth Lautner from the National Pork Producers Council  
18 speaking on research gaps with respect to pork.

19           DR. LAUTNER: We had good representation in our  
20 group by a cross-section of producers, packers, food-safety  
21 scientists, commodity groups, academia, state officials,  
22 academia, as I said, and international representation, as  
23 well. I want to thank Dr. Paul Sundburg for serving as

1 recorder, and Dr. Dave Pyburn organized four very quick  
2 presentations that we had to kick off the discussions in the  
3 research area. And I'll just very quickly summarize those  
4 and then walk through our discussion.

5           We had a presentation by Julie Funk from the Ohio  
6 State University on risk factors for Salmonella on farms.  
7 Walked through some recent studies of identifying risk  
8 factors that need further study, but there was some  
9 interesting ones that emerged, such as not having toilet  
10 facilities on-farm has an impact as a risk factor for  
11 increased Salmonella on-farm. I'm not going to go into the  
12 whole discussion of that.

13           But poor finisher feed conversion, floor space,  
14 season, temperature variation, number of human workers  
15 actually on the farm, and other domestic animals all had  
16 impact and were identified as risk factors to identify  
17 further.

18           There's many issues when you look at risk factors  
19 of looking at what should be sampled, where, and when. As  
20 there's many different risk-factor studies out there, we  
21 need to continue to look at those issues of what was  
22 sampled, where, and when, to be able to look and see if we  
23 can start comparing different risk-factor studies.

1 She also noted that there may be some production  
2 benefits to risk-factor management, and that helps lead into  
3 the cost areas of implementation, as well.

4 Dr. Peter Bahnson [phonetic] from the University  
5 of Illinois looked at needs in testing and interventions for  
6 Salmonella and gave a very good presentation. I'm just  
7 summarizing very briefly the comments they brought forward.

8 He brought forward that no current tests meet the  
9 desired test characteristics, and he had outlined what types  
10 of characteristics you would like to see in tests that are  
11 used on-farm for Salmonella. He noted that we needed to  
12 look at both the antigen and antibody testing methodologies;  
13 they're for different purposes.

14 Even brought up issues that's more convoluted  
15 than that. He brought up issues that there's different  
16 sensitivities, potentially, in the tests for different  
17 serotypes of Salmonella. So those are all areas for further  
18 research.

19 He made the point that common methodologies need  
20 to be used in evaluating risk factor and interventions. As  
21 we're doing studies on-farm in evaluating the risk factors  
22 and interventions, if we're not using the common  
23 technologies, then it's very difficult to compare those

1 studies.

2           And it made the point that we need to have more  
3 formal testing of these risk factors that are coming up in  
4 these observational studies. And Dr. Bahnson pointed out  
5 other areas we need to continue to look at: feed, incoming  
6 breeding stock, aerosol transmission, the transportation in  
7 layerage, hygiene, serotypes, other animal reservoirs, and  
8 alternative production systems. We need to look at these in  
9 different production systems as well.

10           He also emphasized the need to be more  
11 collaborative in areas including disciplines microeconomics,  
12 pathology, nutrition, for the epidemiology and ecology  
13 studies.

14           Dr. Paula Cray [phonetic] then gave a  
15 presentation on antimicrobial resistance and raised a lot of  
16 very, very good questions for us on the effect of resistance  
17 on product control, specific products being used, the time  
18 of administration, the bacterial species present, the role  
19 of commensals in resistance transfer, the immune status of  
20 the host, the dissemination, and environment issues; and  
21 then went through a list of issues on the subtherapeutic and  
22 therapeutic side of recognizing that we really don't  
23 understand how subtherapeutics work, to what degree that

1 they impact public health.

2           We need to continue to address those issues. She  
3 posed a question: Is there a way to administer them and not  
4 affect resistance? She also talked about consequences of  
5 removal; what's the economic, herd health effects, would  
6 there be more use of therapeutics or higher levels of  
7 bacteria -- all areas that need continued research.

8           Therapeutics, we need to look at the effects of  
9 misuse, the timing of administration, the course -- short  
10 versus long/high versus low dose. Many of those issues  
11 continue to need to be looked at, as well as very much  
12 enhancing the research on alternatives, the competitive  
13 exclusion vaccines, and management.

14           She also made an interesting comment that  
15 bacteria have outwitted us for centuries, that they don't  
16 play bridge or go fishing; their only goal in life is to  
17 survive. So I don't know if that gives us hope to continue  
18 to outwit them, but I think we all recognize we have  
19 challenges there.

20           Interesting presentation from Dr. Scott Hurd  
21 [phonetic] with ARS at Ames on holding at the abattoir, and  
22 described research looking at isolation of Salmonella from  
23 pigs at the farm level versus an effective layerage in

1 holding times, and made a point about abattoir holding pen  
2 is a significant risk for Salmonella infection before  
3 slaughter, and had field and laboratory research to point  
4 this out.

5           He made a point -- and this is a very important  
6 point, I think, for us as we're looking at on-farm controls  
7 and then the impact at the plant -- that after two hours of  
8 oral exposure to Salmonella, that Salmonella could be  
9 isolated in lymph nodes and cecal contents. So as we're  
10 doing production -- addressing production and reduction at  
11 the farm, we need to understand what impact of holding and  
12 exposures that they may get as they're being transported and  
13 into the packing plant.

14           Also looked at antemortem fecal samples being  
15 insensitive, and really made a point that if we're trying to  
16 link some things -- previous research that looked at on-farm  
17 linkages with abattoir linkages, that we now have some more  
18 confounders to consider as well.

19           When we got into the discussion, a good point was  
20 made by one of the participants was, Maybe we need to keep  
21 looking at this human-to-animal-to-human than transmission,  
22 look at the role of the producer as a food handler. So same  
23 types of things we look at handling the product maybe we

1 need to look at it handling the animals as well.

2           Then also pointed out that we maybe have two  
3 different types of issues that we need to deal with. We  
4 have surface contamination issues of animals going into the  
5 plant, of swine, that really, by the processing -- singeing,  
6 scalding, those types of things -- we're able to address  
7 well, but there is intrinsic bacteria within the animals  
8 that may be present in the lymph nodes, mouth, throat, organ  
9 meats, and maybe we need to have an approach looking at  
10 those differently, extrinsic and intrinsic.

11           Then we had some discussion of market pressure  
12 versus regulatory pressure, needing to make sure we  
13 understand the market forces that are at work, how are those  
14 going to impact what we do at the farm level in the very  
15 near future and how does that impact our research needs.

16           We also talked about risk assessment on finished  
17 product and the impact at farm. There's some collaborative  
18 efforts that we wanted to take part in as well.

19           We spent quite a bit of the time, in fact most of  
20 the time, on Salmonella, but we did recognize that we need  
21 to continue to work on the ecology and epidemiology of other  
22 potential pathogens. We know more about Salmonella right  
23 now, but there's others that we need to address as well.

1           Felt that we made progress on the chemical-hazard  
2 issue. Question with some of the changes, regulatory  
3 changes, in the future, will there be increased needs for  
4 residue testing. That's more of the on-farm or easily  
5 accessible, inexpensive-type tests as well.

6           Also, a comment was made that I thought was good  
7 was that we should recognize that we may be held to the same  
8 standards of other commodity groups in the future. As you  
9 looked at this level playing field, even though we may have  
10 different risks, that some of those types of things may go  
11 across the board, and we need to be aware of what those are  
12 and be prepared researchwise.

13           A point was also made that should we pay more  
14 attention to the development of certification programs with  
15 regard to the format and auditing needs; are there research  
16 questions there. We're starting to get a patchwork of  
17 certification programs out there, and are there research  
18 needs that we need to take a look at.

19           And that's the time that we had for discussion  
20 with our group. We did have one participant that said, We  
21 really have a big bridge to cross here; we're looking at the  
22 risk factors on the farm and how do those translate and  
23 bridge into the human health risks. And as you see, there's

1 a lot of confounders out there that we need to continue to  
2 research.

3           As far as success, we really didn't have time to  
4 address that, but we did note that we've addressed many of  
5 the challenges that were brought forward in 1995 on the  
6 parasite side that were in the proceedings for the 1995  
7 conference, but in the areas of pathogens, we have many of  
8 the same questions. We know more information, but we have  
9 many of the same questions.

10           We also have issues that arise, such as Scott  
11 Hurd's work, on transmission within two hours to be systemic  
12 in animals, that make us question some of the previous work  
13 that we had, that we need to go back in and take a look at  
14 that as well.

15           DR. CRAWFORD: Thank you very much, Dr. Lautner.

16           (Applause.)

17           DR. CRAWFORD: And now, Dr. Elizabeth Krushinksie  
18 is going to speak on research gaps with respect to broilers  
19 and turkeys.

20           Whatever you do, Dr. Krushinksie, don't fall off  
21 the stage, please.

22           DR. KRUSHINKSIE: I'll be in good company if I  
23 do.

1 Well, I'm glad to see there are a few people  
2 left. Okay. Now how do I get this on? Okay.

3 I have to say that -- nope. It's the other --

4 After following the dairy and the pork producers,  
5 I really have nothing left to say. They highlighted every  
6 point that we made in our break-out group, and did a very  
7 good job. So I'm going to take about half a minute to go  
8 through these.

9 We went down the list of questions. The first  
10 one is, What's the definition of an animal production food  
11 safety research gap? We felt the first priority -- well, we  
12 prioritized them later, but the first priority is testing  
13 methodology. We think there's some significant improvements  
14 that could be made in the methodologies available to improve  
15 specificity and sensitivity of foodborne pathogen detection  
16 methods, particularly working on molecular biology areas,  
17 trying to give us more tools to track organisms through the  
18 system from the inputs -- whether it's rodents, feed, et  
19 cetera -- through the product out the other end.

20 And I think that was highlighted both by the  
21 dairy people and pork producers, and that's a great point.

22 The second one we talked about is putting some  
23 research dollars into risk assessment on the source of

1 bacterial, primarily, or foodborne pathogens in production,  
2 and doing some risk assessments, trying to determine what  
3 were more important risk inputs -- maybe rodents was more  
4 important than feed, or maybe feed inputs were more  
5 important than rodents -- and that would help us focus our  
6 intervention strategies.

7           We also thought it would be important to -- there  
8 are some data gaps in the development of prevention and  
9 intervention strategies, and we'd like to focus those -- we  
10 talked about Salmonella control -- and try to get out of the  
11 box. You know, we have competitive exclusion products, we  
12 have a few vaccines, but we really don't have anything that  
13 works consistently and effectively. And we'd like to see  
14 some research effort put into that area.

15           We talked about antimicrobial resistance. That's  
16 a very big area for us. We think there's some significant  
17 data gaps between the resistance levels in the food animal  
18 populations and how well that correlates to resistant levels  
19 in humans.

20           We also thought it was important to spend some  
21 research dollars on consumer food safety purchasing  
22 marketings research. What is it that the consumers really  
23 want, and are those -- are we -- do we have our eye on the

1 right ball. Are we trying to put money and effort into  
2 improving our product in a way that's actually acceptable to  
3 the consumer.

4           We talked about -- the second question was the  
5 researchability of these problems. We felt that some of the  
6 problems in researching these areas included appropriate  
7 sample designs, statistical samplings, and sampling size  
8 problems. We have logistical problems working through a  
9 large number of samples, but when you do a small sample set,  
10 you may not be even coming close to estimating what the true  
11 prevalence is in the population. So I think there's  
12 statistical issues.

13           We have limitations, significant limitations, in  
14 our testing methodologies that area available for  
15 Salmonella, Campylobacter, Listeria. We have a lot of  
16 confounding variables that will interfere with doing  
17 effective research or predictive research in the farm  
18 environment. It's one thing to do it in a controlled pen  
19 study perhaps or in a controlled laboratory setting, but to  
20 actually take that to the farm and be able to do meaningful  
21 research on the farm, there's a lot of confounding  
22 variables.

23           Some people, particularly outside of the

1 production arena, felt that they were having trouble having  
2 access to field samples. The people in production, we've  
3 got all the field samples we want. The people at the  
4 universities or government may not have access to that.

5           They also felt that they didn't have access to  
6 production or processor data. We do a lot of in-house  
7 research, and it's very proprietary, and we don't release  
8 that very readily. And part of it's because we feel we  
9 exist in an adverse regulatory climate and that we cannot do  
10 research on sensitive subjects, such as Listeria in  
11 finished, ready-to-eat product, or Salmonella, without a  
12 fear of being penalized for the consequences of what we  
13 might find. So that stifles that research ability and  
14 effort.

15           We looked at the benefits of each recommendation.  
16 On testing methodology, we felt the benefit is that it's  
17 essential to have good testing methodologies available in an  
18 efficient, effective tool, or the rest of our research  
19 efforts are really meaningless. Sometimes the cost of  
20 improving the methodology can be high.

21           We talked about the benefits of doing risk  
22 assessments on the relative risk of different inputs into  
23 the production system, whether, like I said, feed or rodents

1 bringing in Salmonella. And we thought the benefit was that  
2 it would focus prevention or intervention strategies most  
3 efficiently if we knew what we were -- if we understood the  
4 ecology and the epizootiology of the poultry bacteria, let's  
5 say, system, we would be better able to focus our prevention  
6 and intervention strategies so that they'd actually work.

7           We looked at the -- trying to do -- the benefits  
8 of really focusing these intervention strategies and, like I  
9 said, have better measurable improvements in food safety,  
10 because we wouldn't be -- we wouldn't have that blindfold on  
11 trying to hit the piñata.

12           Again, the benefit of consumer food-safety  
13 purchasing research would help us focus on customer  
14 expectations and not be in the wrong boat going up the wrong  
15 stream.

16           We prioritized these, again, into testing  
17 methodologies, risk assessment of source contamination,  
18 antimicrobial resistance, development of intervention and  
19 prevention strategies, and consumer research.

20           And what would we constitute as success for this  
21 break-out? We would like to identify specific research  
22 objectives for this -- improving food safety that could be  
23 adopted by ARS, FSIS, and whatever university personnel, to

1 really meet our needs and what we need from a producer  
2 perspective.

3           Thanks.

4           (Applause.)

5           DR. CRAWFORD: Thank you.

6           The next presenter is Paul Rodgers of the  
7 American Sheep Industry Association, speaking about -- he's  
8 not Paul Rodgers. You're Martin. Come on up here anyway.  
9 You're elected.

10           MR. WORBINGTON: I'm Martin Worbington [phonetic]  
11 representing the sheep -- I'm a practitioner from Central  
12 Oregon.

13           Probably our number one priority is to somehow be  
14 able to incorporate technology as fast as the swine and the  
15 poultry people can do it. Whew. It's impressive.

16           But again, to not sound like broken record, but  
17 hopefully to place emphasis, our number one priority is also  
18 to understand the ecology of these pathogenic or human  
19 pathogenic bacteria on the farm, in the farm setting. We're  
20 a little more complicated and quite similar to beef in that  
21 our sheep industry, lambs are raised in a multitude of  
22 different environments and cohabitate with a multiple  
23 different animals.

1           And these factors -- in the ecology of these  
2 pathogens, how does wildlife play in; what times of year  
3 does wildlife play in. When we see a Campylobacter or a  
4 Salmonella or a Chlamydia clinical abortion, how long do we  
5 have to rest those paddocks, and is that going to be risk  
6 down the road in a consumed product. And if we need to rest  
7 and how long we rest, or we can't eliminate it that way,  
8 what type of sanitation can we use without encouraging  
9 resistance.

10           The stocking densities -- and again, some of  
11 these factors relate to how much stress can a lamb undergo  
12 before it starts to shed bacteria. And the effects of  
13 transportation is big in our industry. Again, the question  
14 of how long and whether to fast prior to slaughter, and then  
15 basic husbandry practices that --

16           Again, we don't want to get the cart before the  
17 horse. We're being told to eliminate these pathogens. We  
18 don't understand their ecology, so if we make an inroad into  
19 one of our many producers and tell them to do this, six  
20 months later there's a new work out telling them to do that,  
21 we would prefer to only have to change their minds one time,  
22 because that may be all we -- the only opportunity we have  
23 and still have credibility.

1           Our number two priority is to better understand  
2 how the concentration of pathogens in the feces, and  
3 therefore on the pelts of lambs, relate to pathogenesis or  
4 pathogens on the carcass.

5           Our number three, what production  
6 practices/diseases affect condemnation rates of the carcass  
7 or parts of the carcass.

8           Number four was research into what meaningful  
9 information could be collated and transferred back to the  
10 seller. And to do this, we need to revisit -- our last  
11 compilation data was about eight years ago, from FSIS -- and  
12 I think more immediate feedback, so as an industry we can  
13 detect a problem very quickly and hopefully be able to  
14 intervene with the least amount of pain to our producers.

15           And then appropriate design of a way for  
16 information on these animals to travel with the animal. And  
17 that, again, gets to -- animal identification is an  
18 important issue for us as well.

19           Success -- we would measure success by the amount  
20 of funding that we see coming down the line. And the  
21 financial aspect of it also motivates our producers, if they  
22 see that it's taking a high priority, they hopefully will  
23 also make it a high priority and see some benefit to them.

1           And we also would like to see cooperation, as  
2 several of these charts have shown, among the different  
3 agencies. Our producers and myself as a practitioner, we  
4 may not always understand that there are lines drawn between  
5 FDA, USDA, AFIS, CSREES. As far as the producers are  
6 concerned, that is a lump sum called "the government." And  
7 so these lines are not apparent to producers or to our  
8 consumers of our products.

9           And so integration of your efforts and then  
10 spilling them down to us and to our producers through these  
11 educational avenues, I think, would be a measure of success,  
12 that the cooperation can be extended across agency lines to  
13 target down to the consumer or the producer.

14           Another measure of success would be execution of  
15 a process to actually implement the research and review the  
16 implementation to make meaningful improvements. If we're  
17 going to change very staid ways of producing lambs, we need  
18 good obvious pathway to take, and sometimes that pathway  
19 needs to be spelled out in more than one language to, again,  
20 have the impact where it needs to be.

21           And number three -- I'll apologize for the  
22 thickness of this language; it came from our New Zealand  
23 colleague, and I can't quite deliver it as he did -- but to

1 increase the robustness of the food-safety system and its  
2 outcomes through better integration of on-farm activities  
3 with slaughter processing systems, which will result,  
4 therefore, in increased profitability and sustainability in  
5 the sheep meat industry.

6 Thank you.

7 (Applause.)

8 DR. CRAWFORD: Thank you.

9 And now, talking about research gaps in eggs as  
10 they exist, from United Egg Producers, Dr. Jill Snowdon.

11 Dr. Snowdon, front and center.

12 DR. SNOWDON: Thank you.

13 We invested our time in a broad-scale discussion  
14 of the research gaps, identifying them, and then giving them  
15 a sense of priority, and called that success. So I'm going  
16 to try and distill that for you and give you an overview of  
17 what we've done, and then I'm going to come back and recap  
18 the most important things that we indicated. You'll see a  
19 similarity to many of the other lists that have been put in  
20 front of you in the last hour or so.

21 But I remember when I went to research-needs  
22 meeting and asked Charlie Baird, who had several decades  
23 more experience than I did, about research needs, and he

1 says, Oh, it's simple: You have to figure out where  
2 Salmonella enteritidis is coming from and how to stop it.  
3 So it wasn't a big surprise that the first thing that came  
4 up as we identified things was additional intervention  
5 strategies. That's a broad umbrella concept, but basically,  
6 research that is going to support the ability of the  
7 producer to intervene, and the ability of the Salmonella, in  
8 general, but enteritidis has been so much the focus of the  
9 egg industry's problem that everything is applying to  
10 Salmonella enteritidis in this.

11           But the examples of these intervention  
12 strategies, where we could use some improvement, then  
13 improved techniques for pest control. So we're still going  
14 back to building a better mousetrap. So improving the  
15 techniques on the pest control as a research area.

16           Likewise, evaluating and improving the cleaning  
17 and disinfection techniques that are out there. Not that  
18 they're good enough, but that always simpler, easier, more  
19 economical are always going to be more readily implemented  
20 by the producer. And so improvements in that area are going  
21 to facilitate the overall food-safety issue here.

22           And vaccines being the third example area of  
23 additional intervention strategies. Effectiveness in the

1 field, better challenge models, how to time the  
2 administration of the vaccines, the impact of combining  
3 different vaccines, and the delivery systems are all  
4 research areas that would be supportive of the food-safety  
5 issue for eggs.

6           Sampling and detection techniques comes up again.  
7 At the moment, we're using manure as an indicator as the  
8 safety of food that humans are consuming. And so if we have  
9 better sampling and better detection technologies that are  
10 better able to predict which egg is contaminated, it will be  
11 in everybody's interest in eliminating those eggs that are  
12 risky and yet providing -- and letting the wholesome food  
13 not be condemned. But sampling and detection techniques, in  
14 general, are always important to have research and  
15 improvements in that area.

16           And then these things, these additional  
17 intervention strategies and the sampling and detection  
18 techniques are underpinned by basic concepts, and such is  
19 identification of risk factors for flock infection. You  
20 know, continued research to build on what we know so far as  
21 to which risk factors then are going to come into play as  
22 being most important.

23           And surveillance of flocks on an ongoing basis,

1 to build the database, to have a sense of where we are and  
2 where we're going on that in comparison to where we've been.  
3 So part and parcel to this kind of surveillance would be  
4 maintaining a FAWSH-type [phonetic] database, that that type  
5 of specific information then would be useful from a  
6 retrospective viewpoint on a geographic viewpoint as to  
7 which then serovar subtypes then are occurring under what  
8 circumstances, to give you refinement in an understanding.  
9 And perhaps that could be included to molecular techniques  
10 as well, not something we happened to discuss, but that  
11 concept there of maintaining the database for increased  
12 specificity is -- I think, is the concept.

13           We called those things our high-priority items,  
14 but then listed some medium and low items also. But in the  
15 medium category then, we'd look at another umbrella concept  
16 in that of the impact of management practices.

17           It was brought up that to what extent to we know  
18 that best-management practices are indeed best. Sometimes  
19 they're just the traditional practices. And so an  
20 evaluation of what's been considered and recommended  
21 historically would be a research gap.

22           Another example of an impact of management  
23 practices would be forced molting and the impact of -- at

1 the presence of SE in the egg itself, which is, of course,  
2 the part that's going to be eaten by the consumers, as  
3 opposed to shedding into the manure or some other places  
4 where SE could end up.

5           But in medium priority also, then, is a sense of  
6 being able to predict -- predict the layer house that is at  
7 risk of the birds becoming infected with SE; predicting that  
8 flock being at risk -- you know, what do we do, what kind of  
9 techniques, what kind of knowledge could we put to bear on  
10 that. Predicting egg contamination and to then predict to  
11 what extent to we need to divert those eggs away from the  
12 unheated food -- away from the food supply and into  
13 pasteurization, is that is the route to go.

14           The ability to predict the risk to human health.  
15 If the incidence is low, if it's not present, then what is  
16 the relationship there then to human health. So that's  
17 another category.

18           Another one in the medium/low was looking at the  
19 idea of reducing the SE load in pests. We were thinking  
20 particularly of rodents, and somebody made the comment that  
21 if you could vaccinate the rodents, that'd be a help.  
22 That's a little bit of an oversimplification, but to what  
23 extent we may want to look at the importance of these

1 vectors in continuing to perpetuate the cycle. And maybe  
2 the current vaccine techniques may come into play as it  
3 settles into the feed and that the rodents are eating the  
4 feed.

5           Of low priority, but also listed, are things like  
6 the genetics. What are the genetics of rhesus in birds?  
7 Are pullets the source of SE? Is feed a source of SE? What  
8 do the producers know, and how many producers are in the QA  
9 programs. Are trace-backs a research opportunity, and how  
10 feasible is it to identify eggs. And if we did eradicate  
11 SE, are we then going to select for other types of  
12 Salmonella serotypes.

13           So that gives you the overall perspective of the  
14 types of subjects that we spoke about and then a sense of  
15 the priorities on it. And I'm going to go back and just hit  
16 the highlights then on our high and a few of the mediums to  
17 reinforce what I said.

18           And that is that we're looking for the improved  
19 techniques on pest control or cleaning and disinfecting  
20 techniques; to continue to push the envelope on vaccines and  
21 get more specific information on them; sampling and  
22 detection techniques, specifically with regard to the  
23 ability to predict a contaminated egg; and anything that

1 identifies the risk factors for a flock being infected; and  
2 the ability to continue the databases on an ongoing basis  
3 with the form of surveillance in the animal -- in the  
4 flocks.

5 Thank you.

6 (Applause.)

7 DR. CRAWFORD: Thank you.

8 Now comes the man we've all been looking for:  
9 the final presenter of the morning -- of the afternoon --  
10 last but not least, by any means, speaking about exotic and  
11 minor species, Dr. Ken Olson of the American Farm Bureau  
12 Federation.

13 Ken, well met.

14 MR. OLSON: Okay. Thank you. Let's see if I can  
15 get shifted around here.

16 (Pause.)

17 MR. OLSON: Sorry about that delay there.

18 DR. CRAWFORD: It happens, in the best of  
19 families; also in the worst of families.

20 MR. OLSON: The best-laid plans --

21 I guess I could start out by mentioning we did  
22 have a relatively small but high-quality group. When we  
23 were looking at minor and exotic species, you end up with

1 quite a range of things. We had everything from a variety  
2 of aquatic species to a variety of terrestrial species, and  
3 so you end up with a wide range of things that you need to  
4 look at and discuss.

5 A lot of things are not known relative to these  
6 species and what impacts that there might be there, so  
7 again, that presents some concerns. The --

8 DR. CRAWFORD: Those are not our greatest  
9 concerns at the present.

10 MR. OLSON: No.

11 DR. CRAWFORD: This is a picture I've seen  
12 before.

13 UNIDENTIFIED SPEAKER: Hopefully you won't see it  
14 again.

15 (Pause.)

16 MR. OLSON: We're finally in business here.

17 DR. CRAWFORD: No wonder she represents a major  
18 species.

19 MR. OLSON: As I mentioned, we dealt with both  
20 aquatic and terrestrial animals. And one thing that we  
21 would note is that pathogens and residues are both a  
22 concern. In most of the other species, we focused on  
23 residue avoidance in the past, and that issue has been

1 addressed successfully in most cases. But in these species,  
2 there really hasn't been a lot done, and we've got some  
3 other challenges.

4           Just a few of the research needs that we've  
5 identified here, starting out is just to define the level or  
6 load of pathogens at the farm or pond. It's not known very  
7 well in these species as with others.

8           Another thing that comes in, what is the source  
9 of pathogens. When you're talking about the aquatic  
10 animals, does it come in from pollution or runoff into  
11 there. But defining just where things do come from, but a  
12 little bit difference thought process, perhaps, than others.

13           One thing we'd note, that while in most species  
14 we don't -- we've got a limited number of animal health  
15 products, there's basically none that are approved for these  
16 species. And so that does present some problems as well.  
17 You're always talking about extra-label use where it is  
18 used, so how do you determine the residue levels? How do  
19 you make sure you're testing for the right thing?

20           We need to develop and verify testing methods for  
21 residues. Again, with a different species, perhaps there  
22 are some differences, so it's important to look at testing  
23 methodologies for residues.

1            Looking at withdrawal times. Again, a lot of  
2 uncertainty there, because products haven't been tested  
3 there. So I think it's important to do some work there.

4            Antimicrobial resistance is a concern here as  
5 well, so it needs to be addressed.

6            And one thing that the group also wanted to get a  
7 plug in for, again, is the FARAD system. It's an important  
8 and valuable tool, something that we're in grave danger of  
9 losing, and the group felt it was certainly critical that we  
10 do everything possible to maintain that.

11           Another thing that was felt needed to be looked  
12 at here is, does the pathogen load affect the final product.  
13 If we look at what's present in the pond at the farm, what  
14 is the impact on the final products? So some work on that.

15           Can the pathogen -- or how can the pathogen load  
16 be reduced at the farm. Assuming that there is an impact,  
17 we need to look at it. Again, you've got a different  
18 situation with the aquatic environment, but what can we do  
19 to reduce the load there?

20           Looking at the fact that we don't have drugs  
21 available and are not likely to have too many available in  
22 the future, we need to develop management tools other than  
23 drugs to address animal health issues. And this, I think,

1 could fit into the food-safety area as well.

2           Then we made a few observations. One thing I  
3 think we've heard before is that there's a need for  
4 increased research funding. We need a larger pie. But in  
5 the meantime, recognizing that even if we do increase it,  
6 the minor and exotic species probably will have a small  
7 share. We need to do some other things. We need to look to  
8 apply the work from major species to minor species. One way  
9 to do this is to assure that there is good cooperation, good  
10 access to research results so that other researchers have  
11 those available. But make as much effort as possible to  
12 apply work between species.

13           We certainly need a coordination of research  
14 priorities by agencies within USDA, as well as other  
15 agencies that fund research work. So a plea again to make  
16 the best use possible of our research; not to duplicate  
17 things, but to coordinate research really goes with the item  
18 above.

19           Some other areas that we discussed: One species  
20 that is not probably exotic, and we don't think of as a food  
21 animal, but there are a lot of them that are used as food  
22 and slaughtered for food in the U.S., are horses. Where  
23 does that fit in? We recognize that this in an area that

1 there really are -- residues that are found, how do we deal  
2 with them; should we deal with them. But it is an issue  
3 that we probably need to take a look at.

4 Imports were a concern relative to food safety.  
5 What's the impact of products that are not approved in the  
6 U.S. but used in other countries? We need to look at that  
7 relative to food safety.

8 A final area that was brought up relative to  
9 exotic species is chronic wasting disease in elk and deer, a  
10 concern that needs to be looked at. Relative to the  
11 rankings, it would -- amongst the group there, it would  
12 certainly be lower on the priority, but something they felt  
13 that was worth bringing up and addressing for the group.

14 So that, after getting going, is a quick  
15 thumbnail sketch, but some of the things that we felt  
16 important.

17 DR. CRAWFORD: Thank you very much, Ken.

18 (Applause.)

19 DR. CRAWFORD: Now having heard from the  
20 facilitators and others about the reports, it's my pleasure  
21 to close the meeting. I -- just a few parting remarks.

22 When I talked to Steve Sundlof a few weeks ago  
23 about coming to this meeting and how exciting it would be,

1 he promised me two things if I would agree. One was that he  
2 would do a pirouette off the stage at the end of his  
3 presentation, and the second was that is that he would work  
4 with Customs Service, the State Department, the CIA and  
5 others to keep Doug Powell out of the country. He did not  
6 announce that on the day that he was keeping him out of the  
7 country, we also let in the country Fidel Castro and Yasir  
8 Arafat. But nonetheless, he did keep Doug out and put him  
9 in a category of his own, and for that I'm personally  
10 grateful.

11           Listening to -- sitting in on a number of the  
12 presentations, and also listening to these summaries this  
13 afternoon, which, as you know, will be recorded and will  
14 form the basis of recommendations from this very important  
15 conference, we all want to thank Dan Vitiello and all the  
16 other people for putting it together, Dr. Ragan and  
17 anybody -- and all the sponsors. This has been terrific.  
18 Couldn't have been a better plan. 1995 was a success, but  
19 this has been a world beater for sure.

20           I think, in going around, one thing I heard this  
21 morning -- there were about like six categories of items  
22 that were brought up. I just added another one. And I  
23 think these are probably some that bear reflection and

1 probably maybe a white paper and appendix outside the  
2 report.

3           One comment which I heard recurrently was is that  
4 if we knew the criteria for preharvest food safety -- that  
5 is to say, when we know how to do it scientifically, and  
6 when we figure out how to measure whether or not it's  
7 working -- then we will gladly do it, especially if it will  
8 be profitable. And I think that's like a recurring theme.

9           A second thing was is that with all the  
10 discussions of quality-assurance programs, passing mention  
11 of the International Standards Organization 9000 series,  
12 also mention of the European union systems of certification  
13 and quality assurance, the necessity of a third-party audit  
14 became very necessary.

15           I was privileged to hear the excellent  
16 presentation by Dr. Larry Miller in one of the break-out  
17 sessions this morning. Dr. Miller, from AFIS, is one person  
18 who clearly understands, through a lot of hard work and  
19 research, that a quality-assurance program is nothing  
20 without adequate monitoring, authentication, and finally  
21 third-party audits.

22           His presentation, I would hope, could be widely  
23 distributed and thoroughly discussed by people who have the

1 responsibility of, one, putting these programs together; and  
2 two, making sure that they work.

3           I recall a few fits and starts in the 1980s as  
4 this movement got started, and it's time now to put the  
5 finishing touches on what have been some very successful  
6 programs, but some that probably need more of an ironclad or  
7 fail-safe authentication.

8           The necessity for international congruence was  
9 mentioned time and time again. Both Dr. Woteki and also Mr.  
10 Billy mentioned this in a very convincing way. It is not  
11 possible for us anymore in this country, in this new  
12 international world food order that we live in -- since 1994  
13 and earlier with the NAFTA, it's not possible for us to put  
14 together programs that sound appealing to us and  
15 intellectually stimulating and may work in the contiguous 48  
16 states, without some consideration of our international  
17 world food trade.

18           I remember when we were first developing the  
19 concept of HACCP as a regulatory tool, it was necessary for  
20 us to go to all or most of those 160 U.N. countries, and  
21 especially all of those that traded with us, and tell them  
22 what it was we were doing. And because of that, I think,  
23 the system has worked well internationally.

1 All of the many, many ideas here today had as a  
2 backdrop, We hope this is going to work internationally,  
3 and, of course, it will work internationally if it's done  
4 right and if it also is broached correctly to the  
5 international community and especially our 40-some-odd meat  
6 and poultry trading partners. Without that, we don't have,  
7 I think, anything.

8 Antibiotic resistance received far more mention  
9 than it did five years ago. It received far more mention  
10 than it has anytime in the last 20 years except perhaps 20  
11 years ago. It now is a new ball game with antibiotic  
12 resistance, the presence of which can now be verified, of  
13 various molecular developments that lead to antibiotic  
14 resistance can be researched and studied in very clear ways.  
15 And I think it's no accident that in virtually every  
16 discussion group the subject came up.

17 The subject, however, came up in a constructive  
18 way. I didn't hear what people saying what they said 20  
19 years ago, and that is is that we've got to shut down this  
20 industry and quit doing it. What I heard is a lot of  
21 plaudits to the AVMA for their prudent use program and other  
22 organizations, and also some interventional strategies from  
23 a regulatory perspective that may work very well to sustain

1 this perhaps mysterious but nonetheless useful part of  
2 animal husbandry and animal production in this country and  
3 in about 49 other countries.

4           The other thing we didn't hear much about five  
5 years ago was laboratory verification. There's now almost  
6 nothing we can't test for that we've discussed in food  
7 safety since the advent of it in this country in 1906.

8           How well I recall having testified before  
9 Congress somewhere around 1978 that although we had about  
10 560 animal drugs on the market, we could test for only about  
11 a dozen of them, and then we couldn't test for -- in very  
12 many of them -- how much was there. The simple presence was  
13 something that was a glorious thing in those days. But now,  
14 even with biotechnology and with every other drug that's  
15 come on the market since that time, there is at least the  
16 hope of quantitative testing.

17           So with that being the case, we move into an  
18 entirely new era, and I think continued research in that  
19 area, continued nurture of the industrial community that's  
20 developing these kind of tests, for the most part, is  
21 mandatory.

22           And also the regulatory and bureaucratic and  
23 civil service impediments to further development and

1 approval thereof need to be dealt with ex post facto. I'm  
2 not saying we need a single food safety agency, but I'm  
3 saying we need to do something with that.

4           And the one I just added was FARAD. If you look  
5 at the history of these kinds of conferences over the last  
6 25 years, ever since FARAD was formed, as a result of early  
7 concerns about extra-label use and consequent residues in  
8 food animals, every few years all the money runs out for  
9 FARAD. But FARAD is, you know, kind of like the hope for a  
10 divine presence; it's never going to go away. And so  
11 whatever it takes to deal with that, I think this conference  
12 spoke very loudly and unanimously in terms of it needing to  
13 be dealt with.

14           I remember in my time, it cost about \$50,000.  
15 I'm sure it costs 14 million now, but, you know, it's a new  
16 world and there's a lot of money around. We're going to  
17 settle the debt, but not before we refund FARAD, this  
18 conference would hope.

19           In conclusion, then, I felt that we all saw a  
20 sense of community here, and I, for one, can well remember  
21 the time when that was not the case. I remember one of my  
22 predecessors being censored and having some of his pay  
23 removed for making a telephone call to the Food and Drug

1 Administration when he was in FSIS. Now they call each  
2 other very often, and not only that, but they've reached out  
3 to stakeholders in this government.

4           And it is a great thing to see this sense of  
5 community. Obviously, you all more or less know each other.  
6 You can communicate. And you've brought in groups that  
7 really weren't at the table years ago. There's also a sense  
8 of commitment, and finally, the most important thing is a  
9 sense of accomplishment.

10           People are proud of what's happened in the last  
11 five years under the tutelage of their government and food-  
12 safety regulatory bodies therein. And the prospect for real  
13 leadership is here.

14           I suspect that when all of this is analyzed, and  
15 you look at the proceedings of this conference, you'll see a  
16 thread that needs a name, because people are talking about  
17 preharvest food safety, they're talking about that part of  
18 food safety that happens in the plant and in the layerage,  
19 and also what happens between the plant -- processing and  
20 slaughter plant and the final consumer. And all of that  
21 stuff, you know now is a bunch of disaggregated programs  
22 that we identify by a multitude of names.

23           What we need is something to unify all that. I

1 personally think it will take form in the presence of food-  
2 safety objectives, which, as far as I know, is the only  
3 attempt to unify reduction of pathogens with reduction of  
4 human disease. And I think the first comment we made about  
5 if we had the criteria and we knew it would be profitable,  
6 we would do it immediately -- I think that can be found in  
7 food-safety objectives, once that's all put together.

8           And I would hope some funding or some thinking  
9 could be done about that, because unless and until all this  
10 is unified, it's going to be discontinuous and probably not  
11 as productive. And five years from now, when we all get  
12 together again, I would hope that that has been  
13 accomplished.

14           I understand that they haven't been very well  
15 defined, and that it's somewhat controversial with the  
16 European union, even the concept. My personal, professional  
17 experience is, if they don't like it, it's probably a good  
18 thing. So I would encourage you to go ahead.

19           So in closing, let me, once again, thank all of  
20 you, and particularly those of you who remained to the end.  
21 You'll have a warm spot in the arms and eyes of your  
22 government for evermore. Thank you very much.

23           (Whereupon, at 3:40 p.m., the conference was

1 concluded.)

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REPORTER'S CERTIFICATE

IN RE: National Conference on  
Animal Production Food Safety  
DATE: September 7, 2000  
LOCATION: St. Louis, Missouri

I hereby certify that the proceedings and evidence  
are contained fully and accurately on the tapes and notes  
reported by me at the hearing in the above case before the  
U.S. Department of Agriculture.

Date: 9/27/2000

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