Mr. Chairman, Senator Harkin, and members of the Committee, I am honored to have been invited to testify on the impact of the discovery of the first case of bovine spongiform encephalopathy (BSE) in the United States.

I am Dr. Alfonso Torres Professor at the College of Veterinary Medicine at Cornell University where I serve as Associate Dean for Veterinary Public Policy, and as the Executive Director of the New York State Animal Health Diagnostic Laboratory. Prior to my return to academia two years ago, I had the privilege to serve our nation through eleven years of service in the U.S. Department of Agriculture where I was very much involved with activities related to the protection of our nation against the incursion of foreign animal diseases. I was Director of the Plum Island Animal Disease Center before serving USDA as the Chief Veterinary Officer. During 2001, I had the opportunity of working very closely with Secretary Veneman in our efforts to prevent the entry of foot-and-mouth disease into the U.S., while the world witnessed outbreaks of this disease in Europe and South America. I was one of the lead participants at USDA in preparing a comprehensive report to this Senate Committee as part of the Animal Disease Risk Assessment, Prevention, and Control Act of 2001 (P.L. 107-9), which was concerned with the plans of Federal agencies to defend our country against foot-and-mouth disease and BSE. I also served as the U.S. delegate to the World Animal Health Organization (OIE) in matters related to international standards for the trade of animals and animal products. These activities provided me with the opportunity to participate with other Federal officials in international trade negotiations, also related to our import and export of animals and animal products. Those previous experiences at USDA, and my current activities provide the foundation for my following comments on the current situation that we are facing regarding BSE.

While we are newly experiencing the impact of BSE in our country, BSE is not a new disease to us in the veterinary community. We have been following this condition since its first recognition as a brand new disease in the United Kingdom in 1986. As you know, BSE is a slow progressive disease that affects the central nervous system of cattle, invariably leading to their death. BSE is one member of a larger family of similar diseases that affect both animals and humans. These are known as the Transmissible Spongiform Encephalopathies (TSEs), including Kuru and Classical or Sporadic Creutzfeldt-Jacob Disease (CJD) in humans; Scrapie in sheep; Chronic Wasting Disease (CWD) in deer and elk; and Mink Transmissible Encephalopathy (TME). The initial lack of scientific knowledge about BSE led to some erroneous conclusions, particularly in predicting the potential public health risks of BSE. First thoughts were, because Scrapie has not been a human health hazard for over two centuries, that BSE would be the same. Today, we know that that is not the case. The proteinaceous infectious agent, or prions, associated with BSE can infect humans with the development of a neurological condition that bears some similarities to the Classical or Sporadic CJD. The human manifestation of BSE came to be known as Variant CJD (or vCJD). BSE is also known to have infected a variety of ruminant zoo animals, as well as domestic and wild cats (Feline Spongiform Encephalopathy), primarily in the UK, when those animals consumed feeds containing parts of cattle that died of BSE. Today, as a result of intensive international research on BSE and its causative agent, we know a great deal more about how the disease is transmitted, how the disease is diagnosed, and which tissues of an affected animal contain the infectious agent. We also know much about the physical and chemical resistance of the prion

agent to inactivation and destruction. Still, there are many scientific gaps in regard to this disease and its unique type of agent.

Typical of all TSE diseases, BSE has a very long incubation period. From infection to the time the animal develops clinical signs could be a lapse of four to seven years. We know that in cattle, the BSE agent accumulates in the brain, eyes, tonsils, spinal cord, trigeminal and dorsal root ganglia, and the intestines, particularly in those animals older than 24 to 30 months. These tissues are known as the Specified Risk Materials or SRMs. We know that, because the prion agent is resistant to industrial rendering conditions, rendered protein products that contain SRMs from BSE-affected cattle are the main source of infection, if other cattle ingest such materials. BSE is not a contagious disease and therefore no direct transmission occurs from animal to animal. There is some possibility of vertical transmission from cow to its calf offspring. However, semen or embryos from affected animals do not transmit the disease. It is also known that the prion agent of BSE is not shed in the milk, nor it is present in the muscle meat of affected animals.

The proactive regulatory actions of the USDA initiated in 1988, combined with the regulatory actions from the FDA that started in 1997, have worked well in protecting us against a major outbreak of BSE. If there has been one disease that has provided a model for how to plan ahead for the day that a disease may be detected, it is BSE. Since 1990 there has been a federal response plan for BSE. Thanks to that, the federal agencies have been remarkably effective in dealing with the current situation, and I congratulate my colleagues at both USDA and the FDA for their response to this crisis. While the Federal BSE Plan has been effective, now that we have identified the first case of BSE on our soil, the plan needs to be modified. Both USDA and FDA are doing so.

Given the nature of BSE, there are three areas where interventions can make a significant difference: (1) restrictions on trade of ruminants and ruminant products; (2) a targeted domestic surveillance program; and, (3) a ruminant feed ban.. These three elements relate to preventing the introduction animals or risk materials into the US; detection of cases with traceability of other potentially infected animals; and prevention of the amplification of the agent/disease within the US. I will concentrate my comments on these three areas.

Trade of ruminants and ruminant products: The US has been at the vanguard in implementing regulatory safeguards to prevent the introduction of BSE affected animals or animal products containing the BSE-agent. US actions so far have reflected the evolutionary state of scientific knowledge about this disease, and need to be continuously revised and adjusted to match actual risks. Our policy of a universal set trade response to any country having BSE cases in their territory, no matter how many clinical cases or the level of BSE risk factors they may have, needs to be modified. Federal agencies are beginning to do so, particularly after the discovery of the first case of BSE case in a Canadian-born animal earlier last year. Our trade embargoes to BSE-affected countries like Canada must be different than our response to many countries in Europe. There have been only two cases of BSE detected in Canadian-born animals. In contrast, there are still several hundred cases of BSE every year in EU Member countries. I am aware of the efforts of the USDA in working with the OIE and many trading partners in developing a framework for trade in ruminants and ruminant products that is proportional to the

comprehensive risk of BSE in each country. I encourage the USDA and the US Trade Representative to continue to work in this regard. Our nation will not be able to overcome the restrictions that other countries have placed on our animal and animal exports until we adjust our trade restrictions to other countries in an equivalent and proportional way under similar situations.

Targeted domestic surveillance program: The USDA has had an effective surveillance system to provide an early detection of BSE in our country. The system worked well, as demonstrated by the detection of the first BSE-affected cow in the State of Washington. The decision to target non-ambulatory or downer animals as the highest risk population in the US was proven to be correct. The task now is to maintain and expand an effective surveillance program in the face of the recently announced USDA ban on the slaughter of non-ambulatory animals for human food. This segment of the cattle population has been our best target for sampling and testing. A new system for BSE surveillance that statistically represents the entire cattle population of the US, and that meets international guidelines and recommendations, will be a challenge. The systems for transportation to, and sampling at, slaughter establishments that process downer animals for animal feed are not well developed at the present time. While the actions of the USDA in banning the downer animals from entering the human food chain are understandable, there is a need to find a safe and economically viable means to humanely slaughter non-ambulatory animals, and to provide for safe disposal and sampling of on-farm dead animals. Such actions will avoid potential welfare issues with injured animals at the farm, and will restore a well-established source of samples for a credible BSE surveillance at a national level that is based on sound epidemiologic science.

An effective surveillance program would require the ability to trace animals at any location and at any point in time. The need for having an effective national animal identification system is well demonstrated by the difficulties in tracing the animals that were imported from Canada with the BSE-affected cohort cow. That task is even more daunting given the long incubation period of BSE, requiring the back tracing of the entire life of animals through multiple owners and locations. While I recognize and appreciate the many efforts of the USDA and the animal industries in developing and implementing a national animal ID system, the weakness is that such a system is a voluntary effort at this time. I believe the US now requires a mandatory national animal ID system. Technologies are already available and pilot projects, such as the National Farm Animal Identification and Records (FAIR) Project funded by Congress in the recent past, have demonstrated the utility of an ISO-certified radio frequency ID (RFID) system that is cost effective and reliable. Other ISO-certifiable technologies are also available. I am encouraged by recent statements from USDA on the acceleration of the national animal ID plans. However, I respectfully suggest that Congress in collaboration with the USDA need to make this national animal ID system a mandatory program.

Ruminant feed bans: I applaud the efforts of the FDA in tightening enforcement of the regulations banning the feeding of ruminant proteins to cattle. The very best way to prevent the amplification and spread of BSE from affected cattle to other animals is by preventing the use of potentially BSE-contaminated feeds for susceptible animals. Given the fact that the BSE prion agent is primarily present in the SRMs, I urge the USDA and the FDA to ban the use of SRMs from all downers and from cattle older than thirty (30) months of age. These materials

should not enter the human food chain or the animal feed chain. Such action will further enhance the safety of protein supplements used in ruminant and feline diets. I believe the confidence in the safety of our beef industries with our trading partners will be increased if such actions are implemented. This is not a new drastic recommendation. It has been proposed by the World Health Organization as part of scientific measures to prevent the spread of BSE in the world. This recommendation was also made to Canada last June by the international review panel that evaluated their actions after the BSE case in the Province of Alberta last year. I encourage the USDA, the FDA and Congress to consider the implementation of these actions as the next measures in continuing to enhance our safeguards against BSE.

Mr. Chairman, I congratulate the USDA and the FDA for their effective actions following the BSE finding announced on December 23, 2003. These actions have maintained consumer confidence in our beef products. While the trade embargoes were to be expected in a situation like this, I hope that, with the implementation of further actions as suggested; we would continue to enhance the defense of our nation against BSE, and sustain domestic and international confidence in our animal industries and the safety of our food and feed supply.

Thank you again to the Committee for inviting me to testify on this important national issue, and I will be glad to respond to any questions you may have for me at this time.