

**H.R. 1232, VETERINARY PUBLIC HEALTH
WORKFORCE EXPANSION ACT OF 2007**

HEARING
BEFORE THE
SUBCOMMITTEE ON HEALTH
OF THE
COMMITTEE ON ENERGY AND
COMMERCE
HOUSE OF REPRESENTATIVES
ONE HUNDRED TENTH CONGRESS

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H.R. 1232, VETERINARY PUBLIC HEALTH WORKFORCE EXPANSION ACT OF 2007

WEDNESDAY, JANUARY 23, 2008

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON HEALTH,
COMMITTEE ON ENERGY AND COMMERCE,
Washington, DC.

The subcommittee met, pursuant to call, at 10:08 a.m., in room 2322 of the Rayburn House Office Building, Hon. Frank Pallone, Jr. (chairman) presiding.

Members present: Representatives Pallone, Towns, Green, Capps, Baldwin, Hooley, Matheson, Deal, Pitts, Murphy, and Pickering.

Staff present: Lauren Bloomberg, Melissa Sidman, Chad Grant, Bobby Clark, Katherine Martin, and Jessica McNiece.

OPENING STATEMENT OF HON. FRANK PALLONE, JR., A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY

Mr. PALLONE. The subcommittee hearing is called to order. Today we are having a hearing on H.R. 1232, the Veterinary Public Health Workforce Expansion Act. And I will recognize myself for an opening statement. I first of all want to thank my colleague and the chief sponsor of the bill, Ms. Baldwin, for her work on this legislation. You should know that she had been asking that we have this hearing for some time, and she is very aggressive in these matters. The United States is currently facing a significant shortage of veterinary medical officers. Our Colleges of Veterinary Medicine produce only 2,500 graduates a year and are operating at full capacity. An estimated 50 percent of public health service veterinarians are currently at retirement age, and the U.S. Census Bureau predicts that based on current population growth and the corresponding growth in animal populations there will be a shortage of 15,000 veterinarians by 2025.

These statistics are particularly alarming when taking into account that veterinarians not only perform routine animal care but they are also vital providers in the public health sector. Veterinarians work in food safety and animal disease control. They work in the field of bio-security and homeland security, and they conduct crucial research on domestic and foreign animal diseases as well as on animal diseases that are transmitted from animals to humans. In fact, the American College of Veterinary Preventative Medicine actually requires its members to have proficiency in areas of public health, including the fields of epidemiology and bio-statistics, food

safety, infectious and parasitic diseases, environmental health and toxicology, and public administration and health education.

The steady threat of diseases such as West Nile Virus or Lyme Disease, which is particularly an acute problem in my home state of New Jersey, as well as the recent outbreaks of food borne illnesses just amplify the importance of veterinarians serving in the public health sector and how they are becoming more and more crucial to protecting our citizens from devastating diseases. In fact, approximately 60 percent of infectious disease organisms are transmitted by animals, and 75 percent of emerging infectious diseases are passed from animals to humans. The Centers of Disease Control and Prevention, CDC, estimates that food borne diseases such as salmonella and E. coli are responsible for roughly 5,000 deaths a year.

Improving the safety of our nation's food supply and reducing the number of food borne illnesses is a top priority for me and many of my colleagues on this subcommittee. We have had hearings, and Chairman Dingell and I have introduced legislation to bolster the regulatory framework at FDA improving research and increasing FDA's oversight in order to prevent contamination of our nation's food supply. But there is only so much we can do from a regulatory perspective. We need to support and increase the workforce who will carry out these tasks, and H.R. 1232 would compliment our efforts thus far by strengthening the veterinary workforce we rely upon to conduct surveillance and research into zoonotic diseases that threaten our food supply as well as conduct important education and outreach initiatives associated with food-animal production.

This legislation looks to solve the impending veterinary shortage crisis by establishing a competitive grant program to expand capacity and services at veterinary schools. This would include increased teaching labs, research facilities, classrooms, and administrative space. This expansion will allow schools to increase enrollment and produce the next generation of veterinary medical officers. It has been 30 years since the Federal government has provided funding to increase the number of veterinarians in our country. Considering the looming shortage of these critical public health specialists, now is the time for us to act once more.

And again I want to thank Ms. Baldwin for her efforts on this cause, and I would also like to thank our witnesses for appearing before us today to share their expertise. I know the subcommittee has so many things to deal with but I do think that this is a very important issue that we need to move forward on. And I now recognize my colleague from Georgia, Mr. Deal.

[H.R. 1232 appears at the conclusion of the hearing.]

OPENING STATEMENT OF HON. NATHAN DEAL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF GEORGIA

Mr. DEAL. Thank you, Mr. Chairman. I would like to start off by issuing a warm welcome to Dr. Sheila Allen, who is the Dean of the College of Medicine at the University of Georgia. We have met before on this very subject, and I am sure that she will share some of those same opinions with the committee today about the challenges that our current veterinary schools face in providing the

necessary new veterinarians for our nation. Many of us have heard about the variety of roles played by individuals with training in veterinary medicine from caring for personal pets to playing an integral role in the livestock industry by maintaining the health of animals used for food consumption and also inspection of the meat itself and the products that are produced.

Veterinarians help insure the safety of the nation's food supply and they are uniquely situated to address the growing threat of animal-related diseases. Unfortunately, our veterinary schools are not equipped to meet this growing need. Despite a high number of individuals interested in continuing their education at the School of Veterinary Medicine the schools cannot meet the demand. As a result, I have heard anecdotally, as I am sure some of you have, that it is harder to get into vet school than it is into medical school. This has the potential to create a dangerous public health problem as the demand for veterinary services continues to exceed the supply.

I hope that today's hearing can focus on the reasons for low number of veterinary schools and the growing shortage of veterinarians. I also think it is important that we insure money spent on expanding the infrastructure of our vet schools translates into more veterinarians working in the fields with a shortage or in those fields that meet a public health need. I want to thank all of our witnesses for their attendance today. We look forward to your testimony. Thank you, Mr. Chairman.

Mr. PALLONE. Thank you. I should point out to all of you that unfortunately we have the debate and the vote on the override for SCHIP, the Children's Health Initiative, going on at the same time as this hearing this morning so members will float in and out including myself, but we are going to do the best we can. We never know when these things come up when we plan our hearings. Next I recognize our vice chair, Mr. Green.

Mr. GREEN. Mr. Chairman, I thank you for explaining that because we have an Oversight and Investigations hearing on nuclear proliferation. I might have to leave shortly. But I would like to ask unanimous consent to place my statement in the record so we could go on with the witnesses. But thank my colleague from Wisconsin. I am a co-sponsor of the bill. And coming from Texas, I am surprised our ranking member didn't have somebody from Texas A&M here because that is our veterinary school in Texas. Since my son is an Aggie, not a veterinarian, but an Aggie, I would make sure that we do that. Thank you, Mr. Chairman, and I yield back.

[The prepared statement of Mr. Green follows:]

STATEMENT OF HON. GENE GREEN

Mr. Chairman, I am pleased we are holding this hearing today on H.R. 1232, the Veterinary Public Health Workforce Expansion Act. As a cosponsor of this bill, I am please that we are moving this bill through the committee.

Texas A&M is the only veterinary college near my district and one of two in the state of Texas.

Throughout the U.S. there are only 28 Colleges of Veterinary Medicine producing approximately 2,500 veterinarians each year and those schools are at full capacity.

According to the Bureau of Labor and Statistics, currently there are 86,000 practicing veterinarians in the U.S. However, fifty percent of those veterinarians are now eligible for retirement and by 2012, there will be nearly 28,000 open veterinary jobs. That is a turnover rate of nearly 38%.

Over the next 40 years, the American Association of Veterinary Medical Colleges estimates, in order to simply maintain their current level of service, they will need to open somewhere in the area of nine new colleges. But, the federal government has not provided general funding to increase the number of veterinarians in over 30 years.

In recent years, medical issues from human-wildlife have been highlighted in the media. Avian flu, Foot and Mouth Disease, West Nile Virus, and SARS are all diseases associated with human to wildlife contact. Additionally, the CDC estimates that 80% of potential bioterror agents are infectious diseases that spread from animals to humans.

Veterinarians play a crucial role in this medical area because they are the only health professionals trained to link animal and human diseases, food safety, and bioterrorism agents.

The Veterinary Workforce Expansion Act will help veterinary colleges by creating a competitive grants program to increase the number of veterinarians in the US. These grants will expand capacity and services at existing schools.

We don't want to expose ourselves to an animal disease outbreak or a bioterrorism attack simply because we didn't anticipate a veterinary shortage. This piece of legislation is a chance for us to increase the number of veterinarians in the U.S.

I strongly support this bill and I urge my colleagues to do so as well. Thank you Mr. Chairman, I yield back my time.

Mr. PALLONE. Thank you. Now I recognize Mr. Pickering from Mississippi, who is the lead Republican on the legislation.

OPENING STATEMENT OF HON. CHARLES W. "CHIP" PICKERING, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MISSISSIPPI

Mr. PICKERING. Thank you, Mr. Chairman, and I appreciate the chance to come and sit on the subcommittee this morning. I want to thank the lead sponsor this year, Congresswoman Baldwin, and thank her for her partnership on this very important initiative. With only 28 veterinary schools around the country and the critical link between public health and animal health, and as we look at the threats that could come to our nation whether it is Avian flu or through some type of bioterrorism that this type of approach that will provide the grants to help expand the infrastructure, build the institutions, and most importantly bring the resources to bear to train the people and to give us the leadership that we need around the country whether it is in our Federal agencies and our military or in our institutions and in private practice all of this is critical infrastructure with critical personnel that does make a difference for our country, and so I proudly join Congresswomen Baldwin as we look to have this bill now in its second Congress hopefully pass in this Congress and to be signed into law so that we can promote the very important issues of the Veterinary Public Health Expansion Act. Mr. Chairman, with that I yield back, and I thank you and the committee for your attention to this very important matter.

Mr. PALLONE. Thank you. The gentlewoman from Wisconsin.

OPENING STATEMENT OF HON. TAMMY BALDWIN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WISCONSIN

Ms. BALDWIN. Thank you, Mr. Chairman, and I very much appreciate the fact that you are holding this hearing today. I thank our witnesses, and I also appreciate the co-sponsorship of Mr. Pickering. It has been a pleasure to work with you on this bill. I also

recognize the fact that a number of our colleagues on this committee have taken note of how important this particular piece of legislation is and have joined in the co-sponsorship of it. As we will hear more during this morning's testimony of our witnesses veterinarians are truly more than the people who care for our cats and dogs, and while I am quite fond of my two cats I am glad to have a good veterinarian, but I am also glad that there are veterinarians out there who focus on large public health threats.

The interaction between human health and animal health I very clear. It seems like every year we have a new public health threat that dominates the newspaper headlines whether it is Avian flu or West Nile Virus, Mad Cow Disease, Monkey Pox, or antibiotic resistance. It is clear that there is a great need for integrated animal and human health surveillance, diagnostic laboratory systems, and delivery of effective health interventions among animal, human, and public health professions, and veterinarians are uniquely positioned to view health through the lens of public health impacted to understand how human and animal health interact.

However, as we have heard, we are woefully underprepared to meet these public health challenges. Currently there are 86,000 veterinarians in the United States who are trained in only 28 domestic colleges of veterinary medicine. Veterinarians make up less than 1 percent of the public health workforce, yet they play such a vital role in protecting the public health. It is estimated that we currently have a shortage of 1,500 veterinarians, and as we have heard also from previous opening statements this shortage is expected to grow. But this shortage is not for lack of interest. At the University of Wisconsin Madison's Veterinary School they receive far more applications than there are spaces available.

The facilities are designed to accommodate 80 students per class. Most recently, there were 1,144 applications for the class of 2011, 1,144 applicants for 80 spaces. If we don't address these capacity issues soon, we will find ourselves dangerously under prepared and ill equipped to deal with future public health threats. H.R. 1232, the Veterinary Public Health Workforce Expansion Act, would establish a competitive grant program to expand capacity at veterinary schools so that we can develop a public health workforce that is prepared to work at the interface of human, animal, and environmental health. Mr. Chairman, again thank you for holding this hearing and thank you to our expert witnesses for joining us today. I yield back my remaining time.

Mr. PALLONE. Thank you. The gentlewoman from California, Ms. Capps.

OPENING STATEMENT OF HON. LOIS CAPPS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Ms. CAPPS. Thank you, Chairman Pallone. Thank you for holding the hearing. I appreciate that our witnesses are here with their expertise, and I don't think there is going to be a lot of controversy about this procedure today. I echo the remarks that have been made by my colleagues. We all know, and it is actually a matter of public awareness, I believe, that we all will play a role in getting the word out that veterinary science is an essential component of our public health workforce. Public health veterinarians in conjunc-

tion with nurses, doctors, microbiologists, and many others help to protect and enhance the health of our nation and the international community. It is really a team effort.

I am very proud to be a co-sponsor of H.R. 1232, the Veterinary Public Health Workforce Expansion Act 2007, pleased that it was introduced by my colleague, Tammy Baldwin, and for the bipartisan support that it has. This legislation is one of many necessary steps we can take to shore up the exceptional public health workforce that our country needs and deserves and is underfunded and understaffed in almost every arena, this being one example and a very primary one. I am usually the person here speaking about the dire shortage of nurses as my colleagues know full well, but unbelievably I have to acknowledge public health veterinarians are even in shorter supply, and I know that is going to be the under current of the discussion today.

Public health veterinarians bring critical expertise to disease prevention, bioterrorism preparedness, and food safety. I don't believe the public quite understands the values here, and I just say right off the bat that I want to work with our committee because it starts in Congress. I don't know that enough of our colleagues understand the importance of this work and that is one of the roles that we can play in the country, and I hope we will do that. Funding will be another aspect of it, I am sure, eventually or as we go along. But in this age of ever increasing global population, people are becoming more susceptible to zoonotic disease, I don't think again most of the public understands that 75 percent of the new diseases that have affected humans in the past 10 years have originated from plants or from animals or animal parts.

This is astounding, and I think once the public understands this they are going to be very interested in supporting the efforts that we share here. Public health veterinarians are specifically trained to understand and identify diseases in animals and tirelessly work to prevent the diseases spread to humans. That is a vital piece in global health. If you are going to start at the top of the line or some people would prefer to start at the bottom and work up. I just want to point out that in my home state of California just last year we had an E. coli breakout in our Spinach crop, and that was disastrous to a large part of our economy, terrified a lot of people. We should be eating more fresh vegetables and instead people began to—they wouldn't go near the spinach part of the produce. And so it was a public health veterinarian that we must all thank who helped identify the cause of that particular disease and its manifestation and to control the spread. This is how vital this population is, this workforce.

With bioterrorism a greater threat than ever before, we are going to be relying more and more on public health veterinarians who play a crucial role in developing our country's bioterrorism response plan. This I think some people understand and other people need to be educated about. With all the benefits public health veterinarians bring to our public health workforce our society needs to make every opportunity, and starting with this one, to support their work. H.R. 1232 does that, and I am proud to support it. Again, I look forward to our witnesses and yield back.

Mr. PALLONE. Thank you, and thank you for all your support. I think the panel may or may not know that Ms. Capps plays a major role here in trying to draw attention to the need—the shortage of health care professionals in so many respect, which is really so crucial so thank you. Next, I recognize the gentleman from Pennsylvania, Mr. Pitts, and I told Congressman Pitts that I had the fortune of going to his district to look at the University of Pennsylvania veterinary school farm campus essentially, and it was so beautiful just to ride out there. But I also told him that there were—obviously Penn is one of the major veterinary schools in the country but when I was looking around at the facilities they needed work so that was sort of an eye opening to me to see that even one of the what I guess is probably one of the top notch schools in the country still has a lot of infrastructure needs. I recognize the gentleman.

Mr. PITTS. Thank you, Mr. Chairman. I am sorry I am late. But I look forward to hearing the witnesses today on this very important bill. I will submit my statement for the record.

DIDN'T SUBMIT STATEMENT

Mr. PALLONE. And next the gentleman from New York, Mr. Towns.

Mr. TOWNS. Mr. Chairman, I will submit my entire statement for the record, but let me just make 1 or 2 comments because I am anxious to hear from the witnesses. As people travel more and carry diseases stemming from animal contact, and as our food supply comes into our ports from foreign sources, we need to insure that we are safe and that our food is safe. Veterinarians will assist our nation in coping with the 21st century challenges relating to food safety and animal disease control, bio security and homeland security research on domestic and foreign animal diseases, especially those animal diseases that affect humans.

I welcome our witnesses, and thank you, Mr. Chairman, for holding this hearing. I really hope that one thing will come out that we will increase the amount of seats for veterinarians because it seems to me that that is something that we must do. And I want to salute Congresswoman Baldwin for her work in this area, and also Senator Wayne Allard's efforts as well, and I look forward to working with them in terms of making this a reality. On that, I yield back, Mr. Chairman.

[The prepared statement of Mr. Towns follows:]

STATEMENT OF HON. EDOLPHUS TOWNS

Thank you, Mr. Chairman for holding this hearing on, "H.R. 1232, Veterinary Public Health Workforce Expansion Act of 2007", of which I am a co-sponsor.

I thank Congresswoman Tammy Baldwin and Congressman Chip Pickering for introducing this bill in the House, and Senator Wayne Allard, a veterinarian, who first introduced it in the Senate. This bill would amend the public health service act to establish a competitive grant program to build capacity in veterinary medical education and expand the workforce of veterinarians engaged in public health practice and biomedical research. We must avert an estimated shortage of 15 thousand veterinarians over the next 20 years. For the nation's survival, we must do this.

As a congressman from the proud 10th Congressional District of New York, I can picture from history books, shantytown life in my dear Brooklyn community of the Eighteen Hundreds, when many raised chickens, goats, pigs and cows. In 1879, Lachlan McLean became the first veterinary inspector appointed in Brooklyn. He pushed for veterinarians to be in charge of meat inspection. The New York State

Veterinary Medical society, which represents more than 3,500 veterinarians in New York state, was founded in 1890. Its leaders were the pioneers of modern veterinary medicine and were instrumental in introducing a practice act for veterinary medicine into law in 1895, when veterinarians joined physicians as one of the first licensed professions in New York state.

Today, as people travel more and carry diseases stemming from animal contact, and as our food supply comes into our ports from foreign sources, we need to ensure that we are safe and that our food is safe. Veterinarians will assist our nation in coping with the twenty-first century challenges relating to food safety and animal disease control; biosecurity and homeland security; research on domestic and foreign animal diseases, especially those animal diseases that affect humans; and more. Lastly, we need the resources to ensure the health of our beloved family pets.

I welcome our witnesses and urge my colleagues support.

Thank you, Mr. Chairman.

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Mr. PALLONE. Thank you. The other gentleman from Pennsylvania, Mr. Murphy.

OPENING STATEMENT OF HON. TIM MURPHY, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF PENNSYLVANIA

Mr. MURPHY. Thank you, Mr. Chairman. And thank you for holding a hearing to recognize the needs of veterinarians. Pennsylvania's number 1 part of our economy is agriculture and much of that is dealing with large animals, of course. One of my counties in my district, Washington County, is a state leader, for example, in sheep and lamb production. And I know that the issues involved with the veterinarians and making sure we have enough of them who are well trained continues to be a concern as well as others who work in the health care sector of veterinary medicine. Often times when we think of veterinarians we think of those who take care of our dogs and our parakeets, et cetera, but let us not forget they are an essential part of our economy, and they also are really an essential part of other issues that we have dealt with in this committee and that has to do with such things as food and toxic substances that come through that affects our animals. They are often times the front line of identifying what it is that is affecting our animals so I am pleased we are working on these issues that deal with training and education our veterinarians in the future.

Often times in America we only know of veterinarians from what we have seen about James Harriet who has made something of a hero of everybody who is out there slogging through the mud in the barn as well as seeing our dogs and cats in their offices but let us not forget that they are a front line of an essential part of our economy and certainly that way in Pennsylvania. So I thank you for pointing out their needs for their future, Mr. Chairman.

Mr. PALLONE. Thank you. I think that concludes our opening statements by members of the subcommittee so we will now turn to the panel. Let me welcome all of you and introduce you. I will start on my left with Dr.—I was told it was Pappaioanou. Did I get that right?

Dr. PAPPALIOANOU. Yes.

Mr. PALLONE. That was easy because we have a Congressman Capuano. She is Executive Director of the Association of American Veterinary Medical Colleges based here in Washington. Next we have Dr. Ron DeHaven, who is Executive Vice President of the

American Veterinary Medical Association from Illinois. And then we have Dr. Alan Kelly, who is Dean Emeritus of the University of Pennsylvania School of Veterinary Medicine. It has you down as New Bolton Center, which is where I went so thank you for taking me there. And then we have Dr. Sheila Allen, who is Dean of the College of Veterinary Medicine at the University of Georgia in Athens, Georgia.

The way we work it, we have 5-minute opening statements. Those become part of the record. And each witness may in the discretion of the committee submit additional brief and pertinent statements in writing for inclusion in the record, and we may also ask you to do some follow-up written responses to our questions. So I will start now with Dr. Pappaioanou for a 5-minute opening statement.

STATEMENT OF MARGUERITE PAPPAIOANOU, D.V.M., M.P.V.M., PH.D, D.A.C.V.P.M., EXECUTIVE DIRECTOR, ASSOCIATION OF AMERICAN VETERINARY MEDICAL COLLEGES (AAVMC), WASHINGTON, D.C.

Dr. PAPPAIOANOU. Good morning, Mr. Chairman, and members of the committee. First of all, we would like to very much thank Congresswoman Baldwin, Congressman Pickering, and Senator Allard for leadership on this issue and the support by many of you as expressed in your opening comments. I am Marguerite Pappaioanou, Executive Director of the Association of American Veterinary Medical Colleges, the organization that coordinates the national and international affairs of all 28 U.S. Colleges of Veterinary Medicine, 9 Departments of Veterinary Science, 8 Departments of Comparative Medicine, and 14 other veterinary medical institutions in the U.S., Canada, the UK, and Australia.

Prior to joining AAVCM November 1, I was Professor of Infectious Disease Epidemiology at the University of Minnesota, and for 21½ years from 1983 through 2004, I was an epidemiologist on staff at the Centers for Disease Control and Prevention as a veterinary officer in the Commissioned Corps of the U.S. Public Health Service. I am pleased to provide information on the roles of veterinarians in protecting public health and food safety and the importance of the Veterinary Public Health Workforce Expansion Act to strengthen our national security and preparedness. Strong links exist between human and animal health, 61 percent of over 1,400 infectious disease organisms that cause illness in humans, 75 percent of emerging infectious diseases and 5 out of 6 CDC category A bioterrorism agents are transmissible from animals to people.

In the U.S. there are an estimated 85,000 veterinarians compared to 800,000 physicians. Graduating veterinarians swear that they will use their scientific knowledge and skills for the benefit of society through the promotion of public health and the advancement of medical knowledge in addition to the health and well being of animals. Approximately 2,800 veterinarians serve in public health and food safety positions across Federal, state, and local government and academia. Across CDC centers approximately 85 veterinarians on staff and in leadership positions conduct investigations of infectious, food borne and environmental disease outbreaks in the United States and internationally.

They conduct surveillance for diseases, conditions spanning the spectrum of public health threats. They design, implement, and evaluate disease and injury prevention and control, and emergency and bioterrorism preparedness and response programs. They address public health threats emanating from the illegal importation of exotic animals. They conduct public health research. Veterinarians at CDC and FDA monitor and track the magnitude and trends of food borne infections in people, the source of infections, and antimicrobial resistance of food borne pathogens. Following the 9/11 attacks in New York City CDC veterinarians conducted human disease and injury surveillance in local hospitals. In the 2002 anthrax bioterrorism attacks CDC veterinarians conducted surveillance for new human cases of anthrax across affected cities and states.

A veterinarian from EPA, Environmental Protection Agency, led environmental clean-up efforts right here on Capitol Hill. Approximately 85 veterinarians at NIH oversee the health and welfare care research for research animals providing expertise in laboratory animal medicine, surgery, toxicology, and comparative pathology to insure the highest quality research. At FDA approximately 115 veterinarians are engaged in policy planning, oversight of new animal drug reviews and approvals, development of screening tests for drug residues in meat and milk, and research. Currently, two of FDA's five centers are veterinarians. At EPA approximately 20 veterinarians address adverse health effects of air, drinking water, and terrestrial pollution and environmental contamination, emergency preparedness and response needs.

Many of the 500 veterinarians in the Army and Air Force are in positions protecting human health of our troops. In the Department of Homeland Security approximately 10 veterinarians serve in the Medical Affairs Office and in FEMA on issues of national emergency preparedness and response. At the state level veterinarians oversee infectious, chronic, and environmental disease and injury surveillance, prevention, control, and emergency preparedness programs. Veterinary diagnosticians and pathologists at veterinary diagnostic laboratories test for causes of disease outbreaks. At universities veterinarians conduct biomedical research and develop animal models for the study of human and animal diseases.

Veterinarians offer expertise in comparative medicine having studied diseases of multiple species. They receive significant amounts of training on diseases that are transmitted from animals to humans. They are taught population based approaches to disease prevention and control. Their unique training brings important expertise to the U.S. public health workforce. Many more are needed to confront today's multi-faceted challenges to public health and food safety. Thank you for this opportunity to discuss how veterinarians protect human health and the importance of the Veterinary Public Health Workforce Expansion Act to strengthen our national security and preparedness. I would be pleased to respond to any question.

[The prepared statement of Dr. Pappaioanou follows:]

TESTIMONY OF DR. MARGUERITE PAPPAIOANOU

Good morning, Mr. Chairman and Members of the Committee. I am Marguerite Pappaioanou, Executive Director of the Association of American Veterinary Colleges,

or AAVMC, the organization that represents the future of veterinary medicine. AAVMC coordinates the national and international affairs of all 28 US Colleges of Veterinary Medicine, 9 Departments of Veterinary Science, 8 Departments of Comparative Medicine, and 14 other veterinary medical institutions in the US, Canada, the UK, and Australia. Prior to joining AAVMC this past November 1, 2007, I was Professor of Infectious Disease Epidemiology in the School of Public Health, with a joint appointment in the College of Veterinary Medicine at the University of Minnesota from 2005-2007, conducting research on the human-animal interface of avian influenza, and for 21^o years spanning the period from 1983 through 2004, I was as an epidemiologist at the US Centers for Disease Control and Prevention as a Commissioned Officer of the US Public Health Service. At CDC I began as an epidemic intelligence service officer and later as staff, conducted research on malaria prevention and control in Africa, designed and led implementation of disease surveillance for HIV infections in the US, guided and supported the development of the US Guide to Community Preventive Services, and as Associate Director of Science and Policy in CDC's Office of Global Health, coordinated CDC's research and programs in Africa and Asia. I received my Doctor of Veterinary Medicine degree from Michigan State University in 1972, Masters of Preventive Veterinary Medicine and Doctor of Philosophy degrees from the University of California, Davis, in 1976 and 1982, respectively, and am a diplomat of the American College of Veterinary Preventive Medicine.

As a veterinarian having worked directly in public health for almost my entire career, I am pleased to provide the Committee with information on the essential role that veterinarians play in protecting public health and the necessity for the HR 1232, the Veterinary Public Health Workforce Expansion Act.

Although the public at large understands the important role that veterinarians play in promoting and protecting the health of our companion animals, largely unappreciated are the essential functions and roles that veterinarians play in protecting human health, and in promoting and protecting our national security and emergency preparedness and response capabilities at international, national, state, and local levels across both the public and private sectors.

Strong links exist between human and animal health- including shared susceptibility across human, domestic animals, and wildlife species to hundreds of infectious disease agents that are spread through direct contact, contamination of food and water, insect vectors, or by intentional introduction such as a bioterrorist attack. Increased opportunities for transmission of infectious diseases from animals to humans are resulting from growing close contact between humans and their companion animals, human populations moving into peri-urban and rural environments as our human population grows in size, rapid travel and movement of people and their animals, changes in climate affecting insects and small mammals that can spread disease, globalization of our food supply, and changes in our food production systems.

In 2003, the Institute of Medicine (IOM) issued a report, "Microbial Threats to Health: Emergence, Detection, and Response". That report made several recommendations for preventing and controlling microbial threats to human health, including the recommendation that human and animal health work more closely together. The IOM described thirteen factors involved in the emergence of infectious diseases, with a majority comprising agricultural or animal health issues that inevitably affect human health. The report also recognized the growing threat from insect-borne and zoonotic diseases-those diseases transmitted from animals to humans. The IOM used the example of the SARS outbreak in 2003 to demonstrate the close ties between U.S. and global health, and that controlling infectious diseases would require global awareness and a focus on the overlap of animal and human health.

Approximately 61% of over 1400 infectious disease organisms that cause illness in humans, and 75% of emerging infectious diseases, such as West Nile Virus, avian influenza, monkeypox, E Coli O157, bovine tuberculosis among others-are caused by organisms transmissible from animals to people. These zoonotic infectious diseases cause many outbreaks nationally and internationally each year, with significant adverse health outcomes. In addition, the highest-priority bioterrorism agents listed by CDC (CDC Category A agents) are those that pose a risk to national security because they can be easily disseminated or transmitted from person to person, result in high mortality rates, and have the potential for major public health impact. Five of the six CDC Category A bioterrorism agents are zoonotic. Recently, the American Veterinary Medical Association and American Medical Association have created a "One Health" Task Force, which is identifying ways that human and veterinary health professionals can work together to effectively address threats to human, animal, and ecosystem health. The report of this Task Force is expected in the spring

of 2008. There are approximately 85,000 veterinarians in the US. When compared to 2 million nurses, and 800,000 physicians, we are a small but important and effective profession. At graduation veterinarians swear they will use their scientific knowledge and skills for the benefit of society through the protection of animal health, the relief of animal suffering, the conservation of livestock resources, the promotion of public health and the advancement of medical knowledge.

The public is most familiar with veterinarians working as private clinical practitioners, keeping companion animals healthy. Largely unrecognized are the contributions of approximately 2,800 veterinarians working in formal public health positions across federal, state, and local levels of government and academia, with their primary responsibility to promote and protect public health.

At the Federal level, veterinarians as epidemiologists, researchers, program managers, laboratory scientists, risk assessment analysts, and higher level administrative and management positions, carry out important public health missions across several Departments of the Executive Branch. They provide leadership, oversight, and manpower for human and animal health emerging infectious and environmental disease and injury prevention and control programs, food safety and security, bio- and chemical terrorism preparedness, environmental health programs, emergency preparedness and response, biomedical research, laboratory animal medicine, and more.

At the Centers for Disease Control and Prevention in the Department of Health and Human Services, approximately 3 to 5 veterinarians serve as laboratory animal veterinarians who are critical to the conduct of high quality biomedical and public health research. However, there are approximately 85 veterinarians (comprising approximately 1% of the CDC workforce) who are working on staff and in leadership positions, as epidemiologists in CDC's infectious disease and environmental health programs and centers. They lead teams or work as team members in the conduct of infectious and zoonotic disease, insect or vector borne disease, foodborne disease, and environmental disease outbreak investigations, locally in collaboration with state health officials, regionally, nationally and internationally. Veterinarians conduct disease surveillance for diseases and conditions that span the spectrum of public health threats, and they design, implement, and evaluate disease prevention and control programs. They are leaders and core team members in programs that prevent and control emerging infectious diseases including HIV/AIDS, malaria, vaccine preventable diseases, protect environments and ecosystems, prevent and control chronic diseases and injuries, prepare for, detect, and or respond to bio- and agroterrorism attacks, advance medical science through research. Since 1950, over 250 veterinarians have graduated from CDC's Epidemic Intelligence Service. Veterinarians also participate in CDC's Emerging Infectious Diseases Laboratory Fellowship Program.

During the SARS outbreak, monkey pox outbreak, and highly pathogenic H5N1 avian influenza outbreaks in 2003, veterinarians at CDC were critical members of CDC's international response teams, working as a team with physician and laboratory scientist colleagues, contributing their special training and perspective to achieving the mission.

In the United States, there are an estimated 76 million cases of foodborne disease annually, with 325,000 hospitalizations and 5,000 deaths. Dr. Ron DeHaven will be addressing the role of over a thousand veterinarians who are looking after our food safety in positions with the Animal Plan Health Inspection and Food Safety Inspection Services of the US Department of Agriculture. Veterinarians at CDC lead and or participate in multi-state foodborne outbreak investigations. In addition, veterinarians and colleagues at CDC and FDA, in collaboration with USDA and State health departments however, have developed and oversee FoodNet-an active sentinel surveillance system in the U.S., which helps to identify the magnitude and trends of foodborne infections in people, the source of foodborne infections so effective interventions can be undertaken, and serves as a platform for the conduct of more detailed investigations of risk factors for foodborne diseases and effective interventions to prevent them. Veterinarians at CDC, FDA, and USDA, in collaboration with selected State health departments, have established another key sentinel surveillance system called the National Antimicrobial Resistance Monitoring System (NARMS) for Enteric Bacteria. Veterinarians involved with NARMS monitor and report on antimicrobial resistance of six different species of bacteria that are obtained from human infections, to 17 different antimicrobials, in 27 sites, covering 158 million people in the U.S-or 56% of the U.S. population. Veterinarians at USDA and FDA coordinate and conduct testing for antimicrobial resistance of salmonella, Campylobacter, and E. coli isolates from infections in a number of food and companion animals. Veterinarians involved with NARMS are providing important infor-

mation to inform medical and veterinary practitioners on the status of antibiotic resistance to aid in making judicious decisions on the use of antibiotics.

Following the 9/11 attacks in New York City, the public heard about the wonderful care that veterinarians administered to working dogs that were members of the rescue operation. Less publicized were the efforts of several CDC veterinarians leading the conduct of human disease and injury surveillance programs in local hospitals during the emergency. Another example of the public health roles that veterinarians play should hit a little closer to home for some members of Congress. In the anthrax attacks of 2001 which targeted members of Congress right here on Capitol Hill, a veterinarian from EPA led environmental cleanup efforts on Capitol Hill. In addition, other veterinarians at CDC led the surveillance effort for new cases across affected cities and states during that event.

Moving to the National Institutes of Health, there are approximately 85 veterinarians working to ensure the highest quality research, by overseeing the health and welfare care for research animals, and providing expertise in laboratory animal medicine and surgery, toxicology, and comparative pathology. In addition, there are veterinarians at NIH who work as scientists and program directors in disease research programs.

At the Food and Drug Administration, approximately 115 veterinarians in the Center for Veterinary Medicine and the Center for Food Safety and Nutrition work as epidemiologists and veterinary pathologists involved with policy, planning, budgeting, oversight of new animal drug reviews and approvals, surveillance for animal health /adverse drug reactions and antibiotic resistance. Veterinarians approve safe and effective products for animals, enforce applicable provisions of the Federal Food, Drug, and Cosmetic Act & other authorities, conduct animal drug review, oversee compliance-related actions and post-approval monitoring, oversee animal feed safety, and conduct surveillance for antibiotic resistance of food borne bacteria. Veterinarians at FDA develop screening tests for drug residues in meat and milk, and conduct research to support animal drug approvals. Dr. Steve Sundloff, a veterinarian at FDA recently was named Director of FDA's Center for Food Safety and Nutrition.

As of 2004, there were approximately 20 veterinarians working in public and environmental health at the Environmental Protection Agency. At EPA, veterinarians conduct risk assessments of and evaluate Superfund sites, Eco-toxicological pathogens and or contaminants such as metals, antimicrobials, sludge borne, water and food borne pathogens. They conduct policy analysis and development, lead or participate in emergency preparedness and response and environmental contamination, conduct research on the adverse health effects of air, drinking water and terrestrial pollution, and address environmental issues related to intensive or concentrated animal feeding operations.

In the Department of Homeland Security, approximately 10 veterinarians work in leadership and staff positions in the Medical Affairs Office and FEMA, contributing toward national emergency preparedness and response goals and objectives. In the Department of Defense, approximately 500 veterinarians are protecting and promoting human health and welfare in the Army and Air Force, working as public health officers, on medical intelligence, deployment health support, decontamination of chemical/biological/ radiological casualties, and food safety as well as clinical veterinarians who care for working animals. At the State level, veterinarians serve as State Epidemiologists, State Public Health Veterinarians, State Veterinarians, and State Wildlife Veterinarians (and Deputies and Assistants to these positions). State Epidemiologists oversee disease prevention and control across acute infectious disease, chronic disease, environmental, occupational, and injury programs. State Public Health Veterinarians oversee and conduct surveillance for diseases that are transmitted from animals to people, such as rabies, West Nile Virus, and others, and prevention and control programs for zoonotic and food safety programs, and coordinate bio- and chemical bioterrorism preparedness. State Veterinarians oversee livestock and poultry health /disease prevention and control programs, health issues involving exotic and domesticated animals, animal care and welfare, and more. State Wildlife Veterinarians oversee wildlife health and conservation programs, which are gaining increasing importance with the recognition of wildlife health in the epidemiology and ecology of emerging zoonotic infectious diseases, which threaten human health and which appear to be increasing in occurrence.

Increasingly, veterinarians at the state and local levels are playing critical roles in leading the development and implementation of plans for emergency preparedness and response. Veterinary colleges and their diagnostic laboratories, with faculty and staff (including veterinary diagnosticians and pathologists) are playing an important role in surveillance, laboratory testing including providing surge capacity for human laboratories, education and training, and research. Following Hurricane Katrina and in preparation for Hurricane Rita, at the request of Brazos County

Health Department and the Texas State Health Department, Faculty at the College of Veterinary Medicine at Texas A&M partnered with medical colleagues to convert their large animal veterinary hospital into a facility to care for several hundred "special needs" patients from Houston and Galveston. By the evening Hurricane Rita arrived, the hospital was emptied of animals and sanitized, and ultimately 650 people including patients, families and caregivers were housed in the facility.

At universities as well as in health agencies, veterinarians dedicated to the conduct of public health and biomedical research are needed to develop new public health interventions, to research the factors that influence the ability of viruses and bacteria to both animals and people, to study our immune systems which can make us more susceptible to diseases, to develop vaccines, to develop animal models of human diseases to study disease processes better and to identify new treatments for humans and animals.

In the roles and contributions I have described, veterinarians either lead or work as part of multidisciplinary teams. In their training, veterinarians receive the same basic science preparation as physicians and other allied health professions; however, they study anatomy, physiology, and diseases of multiple species, making them comparative medicine specialists.

Veterinarians are keen observers as their patients cannot offer information on symptoms they are feeling. Veterinarians receive extensive training in diseases of animals caused by parasites, bacteria and viruses and that are transmissible to people. Veterinarians are trained to consider the environment in which disease processes are taking place, and to expect the unexpected. In food animal medicine, they are taught population-based approaches to disease prevention, control, and health promotion, and in food systems that bring our food to the tables from our farms. In general, Veterinarians are taught to see the world as an ecosystem, in contrast to the education of the allied health professions which tends to target individuals alone. The training and perspective of veterinarians are unique and add value to the public health team. When veterinarians are not present to address a public health outcome, that lost perspective can present added challenges in arriving at effective public health solutions. And with an increasing human population, increasingly mobile human and animal populations, global climate change, globalization of our food supply, changing human behaviors with regard to animals that increase human exposure to zoonotic pathogens, and changing microbes, the need for and benefit of veterinary knowledge, perspective, and expertise to contribute toward solving an increasing number of global health challenges, will only increase into the future. Many more public health veterinarians than the 2,800 currently serving (with many due to retire in the near future), are needed to take on the growing number of challenges to human, animal, and ecosystem health.

The Institute of Medicine has defined public health as "what we, as a society, do collectively to assure the conditions in which people can be healthy". Veterinarians are an essential component of the US public health workforce. However, the profession and numbers of veterinarians working in public health are extremely small compared to the other health professions. Many more veterinarians are needed to keep up with the increasing human population accompanied by increasing numbers of companion and food animals, as well as to ensure sufficient numbers of veterinarians working in the public health areas I have described. With yearly graduating classes similar in size to those of 35 years ago, the profession cannot meet societal needs and fulfill its obligations to promote and protect public health.

Our nation's Colleges of Veterinary Medicine, located in 26 of our 50 States, are working with their universities and states to graduate the greatest number of new veterinarians possible with the facilities and infrastructure that exist, but many more veterinarians are needed to ensure our national food safety, preparedness, and security, to prevent, detect and control outbreaks of emerging infectious diseases, and to fulfill our responsibilities for national preparedness and response. Our national security and preparedness are at stake. Federal support, as described in the Veterinary Public Health Workforce Expansion Act (HR 1232) is essential to complement public and private support provided at state and local levels to meet the national need.

Thank you for this opportunity to discuss the important roles that veterinarians play in protecting our public's health, in assuring our national security, our national veterinary public health workforce shortage, and efforts needed to address the national need. I would be pleased to respond to any questions.

Mr. PALLONE. Thank you. Dr. DeHaven.

**STATEMENT OF W. RON DEHAVEN, D.V.M., M.B.A., EXECUTIVE
VICE PRESIDENT, AMERICAN VETERINARY MEDICAL ASSO-
CIATION (AVMA), SCHAUMBURG, IL**

Dr. DEHAVEN. Mr. Chairman and members of the subcommittee, thank you for giving the American Veterinary Medical Association the opportunity to speak in support of the Veterinary Public Health Workforce Expansion Act. I am Dr. Ron DeHaven, the executive vice president of the AVMA. Previously, I served for nearly 3 decades with the U.S. Department of Agriculture's Animal and Plant Health Inspection Service most recently as its administrator. In that capacity, I was responsible for protection of U.S. agriculture and natural resources from pest and disease. The AVMA represents some 76,000 veterinarians who are involved in every aspect of our veterinarian medical profession. Our members insure the well being of our companion animals. They protect human health through the control of zoonotic disease.

They conduct research into animal and human health and they help preserve endangered species. Many of our AVMA members are also working to insure the health of our nation's livestock, and in doing so ultimately enjoy the safety of our food supply. These veterinarians have their work cut out for them. According to the CDC food borne diseases such as salmonella and E. coli are responsible for an estimated 76 million human illnesses, over 300,000 hospitalizations, and 5,000 deaths each year just in the United States. Food safety and the risk of illness from eating contaminated food remain on the collective conscience of our nation's public, and we just saw on January 12 the recall of nearly 200,000 pounds of ground beef over concern about E. coli contamination.

As our nation continues to rely on protein-based diets the number of food animals that will be needed to meet that demand will grow proportionate with our population. The U.S. Census Bureau projects that the United States population will reach 335 million by the year 2020 and in fact 413 million or 419 million by the year 2050. This population growth will put increased demands on our food supply system as well as on those who are responsible for its safety and quality. Veterinarians have and will continue to play a critical role in that regard. Animals and humans are inextricably linked when it comes to disease. Veterinarians have been working on diseases of public health significance such as tuberculosis and brucellosis for over 100 years.

SARS, monkeypox, West Nile Virus, Lyme disease, highly pathogenic avian influenza, bovine spongiform encephalopathy or BSE are just a few of the more recent examples of animal diseases that have had tremendous implications for public health. Veterinarians have played a pivotal role in the diagnosis, treatment, control, and surveillance for each one of those diseases. This connection between animals and humans is truly an issue of one health, that is, as goes the health of our nation's animals so goes the health of our nation's people. As guardians of our nation's food supply veterinarians will be the first medical professionals to diagnose and contain diseases in animals that may spread to humans. Unfortunately, the number of veterinarians available to serve society in these critically important roles does not meet that demand.

A recent study conducted at Kansas State University projects this shortage to worsen by 4 to 5 percent each year into the foreseeable future. Reports indicate that 50 percent of the U.S. Public Health Service veterinary medical officers are now eligible to retire. The U.S. Department of Agriculture, which is already underserved by veterinarians is projecting huge deficits in the future in that same regard. A survey of the AVMA membership shows that the mean age of food supply veterinarians is approximately 50 years of age and so many of them are nearing retirement. At the heart of the issue is the fact that our country's veterinary medical colleges lack the capacity to produce more food supply and public health veterinarians. Our nation's 28 accredited veterinary colleges are currently at or above capacity graduating approximately 2,500 veterinarians each year.

According to a recent report by the Bureau of Labor Statistics veterinary medicine ranked 9th among the 30 fastest growing occupations for the years 2006 to 2016. It is estimated that jobs for veterinarians will increase by 35 percent in the next several years, and it is our collective responsibility to insure that there are veterinarians to fill those positions. Fiscal concerns are also playing an important role in this shortage. Only 26 states currently cover the lion's share of the cost of producing veterinarians who protect the entire nation's food supply and public health. There has also been a dearth of Federal funding for veterinary colleges. According to a 2005 report by the National Research Council the last major Federal funding program to support construction of facilities for colleges of veterinary medicine ended more than 40 years ago.

Our country's ability to protect its food supply and its capacity for zoonotic and food animal disease research is insufficient and these realities could have devastating long-term consequences. Food animal production adds approximately \$124 billion annually to the U.S. economy. A single highly infectious disease that is not rapidly diagnosed could destroy much of our nation's livestock resulting in shortages, not just dietary protein, but also result in huge economic losses. In addition, the CDC estimates that 80 percent of the bio-terror agents are infectious diseases that spread from animals to humans. Failure to quickly diagnose these diseases in animals before they are spread to humans could have huge consequences and catastrophic loss of human life.

There are ways of addressing this problem, and we need look no further than the Veterinary Public Health Workforce Expansion Act. This act would create a competitive grants program designed to produce more veterinarians working in public health practice and enhance our capacity for research on diseases that threaten both public health and food safety. Mr. Chairman, the AVMA fully supports the Veterinary Public Health Workforce Expansion Act. We thank you for holding this hearing and thank you for providing the AVMA the opportunity to address the subcommittee.

[The prepared statement of Dr. DeHaven follows:]

TESTIMONY OF W. RON DEHAVEN

Mr. Chairman and members of the Subcommittee, thank you for giving the American Veterinary Medical Association the opportunity to speak in support of the Veterinary Public Health Workforce Expansion Act.

I am Dr. Ron DeHaven, executive vice president of the AVMA. Prior to joining the AVMA, I served nearly three decades with the United States Department of Agriculture's Animal and Plant Health Inspection Service, most recently as APHIS administrator. In that capacity, I was responsible for the protection of U.S. agriculture and natural resources from exotic pests and diseases, administering the Animal Welfare Act, and carrying out wildlife damage management activities.

The American Veterinary Medical Association represents more than 76,000 American veterinarians engaged in every aspect of veterinary medical science. Among other things, we ensure the well-being of our nation's companion animals, we protect human health through the control of zoonotic disease, we conduct research into animal and human health, and we help preserve endangered species. Many of us are working to ensure the health of our nation's livestock, and ultimately our food supply.

As you can see, veterinarians do much more than take care of our beloved family pets. They also play a vital role in preserving our country's public health by protecting humans from diseases spread by animals and assuring the safety of our food, from poultry to pork and beef.

These veterinarians have their work cut out for them. According to the Centers for Disease Control and Prevention, foodborne diseases, such as Salmonella and E. coli, are responsible for an estimated 76 million human illnesses, 300,000 hospitalizations and 5,000 deaths each year in the United States. Food safety and the risk of illness from eating contaminated food items remain on the nation's collective conscience, as we just saw January 12 with the recall of nearly 200,000 pounds of ground beef because of concerns of E. coli contamination.

As our nation continues to rely on protein-based diets, the number of food animals needed to meet that need will rise proportionately with population growth. The U.S. Census Bureau projects that the United States population will grow to more than 335 million by 2020 and to more than 419 million by 2050. This population growth will put increased demands on our food supply system and those who are responsible for its safety and quality. Veterinarians will play a critical role in that regard.

Animals and humans are inextricably linked when it comes to disease. Veterinarians have been working on diseases of public health significance, such as tuberculosis and brucellosis, for more than 100 years. Severe acute respiratory syndrome (SARS), monkeypox, West Nile Virus, Lyme disease, avian influenza and bovine spongiform encephalopathy (BSE) are more recent examples of zoonotic diseases that have had significant public health implications. Veterinarians have played a pivotal role in the identification, diagnosis, treatment, control and surveillance of each one of these diseases. This connection between animals and humans is truly an issue of "one health." That is, as goes the health of our nation's animals, so goes the health of its people.

The veterinarians working in food safety and public health can be found in both the public and private sectors. At the Centers for Disease Control, veterinarians work in areas such as bioterrorism, environmental health, viral and bacterial diseases, and food safety. At the Food and Drug Administration, veterinarians working in the Center for Veterinary Medicine help regulate the manufacture and distribution of food additives and drugs that are given to animals, including those animals from which human foods are derived. At the United States Department of Agriculture, veterinarians work in food safety and animal health. In the private sector, food supply veterinarians are involved in keeping food animals healthy and their environments free of contaminants.

Simply put, all of these veterinarians serve as guardians of our nation's food supply, and they will be the first medical professionals to diagnose and contain diseases in animals that may spread to humans.

Unfortunately, the number of veterinarians available to serve society in these key roles does not meet demand. A recent study conducted at Kansas State University projects this shortage to worsen by 4 percent to 5 percent annually for the next several years. This shortage is being felt across the board. Reports indicate that 50 percent of U.S. Public Health Service veterinary medical officers are now eligible for retirement. The USDA, which is already underserved, is predicting a shortfall of several hundred veterinarians. A survey of the AVMA membership shows that the mean age of food supply veterinarians is around 50 and nearing retirement, placing an even greater burden on the profession and our society.

Added to the mix is the fact that the country's veterinary colleges lack the capacity to produce more food supply and public health veterinarians. Our nation's 28 accredited veterinary colleges are currently at or above capacity, graduating about 2,600 veterinarians each year. According to a recent report by the Bureau of Labor Statistics, veterinary medicine ranked 9th in the list of the 30 fastest-growing occupations for 2006 through 2016. It is estimated that jobs for veterinarians will in-

crease by 35 percent in the next several years. And it is our joint responsibility to fill them.

While some of that growth will be met with the addition of new graduates into the workforce, there are national concerns that many jobs in food supply and public health will go unfilled. There are about 8,850 U.S. veterinarians working in the food animal field. Around the turn of the 20th Century, virtually every veterinarian was a food animal veterinarian. Today, only about 17 percent of veterinarians work in food supply and more than 70 percent of veterinarians work with companion animals. This trend is likely to continue as veterinary school graduates enter the workforce.

Apart from the workforce issues I have highlighted, fiscal concerns also are playing a role in this shortage. Only 27 states currently share the cost of producing the veterinarians who protect the entire nation's food supply and public health. There has also been a dearth of federal funding for veterinary colleges. According to a 2005 report by the National Research Council of The National Academies, titled, "Critical Needs for Research in Veterinary Medicine," the last major federal program to support construction of facilities for colleges of veterinary medicine ended more than 40 years ago.

Our country's ability to protect its food supply, and its capacity for zoonotic and food animal disease research is insufficient, and these realities could have devastating consequences.

Food animal production generates about \$124 billion annually to the U.S. economy. A single, highly infectious disease that is not rapidly diagnosed could destroy much of our livestock, resulting in shortages of dietary proteins and significant economic losses. In addition, the CDC estimates that 80 percent of potential bioterror agents are infectious diseases that spread from animals to humans. Failure to diagnose these diseases in animals before their spread to humans could result in a catastrophic loss of human life.

Additionally, as food animal operations become more centralized, there is even greater risk of a single disease spreading throughout an entire herd that could easily number in the tens of thousands, prompting an outbreak of enormous proportion that would require veterinarians' talent, experience and expertise to contain and eliminate.

There are ways of addressing this problem, however, and we need look no further than the promise behind the Veterinary Public Health Workforce Expansion Act. This Act would create a competitive grants program designed to produce more veterinarians working in public health practice and enhance our capacity for research on diseases that threaten public health and food safety.

Mr. Chairman, the AVMA fully supports the Veterinary Public Health Workforce Expansion Act.

The shortage of veterinarians working in food supply and public health positions poses a threat to our country's security. Though the federal budget is strained, national investment in our veterinary colleges and our capacity in zoonotic and food animal disease research is necessary. The potential costs of failing to make this investment far exceed the cost of the investment itself.

Mr. PALLONE. Thank you. Dean Kelly.

STATEMENT OF ALAN KELLY, B.V.SC., M.R.C.V.S., PH.D., DEAN EMERITUS, UNIVERSITY OF PENNSYLVANIA, SCHOOL OF VETERINARY MEDICINE, NEW BOLTON CENTER, KENNETT SQUARE, PA

Mr. KELLY. Chairman Pallone and members of the Health Subcommittee, thank you for giving me the opportunity to testify before you today. I would like to take the opportunity of thanking Congressman Baldwin and Congressman Pickering for the support of the bill. My name is Dr. Alan Kelly. For 12 years I was dean of the School of Veterinary Medicine at the University of Pennsylvania, and I have been on the faculty at Penn for 45 years. Let me start by saying that the veterinary profession provides an extraordinary and important link between agriculture and human medicine. Our testimony presents the case for increasing enrollment in the nation's 28 veterinary schools and is largely driven by public

concern over the safety of the food supply and the security from diseases that are communicable from animals to humans such as avian influenza and SARS.

In my written testimony, I describe the background of the Workforce Expansion Act, starting with the Veterinary Medical Education Act of 1966 that recognized the need to upgrade aging facilities to increase enrollment in the nation's veterinary schools. As a result, enrollment increased by approximately 1,000 students per year between 1963 and 1983. Since that time enrollment in U.S. veterinary schools has remained more or less flat at about 2,400 students per year. As a result, veterinary schools are very difficult to get into. For example, at Penn this year we received 1,500 applicants for 112 places, and now 1,200 American students are obtaining veterinary education overseas and this number is growing.

This number represents more than 10 percent of the total enrollment in veterinary schools in this country. Veterinary public health and safety begins on the farm. For the past 30 years American livestock and poultry production has undergone dramatic changes with consolidation and integration of the poultry and swine industries into large production units that use less veterinary services per animal than in more traditional farming. The dairy industry is undergoing the same trend. Small dairy farms are going out of business and the number of herds of over 1,000 milking cows is increasing rapidly. With the increased size of herds the amount of veterinary services is declining, and it is increasingly difficult for farm animal veterinarians to survive in the rural setting.

As a consequence of this shift, large areas of the United States are now without veterinary coverage. The decrease threatens to undermine the nation's capacity to protect animal and human health and to respond to potential emergencies should they arise. As my colleagues have described veterinarians employed in multiple ways in the Federal and state governments to insure the safety of the food supply from farm to fork as well as the safety of imported foods and live animals. Veterinary schools are not able to meet present needs, and let me give you some examples. The average age of USDA Food Safety Inspection Service veterinarians is 54 and approximately 500 USDA veterinarians are expected to leave in the next 5 years.

Even with replacement of retirees the veterinary services division of the Animal and Plant Health Inspection Service project a shortfall of 298 veterinary offices by 2011. The Center of Disease Control and Prevention estimates the needs of 200 specially trained veterinarians in the next decade. The U.S. Public Health Service has more than 50 unfilled positions and 50 percent of the present U.S. Public Health Service veterinarians are now eligible for retirement. To maintain its current defective strength the U.S. Army Veterinary Corps which has responsibility for the safety of food supplies to the military requires an additional 45 new veterinarians each year. There is an acute shortage of lab animal veterinarians which threatens research activity not only in the pharmaceutical industry but also in health-related research in the nation's universe of these research institutions.

Veterinary pathologists are critically important to the U.S. drug and chemical industries and to diagnostic labs. In the U.S.A. today

there are 1,300 board-certified veterinary pathologists. Currently there are 90 open positions and in the next decade this number is projected to increase to 300 to 500 and fill positions because of increased demand. To meet these needs projections are that the U.S. veterinary schools must graduate over 420 more veterinary students per year. In addition, because of the sophistication of clinical and research training now required slots for 219 more graduate students are needed. The schools need additional faculty and funding for capital improvements to be able to fulfill these needs. Draining and basic research must also be expanded especially in immunology and infectious disease research and food safety.

Infectious diseases research is of special importance for veterinary schools since most of the new and emerging infectious diseases that have appeared in the last 15 years and affect humans have come from reservoirs of infection in wildlife. As people intrude further and further into wildlife areas and as unregulated live animal markets and the sale of bush-meat continues, more and more of these diseases will emerge to threaten the global community. It is here that a partnership must be forged between human and veterinary public health as one health to control the spread of these infections and to sustain the safety of Americans and their food supply. Thank you for your attention.

[The prepared statement of Mr. Kelly follows:]

“H.R. 1232 Veterinary Public Health Workforce Act of 2007”

Submitted by Dr. Alan M. Kelly, Dean Emeritus, School of Veterinary Medicine, University of Pennsylvania, for testimony before the **Subcommittee on Health of the House Committee on Energy and Commerce** on Wednesday, 1/23/08

Congressman Pallone and members of the Health Sub-Committee, thank you for giving me the opportunity to speak to you today. I am Dr. Alan Kelly, for 12 years I was dean of the School of Veterinary Medicine at the University of Pennsylvania. I remain on the faculty and am presently putting together a master’s degree program in veterinary public health at the School.

The veterinary profession provides an extraordinary, and increasingly important link between agriculture and human medicine. As rated by state government experts, public concern over food safety is the number one factor that influences an increased demand for food supply veterinarians.

Veterinary medicine encompasses a number of distinct fields of clinical practice including the care of livestock, poultry, and farm raised fish, companion animals (cats and dogs, pet birds), horses, ecosystem health including conservation medicine and wildlife biology, public health, laboratory animal care, industrial medicine, and scientific research. The list of responsibilities continues to expand and it is not surprising that veterinary schools face a difficult challenge in producing sufficient numbers of graduates with appropriate depth of competence across the full range of services the profession is called upon to provide.

In the past decade there has been a convergence of animal, human, and environmental health issues that has created a crisis in veterinary medicine and in the Nation's overall health infrastructure. Unprecedented changes are occurring in food animal production and health, human and livestock demographics, patterns of disease, concerns for animal well-being and welfare, antibiotic resistance, environmental and wildlife health, and biotechnology. These are reviewed in the testimony and are all issues for which the veterinary profession must assume responsibility. To respond, veterinary schools must offer new curricula and new patterns of clinical training but they can not do so with the present limited facilities.

Education and Training of Veterinarians

Attaining a DVM degree requires at least 2 years and usually 4 years of undergraduate preparation followed by the professional curriculum that extends over 4 years. This is very similar to human medicine with the key difference being that internship is not required prior to licensure in veterinary medicine. DVM programs are uniformly subjected to accreditation by the American Veterinary Medical Association which sets standard requirements for accreditation including physical facilities and equipment, clinical resources, faculty, curriculum, and research programs. The United States presently has 28 schools of veterinary medicine.

Table 1 depicts the growth in numbers of veterinary colleges in the United States from 1968 to the present.

<u>Year</u>	<u>Number of Vet.Colleges</u>	<u>Number of Students Graduated</u>
1968 - 1969	18	1129
1969 - 1970	18	1124
1970 - 1971	18	1148
1974 - 1975	18	1408
1979 - 1980	23	1847
1984 - 1985	26	2155
1989 - 1990	27	2128
1994 - 1995	27	2135
1999 - 2000	27	2242
2004 - 2005	27	2306
2006 - 2007	28	2478

After the second world war, the nations needs were served by 18 veterinary schools that graduated slightly more than 1,000 students per year. It became increasingly clear to veterinary school deans at the time that this limited output was not meeting the needs of the Nation and that investments had to be made in personnel and physical facilities of the existing schools and new schools had to be established. After intense lobbying in Congress this need was recognized and in 1966 Dr. Philip Lee, assistant secretary for health and human services at HEW, stated,

We recognize the substantial contributions made by veterinarians to both animal health and human health. We also recognize that there is a manpower shortage in the field of

veterinary medicine as there is in most health manpower fields. Therefore, we would not object to amending the Health Professions Educational Assistance Act to allow grants for construction of veterinary medical teaching facilities and loans to students of veterinary medicine.

As a result of this and other testimony, the Veterinary Medical Education Act (VMEA) was passed in 1966 that permitted existing schools of veterinary medicine to expand their facilities and enrolments and also helped to establish 11 new veterinary schools between 1963 and 1983. Numbers of new graduates increased by approximately 1,000

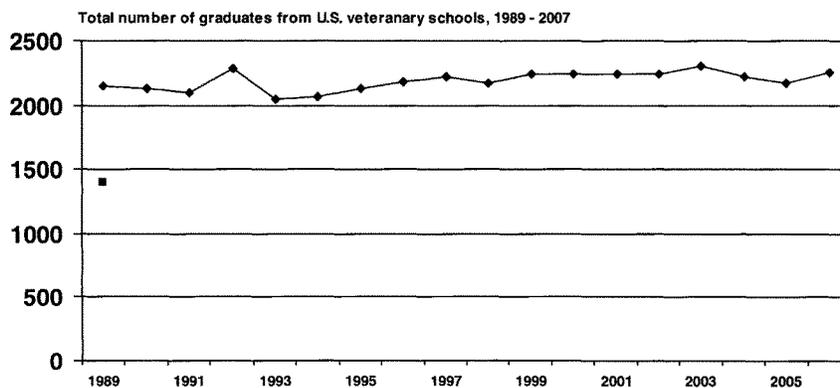


Figure 1 illustrates the numbers of new graduates from the Nations 28 veterinary schools between 1989 and 2006, it is flat! The reasons there has been virtually no increase in numbers of graduates are the same as they were in 1966, veterinary

schools have expanded as much as possible but most are operating with an old physical plant that constrains them from increasing their enrollment further. It is the physical plant that limits further expansion of student enrollment. Now, 40 years after passage of the VMEA, we respectfully request funds to update existing facilities in order to enroll more students, to increase faculty to educate these students, and for research laboratory space to conduct veterinary research.

Enrollment in US veterinary schools has been more or less static for the past 20 years yet the Nation's population has grown from 240 million to over 300 million during the same period. More students are applying for admission and there is the reputation that veterinary schools are harder to get into than medical schools. All schools are experiencing large and increasing numbers of applicants. At the University of Pennsylvania for example, we receive some 1500 applicants for 112 places. Because of the restricted opportunities, American students are increasingly going overseas for their veterinary education. Presently, over 1200 American students are receiving their veterinary education overseas at schools in the Caribbean, the United Kingdom, Australia and New Zealand. This number exceeds 10% of the total student enrollment in U.S. veterinary schools.

Responsibilities of the Veterinary Profession.

Table 2, shows the AVMA membership by employment.

	<u>1990</u>	<u>2006</u>
Private practice	%	%
Large animal exclusive	4.5	1.7
Large animal predominant	11.6	7.4

Mixed animal practice	8.7	7.8
Small animal exclusive	54	66.2
Small animal predominant	13.8	10.1
Equine	4.4	6
<u>Other private practice</u>	<u>2.8</u>	<u>0.6</u>
Public and Corporate	%	%
College & university	43	41.9
Federal Govt	21	12.4
State/Local Govt.	6.9	7.7
Uniformed services	6.9	4
Industry	12.1	21.9

Farm animal practice.

In the past 30 years, American livestock and poultry production has undergone dramatic changes with greatly increased consolidation and integration of the poultry and swine industries into large production units commonly known as concentrated animal feed operations or CAFOs. Whereas these industries were at one time distributed across the country, they are now concentrated into several geographic areas, the chicken industry in the Delmarva Peninsula, Alabama, and Georgia for example and the swine industry in North Carolina and Iowa. As a result, the demand for veterinary services by these industries has also become geographically focused. CAFOs use less veterinary services per animal than was the case in the more traditional forms of production and the numbers of veterinarians associated with

these industries has dramatically declined though they remain important to the industry overall. The responsibilities of the veterinary profession towards food safety remains paramount, consumer are worried about Salmonella, campylobacter, avian influenza, and multidrug resistant organisms that may arise in these concentrated units and must be monitored. Additional responsibilities of the profession now involve the volume of manure that is produced in a concentrated area, and its impact on wildlife and on the environment. It is these concerns have spurred the growth of organic methods of production that are rapidly expanding in the U.S.

Consolidation of the dairy industry into large milking herds is also taking place driven by economies of scale and razor thin profit margins. Many small dairy farms have gone out of business making it difficult for large animal and mixed animal practitioners to survive in the rural setting. Training veterinarians to serve an industry that ranges from 20 to 25,000 cows as well as organic methods of milk production requires differing skills and a broader curriculum.

Clinicians whose primary source of income was from the dairy industry, also provided care for farmers in the beef, sheep, goat industries. With dairy vets in decline, a whole rural veterinary public health infrastructure is in jeopardy and the consequences for rural America are profound. Surveillance of livestock health and welfare in large parts of the country is left vacant. This obviously places the U.S. in a precarious situation, not only in health surveillance but in manpower needs should an accidental or malicious emergency arise. With increased globalization of trade in food and greater access to foreign animal markets, the opportunities for foreign diseases to gain a foothold in the United States are larger than ever before. Veterinary schools

and the profession have to invent new methods of surveillance of livestock, poultry, and wildlife, probably using remote sensing and digital technologies, to provide the infrastructure of veterinary public health and response. All of this requires research and translation into the field.

3 Federal and State Veterinarians

In view of the above concerns for disease surveillance and control, it is troubling that numbers of veterinarians employed by the Federal Government has declined by 40% since 1990 (Table 2) while remaining static in state public health services. One, estimate projects that if there were a serious animal health crisis involving a highly contagious disease, approximately 6,000 more federal and state veterinarians would be needed.

Veterinarians are employed in multiple ways in the Federal Government to ensure the safety of the food supply, including the safety of imported foods and live animals. They are needed in Federal veterinary diagnostic labs at the CDC, USDA, FDA, DHS, and the Department of the Interior, as well as at state and local public health labs, at food testing labs of the FDA and others responsible for testing the safety of the food supply, at environmental labs with capabilities for testing water and other environmental samples, and at the USGS for surveillance of wildlife.

The average age of USDA FSIS veterinarians is 54 and approximately 500 are expected to separate from the USDA in the next 5 years. Veterinary Services within Animal Plant Inspection Service project a shortfall of 298 veterinary officers by 2011. The Center for Disease Control and Prevention estimates a need for 200 specialty

trained veterinarians in the next decade, the USPHS has more than 50 unfilled positions and 50% of the present USPHS veterinarians are now eligible for retirement. To maintain its current effective strength, the US Army Veterinary Corps requires an addition of 45 new veterinarians each year. Overall, projections suggest that to satisfy only current needs in population health and public practice will require more than 500 of the 2,400 available U.S. graduate students each year.

The volume of work and problems confronting Federal veterinary public health services is illustrated by the following:

In 2006, over 27,000 nonhuman primates were imported into the United States, primarily for research. NHP import is highly restricted by CDC.

100% of imported NHPs are inspected on entry and required to undergo a minimum 31 day quarantine period on the importers' premises.

An unknown number of dogs are imported into the United States each year, but it is estimated to be over 200,000 annually. Likely, only a fraction of dogs are inspected on entry, especially at land border crossings. Recently, there has been a documented increase in the number of young puppies (too young for rabies vaccinations) being imported from rabies-enzootic countries, presumably for commercial sale.

Because the Nation must be prepared for restricting access and diagnosing animal diseases, greater numbers of graduates from veterinary schools are needed together with a large investment in post-graduate education. In public health alone, Dierks et al (J. Vet. Medical Education, 34, 529 – 537, 2007) project needs of 121 postDVM students per

year in animal health and food safety, and 151 in population medicine, public health and epidemiology.

In response to the shortfalls, 17 schools of veterinary medicine have either instituted new programs or expanded existing programs in veterinary public health with enrollment of a significant number of students. Epidemiology, preventive medicine and public health course offerings have been expanded but many of the programs rely on shared course work with schools of public health. These schools bring strength to the programs but the focus of the latter is naturally towards human health, chronic disease, diabetes, and social issues such as family violence, undeniably important topics but of limited relevance to issues of veterinary public health. Veterinary schools must now find the resources to train faculty and expand course offerings in the essential disciplines of veterinary public health.

4 Industry

Since 1990 the number of veterinarians in industry has increased by 40%, much of the increase has been in technical services offered by pharmaceutical companies.

Veterinarians provide a number of other essential services to industry. These include:

- a) Lab animal medicine veterinarians are responsible for the care and health of laboratory animals used by industry in drug trials and research. This includes caring for many species including rats, mice, dogs, and primates. Lab animal veterinarians are certified by the American College of Laboratory Animal Medicine. Much of the training takes place at the post-graduate level but the numbers entering the field is not adequate to meet the needs. Currently there are 50 unfilled positions with 25 at the director level.

b) Veterinary anatomic and clinical pathologists are responsible for monitoring the response of lab animals to pharmaceutical and chemical agents in drug trials, in drug discovery, and in research. Veterinary pathologists are board certified by the American College of Veterinary Pathology which has a membership of 1300 diplomats. A 2002 employer and training program survey confirmed a critical shortage of existing veterinary anatomic and clinical pathologists, and predicted the situation would worsen in the future due to continuing deficit in supply, increases in demand, and retirements in the current workforce. Presently there are 90 open positions for veterinary pathologists in academia and industry. In the next 10 years this number is projected to increase to 300 to 500 open positions. Much of the advanced training for this specialty takes place in veterinary schools and will need additional board certified faculty

5 Academia and research.

Veterinary academia is challenged to expand curricular offerings in the face of unprecedented changes in the demands now placed on the profession. A survey by the American Association of Veterinary Medical Colleges (AAVMC) estimated that member institutions need an additional 483 faculty at a start-up cost of \$300,000 each to equip research labs, together with on-going salary. Projections are that U.S. veterinary schools must graduate 423 more veterinary students per year to meet the needs. Because of the sophistication of clinical and research training now required additional slots for 290 graduate students are also required.

Funding for advanced training should include residency programs in food animal medicine, and support for post graduate training in public health and wildlife biology. Training in basic research must also be expanded especially in immunology, infectious disease research including parasitology and microbiology, vaccines, food safety, genetics, animal models of human disease, oncology, and toxicology, epidemiology, and population biology. Infectious disease research is of special importance to veterinary schools since most of the new and emerging infectious diseases that have appeared in the past 15 years and infect humans (West Nile virus, Hanta virus, Nipah virus, BSE, SARS, monkey pox, avian influenza) have come from reservoirs of infection in wildlife. As people intrude further into wildlife areas and as unregulated live animal markets and the sale of bush-meat continues, more of these diseases will emerge to threaten the global community. It is here that the essential link between human and veterinary public health must come together to control the spread of these infections.

Mr. PALLONE. Thank you, Dean Kelly. Dr. Allen.

STATEMENT OF SHEILA W. ALLEN, D.V.M., M.S., DEAN, COLLEGE OF VETERINARY MEDICINE, UNIVERSITY OF GEORGIA, ATHENS, GA

Dr. ALLEN. Good morning, Chairman Pallone, Congressman Deal, and members of the subcommittee. It has been my privilege to be involved in educating future veterinarians at the University of Georgia for 27 years. My testimony will focus on what veterinary colleges are doing to address the manpower shortage and why our Federal government should assume some of the responsibility for addressing this critical shortage. The demand for enrollment in U.S. colleges remains high and the interest among students in public service and food animal medicine is strong. Young people pay attention to the news and they recognize the threat to human health that is posed by the prevalence of animal pathogens and would like to help meet this challenge. We are admitting students with interest in public health, nurturing that interest while they are in school and providing incentives such as scholarships and loan forgiveness programs.

As a result of these and other incentives veterinary graduates are entering careers in which the shortage exists. At the University of Georgia, more students entered public health, food animal practice, and biomedical research careers in last year's graduating class than ever before. Although we are pleased with this progress the harsh reality is that it will not come close to filling the need. We must increase enrollment in our veterinary colleges. Feasibility studies conclude that it is cost prohibitive to establish new colleges of veterinary medicine. As a result, many of the states that do not have a veterinary college partner with an existing college in another state to provide a veterinary education for their citizens. Examples include Nebraska's partnership with Iowa State University, and the relationship between South Carolina, West Virginia, and Delaware with the University of Georgia.

Each college's annual cost of educating a veterinary student ranges between \$55,000 and \$65,000 per year per student. With the average yearly tuition paid by the in state student being 15,000 and the out of state student 29,000 the balance must be paid by the state supporting these institutions at an average state appropriation of over \$20 million per year. The average annual cost assumed by each student to attend veterinary school including tuition, books, and living expenses is \$37,000 for in-state residents and \$53,000 for out-of-state residents. It is no wonder that the average educational indebtedness after completing the 4-year program is over \$100,000. We cannot rely exclusively on tuition increases to pay the escalating costs of operating a veterinary college much less expanding them.

To do so would exacerbate the student's debt burden and further diminish the number of graduates who can afford to enter underserved careers in public service, biomedical research, and rural practice. State governments continue to pay the recurring expenses involved in running a veterinary college, all of which are escalating rapidly. What we need help with is construction to expand our colleges. We need larger classrooms, larger instructional laboratories,

and expansion of all the support areas that increased enrollment requires. Most U.S. colleges have major capital expansion projects proposed to their state legislatures. Even if all were fully funded, we cannot increase our enrollments sufficiently to meet the needs of the future. Our Federal government has recognized its responsibility to protect the health of the nation by establishing the National Animal Health Laboratory Network, diagnostic laboratories that are dedicated to the disease surveillance of animal populations.

The proposed National Bio and Agroterrorism Defense Facility or NBAF is another example of our Federal government assuming the responsibility of protecting our nation's animal resources. Unless we work together to expand the capacity for training more veterinarians there simply won't be enough qualified veterinary professionals to work in these federally funded facilities. What we are proposing is a competitive grants program that will administer awards to institutions that are devoted to graduating more veterinarians who will enter fields of veterinary medicine that are of vital importance to the health of our nation. The institution's awarded funds will be expected to document that the enrollment increase resulted in more graduates entering fields of public health importance. We expect to be held accountable for demonstrating this desired outcome.

I hope we have explained the vital role that veterinarians play in keeping the interface between people and animals a healthy one. Whether that interface is the milk we drink, the eggs and meat that we eat or the wildlife in our forests veterinarians play an important role in insuring that animal disease are monitored for, detected earlier, and hopefully prevented so they don't threaten the well being of people. We believe that increasing the number of veterinarians devoted to this work is vitally important and that the U.S. government should contribute towards this national priority. I thank you for your time and attention, and I also thank Congresswoman Baldwin, Congressman Pickering, and Senator Allard for their leadership in this effort.

[The prepared statement of Dr. Allen follows:]

TESTIMONY OF SHEILA W. ALLEN

Good morning Congressman Pallone, Ranking Member Deal, and members of the subcommittee. I am Dr. Sheila Allen, dean of the College of Veterinary Medicine of the University of Georgia. It has been my privilege to be involved in training future veterinarians at the University of Georgia for 27 years. I thank you and the subcommittee for the opportunity to speak to you today about the Veterinary Public Health Workforce Expansion Act. This legislation is vital not only to the future of the veterinary profession, but to the health of our nation. My colleagues Drs. DeHaven and Pappaioanou have outlined the many critical roles that veterinarians play in protecting people from diseases transmissible from animals to man, whether that transmission occurs by direct contact (such as highly pathogenic avian influenza), from ingestion of contaminated food or water (such as E. coli 0157 or salmonella), or through insect borne means (such as West Nile virus). They and Dr. Kelly also have described the workforce shortage that already exists in the federal agencies devoted to this important work. My testimony will focus on why the federal government should assume some of the responsibility for expanding the capacity of US Colleges of Veterinary Medicine to help address this critical shortage.

There are currently 28 Colleges of Veterinary Medicine in the United States, supported by 26 states. The states that do not have a College of Veterinary Medicine have contracts with existing colleges to provide a veterinary education for their citi-

zens. Many of these states have conducted feasibility studies to determine what it would take to establish a College of Veterinary Medicine, and all have concluded that it is cost prohibitive. It is much more cost effective to expand existing colleges to meet the demand for enrollment and the market for veterinary graduates than to build new schools. Many of the states that do not have a College of Veterinary Medicine, yet have a high demand for enrollment among its citizens, have chosen to partner with an existing College in another state to provide funds to allow those Colleges to expand. Examples of such partnerships include Nebraska's partnership with Iowa State University, and the relationship between South Carolina and the University of Georgia.

The demand for enrollment in Colleges of Veterinary Medicine in the US remains high. The interest among our students in entering careers in public health, biomedical research, and food animal medicine is strong. Young people pay attention to the news and recognize the threat to human health that is posed by the prevalence of animal pathogens, and would like to be part of the veterinary workforce that will meet this challenge. Colleges of Veterinary Medicine are trying to address the shortage by admitting students with these interests, nurturing that interest while in veterinary school, and providing incentives such as scholarships and loan forgiveness programs. Students who pursue a masters of public health or doctoral research degree programs are awarded stipends to minimize the added cost of obtaining such training. As a result of these and other incentives, veterinary graduates are entering these careers in which a shortage exists. At the University of Georgia, more students entered public health, food animal practice, and biomedical research careers from last year's graduating class than ever before. Although we are pleased with this progress, the harsh reality is that it will not come close to filling the need. In order to preserve the health of our nation and its animal resources, we must have an overall expansion of enrollment in our veterinary colleges.

Some of the most severe shortages in veterinary workforce are in those fields devoted to protecting public health: food safety and food animal practice, public health officials, and biomedical research. The federal government has recognized its responsibility to protect the health of the nation by establishing the National Animal Health Laboratory Network, which is a network of diagnostic laboratories dedicated to the disease surveillance of animal populations. The proposed National Bio and Agroterrorism Defense Facility (NBAF) is another example of our federal government assuming the responsibility of protecting our nation's animal resources. Ladies and gentlemen, unless we work together to expand the capacity for training more veterinarians, there won't be enough qualified veterinary professionals to work in these federally funded facilities.

The states that have Colleges of Veterinary Medicine have invested heavily to educate veterinarians who will serve society, and will continue to do so. The average annual operating budget for a veterinary college is \$56 million. Colleges of Veterinary Medicine estimate the annual cost of educating a veterinary student to be \$55,000 to \$65,000 per year per student. With the average yearly tuition paid by the in-state student being \$15,000, and the out of state tuition average being \$29,000, the balance is paid by the states supporting these institutions, at an average state appropriation of \$20 million per year.

The average annual cost assumed by each student to attend veterinary school, including tuition, books, and living expenses is \$37,000 for in-state residents, and \$53,000 for out of state residents. It is no wonder that the average educational indebtedness after completing the four-year program is over \$100,000. We cannot rely exclusively on tuition increases to pay the escalating costs of operating a veterinary college, much less expanding them. To do so would exacerbate the students' debt burden, further diminishing the number of graduates who can afford to enter underserved careers in public service, biomedical research, and rural practice for which the financial compensation is less than in suburban private practice and specialized veterinary medicine.

State governments will continue to assume the ongoing costs of paying faculty and staff, facility maintenance and utilities, and all the other recurring expenses involved in running a veterinary college, all of which are escalating rapidly. We also will continue to award scholarships and administer loan forgiveness programs for students who pursue careers of great need in our profession. We will continue to place emphasis on admitting students who demonstrate a desire to pursue underserved career paths. What we need help with is capital construction to expand our colleges. We need larger classrooms, larger instructional laboratories, and an expansion of all the student support areas an increased enrollment requires (locker rooms, computer labs etc.). Most US Colleges have major capital expansion projects proposed to their state legislatures. Even if all were fully funded, we cannot expand our enrollments sufficiently to meet the needs of the future.

House Resolution 1232 seeks federal assistance to expand the infrastructure in existing Colleges of Veterinary Medicine so that more students can be trained to enter careers that are vital to our nation's health: animal and human. What we are proposing is a competitive grants program. The grants will be awarded to institutions that are devoted to graduating veterinarians who will enter fields of veterinary medicine that are of vital importance to the health of our animal resources, our environment, and ultimately our citizens. The institutions awarded funds will be expected to document that the enrollment expansion resulted in more graduates entering fields of public health importance. We expect to be held accountable for demonstrating this desired outcome.

I hope we have explained the vital role that veterinarians play in keeping the interface between people and animals a healthy one. Whether that interface is the milk we drink, the eggs and meat we eat, or the birds in our backyard bird feeder, veterinarians play an important role in ensuring that animal diseases are monitored for, detected, and hopefully prevented so they don't threaten the well-being of people. We believe that increasing the number of veterinarians devoted to this work is vitally important, and that the US government should contribute toward this national priority.

Thank you for your time and attention. I'll be happy to respond to any questions you may have.

Mr. PALLONE. Thank you, Dr. Allen, and thank all of you. We will have questions for the panel now, and I will start out with myself and I am going to start out with Dean Kelly. When you took me for the tour of the New Bolton Center it was painfully obvious that there were many infrastructure needs there. I had no idea how many buildings, you know, how much in terms of resources it takes to just maintain the farm campus or whatever it is, and of course I am looking at U Penn, which I assume is probably, I could be wrong, but I assume is probably one of the wealthiest of the veterinary schools, and yet there were so many needs. But of course the opposite side of that is we have all kinds of needs here, you know, whether it is doctors, veterinarians, nurses, whatever, so I wanted to ask a couple of—a few questions that sort of maybe are in the negative, if you will.

You talked about how there is an increasing number of overseas schools and veterinarians being educated there. One could sort of assume that so what, OK, let them be educated overseas. It doesn't cost us much. Let the states continue to pay the cost or maybe we can get wealthy benefactors to contribute, and then there is the other issue about why do veterinarians have to perform these public health functions. Maybe they can be performed by people that aren't educated to that degree. Why do we need the Federal government to step in and why do we need to have more veterinarians for these public health purposes.

So I am asking that in the negative. If you want to respond to all that because these are some of the questions that come up.

Mr. KELLY. So far as the students going overseas, one of the characteristics of veterinary education is that it is by states and it revolves around the type of agriculture there is in a state so the type—Pennsylvania, for example, we have a large dairy industry so a lot of our large animal education is focused on the dairy industry. In Texas it is the beef industry. If you go overseas, you are looking at a totally different type of agriculture and actually a totally different type of education that they will get which is not necessarily relevant to this country, and they certainly are not going to get the type of education in public health that we would recommend.

Now so far as why veterinarians are concerned, let me give you one example, and it focuses on Britain in relation to the Foot and Mouth disease outbreak that occurred there a few years ago where epidemiologists who were not veterinarians designed the plan for eradicating the disease. Because they didn't understand the disease and the type of transmission that that particular strain of Foot and Mouth disease, it is probable that at least 5 million animals that did not need to be destroyed were destroyed, and that is where you get the figure of \$10 million. As a veterinarian, you have to understand the interplay between disease and the animal population and how it should be best handled, how you would best limit the spread of a disease.

These are the reasons why knowledge of animal health, animal physiology actually, probably the most important thing is understanding animal physiology. That is the training that a veterinarian has and other people don't have. It is critically important and that is understanding the issues that we are confronted with.

Mr. PALLONE. I know Dr. Allen mentioned the state support but what about those other 2 aspects? In other words, why not just let the states continue to support this, why does the Federal government have to be involved? And what about just getting the big private benefactors. You know, there are all these people out there that love animals. They can just give us millions of dollars. I don't really believe this is happening but I want a response.

Mr. KELLY. Well, so far as private benefactors are concerned, they are interested, and you saw New Bolton Center and we have a large equine clinic, a lot of that is supported by private benefactors who are interested in the horse. They have money and they want to provide the best quality care for horses. They are not interested in public health, and you will not be successful in raising funds from the private sector for public health. It just won't happen, I can tell you. So far as the states are concerned Pennsylvania, Congressman Pitts has been very generous to us when he was in the state legislature in supporting us to the extent that they are able. We are a private institution. We don't get capital funds from the state.

And I think in large measure the states have done as much as they possibly can but these are very large numbers and the state budgets are not able to go further.

Mr. PALLONE. And I assume from what Dr. Allen said that creating new veterinary schools would even be more expensive than using this money for infrastructure needs to create more public health purposes at the existing ones, I am a little prejudiced because being from New Jersey, I have always thought it would be great for Rutgers to have a veterinary school, and I would still like to see that some day but I just wanted your response. I assume it is just a lot more expensive to build new schools as opposed to create slots at existing ones.

Dr. ALLEN. That is correct. A feasibility study was done by the State of Connecticut for the very reason that you suggested. They wanted to have a veterinary school there and they quickly realized that the capital construction costs and the annual operating budget were not something that the state was prepared to embark upon, and so they are looking for other schools to expand their enroll-

ment and accept their students. The State of South Carolina is doing the same thing. They are growing rapidly and have asked the University of Georgia to expand the enrollment of South Carolina citizens in our college because they recognize that it is cost prohibitive for them to develop their own veterinary college.

Mr. PALLONE. OK. Thank you. Mr. Deal.

Mr. DEAL. Thank you. This bill that we are considering is an amendment to the Public Health Safety Act and that has part to do with jurisdiction of this committee and part the focus of what the legislation directs the capital money that would be authorized to be used for, namely, aimed at public health service roles by veterinarians. One of the concerns that people have expressed is how does a college of veterinary medicine segment capital funds for the purpose of giving emphasis to the public health arena. And, Dr. Allen, I would ask you that question because you mentioned that your number of graduates last year at the University of Georgia vet school that were going into this area that this bill is designed to emphasize increased. How would you convince somebody in a competitive grant environment that you were doing that and what percent of those graduates last year went into this area?

Dr. ALLEN. Well, a number of things have been done at the University of Georgia and other veterinary schools to increase the number of students or graduates who are entering these fields. For example, we started a food animal veterinarian incentive program, and what this does is identifies student in high school who have a demonstrated interest in food animal food safety questions and give them early admission to veterinary college as they are mentored through their undergraduate career. That is one example. The number of colleges that have developed combined DVM, MPH or Master's of Public Health degree programs has gone from 6 to 16 in recent years because the colleges recognize that it is important to encourage students to enter these careers.

At Georgia we provide scholarships for those students to diminish the financial burden for them to enter these careers so—

Mr. DEAL. Does it give preference to this area of the public health sector or is it across the board?

Dr. ALLEN. Yes, sir, it does. And what has resulted is we have more students going in these areas, and I think those institutions that are awarded this competitive grants program must be held accountable to show that the overall increase in the expansion of their facility will result in more students going in these careers.

Mr. DEAL. What percentage of your last year's graduates went in this area?

Dr. ALLEN. We had over 10 percent last year go in public health, lab animal, these types careers, but we had more students go into large animal and mixed animal practice than ever before. So we are very encouraged by that.

Mr. DEAL. Pardon the intended pun but there is concern that we don't want this to all go to the dogs.

Dr. ALLEN. Understood.

Mr. DEAL. The University of Georgia not included in that. That literally is one of the concerns obviously is to focus the training of veterinarians in the areas that we are concerned with, and in that regard, Dr. DeHaven, as you are aware there is a companion, if you

would, provision in the Farm Bill, as I understand, that is in conference now that comes from a little different jurisdictional point of view. What is your opinion as to whether we need this with this emphasis from public health as a companion to or as an augmentation to what may come out of the Farm Bill? Would you comment on that, please?

Dr. DEHAVEN. Yes, Congressman Deal, thank you for the question. I think it is one that needs to be clarified. While we are not responsible for it both the AVMA and the AVMC, the Association of Veterinary Medical Colleges, support the Farm Bill language, and we think that is because the Agriculture Committees recognize that indeed there is a shortage of food animal practitioners, those veterinarians in the field that provide the hands-on care to our production food animals. So while there is certainly a connection or an apparent overlap you can't separate food animal practice from food safety and public health. They are inextricably linked as we have already talked about. It would be most likely those food animal practitioners in the field that would be the first to see and diagnose a new or emerging disease or foreign animal disease in our nation's livestock, so the two are very closely linked.

We want to make sure that the language in the Veterinary Public Health Workforce Expansion Act and the Farm Bill language would compliment each other as opposed to any conflict or duplication of effort so while we recognize again this inextricable linkage between production farm animal practice and public health veterinary medicine, we would be anxious to work with the committee to insure that there is not unnecessary duplication or conflict between the 2 pieces of legislation.

Mr. DEAL. Thank you, Mr. Chairman. I will yield back.

Ms. BALDWIN [presiding]. I will now recognize myself for questioning. Dr. Poppaioanou, we know now with the global economy there is a lot more movement of people traveling across the globe and public health threats don't adhere to national borders. I am wondering how the U.S. Public Health Veterinary Workforce compares to that of other nations and how we play a role in identifying and monitoring zoonotic diseases abroad. Does our veterinary shortage affect our capacity to assist other nations in conducting surveillance?

Dr. PAPPALIOANOU. Thank you very much for that question, Congresswoman Baldwin. I think the Centers for Disease Control and other agencies in the Public Health Service and the Department of Health and Human Services are a model really for other countries. Several other countries in Europe have actually formed like CDC agencies because of the very special role that CDC and its sister agencies play in the United States. And veterinarians, and they see the role that veterinarians play actually working side by side with physicians, with nurses, with statisticians as part of the public health team in conducting food borne and outbreak investigations, other zoonotic disease outbreaks, the surveillance that you have mentioned actually working in disease prevention and control, the CDC veterinarians actually have been a part of our nation's international response teams on the SARS, monkeypox, and Avian highly pathogenic H5N1 Avian Influenza outbreaks working as part of the WHO multi-national teams that were sent out to the field.

Our veterinarians also have worked, for example, they led surveillance efforts at the Olympics in Greece. I don't know for certain but I wouldn't be surprised that they are right there working and planning, helping the Chinese, so they really do play a role. Other nations have looked to what occurs in the United States, the training that we get. Veterinarian participation in the EIS program at CDC, right now I think it is close to 250 veterinarians have graduated from that program, and so we really are showing the way of one health, if you will, of really linking human and animal health.

Ms. BALDWIN. Continuing on this vein, I know that in Congress we are aware that we ought to act in preventative ways but often times we don't act until the crisis is upon us so I am going to give you all a chance to maybe scare us a little bit into thinking about how important it is to take early steps. But focusing in on the pandemic flu, Avian flu, this subcommittee and in fact the full Energy and Commerce Committee has been told by experts who have appeared before us before that it is a matter not if but when we will see some sort of pandemic occur. And animal surveillance clearly will be critical to early identification of a more dangerous strain of H5N1. The earlier identified the strain the better our chances of containing an outbreak and beginning production of a pandemic vaccine, and we know that veterinarians are integral to these surveillance efforts.

If you could just talk to our subcommittee a little bit more about the role of public health veterinarians, the role that they will play in the diagnosis of Avian flu, and if a highly pathogenic Avian influenza were introduced into the U.S. how would veterinarians work with other public health officials to help control the disease, minimize loss of life, and economic loss in this country?

Dr. PAPPAYOANOU. I will begin, I guess. There are a number of ways that public health veterinarians can make a huge impact in this area. The true prevention of a pandemic influenza comes with the prevention and control of Avian influenza in poultry. That is truly where the prevention of a pandemic is period. And recently just as an example about a year and a half ago I was in Vietnam actually working on a joint Avian influenza project that the University of Minnesota was embarking upon with Vietnam, and they asked if University of Minnesota's College of Veterinary Medicine could work with their veterinary school to develop curricula and training on Avian influenza because the veterinarians in Vietnam actually received very little training on poultry disease and health, and so this was a way, and many countries in Asia actually are looking to partner with U.S. institutions to develop this type of training which would build their capacity to detect the disease early and to control it at that level.

Should the unfortunate, I mean the tragedy of a pandemic influenza occur it is veterinarians really in the U.S. Public Health Service at the various agencies working with their medical colleagues and its counterparts in the colleges working on disease surveillance, of providing education and training, that can provide search capacity for laboratories that exist, and very much engage in biomedical research that actually would lead to the development of a vaccine or the understanding of how immunity works or how it even crosses species. Texas A&M actually post Hurricane Katrina

converted their large animal clinic into facilities to house people who had lost their homes, and so it was tremendous to see how they could then—that partnership could really kick in on emergency preparedness and response. I will stop there.

Dr. DEHAVEN. Congresswoman Baldwin, if I could add to that bringing a decidedly agricultural perspective to the table since that is my background, I think that H5N1 highly pathogenic Avian influenza is probably the current poster child for this whole issue of the convergence of animal health, public health, and as you pointed out environmental health as well. There is really a 3-prong approach with regard to H5N1 from an animal disease perspective, and this still very much is an animal disease and the better we can control it in animals the less likely it is to mutate into that all feared pandemic virus. But the 3 prongs would be exclusion, let us keep it out. The second is early detection. If it arrives, let us find it very quickly, and then if we do find it rapid response to contain and eradicate it.

There is ongoing surveillance in wild bird carried out by veterinarians involved in wild bird surveillance, in fact, the largest wildlife surveillance program of its kind anywhere in the world. There was ongoing surveillance by veterinarians involved in food animal practice in the industry who test virtually every flock of birds before they go to slaughter in the United States. In terms of laboratory capacity, Dr. Allen mentioned the National Animal Laboratory Network that we have so we have a network of laboratories that are all trained to do this diagnostic work, and then we have had in place and have certainly improved the overall planning for a response mechanism so while the efforts that I am talking about are certainly directed towards the disease in animals again if it finds its way here we would want to eliminate it in animals, and in doing so we protect the health of our public.

Ms. BALDWIN. Next I would recognize Mr. Murphy from Pennsylvania for questions.

Mr. MURPHY. Thank you, Madam Chairman, and thank you for introducing this bill. This is an important issue. I wish we had more veterinary schools in Pennsylvania, but we do have a great one there. I want to ask about a couple things about this and extend what we were just discussing with Avian influenza for the panel, and you have expanded some things that vets can do with regard to disease surveillance, education, training and research, surge capacity, et cetera. Do you see now that in the public health sector and in CDC for anybody on the panel that this is something that currently we need more veterinarians working on these issues now because of the potential what is occurring or are we invested enough, anybody? Yes, Doctor.

Dr. PAPPALANOU. Very briefly, the short answer is yes, and you could probably clone each veterinarian working in public health 10 to 20 times over.

Mr. MURPHY. We are not into cloning people.

Dr. PAPPALANOU. Well, to multiply them 10 to 20 times over to really have sufficient numbers to actually really engage with our human health counterparts on solving these problems. Because we are such a small profession right now, and so few veterinarians are actually working in public health, each public health veterinarian

is actually a rare commodity, and therefore right now there has to be very strategic thinking really in terms of where they work because there are insufficient numbers to be there as part of the public health team across these areas.

Mr. MURPHY. Do other members agree with the same thing? Let me ask this. I think, Dr. Allen, you had mentioned about the tuition costs in particular that someone may graduate with over \$100,000 in debt, similar to medical school as well. On this bill, I think it authorizes about \$300 million if I am not mistaken in capital costs, which is good and helps with a lot of the necessary facilities. Does it do enough to take care of tuition costs?

Dr. ALLEN. This bill will not address the tuition costs. There is a separate law, the National Veterinary Medical Services Act, that does help with a loan forgiveness program for graduates who go in underserved areas of veterinary medicine. What this bill will do is allow us to expand the capacity of our veterinary colleges so that we can admit more students. There may be some marginal return kind of economies of scale, if you will, that will help with the cost of per student but I don't expect that this bill will impact the tuition rates in our existing schools.

Mr. MURPHY. Do we have a number of what this bill will do to actually expand the number of veterinarian students across the country? Does anybody know?

Mr. KELLY. The intent is that it would increase the enrollment by 423 students per year. That would be the objective of this bill.

Mr. MURPHY. And do we know in terms of numbers what the need is nationwide?

Mr. KELLY. It is very difficult to come up with exactly the need. There is a study by the National Academy that was trying to look at that but we are not far enough along to give you numbers on that. We will happily give them to you when we have them.

Mr. MURPHY. Thank you. And with regard to some loan forgiveness programs is that an area we need to be expanding to? We talked a great deal about the public health sector. It is extremely important, the E. coli, the Avian influenza, a whole host of things. Do we have enough there in terms of the breadth and depth of our loan forgiveness programs now to take care of that, Dr. DeHaven?

Dr. DEHAVEN. Congressman Murphy, thank you for bringing that up. We think the two bills in fact are very inextricably linked. The National Veterinary Medical Services Act has in fact been passed but it is authorized legislation and so far has only been funded at a level of about \$1 million. We would anticipate to really have an impact and get veterinarians involved in food animal or public health practice to the areas where they are needed most that we would like to see funding in the level of \$50 million to really have an impact. So this bill, the Veterinary Public Health Workforce Expansion Act, if you will, would increase the number of students going in the pipeline where the National Veterinary Medical Services Act, which authorizing legislation is already in place, with adequate funding would help us get those students, those graduates, to the locations where they are most needed, the underserved areas.

Mr. MURPHY. When you say underserved areas, are you talking about geographically underserved areas or are you talking about

things, for example, people work for CDC or work for the military as employees of those branches of government that can have loan forgiveness while they put their time in. For example, every year they work they get a certain amount of loan forgiveness, is that what you would foresee?

Dr. DEHAVEN. Actually both in that there are underserved areas within government and in private practice in terms of disciplines, if you will, but the bill is primarily intended to put graduates in geographical locations where there is the greatest need recognizing that foreign animal disease of human health implications could be introduced anywhere in the country if we don't have an adequate number of veterinarians in those locations then it is going to be a longer period of time before that disease is diagnosed.

Mr. MURPHY. If I could squeeze in one more brief question, I just want to know what this also does for undergraduate training as well. There is a graduate level of doctors of veterinary medicine. Do you see this bill, the Baldwin-Pickering bill, of expanding also undergraduate level training?

Dr. ALLEN. This bill is primarily intended to increase the capacity for the professional DVM program. Now there are a lot of students who are pre-vet, if you will, at the undergraduate level, who are disappointed by not being able to get into veterinary college so indirectly it will impact those students who are in animal and dairy science programs or what have you throughout the United States so indirectly it will increase the number of students who are able to attain admission to veterinary school.

Mr. MURPHY. Thank you very much, and thank you, Madam Chairman. I would love to be a co-sponsor of the bill.

Ms. BALDWIN. Excellent. We will add you. Next I would recognize Ms. Capps from California.

Ms. CAPPS. Thank you, and I want to thank you again for the bill and for this hearing for our subcommittee because I have learned so much and I realize I already felt like I knew some things about health care and I didn't know a lot about this. And I am extrapolating that to my colleagues and then to the rest of us that you are really providing a valuable service here for us today. This is going to—there are a limited number of questions we can ask and so some of this might seem repetitive but I think a good case can be made to the public about Avian flu and that threat because people kind of understand what it is. And I know that, Dr. Kelly, we have been working on ways to prepare for an outbreak of Avian flu, and I want to look at what you have done in Pennsylvania, that Penn has been working with your state's Department of Agriculture to implement a statewide Avian flu surveillance program. Other states, Minnesota, I think has, but some states have really lagged in this area. And this partnership is something I am interested in. This probably falls outside the range of what the bill is. We are talking about a broader thing, but I want to understand more about how our veterinary schools are constrained in their ability to conduct surveillance, testing and training for infectious diseases. Is it because of limited funds strictly or are there some other things? I want to see if 1232 would help the public health community in ways that maybe I don't understand yet.

Mr. KELLY. Well, we certainly need to do more research on Avian influenza and ways in which we can limit the spread in animal facilities what we do is GIS lapping of the poultry facilities in Pennsylvania. That has come about because we have had repeated outbreaks of Avian influenza in Pennsylvania and other states have lagged simply because they haven't had the experience. There is much more we can do in terms of understanding the populations of poultry in the state and how we would control a disease should it arise, and that needs to be expanded across the country.

Ms. CAPPS. I guess what I am getting at is I come from California. If you got all this research that you are compiling there and the first case or a bunch of cases happen in another state how good are we—and other people can jump into this too. I just think it is an interesting place. Right where we are today, do we have that structure in place and what do we do.

Dr. ALLEN. Thank you for that question. At the University of Georgia we have a unit called the Southeastern Cooperative Wildlife Disease Study, and the purpose of this unit which has 4 faculty, 2 of whom are veterinarians, is to conduct disease surveillance of wildlife through a 15-state region. There are similar units elsewhere in the country so to answer your question there are individuals who are funded for this purpose but each state typically does not have their own simply because, A, there is not funding for it and, B, there aren't really enough veterinarians in this area right now to provide the manpower.

Ms. CAPPS. So this bill will help, maybe indirectly, but maybe we can educate ourselves well enough that we will say, now we need to do this because there is more that needs to be done. I guess I have been so focused on shortages of nurses, I just see so many corollaries. Our public health workforce is really short—and the fact that you are in Georgia and CDC is there, is there a role there too?

Dr. ALLEN. Absolutely. The CDC has a program that allows our veterinary students to come to their facility for training, and it also helps with their recruiting effort to get more veterinarians in the public health arena.

Mr. CAPPS. Somebody else might want to jump in. I am not going to go to my other question. I find this very fascinating, and this piece of it we haven't talked about yet, I don't think.

Dr. DEHAVEN. Congresswoman Capps, thank you for the opportunity to add to that and again coming from an agricultural background there has been a—again I think Avian influenza is the perfect poster child of how we can work together cooperatively to develop programs that integrate public health and animal health. Dr. Kelly or Dr. Allen mentioned the National Animal Health Laboratory Network, which is a consortium of over 50 laboratories at the state diagnostic university diagnostic level that now have the capacity to do diagnostic testing on a number of diseases including highly pathogenic Avian influenza.

Ms. CAPPS. Let me interject. Is the Federal government a partner with you in that?

Dr. DEHAVEN. Indeed. It is a partnership between Federal government who oversees and administers the network and then it is the state laboratories that actually do the testing and much of that testing is done at the request of the affected industry so we at this

point have virtually 100 percent surveillance on every commercial flock of birds. There are many states that have live bird markets where birds are brought from multiple locations for resale and you couldn't design a better way to spread disease but we have surveillance at those live bird markets as well. And so that partnership, I think, is working very well between the industry, the state diagnostic laboratories, and the state departments of agriculture who have response plans in place as well as these surveillance programs in place, so there is I think a very good cooperative effort there.

One of the limiting factors though is the veterinarians that we have to participate in all of those activities, and ultimately it has to be those that work—either veterinarians or those that are working directly under the supervision of a veterinarian who have the oversight and make sure that we have all of our bases covered.

Ms. CAPPS. I certainly can understand that from a public health nurse point of view because in the shortcuts that we want to take in cutting funds we try to think that a non-professional or a different kind of professional person can understand that, and just as you mentioned earlier if you don't have that basic veterinary science which some other countries and other places might, we got to keep the quality really high as you are saying, and we need more veterinarians at the table of the interdisciplinary groups that are doing that. Thank you. I think I have gone over but this is very interesting.

Ms. BALDWIN. Next I recognize Mr. Pitts for questions.

Mr. PITTS. Thank you, Madam Chairman. And it is a particular delight to welcome Dean Kelly and the panel here and to have heard your testimony. I had the privilege of working with the dean at New Bolton Center, which is in my district, for many years when I was in the state legislature. It is the, as I don't know if you said, the only vet school in Pennsylvania, and one of the premier veterinarian institutions in the United States. And with agriculture being so important in Pennsylvania, it plays a very key role in keeping ag number one. I know a few years ago you were at the forefront of catching the Avian flu epidemic in the ag poultry population.

Dean Kelly, you mention in your testimony the new methods of livestock and poultry and wildlife methods that must be developed that require research and translation into the field. Could you just elaborate, does the university receive faculty grants to do research from Federal agencies? What types of grants are awarded on these issues?

Mr. KELLY. We receive funds from the National Institute of Health. This would entirely be for diseases of animals that have relevance to human health. We receive funds much less from the USDA for various aspects of production agriculture. When we are talking about surveillance and new methods we don't have those resources. We need to find these resources because this has to be the future in surveillance of the livestock and poultry populations across the country. I think this is critically needed. There was one state grant that was given about 3 years ago but it is fairly limited funding, as you know, in those agencies. So we need funds because

we have to really invent a new system for surveillance of livestock and poultry across the country.

Mr. PITTS. And there is a need for more faculty to be hired.

Mr. KELLY. Yes.

Mr. PITTS. H.R. 1232 is designed to fund, I think, construction and capital costs, not training for advance research or faculty. Do you believe that that is a shortcoming in the bill or how would you—

Mr. KELLY. In more advanced training typically a graduate student will work in the laboratory of a faculty so if you increase the laboratory space you increase the capacity to do advance training. There are funds in there for I think it is 290 post-doctoral students because we need much more specialization and much more sophisticated training in so many areas that are relevant to veterinary medicine.

Mr. PITTS. Dr. Allen, you wanted to add something.

Dr. ALLEN. Yes. I appreciate being able to respond to that question. We regard it as the state's responsibility and the colleges' responsibility for faculty positions. The University of Georgia recently allocated three new faculty positions for infectious disease research specifically. So this bill does not—has nothing to do with faculty positions. The states that are awarded these grants will be for infrastructure expansion. When we expand our enrollment, we recognize we are going to have to increase the number of faculty and staff to keep our faculty to student ratio appropriate to have a good quality education but we recognize that as the state's responsibility.

Mr. PITTS. And you heard the dean mention the \$7 billion endowment. I know people are mumbling and questioning about the sources of funding. I know when we were in the state legislature we helped with capital costs at New Bolton, but would you expand a little bit about what is done with endowment money and how various pots and phases of funds are used to expand facilities and operations?

Mr. KELLY. Endowments typically don't provide funds for facilities. Endowments typically would be for an endowed professorship in a particular area that is of interest to the donor. So the endowment is overwhelming focused on faculty particularly in specific areas. In clinical veterinary medicine we get endowments in companion animal veterinary medicine and in equine veterinary medicine. Basic sciences there is no endowed professorships, and in public health I don't think we have a single one. So it is very focused. It doesn't cover the whole of the needs of the veterinary school. It is important sources of funding no doubt but it is not going to take care of public health needs, I can assure you.

Mr. PITTS. Would those who give have the opportunity to require that you spend it in certain ways? For instance, I know with large animals out at New Bolton and the horse industry, the racing industry, you are required to spend money in certain ways without a doubt, is that correct?

Mr. KELLY. That is exactly correct, Congressman. Yes.

Mr. PITTS. Dr. Allen.

Dr. ALLEN. Endowments that are receive the typical spending limit will be 5 percent of that endowment so even if someone were

to give you a million dollar gift it is only going you \$50,000 amount of money annually that you can spend. And they are typically, as Dr. Kelly indicated, for the research efforts and for recruitment purposes to get new faculty on board. Annual operating budget for a veterinary college averages around \$56 million. Very little of that is endowment income or private gifts. Most of it is state appropriation, service income from hospital activities, research activities, and a very small amount of it is private giving.

Mr. PITTS. And really there is none given for public health purposes?

Dr. ALLEN. Very rarely is any of the money given for public health purposes. We did have one endowment last year that was donated for infectious disease professorship to help us recruit more faculty members to do this important work, but again it is pretty rare for it to be in a public health arena.

Mr. PITTS. Well, my time is up, but thank you for your testimony. Dean Kelly, it is great to see you, and thank you for your leadership for many years.

Mr. PALLONE. Thank you. The gentleman from New York, Mr. Towns.

Mr. TOWNS. Thank you very much, Mr. Chairman. Let me begin by thanking you for your testimony. I thought it was very, very informative. Let me begin by asking you, and I am in strong support of H.R. 1232, the Health Workforce Expansion Act, but is it really enough? Let us go right down the line starting with you, Dr. Allen. Just go right down the line.

Dr. ALLEN. Do you mean is the legislation itself enough or is the amount of money enough?

Mr. TOWNS. Both.

Dr. ALLEN. If it were fully funded as the bill is written. We did do feasibility studies of what it would take to expand our veterinary colleges to address the shortage as it was estimated at that time, and we do feel that the amount in the bill will help the existing colleges expand sufficiently for the future. And as far as the bill itself, we would welcome the staff of the subcommittee to help us with the language if it is felt it were needed to more clearly describe what the intended purpose is, but if the desired outcome—if the bill is funded, I think the desired outcome will be met.

Mr. TOWNS. Thank you, Dr. Kelly.

Mr. KELLY. I think, and Dr. Allen used I think the very important phrase, and that is if the bill is fully funded. If it is not, we are going to continue to be short. We are looking at over a 15, 20-year period. If you look over a much longer period there is not going to be enough. It is crucial that we get the funds to at least address the demand and the need. For example, I used the figure that there were 1,200 Americans getting veterinary education overseas. That is 400 students per year. We can accommodate that number with this current bill. So, as I say, if it is fully funded it will take care of the need.

Mr. TOWNS. Dr. DeHaven.

Dr. DEHAVEN. Thank you. I would agree with my colleagues that if it is written and fully funded it would provide enough capacity. Recognize that today the majority of graduates out of our 28 veterinary colleges are going into companion animal practice, and that

is critically important. The human animal bond is stronger than ever before and indeed we add to our public health through our association with pet animals so it is not that we are talking about a huge number of new graduates that need to go into this public health arena with the provisions in the bill. If in fact that increased capacity were devoted to the public health arena, we feel that it would meet the need.

Mr. TOWNS. Thank you.

Dr. PAPPALANOU. I would agree with my colleagues although I would add that there really is an urgency about this, and not only absolutely to begin to meet the needs in public health but also from a construction point of view that with construction costs, and I am sure many of you may have this experience, but every day or week or month you delay when you talk back with contractors your cost just went up. So I think the more quickly this bill could be passed and implemented and funded then adequate study has gone into the figures that have gone into it, but if there is a lot of delay construction costs do go up, and I think that would impact on the numbers.

Mr. TOWNS. Right. I think you, Dr. Kelly, mentioned about the amount of students that are being trained in foreign countries. How many of them return, would you know? How many of them would return after training?

Mr. KELLY. I would think these are American students. The vast majority will come back to this country, I would fully expect. There students who have not been able to get into a veterinary school in this country and desperately want to become veterinarians but there will be deficiencies in their education and that is a significant problem. Just to add, if I may, we are concerned about public health, students going into public health. There is a remarkable change in our students in their interest in public health which frankly wasn't there 5 or 6 years ago. To give you an example, I think this weekend there is CDC Day down in Atlanta. There are 300 veterinary students going down to CDC Day to learn more about CDC and public health, and it is an example of the change of interest amongst our students.

Mr. TOWNS. Thank you. Thank you very much. Yes, Dr. Allen.

Dr. ALLEN. One thing I wanted to point out is that although there are a lot of students, American students, who don't gain entrance to a U.S. veterinary college who end up going overseas, first of all, they are not trained in the public health arenas that we are talking about. And, secondly, the cost for their education to them, they end up with an educational debt that is staggering, \$200,000 to \$300,000 per student. The likelihood that they are going to go into a public health career with that kind of educational debt is very low. So although there are students that are able to get an education in veterinary medicine it is not an education that will fulfill the need we are talking about today.

Mr. TOWNS. Let me ask, is there a preference given to state students in terms of grants, is there a preference?

Dr. ALLEN. There is a preference given to students from that state for admission to veterinary college, yes, but in terms of scholarships for veterinary college it depends on the source of the funds. Typically a scholarship is from a private donor, and we have many

private donors who will believe it or not stipulate what county the student should be from. So indirectly, yes, there is a preference for in-state students because of the source of our scholarship funds tends to be from our alumni from our state.

Mr. TOWNS. Go ahead, Dr. Kelly.

Mr. KELLY. Most schools have an in-state and an out-of-state tuition. For example, there is a \$10,000 difference in the cost of your education if it is in-state or out-of-state. The taxpayers of Pennsylvania bear the brunt of the cost of our school and our education, and it seems to me only reasonable that there would be a price differential as far as the students from out of state are concerned.

Mr. TOWNS. I was actually talking about in terms of a preference in terms of admissions.

Mr. KELLY. We would admit—at Penn we will admit 60 percent of the students are Pennsylvania residents, 40 percent come from out of state. That varies with the different colleges though.

Mr. TOWNS. Let me ask, this is just for help.

Mr. PALLONE. Just let me remind the gentleman he is 2 minutes over, but we will take one more.

Mr. TOWNS. I yield. I am sorry. Thank you very much. Let me thank all of you for your testimony. Thank you so much. Thank you, Mr. Chairman.

Mr. PALLONE. I am sorry. I recognize the gentlewoman from Oregon, Ms. Hooley.

Ms. HOOLEY. Thank you, Mr. Chair. I am proud to represent a veterinary school in my state, Oregon State, and I am a co-sponsor of this bill and proud to do that. Oregon State includes public health as part of its core curriculum, and it is in the process of developing a collaboration between the school of public health and the school of pharmacy trying to strengthen public health. I have a question. Dr. Allen, you mentioned that 16 out of the 28 veterinarian medicine schools now have dual degrees, and what is the capacity of those 16 programs and what educational paths do most public health veterinarians pursue? Do they do it—how do we build our capacity? Is it in those dual programs or traditional veterinary college?

Dr. ALLEN. As far as the capacity of the DVM, MPH programs, which I think is what you were referring to, at University of Georgia we have scholarships for two students per year. However, we don't have any limitation in the number of students who can enroll. We only have a limitation in the number of scholarships. So consequently we typically will have of course the two students who get scholarships but also additional students who will enter the dual degree program. I am afraid I can't speak for the other colleges of veterinary medicine as far as what their capacity is for the number of students who will graduate per year. So right now at Georgia though, we are only doing say three students per year/

Ms. HOOLEY. Yes.

Dr. PAPPALANOU. I can provide some information on the other schools. The University of Minnesota, for example, has close to 40 or 50 students who are enrolled in the dual degree DVM, MPH program there. That program actually accepts students from several of the other schools in the Midwest, Michigan State for one, Ohio, Indiana, et cetera, that come in and actually participate in that

program, and all of them report absolutely, you know, the interest of the students really going off the chart, so the student interest is there. In addition to the 16 schools with the dual degree programs there are at least 6 others who have public health programs, and again they are seeing a growing number of students. Where these students go when they leave are many of the opportunities that I alluded to in my testimony and across the Federal government, the state government, local governments working in academia, even international organizations so there is a tremendous opportunity out there for these graduates.

Ms. HOOLEY. Does anyone else want to comment? So you think the dual program, dual degree program, probably produces more of our public health veterinarians?

Dr. PAPPAIOANOU. Absolutely.

Ms. HOOLEY. OK.

Mr. KELLY. We will form a dual degree at Penn. We just haven't gotten far enough along in doing it.

Ms. HOOLEY. When I talked to Oregon State, their veterinarian medical association, they indicate there is a lot of reasons why there is a decreasing supply of food animal practitioners, and one of the main reasons is a lack of earning a decent living in that area. They serve in rural communities. I look at one of my counties in my district, for example, is Tillamook County. They have lots and lots of dairy farms. Having a food animal practitioner is really important in those areas. How do we get more veterinarians into the rural communities? Do we have an answer? Does this bill help that?

Dr. DEHAVEN. If I could.

Ms. HOOLEY. Go ahead.

Dr. DEHAVEN. Thank you. I think we all want to answer that one, Congresswoman.

Ms. HOOLEY. Good. I would like to hear from all of you.

Dr. DEHAVEN. I think there is a couple different ways. Really the recruitment needs to start with the pre-veterinary students or even before that to generate an interest in this food animal public health arena, and we are, as Dr. Kelly mentioned, already seeing that increase in some of these disciplines that heretofore there hadn't been a lot of interest. This bill will increase or this bill if passed would increase the number of students in the pipeline for these potential kinds of jobs. It is the National Veterinary Medical Services Act that is really intended to give veterinarians who have already graduated through a loan repayment program into these underserved areas. It is particularly important in the food animal arena, and again making this linkage between food animals and public health, in that it is those individuals that are most likely to be the first to identify a disease in animals that have public health implications, and so this is critically important.

There will actually be a hearing on the National Veterinary Medical Services Act talking about the need for funding for that program but also the need for the U.S. Department of Agriculture to do the regulations, promulgate the regulations that will implement this program and identify such things as what are under represented areas and how do we identify them.

Ms. HOOLEY. Do you think this bill will help?

Dr. DEHAVEN. It certainly would help in terms of getting more students in the pipeline that would be interested in going to those areas in that kind of work.

Ms. HOOLEY. Dr. Allen, maybe your idea of having these scholarships from a county might not be such a bad idea. Go ahead. Anybody else that wants to answer that question.

Mr. KELLY. One of the issues, this is a problem of rural America in general, and to support a veterinarian in an area needs a certain value of animals in a geographic area, and what you have to do is—increasingly you will find veterinarians still in Lancaster County in Pennsylvania, which is a very heavy dairy industry. What you have to do is expand that geographic area, and I think we have to use digital technologies on the farms so you have every day surveillance, electronic communication to a veterinarian who is in a central office working with somebody who is trained as a technician to provide the every day surveillance on the farms. I think that is the direction that I believe we must progress in.

Ms. HOOLEY. Dr. Allen.

Dr. ALLEN. You asked a question of how we can address this lack of veterinarians in rural America, and I think it is two main things. One is financial through scholarships and loan forgiveness programs. Nothing helps address a shortage like money and so what we have done at Georgia is a loan forgiveness program that has been suggested and proposed to our state legislature, but we have also had the food animal veterinary incentive program whereby we are identifying students who come from rural Georgia, in high school we identify them, and put them into this program that nurtures their interest and helps them through the undergraduate years because we know if a student comes from an area they are much more likely to go back to that area. And so we have started this program to try to address that need in rural Georgia, and I know there are other programs elsewhere in the country in other states that have done the same thing.

Mr. PALLONE. We are almost at three now although it is very interesting.

Ms. HOOLEY. This whole thing is totally fascinating.

Mr. PALLONE. I agree. I agree. I am sorry to cut you off but we are going to have a vote pretty soon on the SCHIP override so we have to conclude. I think that concludes all our questions by the members. I do want to thank you all though. This has really been enlightening to us. I mean some members obviously represent areas, rural areas, and have more knowledge than others, but it has been very helpful I think to us in terms of knowing the significance of this legislation. And I would also encourage members if they are from more urban or suburban areas like myself to get out to some of these colleges like I did at Dean Kelly's initiative because otherwise you don't really know what it is all about. So thank you very much.

Let me mention that members can still submit written questions for the record so within the 10 days they have to submit those so you may get additional questions from us to answer in writing, and the clerk would notify your offices if that happens and the procedures and all that. But again thank you all, and thank you, Con-

gresswoman Baldwin, and without objection this meeting of the subcommittee is adjourned.

[Whereupon, at 11:50 a.m., the subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

110TH CONGRESS
1ST SESSION

H. R. 1232

To establish a competitive grant program to build capacity in veterinary medical education and expand the workforce of veterinarians engaged in public health practice and biomedical research.

IN THE HOUSE OF REPRESENTATIVES

FEBRUARY 28, 2007

Ms. BALDWIN (for herself and Mr. PICKERING) introduced the following bill; which was referred to the Committee on Energy and Commerce

A BILL

To establish a competitive grant program to build capacity in veterinary medical education and expand the workforce of veterinarians engaged in public health practice and biomedical research.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the “Veterinary Public
5 Health Workforce Expansion Act of 2007”.

6 **SEC. 2. COMPETITIVE GRANTS PROGRAM.**

7 (a) IN GENERAL.—The Secretary of Health and
8 Human Services (referred to in this section as the “Sec-

1 retary”) shall award competitive grants to eligible entities
2 for the purpose of improving public health preparedness
3 through increasing the number of veterinarians in the
4 workforce.

5 (b) ELIGIBLE ENTITIES.—To be eligible to receive a
6 grant under subsection (a), an entity shall—

7 (1) be—

8 (A) a public or other nonprofit school of
9 veterinary medicine accredited by a recognized
10 body or bodies approved for such purpose by
11 the Department of Education;

12 (B) a public or nonprofit, department of
13 comparative medicine, department of veterinary
14 science, school of public health, or school of
15 medicine that is accredited by a recognized
16 body or bodies approved for such purpose by
17 the Department of Education and that offers
18 graduate training for veterinarians in a public
19 health practice area as determined by the Sec-
20 retary; or

21 (C) a public or nonprofit entity that con-
22 ducts recognized residency training programs
23 for veterinarians that are approved by a veteri-
24 nary specialty organization that is recognized
25 by the American Veterinary Medical Association

1 and that offers postgraduate training for veteri-
2 narians in a public health practice area as de-
3 termined by the Secretary; and

4 (2) prepare and submit to the Secretary an ap-
5 plication, at such time, in such manner, and con-
6 taining such information as the Secretary may re-
7 quire.

8 (c) CONSIDERATION OF APPLICATIONS.—The Sec-
9 retary shall establish procedures to ensure that applica-
10 tions under subsection (b)(2) are rigorously reviewed and
11 that grants are competitively awarded based on—

12 (1) the ability of the applicant to increase the
13 number of veterinarians who are trained in specified
14 public health practice areas as determined by the
15 Secretary;

16 (2) the ability of the applicant to increase ca-
17 pacity in research on high priority disease agents; or

18 (3) any other consideration the Secretary deter-
19 mines necessary.

20 (d) PREFERENCE.—In awarding grants under sub-
21 section (a)(1), the Secretary shall give preference to appli-
22 cants that demonstrate a comprehensive approach by in-
23 volving more than one school of veterinary medicine, de-
24 partment of comparative medicine, department of veteri-
25 nary science, school of public health, school of medicine,

1 or residency training program that offers postgraduate
2 training for veterinarians in a public health practice area
3 as determined by the Secretary.

4 (e) USE OF FUNDS.—Amounts received under a
5 grant under this subsection shall be used by a grantee to
6 increase the number of veterinarians in the workforce
7 through—

8 (1) paying the costs associated with construc-
9 tion, the acquisition of equipment, and other capital
10 costs relating to the expansion of existing schools of
11 veterinary medicine, departments of comparative
12 medicine, departments of veterinary science, or enti-
13 ties offering residency training programs; or

14 (2) paying the capital costs associated with the
15 expansion of academic programs that offer post-
16 graduate training for veterinarians or concurrent
17 training for veterinary students in specific areas of
18 specialization.

19 (f) DEFINITION.—In this section, the term “public
20 health practice” includes bioterrorism and emergency pre-
21 paredness, environmental health, food safety and food se-
22 curity, regulatory medicine, diagnostic laboratory medi-
23 cine, and biomedical research.

24 (g) AUTHORIZATION OF APPROPRIATIONS.—There
25 are authorized to be appropriated to carry out this section,

1 \$300,000,000 for fiscal year 2007, and \$1,264,000,000
2 for the 9-fiscal year period beginning with fiscal year
3 2008. Amounts appropriated under this subsection shall
4 remain available until expended.

○



February 28, 2008

The Honorable John Dingell
 United State House of Representatives
 Washington, DC 20515

Dear Mr. Chairman,

On behalf of the 59 member institutions of AAVMC, I want to thank you for the opportunity to have testified before the Committee on the roles that veterinarians play in protecting our nation's public health, and to respond to the insightful and important follow-up questions posed by the House Energy and Commerce Committee regarding H.R. 1232, the Veterinary Public Health Workforce Expansion Act. This legislation is critically needed as a national investment, complementing what 26 of our 50 nation's states and private contributors are able to provide, to produce increased numbers of veterinarians with the appropriate capacity and skills that will serve across all 50 US states and territories, to protect the safety of our national food supply, to protect and promote public health across the spectrum of infectious and chronic diseases, environmental health, and to promote and protect our national security, and ensure our national readiness with respect to preparedness and response for both natural and or intentional, man-made disasters.

I am pleased to answer the following questions that you sent me in correspondence dated February 12, 2008. I look forward to working with you as this vital legislation is considered.

Question 1: How many veterinary medical schools are currently planning expansions?

Response: We surveyed the nation's 28 Colleges of Veterinary Medicine (CVM) on what construction, if any, they have embarked upon since 2003, the type of facility they are constructing, and the sources of funding for this construction. We also surveyed the Colleges on what facilities are being planned. We received responses from all 28 Colleges.

- Of the 28 US Colleges of Veterinary Medicine, 8 (28.6%) have not undertaken any construction since 2003, and 2 (7%) are not planning any construction as of February 2008.
- Twenty (71.4%) of 28 Colleges have undertaken new construction since 2003, and we show the numbers of colleges by type of construction in Table 1 below. Please note that since some Colleges have started constructing more than one type of facility, the total number of facilities under construction by the Colleges exceeds the numbers of Colleges.

- Twenty six (93%) of 28 Colleges are planning additional construction, but have not begun such construction as they are in the planning phases only (including identifying funding for the planned facilities). This information is presented in Table 2.

Table 1. Type of Construction Projects Undertaken Since 2003 by 20 of 28 US Colleges of Veterinary Medicine (Source: AAVMC survey, February 2008)

Type of Construction Project	Number of Projects
Office Space	12
Classroom	9
Medical Library	3
Teaching/Clinical Pathology Laboratory	7
Diagnostic Laboratory	9
Research Laboratory	10
BSL3 Laboratory	8
BSL3 Animal Holding	5
Food Animal Clinical Space	4
Computer Laboratory	0
Companion Animal Clinical Space	11
Equine Clinical Space	7
Other	5
Total Facilities Planned by 20 Colleges*	90

*Eight Colleges of Veterinary Medicine have not started any new construction since 2003.

Table 2. Numbers of planned construction projects at US Colleges of Veterinary Medicine, by Type of Construction (Source: AAVMC survey, February 2008)

Type of Construction	Number of Projects
Office Space	17
Classroom	14
Medical Library	4
Teaching/Clinical Pathology Laboratory	3
Diagnostic Laboratory	9
Research Laboratory	20
BSL3 Laboratory	11
BSL3 Animal Holding	3
Food Animal Clinical Space	10
Computer laboratory	3
Companion Clinical Space	12
Equine Clinical Space	13
Other	2
Total Facilities Planned by 26 Colleges*	121

* Two Colleges of Veterinary Medicine are not planning any new construction as of February 2008.

Question 2: For each project, do these schools have plans on how to finance such expansions?

Response: Facing an ever-growing need to expand enrollment, colleges of veterinary medicine are quickly developing plans to build upon their existing infrastructure. Despite developing plans for these new facilities, identifying a source of funds has been difficult. Sources of funding, independent of federal funding include state appropriation dollars, bond purchases, and private funding from individual donors, foundations, endowments. Private funds from individual donors most often are targeted for facilities to support companion and or equine medicine. There are minimal to no federal dollars that have been obtained or identified since the 1970's to meet these national needs for our growing US population.

Below we present the information we obtained from the Colleges on the source of funding being sought and or identified by those 26 colleges with plans for facilities underway. Results on the source of funding for construction projects already underway are shown in the accompanying Appendix. Table 3 shows the number of planned projects with funding secured and those for which funding has not been secured as of February 2008, by type of construction project. Table 4 shows the source of funding either already confirmed or that is being sought for projects being planned as of February 28, 2008.

Table 3. Number of Funded and Unfunded Planned Construction Projects, by Type of Construction (Source: AAVMC survey, February 2008)**

Type of Construction	Projects with Secured Funding	Projects with No funding available
Office Space	3	14
Classroom	0	14
Medical Library	0	4
Teaching/Clinical Pathology Laboratory	0	3
Diagnostic Laboratory	3	6
Research Laboratory	5	15
BSL3 Laboratory	5	6
BSL3 Animal Holding	1	2
Food Animal Clinical Space	0	10
Computer laboratory	2	10
Companion Clinical Space	0	3
Equine Clinical Space	1	12
Other	0	2

** The second column represents the number of planned projects that have secured funding but are not underway, while the third column shows the number of planned projects that have yet to receive funding.

Table 4. Funding or Sought Funding of Planned Construction, by Type funding source (Source: AAVMC survey, February 2008)

Funding Source	Secured Funding	No funding available
Federal Support	1	19
State Appropriation	17	39
Bond Purchase	2	3
Private Funding	11	38
University	2	6
Other	2	2

Table 4 identifies the sources of funding secured or desired by colleges of veterinary medicine for the plans identified in Table 3. The totals for the second column are higher than those shown in Table 3 due to the fact that CVMs pursue more than one source for funding when developing expansion plans. Table 4 clearly shows that a vast majority of the plans to expand capacity have not received a dedicated funding source. Several colleges cited VPHWEA as their only hope to successfully get these projects started.

Question 3: The intent of this bill is to provide more veterinarians in public health fields. Per the discussion at the hearing, it is unclear whether this bill would accomplish the goal of training veterinarians specifically for this purpose. Would it not be more efficient to provide loan repayment programs for veterinarians that enter into public health fields?

Response: We absolutely agree that the intent of the bill is to provide more veterinarians in public health practice. Loan repayment programs would provide incentive for currently graduating or graduated veterinarians with large debts to move into underserved areas being targeted by H.R. 1232, leaving other areas of the profession short in numbers that protect the health of our nation's companion animals. Thus, loan repayment programs do not and will not provide the increased capacity needed by our country's Colleges of Veterinary Medicine that can only be obtained through the construction of new facilities, to train and graduate increased numbers of veterinarians annually, having the training needed to meet societal public health needs identified in this legislation.

A federal loan repayment program for veterinarians who agree to work in underserved, rural areas of the country currently exists within USDA. This program, the National Veterinary Medical Services Act (NVMSA) has lacked sufficient Congressional funding, and federal rules and regulations that would permit the expenditure of funds appropriated to this program have not been written. It is essential that Congress continue to support a loan repayment program for veterinarians interested in serving in public health practice in addition to the competitive grant program proposed under the Veterinary Public Health Workforce Expansion Act to meet US needs.

Question 4: Is there any way to distinguish if the construction dollars are used solely for public health projects?

Response: It is essential that any grants received under this act for the sole purpose of graduating more veterinarians with the necessary training required to quickly fill gaps in our Nation's public health infrastructure achieve its stated objectives. Classroom space, all types of laboratories, food animal clinical space, computer laboratories, and office space for increased faculty to train the increased number of enrolled students are critical to achieve the objectives of this program. There are several ways that we will ensure that the funds are used to achieve the stated objectives. First, under tight regulations from the Secretary, as the competitive grant process is set up, clear criteria would be defined and used to rate and award funds for the stated purpose. Documentation would be sought from those applying as to how proposed construction dollars would lead to increased numbers of students that would be entering public health practice upon graduation. Secondly, the program would be monitored and evaluated to ensure that the dollars invested in this Act will accomplish its stated goals of producing an increased number of veterinarians working in public health to meet our nation's food safety and other needs. We look forward to working with the committee to improve the bill.

Conclusions

- Although the majority of our US Colleges have begun construction projects, Colleges cannot admit and graduate more veterinarians targeted at societal public health needs unless there is a similar significant expansion of preclinical instructional infrastructure, accompanying faculty office and research infrastructure and food animal teaching needs.
- It is important to consider that despite the modest success at receiving funding for the projects identified in Table 1, Colleges of Veterinary Medicine have not been able to significantly increase enrollment because the type of construction that colleges have been able to fund are not the type that provide for increased class size.
- Sources of funding, independent of federal funding include state appropriation dollars, bond purchases, and private funding from individual donors, foundations, endowments. Private funds from individual donors most often are targeted for facilities to support companion and or equine medicine. There are also several states that prohibit state funds from being used for construction, requiring that all new construction dollars come from federal or private sources.
- The vast majority of the plans by CVMs to expand capacity have not received a dedicated funding source. Several colleges cited VPHWEA as their only hope to successfully get these projects started.
- Loan repayment programs do not and will not provide the increased capacity needed by our country's Colleges of Veterinary Medicine that can only be obtained through the construction of new facilities, to train and graduate increased numbers of veterinarians annually, having the training needed to meet societal public health needs identified in this legislation.
- The 28 US Colleges of Veterinary Medicine are located in just 26 of our 50 States. Yet, their graduates must meet national needs to protect our national food supply (including school lunch programs), prevent the introduction of or detect early any new emerging, or re-emerging

infectious zoonotic diseases across our entire country, such as avian influenza in our country's poultry, or an introduction of rift valley fever, to name just a few examples.

- Federal investment, in partnership with state funding, is urgently needed to allow the capacity needed by our Colleges of Veterinary medicine to be developed within a reasonable time frame to meet national public health, preparedness, response, and security needs.

Please don't hesitate to contact me further if I can be of further assistance.

Sincerely,



Marguerite Pappaioanou, DVM, MPVM, PhD, Dipl ACVPM
Executive Director



American Veterinary Medical Association

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February 24, 2008

The Honorable John Dingell
Chair
House Energy and Commerce Committee
United States House of Representatives
2125 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Dingell:

On behalf of the American Veterinary Medical Association and its 76,000 members, I would like to thank you for inviting us to participate in the hearing for H.R. 1232, the Veterinary Public Health Workforce Expansion Act. We are pleased to answer the Committee's questions concerning the Act.

1. How many veterinary medical schools are currently planning expansions?

As you are aware, there are twenty-eight veterinary schools in the United States representing twenty-six states. Since 1989, the number of new graduates has been relatively flat, despite the increasing U.S. population. A recent Kansas State study estimates a 4 percent to 5 percent annual shortage of veterinarians for the foreseeable future. The U.S. veterinary schools are at capacity, and we need to invest in these schools to meet the critical shortage of veterinarians, especially in the area of public health. The Association of American Veterinary Colleges (AAVMC) represents the veterinary schools and collects data about the specific needs of each school. I will defer to Dr. Pappaioanou, AAVMC Executive Director, for the particulars concerning the expansion plans of each of AAVMC member veterinary schools.

2. For each project, do these schools have plans on how to finance such expansions?

Because this question relates to the specific financing plans of each school, I will defer to Dr. Pappaioanou for the answer to this question.

3. The intent of this bill is to provide more veterinarians in public health fields. Per the discussion at the hearing, it is unclear whether this bill would accomplish the goal of training veterinarians specifically for this purpose. Would it not be more efficient to provide loan repayment programs for veterinarians that enter into public health fields?

There is a critical shortage of veterinarians working in food safety and public health. The nation's veterinary schools are currently at or above capacity, graduating approximately 2600 veterinarians per year. Without expanding the veterinary schools, we will be unable to meet the future veterinary needs of our country, especially in the areas of public health and food safety. The Veterinary Public Health Workforce Expansion Act is written to

to increase the number of veterinarians serving in public health practice, which is defined by the act as follows:

“The term “public health practice” includes bioterrorism and emergency preparedness, environmental health, food safety and food security, regulatory medicine, diagnostic laboratory medicine, and biomedical research.”

The National Veterinary Medical Service Act (NVMSA) was enacted in 2003. Once fully funded and functional, it will provide veterinarians loan repayment assistance in return for working in underserved geographic and professional areas of veterinary medicine, especially public health and food safety. While a loan repayment program will provide incentives to go into specific fields, it will not address the need for increasing the capacity of our nation’s veterinary schools. Without increasing the overall number of veterinary school graduates, we will be unable to address the critical shortage of veterinarians in food safety and public health.

4. Is there any way to distinguish if the construction dollars are used solely for public health projects?

The Veterinary Public Health Workforce Expansion Act was specifically written to increase the number of veterinarians in public health practice. One of the criteria in awarding the grants is “the ability of the applicant to increase the number of veterinarians who are trained in specified public health practice areas.” The AVMA will work closely with AAVMC and its members to insure that the construction dollars spent will increase the number of public health veterinarians as described in the school’s grant proposal. The AVMA will also work closely with AAVMC to assist the Secretary to write rigorous regulations for the program that will provide the intended outcome - to increase the number of veterinarians entering public health practice. The AVMA and AAVMC are willing to work with your committee to improve the legislation and address the concerns of your committee members.

I appreciate the opportunity to address your questions, and look forward to working with you in the future. Please feel free to contact me or the AVMA Washington, DC, staff (Dr. Mark Lutschaunig, 202-289-3205) if you need additional assistance.

Respectfully,

A

W. Ron DeHaven, DVM, MBA
Executive Vice President



February 28, 2008

The Honorable John Dingell
 United State House of Representatives
 Washington, DC 20515

Dear Mr. Chairman,

I am pleased to answer the following questions that you sent me in correspondence dated February 12, 2008. I look forward to working with you as this vital legislation is considered.

Question 1: What expansion or construction projects have been undertaken by the University of Pennsylvania in the last 15 years?

Question 2: How did the University of Pennsylvania finance these expansion or construction projects?

Response: Below is a report developed by the School of Veterinary Medicine on the three construction projects that cost over \$5 million between 1993 and 2008. Sources of funding are cited after a brief description of the project.

- Hill Pavilion, new teaching and research facility at the School. This is the first new teaching and research facility at the School in 43 years. In 1972 the School increased its enrollment from 65 to 105 students per year as a result of the federally funded Comprehensive Health Manpower Training Act. Funding for this Act was not sustained with the result that since 1972, the School has been using an outdoor patio with a roof placed over it as a classroom for the increased class size.

The total cost of the Hill Pavilion is listed at \$82 million. This includes:

- \$5 million from the Med School for use of the building
- \$34 million from private gifts,
- \$18 million from State capital funds
- \$ 6 million in Federal grants for vivarium serving the entire University
- \$ 7 million in other grants including the Kresge Foundation
- \$ 5.6 million in School funds,
- \$ 8 million loan from the University

- Isolation and High Risk Facility at New Bolton Center.

This new construction became necessary because the large animal teaching hospital at New Bolton Center acquired a lethal, multidrug resistant salmonella infection. As it was unsafe for large animals, the hospital had to be closed for 3 months in 2005 for cleaning and remediation. The hospital was built in 1964 at a time when multidrug resistant organisms were unheard of. Problems continue and the new facility is essential.

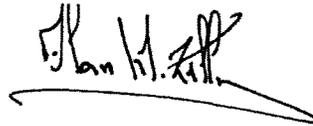
Total cost = \$14.3 million,
\$12 million from the State via racetrack wagering revenues
\$2 million gift.

- Imaging Center at the Ryan Hospital for Companion Animals, Philadelphia

Total cost = \$5.5 million,
\$4.5 million in gifts
\$1 million loan from the University

I thank the committee for the opportunity to testify before you and to provide this supplemental information. Please contact me if I may be of further assistance.

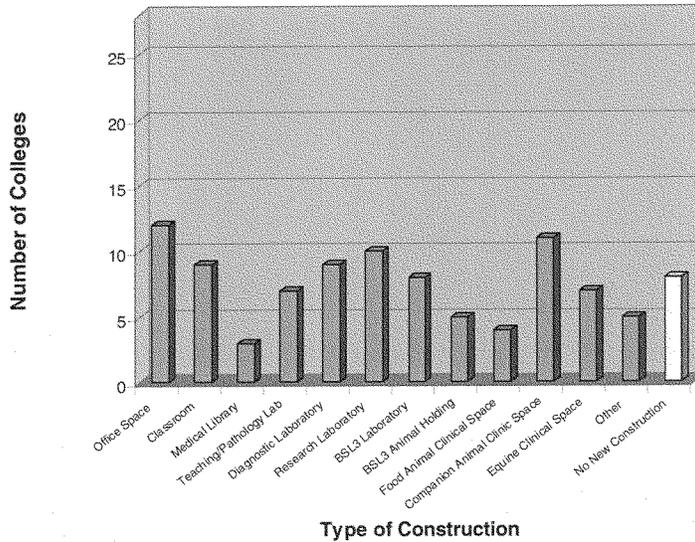
Sincerely,

A handwritten signature in black ink, appearing to read "Alan M. Kelly", with a long horizontal flourish underneath.

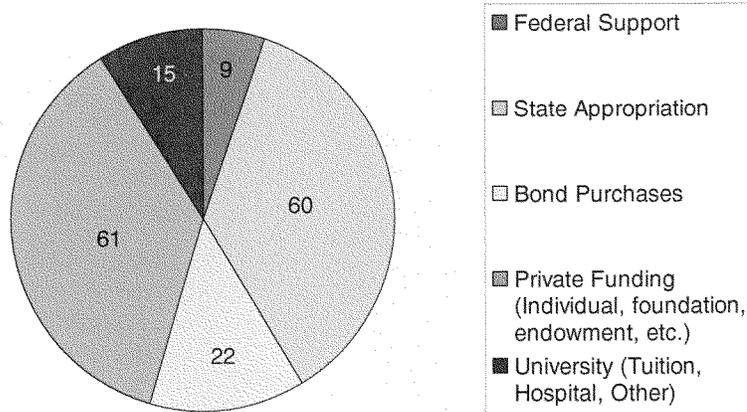
Alan M. Kelly
The Gilbert S. Kahn Dean Emeritus
The School of Veterinary Medicine

Construction *Started* 2003 through February 2008

Type of New Construction Started by 28 U.S. Colleges of Veterinary Medicine, 2003 through February 2008*

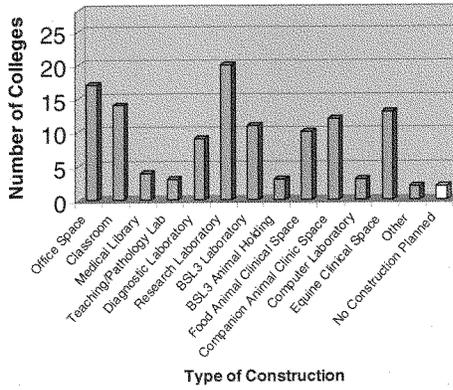


Type of Funding Secured for 90 Construction Projects Started at 20 U.S. Colleges of Veterinary Medicine Since 2003*

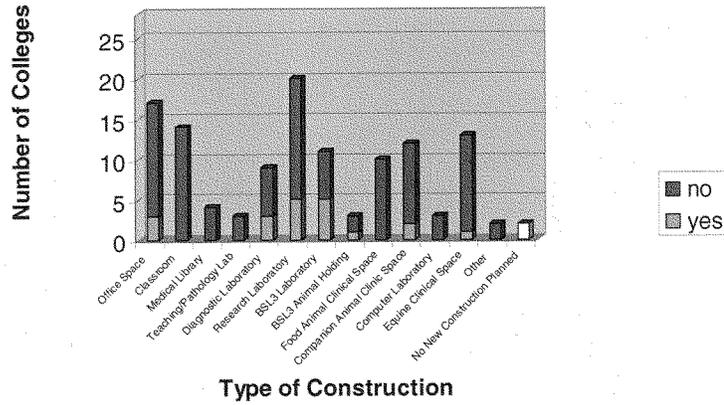


Construction *Planned* as of February 2008

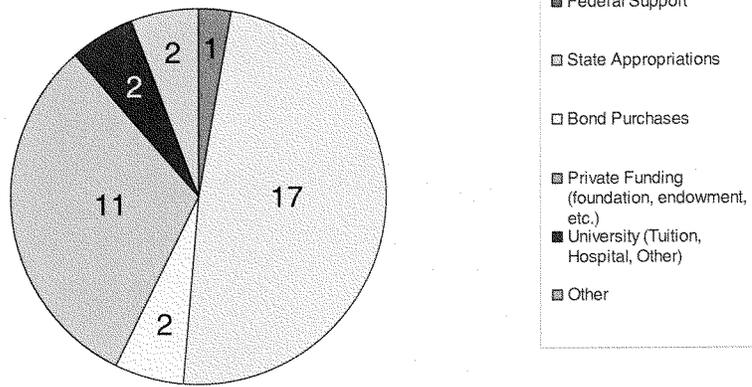
Type of New Construction *Planned* by 28 US Colleges of Veterinary Medicine, as of February 2008*



Funding Secured by 28 U.S. Colleges of Veterinary Medicine for *Planned* Construction, as of February 2008*

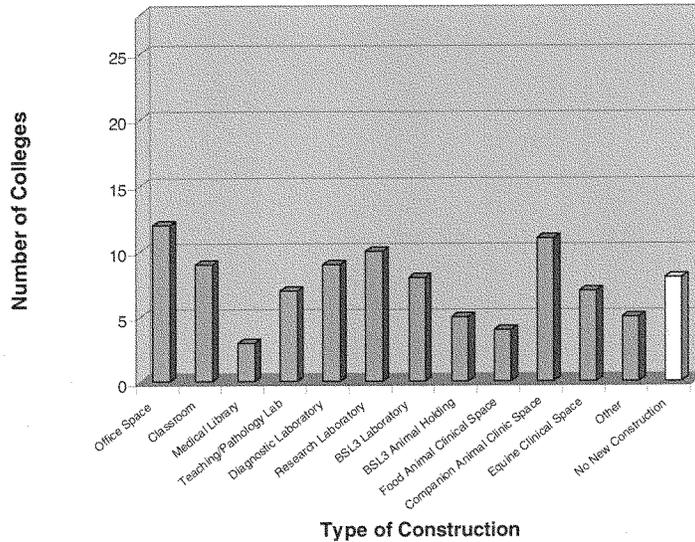


**Types of Funding Identified for 20 Construction
Projects *Planned* at 10* U.S. Colleges of Veterinary
Medicine, as of February 2008****

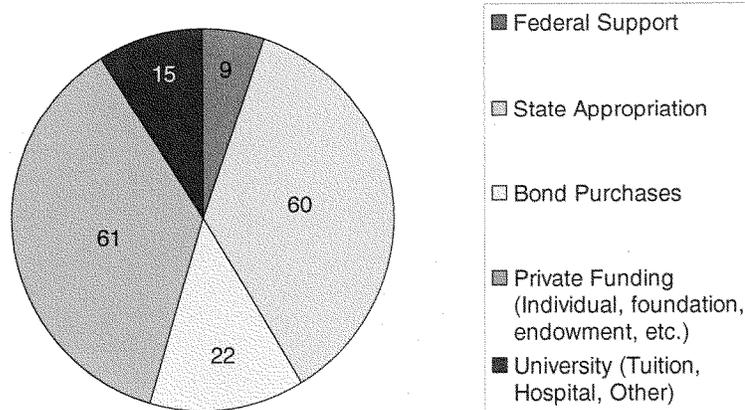


Construction *Started* 2003 through February 2008

Type of New Construction Started by 28 U.S. Colleges of Veterinary Medicine, 2003 through February 2008*

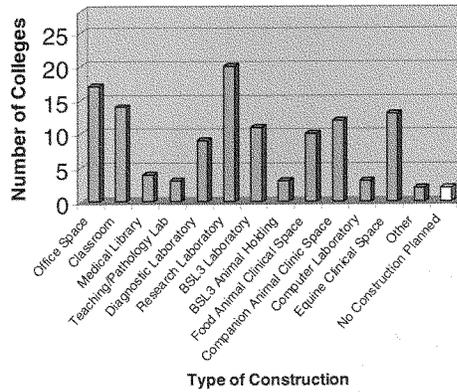


Type of Funding Secured for 90 Construction Projects Started at 20 U.S. Colleges of Veterinary Medicine Since 2003*

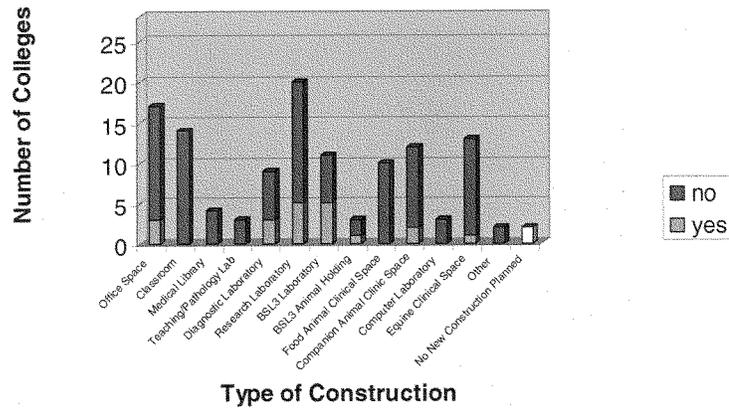


Construction *Planned* as of February 2008

Type of New Construction *Planned* by 28 US Colleges of Veterinary Medicine, as of February 2008*



Funding Secured by 28 U.S. Colleges of Veterinary Medicine for *Planned* Construction, as of February 2008*



Types of Funding Identified for 20 Construction Projects *Planned* at 10* U.S. Colleges of Veterinary Medicine, as of February 2008**

