SURVEYING THE THREAT OF AGROTERRORISM: PERSPECTIVES ON FOOD, AGRICULTURE, AND VETERINARY DEFENSE

HEARING

BEFORE THE

SUBCOMMITTEE ON EMERGENCY MANAGEMENT AND TECHNOLOGY

OF THE

COMMITTEE ON HOMELAND SECURITY HOUSE OF REPRESENTATIVES

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CONTENTS

SURVEYING THE THREAT OF AGROTERRORISM: PERSPECTIVES ON FOOD, AGRICULTURE, AND VETERINARY DEFENSE

Tuesday, September 16, 2025

U.S. HOUSE OF REPRESENTATIVES,
COMMITTEE ON HOMELAND SECURITY,
SUBCOMMITTEE ON EMERGENCY MANAGEMENT
AND TECHNOLOGY,
Washington, DC.

The subcommittee met, pursuant to notice, at 3:05 p.m., in room 310, Cannon House Office Building, Hon. Dale W. Strong [Chairman of the subcommittee] presiding.

Present: Representatives Strong, Brecheen, Mackenzie, Kennedy, and Hernández.

Chairman STRONG. The Committee on Homeland Security Subcommittee on Emergency Management Technology will come to order. Without objection, the Chair may declare the subcommittee in recess at any point.

The purpose of this hearing is to assess the threat of agroterrorism to the United States' food and agriculture sector and examine how Federal efforts to prevent, respond to, and recover from such attacks can be strengthened. I now recognize myself for an opening statement.

Good afternoon and thank you for joining us today. Today this subcommittee is meeting to discuss the threats posed by agroterrorism and other malicious actors who seek to harm America's food and agriculture sector.

The importance of our Nation's agriculture assets to both our economy and national security cannot be overstated. Agroterrorists who use biological agents and other means to disrupt our food supply chain can find success in generating mass fear, instability, and economic damage. This makes our agriculture a tempting target for hostile actors. Just earlier this year, the DOJ charged 3 Chinese nationals with trying to smuggle hazardous biological material into the United States, materials that could have threatened the health of our crops and our livestock. These Chinese nationals intended to conduct further research on the materials at the University of Michigan laboratory. That raises serious questions about the risk of modifying dangerous pathogens and other strengths of security measures protecting research conducted within our universities and laboratories.

While CBP agents successfully intercepted the undeclared biological materials, this incident highlights the critical role of food

safety and security in our homeland security operations. Unfortunately, these incidents are just the latest development in an ongoing trend of foreign and malign interest in U.S. agriculture.

The risks we face aren't limited to just the international introduction of biological threats. More and more, the food and agriculture industries have incorporated automations and digital technologies to improve the efficiency of farming. But as the farming industry continues to increase its use of these technologies, it becomes more vulnerable to cyber attack, potentially jeopardizing the entire supply chain.

Rogue actors have also attempted to breach our agriculture sector from within. A GAO study from January of last year confirmed that foreign ownership of U.S. farmland has been steadily increasing over the course of decades. There is a growing concern that groups affiliated with the PRC will continue to seek to purchase farmland near and around U.S. military bases and installations.

That is why I am proud to have sponsored the Protecting America's Agriculture Land From Foreign Harm Act 2025. My bill would prohibit people tied to the governments of Iran, North Korea, China, or Russia from purchasing or leasing agriculture land in the United States of America. It's a common-sense step to protect our food, fiber, and supply chain and prevent adversaries from using our farmland as a base for operations that threatens our homeland security. I hope that the relevant committees of jurisdiction can take up this bill soon.

I also commend President Trump and his administration for standing up for the National Farm Security Action Plan, which brings together USDA, DHS, the Department of War, and other Federal agencies. This initiative has the potential to revolutionize the integration of agriculture security into national security, and I strongly support it.

Today we are fortunate to have a panel of experts who can testify to the nature and severity of the threat that terrorists and other malicious actors can pose to agriculture. I look forward to hearing their perspectives of what else Congress and the Federal Government can do to protect our farmland and our food supply chain from bad actors.

[The statement of Chairman Strong follows:]

STATEMENT OF CHAIRMAN DALE W. STRONG

Good afternoon, and thank you for joining us.

Today, this subcommittee is meeting to discuss the threats posed by agroterrorism and other malicious actors who seek to harm America's food and agriculture sector.

The importance of our Nation's agricultural assets to both our economy and national security cannot be overstated.

Agroterrorists who use biological agents and other means to disrupt our food supply chain can find success in generating mass fear, instability, and economic damage.

This makes our agriculture a tempting target for hostile actors.

Just earlier this year, the DOJ charged 3 Chinese nationals with trying to smuggle hazardous biological materials into the United States—materials that could have threatened the health of our crops and livestock.

These Chinese nationals intended to conduct further research on the biological materials at a University of Michigan laboratory.

That raises serious questions—about the risks of modifying dangerous pathogens, and about the strength of security measures protecting research conducted within our universities and laboratories.

While CBP agents were able to successfully detect and interdict the undeclared biological materials, this incident demonstrates the vital importance of food safety and security as a part of our homeland security operations.

Unfortunately, these incidents are just the latest development in an ongoing trend of foreign and malign interest in U.S. agriculture.

The risks we face aren't limited to just the intentional introduction of biological threats.

More and more, the food and agriculture industries have incorporated automation and digital technologies to improve the efficiency of farming.

But as the farming industry continues to increase its use of these technologies, it becomes more vulnerable to cyber attacks, potentially jeopardizing the entire supply chain.

Rogue actors have also attempted to breach our agriculture sector from within.

A GAO study from January of last year confirmed that foreign ownership of U.S. farmland has been steadily increasing over the course of decades.

And there is growing concern that groups affiliated with the PRC will continue to seek the purchase of farmland near and around U.S. military bases and installations.

That's why I'm proud to have sponsored the "Protecting America's Agricultural Land from Foreign Harm Act of 2025."

This bill would prohibit people tied to the governments of Iran, North Korea, China, or Russia from purchasing or leasing agricultural land in the United States.

It's a common-sense step to protect our food supply and prevent foreign adversaries from using our farmland as a base for operations that threaten our homeland security.

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This initiative has the potential to revolutionize the integration of agricultural security into national security, and I strongly support it.

Today, we are fortunate to have a panel of experts who can testify to the nature and severity of the threat that terrorists and other malicious actors can pose to our agriculture.

I look forward to hearing their perspectives on what else Congress and the Federal Government can do to protect our farmland and our food supply chains from these bad actors.

Chairman STRONG. I now recognize the Ranking Member of the subcommittee, Mr. Kennedy, for his opening statement.

Mr. KENNEDY. Thank you, Chairman, and good afternoon.

Last week, several Members of this committee traveled to New York City to pay our respects and honor the lives of those who were lost on September 11, 2001. I am glad we were able to come together in a bipartisan manner to remember those who perished on that tragic day.

One of the problems identified in the aftermath of September 11 was our country's failure to imagine the absolute worst-case scenarios. In recognizing those gaps in our national security, the Department of Homeland Security was created the following year and Congress invested in first-responder resources to strengthen communities' ability to counter all types of threats and hazards. In fact, as a direct result of the 9/11 attacks, Congress and the George W. Bush administration recognized the need to improve the United States' preparedness toward agroterrorism and biosecurity more broadly. This included designating agriculture as a critical infrastructure sector and passing legislation in 2002 to implement a coordinated whole-of-Government strategy for bioterrorism preparedness.

Since then, over the last 2 decades, the Federal Government has worked closely with farmers, private-sector partners, animal and plant experts, and academia to ensure that we have a strong infra-

structure in place to detect and defend against any biosecurity threats. In fact, in my home State of New York, Cornell University hosts the Animal Health Diagnostic Center, a Level 1 facility that is part of the U.S. Department of Agriculture's National Animal Health Laboratory Network. Their work involves receiving specimens from livestock and testing them for infectious diseases that could have a devastating impact on animal agriculture and, subsequently, on our national economy.

Unfortunately, in the last week, Cornell's lab received notice that 2 funding agreements they were set to receive from the USDA have been paused. If Cornell's role in the national lab network is diminished, the entire biosecurity surveillance system becomes weaker, meaning there is a lower capacity nationwide to respond quickly if we were to experience an agroterrorism event.

There is a risk that terrorist groups could develop agro and biological weapons in isolation or may even receive help from our foreign adversaries like North Korea, China, Iran, or Russia with biological weapons programs. Cornell's lab hosts the infrastructure that would help counter a threat like this, and losing a link in the USDA surveillance network due to withheld funding would severely cripple our ability to respond to an act of agroterrorism such as this.

More broadly, a weakening of Federal infrastructure is a trend we are seeing across a counterterrorism and public health sector, undermining the very lessons learned from September 11. Just last month, the Federal Emergency Management Agency announced $134 million in cuts to counterterrorism funding from cities that have repeatedly been identified as top targets for terrorists. New York City, the site of the deadliest terrorist attack to hit our Nation, will have to weather a cut of $64 million this year alone.

Importantly, these grants support the first responders who encounter threats from today's hearing subject, agroterrorism. The Trump administration's counterterrorism funding cuts to New York City; Washington, DC; Chicago; Los Angeles; Jersey City; and San Francisco should be cause for bipartisan concern, and I hope the Majority will hold a hearing on the impacts of funding losses in places targeted by terrorists.

Since taking office, the Trump administration has also dismantled some of the institutions that would lead to a robust public health response to an agro or bioterrorism attack. This administration has fired the head of the Centers for Disease Control, failed to appoint permanent leadership to the Administration for Strategic Preparedness and Response, and to FEMA. The administration has canceled hundreds of millions of dollars for vaccine development and fired Federal employees, including scientists and researchers, who would support a mass public health response to emerging zoonotic diseases such as avian flu. These Federal agencies, all of which are leaderless, would have a primary role in a mass agro or bioterrorism catastrophe.

I am incredibly concerned that America is not prepared to respond to a serious biological threat. We are walking straight into a scenario where we know the risks, but are completely hamstrung in addressing them, not just today, but in years to come. I hope today's conversation will be useful and informative.

I want to thank the witnesses for participating in today's hearing. I thank the Chairman for his leadership in putting this together. I look forward to all of your testimony so we can work together to move forward to make our Nation stronger and the citizens protected.

With that, I yield back.

[The statement of Ranking Member Kennedy follows:]

STATEMENT OF RANKING MEMBER TIMOTHY M. KENNEDY

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Just last month, the Federal Emergency Management Agency announced $134 million in cuts to counterterrorism funding from cities that have repeatedly been identified as top targets for terrorists.

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Chairman STRONG. Thank you, Ranking Member Kennedy. Other Members of the subcommittee are reminded that the opening statements may be submitted for the record.

I am very pleased to have such an important panel of witnesses before us today. I ask that the witnesses please rise, raise their right hand to be sworn in.

[Witnesses sworn.]

Chairman STRONG. Thank you. Please be seated. Let the record reflect that the witnesses have answered in the affirmative.

I would like to now formally introduce our witnesses. Dr. Daniel K. Wims is the president of Alabama A&M University, proudly located in my district. Dr. Wims has served 25 years in government and higher education, leading academic and student affairs, teaching agriculture science, and directing farm research and development programs across the Southeast. Dr. Wims' extensive educational background in agronomy has informed his leadership of Alabama A&M's robust agriculture and food science programming. Thank you for being here today.

Dr. Cris Young is a professor of practice at the College of Veterinary Medicine at Auburn University. Dr. Young has worked with USDA Animal Plant Health Inspection Services, Veterinary Services in various roles. He has led instant response to avian influenza, cattle fever tick, and screwworm. Dr. Young also served 25 years in the U.S. Army Reserve, during which he commanded the 358th Medical Detachment and held assignments with the Standing Joint Force Headquarters of the 350th Civil Air Command. Welcome.

Dr. Marty Vanier is the director of the National Agriculture Biosecurity Center at Kansas State University and the associate director of the Biosecurity Research Institute. Dr. Vanier oversees programs that address diverse threats to the United States and world agriculture economies and food supply, and she serves as a liaison to the national, State, and local stakeholders and industry groups. Thank you for joining us.

Dr. Asha George is the executive director of the Bipartisan Commission for Biodefense. In her role, Dr. George develops and assesses recommendations to strengthen biodefense, conducts research, and makes policies and oversight recommendations to counter biological threats. Dr. George also served as Active Duty in

the United States Army as a military intelligence officer and paratrooper. She is a decorated Desert Storm veteran.

I thank all the witnesses again for being here today.

I now recognize Dr. Wims for 5 minutes to summarize his opening statements. Dr. Wims.

STATEMENT OF DANIEL K. WIMS, PH.D., PRESIDENT, ALABAMA A&M UNIVERSITY

Mr. WIMS. Thank you, Chairman Strong, Ranking Member Kennedy, and honorable Members of the committee for allowing us to participate in this critical conversation on national security, agroterrorism.

My name is Daniel K. Wims. I serve as 12th president of Alabama Agricultural & Mechanical University, an 1890 land-grant HBCU in Huntsville, Alabama. Of note, for 16 years prior to becoming president 4 years ago, I served as executive vice president, provost, and vice president of academic affairs, vice president for research, and professor of agricultural sciences at 1890 land-grant universities in Alabama and Georgia. Over the past 30 years, I've served in various administrative and professorial capacities at land-grant universities such as Alcorn State, Southern, South Carolina State University, Fort Valley State, and Florida A&M.

I'm grateful to be here today to discuss this critical topic of the threat of agroterrorism in the United States, particularly the food and agricultural critical infrastructure sector. In 2023, the Bureau of Economic Analysis, agriculture, food, and related industries contributed roughly 1.5 trillion to the U.S. gross domestic product, 5.5 percent share. The output of America's farm contributed 222 billion of this sum and 0.8 percent of U.S. GDP.

With nearly 2 million farms in the United States, agriculture is essentially our Nation's most important pillar. Americans must eat safe and high-quality food. Today threats not only expose us to risk of food shortages, foreign dependencies, and higher prices, but they also strike at one of the most critical essential pillars of America, and those threats to American agriculture could lead to agroterrorism. Defending access to American abundance and preserving the American experiment is the essence of agrosecurity and it's why farm security is national security.

Twenty-three years ago, the Chairman of the Joint Economic Committee addressed Congress stating that an agroterrorism incident could immediately cost in the range of 25 to 60 billion. Given the inflation rate, this could cost as much as 106 billion today. In 2001, foot-and-mouth disease in the United Kingdom affected 9,000 farms and required the destruction of more than 4 million animals. That would cost taxpayers in excess of 60 billion today.

As an 1890 land-grant university, Alabama A&M has robust agricultural research capacity. Our researchers have been actively working on technical solutions and research projects in agrosecurity, food safety and quality, diagnostic and detection of foodborne pathogens such as E. coli, salmonella, and listeria. Additionally, the Alabama Cooperative Extension System is a primary outreach organization for the land-grant mission of Alabama A&M University and Auburn University. My friend Auburn University

President Dr. Chris Roberts and I are committed to research and outreach of these programs and collaborations.

ACES agents play a pivotal role in educating farmers and stakeholders about agroterrorism and agrosecurity through different agriculture programs such as Food Safety and Security, Integrated Pest Management, Soil Health and Water Quality, Agronomy, Animal and Plant Health, and Food Safety Modernization Act. ACES has assigned agents to work with FEMA agents and get trained by FEMA agents, particularly in times of crisis and emergencies, and these agents are ready to work and coordinate with FEMA agents as needed.

An additional threat is the increase of foreign investment in our Nation's agricultural land from countries like China. This, too, cannot be ignored. In fact, legislation introduced by you, Mr. Chairman, the Protecting America's Agricultural Land From Foreign Harm Act is a step in the right direction in safeguarding these lands from foreign adversaries.

In closing, I'd like to reinforce the role of Alabama A&M as an 1890 land-grant institution and what we can do to help play in keeping our food safe. It is evident from the threats that Alabama A&M is aligned with the National Farm Security Action an introduced by USDA in July 2025. Our scientists stand ready to partner with industry, the Government, and other academic institutions to ensure our home-grown food supply remains safe and secure for consumption for all Americans. Farm security is national security and I thank you for bringing attention to this important matter, Mr. Chairman.

[The prepared statement of Mr. Wims follows:]

PREPARED STATEMENT OF DANIEL K. WIMS

SEPTEMBER 16, 2025

ACKNOWLEDGEMENTS

Thank you, Chairman Strong, Ranking Member Kennedy, [if present: Chairman Garbarino, Ranking Member Thompson] and the honorable Members of the committee to participate in today's hearing on this critical national security threat, agroterrorism.

INTRODUCTION

I am Dr. Daniel K. Wims, and I serve as the 12th president of Alabama Agricultural and Mechanical University, an 1890 land-grant university in Huntsville, Alabama.

For 16 years prior to becoming president, I served as provost and vice president of academic affairs, research, and professor of agricultural sciences at 1890 land-grant universities in Alabama and Georgia. More broadly, over the past 30 years, I have served in varying capacities at land grant universities such as Alcorn State University (MS), Southern University (LA), South Carolina State University (SC), Fort Valley State University (GA) and Florida A&M University (FL).

AGROTERRORISM

I am grateful to be here today to discuss the critical topic of the threat of agroterrorism to the United States, particularly the food and agriculture critical infrastructure sector. In 2023, the Bureau of Economic Analysis, agriculture, food, and related industries contributed roughly $1.537 trillion to the U.S. gross domestic product (GDP), a 5.5-percent share.

The output of America's farms contributed $222.3 billion of this sum—about 0.8 percent of U.S. GDP. With nearly 2 million farms in the United States, agriculture is essential to our Nation considered and one of the most important pillars of America. Americans must eat safe and high-quality food.

Today, threats to American agriculture not only expose us to risks of food shortages, foreign dependencies, and higher prices but they also strike at one of the most essential pillars of America. Those threats to American agriculture will lead to agroterrorism. Defending access to American abundance and preserving the American experiment is the essence of agrosecurity, and it is why farm security is national security.

Twenty-three years ago, the Chairman of the Joint Economic Committee addressed Congress stating that an agroterrorism incident could immediately cost in the "range of $25 billion to $60 billion." Given the inflation rate, this could cost as much as $106 billion today.

In 2001, Foot Mouth Disease in the United Kingdom affected 9,000 farms and required the destruction of more than 4,000,000 animals. Researchers believe that a similar outbreak in the United States would cost taxpayers up to $60 billion.

AAMU AGROTERRORISM ROLE

As an 1890 land-grant university, Alabama A&M has robust agricultural research capabilities. Alabama A&M researchers have been working actively on technical solutions and research projects in agrosecurity, food safety and quality, diagnostic and detection of foodborne pathogens such as E. coli, Salmonella and Listeria, and Toxicology.

Additionally, the Alabama Cooperative Extension System (ACES) is the primary outreach organization for the land-grant mission of Alabama A&M University and Auburn University. Auburn University president, Dr. Christopher Roberts and I are committed to research and outreach programs collaborations.

ACES agents play a pivotal role in educating farmers and stakeholders about agroterrorism and agrosecurity through different agriculture programs such as food safety and security, integrated pest management, soil health and water quality, agronomy, animal and plant health, and the Food Safety Modernization Act (FSMA). ACES has assigned agents to work with FEMA agents and get trained by FEMA agents. In times of crises and emergencies, ACES agents are ready to work and coordinate with FEMA agents.

With the development of the novel Rapid Detection System and Remote Sensing for Chemical and Biological Threats by Alabama A&M scientists, I can attest that our institution is well-positioned to contribute to protecting our Nation from agroterrorism and provide technologies to counter wide range of threats to our farmlands, crops, animal and plants health, food processing facilities, and food supplies.

An additional threat is the increase in foreign investment in our Nation's agricultural land from countries such as China. This too cannot be ignored. In fact, legislation introduced by you, Mr. Chairman, the Protecting America's Agricultural Land from Foreign Harm Act, is a step in the right direction in safeguarding these lands from foreign adversaries.

CLOSING

To close, I'd like to reinforce the role Alabama A&M, as an 1890 land-grant institution, can play in keeping our food safe. It is evident from the threats that Alabama A&M is aligned with the National Farm Security Action plan introduced by USDA in July 2025. Alabama A&M scientists stand ready to partner with industry, the Federal Government, and other academic institutions to ensure our home-grown food supply remains safe and secure for consumption for all Americans.

Farm security is national security and I thank you for bringing attention to this important matter. As president of Alabama A&M University, I look forward to working with you in the future.

Chairman STRONG. Thank you, Dr. Wims. It is an honor to be with you again.

I now recognize Dr. Young for 5 minutes to summarize his opening statement. Dr. Young.

STATEMENT OF CRISTOPHER A. YOUNG, DVM, MPH, DACVPM, COL USA (RET.), PROFESSOR OF PRACTICE, COLLEGE OF VETERINARY MEDICINE, AUBURN UNIVERSITY

Dr. YOUNG. Thank you. Good afternoon, Chairman Strong, Ranking Member Kennedy, other Members, distinguished Members of the subcommittee. My name is Christopher Andrew Young and I'm

a veterinarian by training, former USDA program director, as you mentioned, and a retired U.S. Army colonel. I'm here today representing Auburn University, though the views I express will be my own and do not necessarily represent the views or positions of the university.

Having said that, let's talk about agroterrorism. Each year, Auburn University's biosurveillance research team reviews several thousand articles across a broad spectrum of open source work. Also, on average, a couple hundred books are read, although not always cover to cover, but we read the sections that are pertinent to the work that we're doing in our on-going analytical operations on agroterrorism.

One consistent finding that we see is that there is no single vetted source of information addressing the diversity and complexity of the threats to food, agriculture, and water. Also, even more importantly, no single work explains how those threats can be mitigated. Our team spends a great deal of time examining data generated by private industry, which we find holds more information, more data on food, ag, and water than Government entities.

Food, ag, and water systems are widely considered essential components of our national security. Without security and resiliency in these critical infrastructure systems that provide safe, reliable food and water, we are vulnerable to exploitation, thereby jeopardizing our Nation's public health, our economic prosperity, our military readiness, and our ability to perform force projection.

The term "biosecurity" traditionally refers to a set of practices on farms designed to minimize risk from disease for plants or animals. But biosecurity can also be thought of as a desired state of being, a matrix of success, if you will, where risk and threats have been identified and neutralized before they become manifest.

The term "biosecure" means to be protected against harmful biological agents, both naturally occurring or intentionally introduced, which can include infectious diseases, pests, and invasive species that may have an impact on the health status of a system or ecosystem. So maintaining systematic biosecurity entails continuous monitoring and the persistent stare that's needed to occur across the continuum of the security domains would include both animal and plant agriculture, laboratory research security, environmental security, and ultimately national security and defense intelligence.

To frame the problem succinctly, if the United States ever goes to war with a pacing adversary, food, ag, and water will be as important as traditional military concerns such as submarines or missiles. Critical problems could emerge first to our west in the Indo-Pacific, but perhaps even within the continental United States. Wars can be and are lost by lack of material, but they can also be lost due to strategic and tactical errors involving food and water. Non-state actors like terrorists and violent extremist organizations may also target our homeland food supply via the agricultural sector. I am especially concerned today about gray zone conflicts.

So what would our adversaries' objectives be? Put simply, their goal is food and water disruption, followed by tactical and strategic dominance and eventual destruction. This picture is bleak, but food, ag, and water threats, already widely distributed and continually growing in intensity, both the critical infrastructure and the

food supply itself will almost certainly be more intensely targeted in the future. Attacks are likely to be geographically diffused, staggered over time, and be combined with cognitive warfare elements, the specifics of which are more suitable for a Classified forum. Because of this threat landscape, it is critical that the U.S. Government better prepare for and mitigate threats to our agricultural sector.

I'd like to thank the committee Chairman, Chairman Strong, and the Members of the committee for holding this hearing and for the opportunity to testify on this important issue. This concludes my opening remarks.

[The prepared statement of Dr. Young follows:]

PREPARED STATEMENT OF CRISTOPHER A. YOUNG

Good afternoon, Chairman Strong, Ranking Member Kennedy, and distinguished Members of the subcommittee.

My name is Dr. Cristopher Andrew Young, and I am a veterinarian, a former USDA program director, and a retired U.S. Army colonel. I am here today representing Auburn University, though the views I express will be my own and do not necessarily represent the views or positions of the university.

I am here today to discuss the critically important topic of agroterrorism.

Each year, Auburn University's biosurveillance research team reviews several thousand articles across a broad spectrum of open sources. Also, on average, a couple of hundred books are read, perhaps not completely, but certainly, we thoroughly read those sections that are relevant to on-going analytical operations and agroterrorism. One consistent finding is that there is no single vetted source of information addressing the diversity and complexity of threats to food, agriculture, and water. Also, even more importantly, no work explains how those threats can be mitigated.

Our team spends a great deal of time examining data generated by private industry, which holds more food-, agriculture-, and water-related data than the Government. Food, agriculture, and water systems are widely considered essential components of our national security. Without security and resiliency these critical infrastructures that provide safe, reliable, food and water supplies are vulnerable to exploitation thereby jeopardizing our Nation's public health, economic prosperity, military readiness, and force projection capability.

The term biosecurity traditionally refers to a set of practices on farms designed to minimize risk from disease in plants or animals. But biosecurity can also be thought of as a desired state of being, a matrix of success, if you will, where risks and threats have been identified and neutralized before they become manifest.

The term "biosecure" means to be protected against harmful biological agents (both naturally occurring or intentionally introduced) including infectious diseases, pests, and invasive species, etc. that may have impact on the health status of a system (animal, plant, ecosystem). Maintaining systematic biosecurity entails continuous monitoring. This persistent stare needs to occur across the continuum of security domains, including:

- Agriculture Security (both animal and plant)
- Public and One Health Security
- Laboratory Research Security
- National Security and Defense Intelligence
- Environmental Security.

To frame the problem succinctly, if the United States ever goes to war with a pacing adversary, food, agriculture, and water will be as important as traditional military concerns, such as missiles, submarines, etc. Critical problems could emerge first to our west in the Indo-Pacific but perhaps even within the continental United States. Wars can be and are lost by the lack of material, but they can also be lost due to strategic and tactical errors involving food and water. Non-state actors like terrorist and violent extremist organizations may also target our homeland food supply via the agriculture sector. I am especially concerned about this during gray-zone conflict.

WHAT WOULD OUR ADVERSARIES' OBJECTIVES BE?

Put simply, their goal is food and water disruption, followed by tactical and strategic dominance, and eventual destruction. This paints a bleak picture, but food, ag-

riculture, and water threats are already widely distributed and continually growing in intensity. Both the critical infrastructure and the food supply itself will almost certainly be more intensely targeted in the future. Attacks are likely to be geographically diffused, staggered over time and be combined with cognitive warfare elements, the specifics of which are more suitable for a Classified forum. Because of this threat landscape, it is critical that the U.S. Government better prepare for and mitigate threats to our agriculture sector.

I would like to thank Committee Chairman Strong and the Members of the committee for holding this hearing and for the opportunity to testify on this important issue. This concludes my opening remarks, and I'll be happy to answer any questions.

Chairman STRONG. Thank you, Dr. Young.

I now recognize Dr. Vanier for 5 minutes to summarize her opening statement.

STATEMENT OF MARTY VANIER, DVM, DIRECTOR, NATIONAL AGRICULTURAL BIOSECURITY CENTER, ASSOCIATE DIRECTOR, BIOSECURITY RESEARCH INSTITUTE, KANSAS STATE UNIVERSITY

Dr. VANIER. Thank you, Chairman Strong, Ranking Member Kennedy, and Members of the subcommittee. Thank you for the opportunity to speak to you today on Surveying the Threat of Agroterrorism: Perspectives on Food, Agriculture, and Veterinary Defense. I'm Dr. Marty Vanier, director of the National Agricultural Biosecurity Center and associate director of the Biosecurity Research Institute at Kansas State University.

Agroterrorism has a very long history. From ancient wars to more recent times, agricultural agents have been used to damage food supplies; spread disease to humans, animals, and plants; disrupt economies or governments; or create fear to affect political change. In current times, economic disaster is the intended effect of agroterrorism events. There is a significant amount of data, some of which you've heard, to quantify the cost of an attack on the U.S. food supply. However, the data do not reveal the complexity of the U.S. agricultural enterprise and the costs incurred by the interconnected elements.

My experience is centered on animal disease response. However, I do want to mention 2 other issues. The first is the threat to the cybersecurity of operating systems in the agricultural community, and the second issue is that of protecting intellectual property.

While the hearing's topic is agroterrorism, it is important to acknowledge that Mother Nature is the most accomplished terrorist. Therefore, introduction of any high-consequence animal or crop disease, naturally or by accident, will require the same response and result in the same consequences as an introduction by a terrorist group.

In the most basic sense, there are 3 steps to a successful response to a high consequence disease event: No. 1, identify it; No. 2, find it, in other words, where is it; and, No. 3, control or eliminate it. Rapid and accurate diagnostics are critical, and planning and training for local responders is an absolute necessity for a successful response.

The response to a high-consequence animal disease event will be so large that it will require both traditional and nontraditional responders. These two groups do not speak the same language nor operate from the same system. A major role of NABC is to bring

these groups together to understand a common operational picture, develop response plans, and train to those plans.

Information sharing at all levels is important. There are a variety of regional groups that share information between State emergency management and agricultural agencies and also plan joint exercises for these groups. There's also a role for Classified information sharing. It gives us the ability to see over the horizon, to recognize potential threats before they get here. The Kansas Intelligence Fusion Center has addressed biological and agricultural threats at the Classified level since 2012 to protect the State and the Nation.

While all agricultural disasters are local, there is and must be a role for the Federal Government to provide support and resources. USDA supports plant and animal disease diagnostics and policy decisions surrounding disease spread and elimination in accordance with domestic and international trade policy. DHS supports technology development by DHS S&T and resources from FEMA in the form of access to training and planning support for responders and logistics support for State emergency managers.

Mr. Chairman and Members of the subcommittee, I thank you for the opportunity to appear today before you and I welcome any questions that you may have.

[The prepared statement of Dr. Vanier follows:]

PREPARED STATEMENT OF MARTY VANIER

SEPTEMBER 16, 2025

Good afternoon, Chairman Strong, Ranking Member Kennedy, and Members of the subcommittee. Thank you for the opportunity to talk with you about threats to agriculture.

I am Marty Vanier, DVM, and I am the director of the National Agricultural Biosecurity Center at Kansas State University, and the associate director of the Biosecurity Research Institute at Kansas State University. With a strong background in agriculture and 23 years of experience in animal disease emergency response, I am pleased to be here.

Agroterrorism has a long history. From ancient wars to more recent times agricultural agents have been used to damage food supplies, spread disease to humans, animals and plants, disrupt economies or governments, or create fear to effect political change.

In 1952 members of the Mau Mau nationalist movement in Kenya poisoned 33 cattle at a British mission station using African milk bush. In the 1980's Iraq developed and tested wheat cover smut to attack Iranian wheat crops. *(https://biosecurity.fas.org/education/dualuse-agriculture/1.-agroterrorism-and-foodsafety/biowarfare-against-agriculture.html)*

In 1984, the Rajneeshee cult in Oregon contaminated a restaurant salad bar for the purpose of affecting a local election by sickening voters prior to election day. And, in 2001, letters containing Anthrax spores were sent to Members of Congress and the media. Five human deaths resulted. *(https://domesticpreparedness.com/articles/agroterrorism-a-persistent-but-overlooked-threat)*

Economic disaster is the generally intended effect of agroterrorism attacks, though degradation of military personnel and supplies may also be a goal. Either goal would also have the parallel effect of creating fear and a lack of trust in the food supply chain and the Government's ability to protect the safety of the American food supply.

There is a significant amount of data to quantify the cost of an attack on the U.S. food supply. USDA data from 2023 reports that food, agriculture, and related industries contributed over $1.5 trillion (5.5 percent) to U.S. gross domestic product and 10.4 percent of total U.S. employment. (USDA ERS 2023). In 2007 Kansas State University researchers Dr. Dustin Pendell and Dr. Ted Schroeder ran 3 Foot and Mouth Disease (FMD) scenarios focusing on southwest Kansas and found the following State-wide costs: small cow-calf operation—$36 million; medium-sized feedlot

(<20,000 head)—$199 million; 5 large feedlots (>40,000 head)—$945 million. (Schroeder and Pendell, 2007 USDA/ERS)

What must be remembered is the complexity of the U.S. agricultural enterprise, so the actual cost of any given event could be much higher. Further, the interconnectedness of the production of food crops and animals will have wide-reaching impacts. Think trucking, ag banking, fuel and fertilizer, equipment manufacturing, sales and repairs, feedstuffs, medications, harvest activities, employment, and all of the economic multiplier effects on rural communities.

While my experience is centered on animal disease response, I do want to mention 2 other categories of threat. The first is the cybersecurity threat to information and operating systems and the second is the threat of loss of intellectual property.

Cybersecurity threats can come in many forms, but 3 important examples are: the threat to precision ag; mis- and dis-information; the threat to control systems.

Precision agriculture has and will continue to revolutionize crop production by increasing crop yields, reducing the environmental impact of production methods and increasing sustainability. This is done through linking information on soil types, soil condition, weather, the target crop, terrain, pests, crop disease, and other parameters. In the livestock world it is used to measure feed consumption, water consumption, movement, body temperature, etc. The programs that collect data and perform data analysis operate through Bluetooth and/or Wi-Fi systems and the internet. One can imagine the impacts on data and its analysis should the system be breached and data is deleted, corrupted, or changed. This could lead to incorrect decision making regarding planting, harvesting, soil amendments, or medical treatment.

Many crop-planting and livestock production and marketing decisions are made based on information reported by USDA or private marketing research firms. The impact on the financial markets of mis- or dis-information could be catastrophic. In 2018, the Kansas Intelligence Fusion Center evaluated 17 potential computer network attack (CNA) scenarios and found a social media-based outbreak hoax would be the most likely method of a CNA against Agriculture. On May 27 of this year a false report of a case of New World Screwworm in Missouri was published on a Missouri radio station's website. Although the story was only on-line for 5 minutes, it impacted the national cattle market futures anywhere from $250,000 to $500,000.

Much like the threat to precision agriculture, the threat to the control systems in agricultural harvest and processing is high. I'm referring to the systems that, for example, control food and milk pasteurization processes, ingredient blending for bakery products, heat treatments for ready-to-eat products and others.

Research security has been a concern for some time. You are aware of the talent recruitment programs supported by our adversaries and the multiple examples of theft of intellectual property by scientists, graduate students, visiting business people, and foreign nations. Particularly for the academic community there will always be a philosophical conundrum. The purpose of academic research is to discover and share new knowledge. This becomes difficult to balance with the need to protect the intellectual property of academic researchers whose projects are largely funded with taxpayer dollars.

While this hearing's topic is "agroterrorism" it is important to note that any introduction of a high-consequence animal or crop disease will require the same kind of response, and the same consequences, whether the introduction is nefarious, accidental, or natural. As we have seen most recently our major disease outbreaks have been from the natural movement of disease vectors such as migratory birds and feral swine. Veterinary defense plays a pivotal role—rapid diagnosis, vaccines stockpiles, and disease detection networks are essential. Despite valiant efforts, gaps remain at both the State and Federal levels.

There are 3 steps to successful response of a high-consequence disease:

(1) identify it;

(2) find it, i.e. where is it located or how widespread is it;

(3) control or eliminate it.

For clarity's sake most of my examples will use animal diseases and will refer to them as "foreign animal diseases" (FADs).

Step 1 necessitates rapid and accurate diagnostics. This is critical from both the agricultural enterprise perspective and from national security. The laboratories and personnel must be operational 24/7/365. It also requires field veterinarians, whether Federal, State, or private, be trained to recognize the clinical signs of high-consequence foreign animal diseases. Are there disease look-alikes? Yes, and that is why rapid diagnostics are so important. The size of a response is so large that you do not want to expend resources unnecessarily in the face of a disease look-alike. The sooner you know what you are dealing with the sooner you can start the response.

Step 2 means finding out where the outbreak is or isn't. Once again this helps determine the size of the initial response. Generally, once the initial location is determined State animal health officials will institute a "stop movement" action to reduce or prevent the continuing spread of the disease. State, local, and sometimes Federal assets are mobilized to control the movement of animals and animal-related materials.

Step 3 institutes the action plan to control or eliminate the disease. This step is dependent on the disease, the animal(s) it affects, whether it is zoonotic, how it is transmitted, and the control method needed to contain the outbreak. Unfortunately, many FADs are only eliminated by euthanasia of the animals. Euthanasia brings a whole host of issues to be considered and dealt with: animal welfare, ethical, environmental, logistical, financial, responder safety, domestic and foreign trade.

There are not enough people working in the animal disease world to manage an outbreak of a FAD, so traditional first responders will be necessary to assist. While traditional first responders in rural areas will be very familiar with agricultural practices, they are generally not familiar with FAD response. Similarly, the agricultural community has little to no familiarity with the response community's Incident Command System, which is the standard format for organizing a non-agricultural response. Much of the work that my program, the National Agricultural Biosecurity Center (NABC), does is bring together traditional and agricultural emergency managers and first responders to understand each other's processes, procedures, and language for the purpose of joint planning, training, and response.

NABC did a survey in 2023 in conjunction with Health, Food, and Agriculture Resilience program at DHS to understand the level of preparedness of county emergency management agencies across the country. One hundred and fifty-five counties from 31 States were surveyed through 2 rounds. The first survey demonstrated that county agencies did understand the importance of food and agriculture writ large and incorporated some level of planning in their emergency operations plans. However, the results also pointed out that counties were looking for more State and Federal guidance, more training specifically for food and agriculture incidents, better understanding of planning for food and agriculture events, and better access to subject-matter experts.

The second survey to the same respondents explored more deeply the capabilities of the county agency to respond. Nearly half of the agencies have fewer than 5 employees and are concerned that staffing is not adequate to participate in a response. Nearly half were not briefed on plans developed by lead agencies for food and agriculture response. They also felt they had little communication with partner agencies that would be part of a food or agriculture response.

Much like traditional emergency management and response the agricultural community needs to plan and train for addressing an FAD outbreak. For the last 10 years, the State of Kansas has hosted a functional Foot and Mouth Disease exercise to explore and train various levels of difficulty in its extensive FMD response plan. Depending on exercise objectives, it may engage with several counties and/or USDA FAD regulatory officials. In a situation where animals will likely be quarantined on farms and ranches, plans need to be made to feed, water, and care for the animals. Dairy cows need to be milked, pigs need to be moved up to the next phase of production, eggs need to be collected all the while animal health officials need to understand and determine whether or not the animal products are safe to be moved or enter commerce. If movement is not allowed what is to be done with the products? Will farm workers and farm machinery and vehicles be allowed to move on or off the farm? All these questions and hundreds more must be addressed in a response plan. Many of these questions will require some very creative answers. Unfortunately, some of these questions do not have any good answers.

Another important aspect of disease response and overall threat analysis is information sharing. This is information sharing at all levels—open source, Controlled Unclassified Information, and Classified information. At this point I am not addressing public information, though that is quite important, I am addressing information sharing between Government officials, animal health officials, responders, and stakeholders.

In the event of a true nefarious event law enforcement will naturally be involved. The FBI particularly has a protocol for working with animal health responders and local law enforcement to handle the criminal investigative portion of the response.

There are a variety of open-source sharing methods through commodity and livestock organizations, the general farm media, and regional disease response organizations. These regional organizations, such as Multi-State Partnership for Security in Agriculture (MSP), Southern Agriculture & Animal Disaster Response (SAADRA), New England States Animal Agricultural Security Alliance (NESAASA), and National Alliance of State Animal and Agricultural Emergency Programs (NASAAEP)

are made up of State animal health officials, State emergency managers, commodity organization members, land-grant universities and others, who share information between States. The information might be about disease response activity or creative solutions to difficult planning or response questions. Some of these regional organizations meet regularly virtually and usually annually in person. They also design and run their own exercises. These joint exercises not only provide planning and training for the member States but also encourage collaboration and cooperation between member States.

There is a role for Classified information sharing. Clearly, we need to "see over the horizon" to identify and understand risks and threats around the world. Classified information by its nature means that distribution is very limited. The State of Kansas has made great strides in analyzing Classified information and using that information to protect the State. The Bipartisan Commission on Biodefense's National Blueprint for Biodefense recommends enabling State fusion centers to address the biothreat. The Kansas Intelligence Fusion Center has addressed biological and agricultural threats at the Classified level since 2012; however, no other State fusion centers currently have this capability.

Much like "all politics are local", "all agricultural disasters are local". Local and State responders will be the first ones on scene and will be responsible for assessing the scope of the outbreak, beginning control activities and managing the response to its conclusion. This does not mean there is no role for the Federal Government. In a word the role is resources. The resources necessary take many forms. Most of my remarks today were concerned responding to a disease outbreak. Confirmation of a FAD in the United States is done by the USDA Foreign Animal Disease Diagnostic Laboratory on Plum Island, and soon to be moved to the National Bio and Agro-Defense Facility in Manhattan, Kansas. It is critical that this function remain robust and well-resourced. Without these confirmatory diagnostics the livestock community is blind in the regulatory sense, and the United States cannot export susceptible livestock or their products. USDA has the regulatory responsibility for plant and livestock disease control. It assists States not only with diagnostic testing, but also with understanding and achieving Federal FAD policy goals.

That being said, there is indeed a role for the Department of Homeland Security. Prior to an outbreak the Department can use its network through FEMA to provide and distribute training and exercise materials to State and local responders. While there are some materials in the FEMA Catalog they are dated. Working through the catalog is important as FEMA training is often the only officially recognized training for first responders. The Department can strengthen ties to the agricultural community through State Departments of Agriculture and the Cooperative Extension Service to assist with and distribute training to on-the-ground responders and emergency management personnel.

The Department of Homeland Security's Science and Technology Directorate must continue its work in threat assessment and technology development to provide products that can be used on the ground and ensure that State animal health officials are included in those efforts. S&T can assist with deep analysis of traffic patterns, marketing patterns, and distribution systems to help prevent massive disruption of food supply chains.

Mr. Chairman and Members of the subcommittee, I thank you for the opportunity to appear before you today and I welcome any questions you may have.

Chairman STRONG. Dr. Vanier, we are honored to have you here. Please forgive me, I mispronounced your name not once but twice, and we will correct that. But it is an honor to have you before us.

I now recognize Dr. George for 5 minutes to summarize her opening statement. Dr. George.

STATEMENT OF ASHA M. GEORGE, DR PH, EXECUTIVE DIRECTOR, BIPARTISAN COMMISSION ON BIODEFENSE

Ms. GEORGE. Thank you, Mr. Chairman, Ranking Member Kennedy, and the other Members of the committee—the subcommittee. Thank you for having me. It's always an honor, of course, to appear before Congress to provide testimony for important issues, but it is particularly important to me. I'm glad to be here. I'm former committee staff for this committee and it's always interesting to be on this side of the table, on this side of the dais instead, so thank you.

I would like to just highlight a few things from my written testimony. As a former intelligence officer, I think it's important for the committee to remember that agricultural terrorism, agricultural warfare, these are not new concepts. The enemy of the United States and enemies around the world have sought out agents, biological agents, and have used weapons specifically targeting agriculture in recent history, relatively recent history. We can go back to World War I and World War II, where we have all kinds of evidence of our country's—foreign countries targeting the United States and specifically developing agents for the purpose of attacking our agriculture and our food. We haven't gone backward from that. Those countries, some of those countries have gone forward. As stated earlier by Mr. Kennedy, there are active offensive biological programs in Russia and North Korea, and we suspect the same for Iran and China. We should not seek to be relaxed even about that. There's no way those 4 countries are all by themselves in the world pursuing these biological agents and others.

The other thing I think is important to remember is that terrorist organizations around the world have also expressed interest. Part of it is because of the economic security impact. Part of it is just that it would be just so incredibly obvious and painful to any country that's attacked in this way. If they were to use, for example, wheat blast, which has come up in the literature from other—from terrorist organizations and, and wheat blast were to blow through the United States, we wouldn't have—obviously we wouldn't have wheat. But can you imagine our citizens going into grocery stores and not finding bread on the shelves, not finding flour on the shelves, et cetera?

I know that there's a tendency to say, well, you know, no big deal, we can—we'll just depend on corn or we'll depend on something else. But I think that that's a very, maybe overly practical aspect. That is not what terrorists are looking to do. They're looking to evoke an emotional response and that would absolutely happen if they used biological agents.

Beyond that, I think it's also important to remember that agriculturally-related crime, food and agriculturally-related crime, is on the rise, as is many other types of crime. But those 3 things, crime, terrorism, and warfare, are all things that this committee has been interested in and has to do something about.

Leadership is key, of course, and we need those leaders not just at USDA, but also at the Department of Homeland Security and Department of Defense and Department of Interior when we're talking about these threats. But I think, also, given the nature of agriculture and food in our country and in every country, supporting the leaders that we have down on the ground, boots on the ground, is incredibly important.

Our commission, the Bipartisan Commission on Biodefense is cochaired by former Secretary of Homeland Security Tom Ridge and former Secretary of Health and Human Services Donna Shalala. Others, we have other representatives, former representatives sitting on the commission as well, as well as former Senate Majority Leader Tom Ridge. But this is important. This is important to our commission. We have gone to Kansas and Colorado State to hold meetings and have issued some reports about that and included ag-

related and food-related recommendations in our latest national blueprint for biodefense.

But I think I'll just end my statement by saying when we're talking about our State and local and Tribal and territorial members of communities that are trying to produce our Nation's food and are trying to deal with agriculture, there are 2 things they need to do. They need, in order to execute on the President's direction, that they feel empowered and that they take charge. One is time. They can't just turn on a dime and say, OK, now we're in charge of everything. The other is funding. How they get those 2 things is something this committee is going to have to weigh in on.

So anyway, thank you. Thank you, committee, really appreciate the opportunity.

[The prepared statement of Ms. George follows:]

PREPARED STATEMENT OF ASHA M. GEORGE

SEPTEMBER 16, 2025

SUMMARY

Since its inception in 2014, the Commission has recognized the importance of safeguarding food and agriculture from biological threats. Despite how critical the food and agriculture sector is to the Nation, Federal attention to, and investment in, biodefense activities that support animal and plant health have historically lagged behind those for human health. The uneven response to last year's highly pathogenic avian influenza outbreak demonstrates that we are not as prepared as we need to be for future threats. Not all States are taking the same approach to responding to animal disease threats. The Federal Government lacks sufficient coordination and speed in addressing a fast-moving novel threat. Agricultural producers need to be engaged as equal partners and educated about the risks posed by newly-emerging or newly-transmissible diseases. Medical countermeasure development, approval, and stockpiling are not where they need to be.

In 2015, the Commission released our foundational report, *A National Blueprint for Biodefense: Major Reform Needed to Optimize Efforts,* containing 33 recommendations and 87 associated action items for national biodefense. That report included a recommendation pertaining to taking a One Health approach to national biodefense that better coordinates and integrates human and animal health. In subsequent years, the Commission released 2 reports that directly address food and agriculture. The 2017 report, *Defense of Animal Agriculture* contains recommendations for investigations of animal pathogen events, development of animal medical countermeasures, information sharing, and coordination of Federal biodefense activities impacting animal health. In the 2022 report, *Boots on the Ground: Land-Grant Universities in the Fight Against Threats to Food and Agriculture,* the Commission provides recommendations for strengthening Federal support for State, local, Tribal, and territorial (SLTT) activities to protect food and agriculture from biological threats, and explores ways to engage the land-grant universities in augmenting national biosurveillance, research and development, and outreach and education efforts. The Commission's 2024 report, *The National Blueprint for Biodefense: Immediate Action Needed to Defend Against Biological Threats,* builds on this previous work, and addresses further recommendations for plant health surveillance, research, and development.

STATEMENT

Chairman Strong, Ranking Member Kennedy, and other Members of the committee, thank you for your invitation to provide the perspective of the Bipartisan Commission on Biodefense during today's hearing, "Surveying the Threat of Agroterrorism: Perspectives on Food, Agriculture, and Veterinary Defense." I am honored to talk with you today about biological threats to food and agriculture, Federal agro-biodefense programs executed by the Department of Homeland Security, and the state of our national biodefense. My name is Asha M. George, DrPH, and I am the executive director of the Bipartisan Commission on Biodefense.

The Commission is co-chaired by former Secretary of Homeland Security, Governor Tom Ridge and former Secretary of Health and Human Services, and Rep-

resentative Donna Shalala; with former Senate Majority Leader Tom Daschle; former Representative Fred Upton; former Representative Anna Eshoo; former Representative Susan Brooks (who served on the Committee on Homeland Security); former Representative Jim Greenwood; former Under Secretary of Homeland Security for Intelligence and Analysis Ken Wainstein (who also served as Homeland Security Advisor to President George W. Bush); and former Commissioner of the Food and Drug Administration Peggy Hamburg serving as Commissioners. The Commissioners and I have addressed homeland, national, and public health security in various capacities for decades. Although we have left our previous positions, we remain committed to public service and the public health, safety, and security of our Nation.

In 2015, the Commission released our foundational report, *A National Blueprint for Biodefense: Major Reform Needed to Optimize Efforts,* containing 33 recommendations and 87 associated action items for eliminating what we identified as serious capability gaps in national biodefense. In the decade since we released that report, Congress, and the administrations have addressed many of our recommendations, including the creation of a National Biodefense Strategy (Recommendation 3). We appreciate the original iteration of the Strategy released by the Trump administration in 2018 and the more recent October 2022 refresh released by the Biden administration. We eagerly await the Strategy's comprehensive implementation by the Federal Government.

However, though progress has been made over the years, the Nation remains critically at risk of a biological event, whether intentional, accidental, or natural. Accordingly, the Commission decided last year to release an update to our original Blueprint. Titled, *The National Blueprint for Biodefense: Immediate Action Needed to Defend Against Biological Threats,* this 2024 report incorporates the lessons learned by the Commission during the course of its work over the past 11 years. The experiences of the Nation's response to COVID–19, mpox, Ebola, highly pathogenic avian influenza, and numerous other pathogens that have emerged during that time informed the report's 36 recommendations and 185 action items.

Other Commission recommendations have been taken up in a variety of legislative vehicles, including the Farm Bill, Intelligence Authorization Act, and Pandemic and All-Hazards Preparedness and Advancing Innovation Act. Most recently, the Servicemember Quality of Life Improvement and National Defense Authorization Act for Fiscal Year 2025 (Public Law 118–159) required the Department of Defense to conduct Biodefense Posture Reviews in 2026 and 2029, building off of the progress made in the Department's first Review in 2023. The Act also elevated the Assistant Secretary of Defense for Nuclear Deterrence, Chemical, and Biological Defense Policy and Programs to a position that straddles the Offices of the Under Secretary of Policy and Under Secretary of Acquisition and Sustainment, to better align weapons of mass destruction activities within those entities. Both of these ideas came from recommendations in the Commission's 2024 *National Blueprint for Biodefense.* Last year the Commission also issued the *Proposed Congressional Hearings on the Recommendations of the 2024 National Blueprint for Biodefense* to assist in future Congressional oversight of the Federal biodefense enterprise.

Though human health rightfully garners a tremendous amount of attention with regard to biodefense, animal health, plant health, and food safety are equally critical elements of the Nation's biodefense enterprise. According to the U.S. Department of Agriculture, agriculture, food, and related industries contributed approximately $1.537 trillion to U.S. GDP in 2023. A single animal or plant pathogen—introduced intentionally or spread naturally—could have devastating consequences for multiple industries in this critical infrastructure sector. We have all witnessed how highly pathogenic avian influenza can devastate not just poultry producers but also dairy farms, raising the price of eggs and dairy products for all consumers. And those are the effects of a virus we are relatively familiar with and for which we have developed or are developing countermeasures. Other threats loom on the horizon and could inflict event greater damage on American farming and associated industries. For example, estimates suggest that the arrival of African Swine Fever in the United States could cause $15 billion in losses for the domestic pork industry in just the first 2 years after introduction alone, and potentially as much as $50 billion in the long term. Wheat blast could have catastrophic consequences for the Nation's wheat supply. Both of these diseases, and many others, are already present in the Western Hemisphere, increasing the chances that the United States will eventually have to determine how best to respond to, recover from, and mitigate their impacts.

Since its inception in 2014, the Commission has recognized the importance of safeguarding food and agriculture from biological threats. In our original 2015 *National Blueprint for Biodefense,* our Commission discussed the need to: (1) better integrate Federal human, animal, and environmental health activities into a One Health approach; and (2) include the Department of Agriculture in the development process

for any National Biodefense Strategy. In the years since that report's release, we continue to draw attention to the threats to this critical infrastructure sector, and the capability gaps that leave us unprepared for future biological events affecting food and agriculture. That activity has included public meetings held at Kansas State University (in 2017) and Colorado State University (in 2019) to discuss these threats; Federal, State, and local activities to address these threats; and how we can better leverage land-grant universities to assist the Government in protecting food and agriculture. Based on the information we gathered at those meetings, our independent research, and further discussions with subject-matter experts, we have to date produced 2 reports dedicated to strengthening the Federal Government's food and agriculture defense activities.

The 2017 report, *Defense of Animal Agriculture,* contains recommendations for the investigation of events involving animal pathogens, development of animal medical countermeasures, information sharing, and coordination of Federal biodefense activities impacting animal health. In the 2022 report, *Boots on the Ground: Land-Grant Universities in the Fight Against Threats to Food and Agriculture,* the Commission provides recommendations to strengthen Federal support for State, local, Tribal, and territorial (SLTT) activities to protect food and agriculture from biological threats, and explores ways to engage the land-grant universities in using their capabilities to augment national biosurveillance, research and development, and outreach and education efforts with regard to food and agriculture.

Despite how critical the Food and Agriculture Critical Infrastructure Sector is to the Nation, Federal attention to, and investment in, biodefense activities that support animal and plant health have historically lagged behind those for human health. In 2023, the Office of Management and Budget produced the first annual crosscut analysis of Federal biodefense spending, as required by the William M. (Mac) Thornberry Defense Authorization Act for Fiscal Year 2021 (Public Law 116–283), and in accordance with Recommendation 4 from our 2015 *National Blueprint for Biodefense* for the requirement of such a crosscut. The crosscut revealed that the Department of Agriculture spent $700 million on biodefense activities in fiscal year 2022, compared to $8.4 billion spent by the Department of Health and Human Services. The National Veterinary Stockpile, which is designed to store critical veterinary supplies, equipment, animal vaccines, and response support services for SLTT governments, received $6.5 million in appropriations in fiscal year 2025, compared to $980 million for the Strategic National Stockpile. The National Animal Health Laboratory Network (NAHLN) has been historically underfunded through annual appropriations relative to their mission. The National Plant Diagnostic Network receives even less funding support for the critical work of tracking the numerous plant pathogens that are circulating within the United States at any given time. In lieu of dedicated appropriations for animal and plant health response, the Department of Agriculture relies on its borrowing authority through the Commodity Credit Corporation for any emergency funding it may require to combat animal and plant health disease outbreaks, including highly pathogenic avian influenza.

The Agriculture Improvement Act of 2018 (Public Law 115–334, also known as the 2018 Farm Bill) made some progress by increasing funding for the NAHLN temporarily, establishing a National Animal Disease Preparedness and Response Program (NADPRP), and creating the National Animal Vaccine and Veterinary Countermeasures Bank (NAVVCB). The Commission recommended the creation of both the NADPRP and the NAVVCB in our 2017 report *Defense of Animal Agriculture.* The One Big Beautiful Bill Act (Public Law 119–21) signed into law by President Trump a few months ago contained a provision that directed an additional $233 million from the Commodity Credit Corporation to support these activities through fiscal year 2030.

Deficiencies remain. The uneven response to last year's highly pathogenic avian influenza epidemic demonstrates that we are not as prepared as we need to be for future threats. Not all States are taking the same approach to responding to disease threats to food and agriculture. The Federal Government lacks sufficient coordination and speed in addressing fast-moving novel threats. Agricultural producers need to be engaged as equal partners and educated about the risks posed by newly-emerging and newly-transmissible diseases. Medical countermeasure development, approval, and stockpiling are not where it needs to be.

Given the jurisdiction of the Committee on Homeland Security, I would be remiss if I did not also discuss the Department of Homeland Security's biodefense activities and where they specifically align with animal and plant health defense. All but one of the operational components within the Department engage in activities that contribute to national biodefense generally:

- Agricultural inspectors within U.S. Customs and Border Protection (CBP) work to prevent disease-carrying pests from crossing our borders.

- CBP and the Transportation Security Administration screen passengers at ports-of-entry when diseases (including those that could affect food and agriculture) move through the global transit system.
- FEMA bears responsibility for providing logistical and emergency management expertise to support national response activities, which is in no small part why President Donald Trump asked them to step in to support the national response to COVID–19 in March 2020. The agency also oversees direct assistance programs to non-Federal Governments through the State Homeland Security Grant Program.
- The U.S. Coast Guard advises vessel owners and operators to report suspected crewmembers and passengers sick with diseases of concern to the Centers for Disease Control and Prevention as part of its long-standing responsibility to implement quarantine measures.
- The U.S. Secret Service maintains discreet protective measures to defend the White House from biological attacks and manages the biological risk to National Special Security Events.
- U.S. Immigration and Customs Enforcement works to combat counterfeit pharmaceuticals and theft of intellectual property rights (such as for newly-developed medical countermeasures) and plays a critical role in export enforcement.
- The Cybersecurity and Infrastructure Security Agency previously addressed biodefense of critical infrastructure during the H1N1 influenza pandemic and issued guidance to the sectors early in the COVID–19 pandemic.
- The Science and Technology Directorate supports biological attribution and characterization activities through the National Biodefense Analysis and Countermeasures Center (NBACC).

In 2017, the Department combined some of its existing chemical, biological, nuclear, and radiological functions into an Office of Countering Weapons of Mass Destruction (CWMD). Congress subsequently authorized the Office a year later and assigned the Assistant Secretary for CWMD statutory responsibilities for coordinating Department of Homeland Security activities for defending food, agriculture, and veterinary systems, as enumerated in the Securing Our Agriculture and Food Act (Public Law 115–43). Though Department officials envisioned CWMD as a central hub for weapons of mass destruction (WMD) policy and activities within the Department, authorizing legislation did not reflect that mission and the Department did not utilize it in that way. CWMD ultimately turned out to be little more than the sum of its parts, focusing on legacy programs that existed before the Office's creation with some additional elements brought over from other parts of the Department of Homeland Security (e.g., WMD intelligence and analysis, removed from the Office of Intelligence and Analysis).

Perhaps in recognition of this reality, the Department of Homeland Security moved the position of Chief Medical Officer from CWMD to a newly-created Office of Health Security, which consolidated departmental health care, occupational health, and public health responsibilities. The Department also moved CWMD food and agriculture defense responsibilities to this new Office. The Office of Health Security has been involved in Government-wide discussions regarding the protection of food and agriculture, but this office neither coordinates the Department's activities in this space, nor do they possess the personnel and resources to effectively execute such a mission.

The biodefense responsibilities of CWMD focus largely on 2 long-standing programs addressing biosurveillance and biological detection:

- The National Biosurveillance Integration Center (NBIC), which was intended to collect and analyze biosurveillance data from other Federal departments and agencies to enable early warning and shared situational awareness of biological events, including among animal populations. However, NBIC lacks the authorities and resources necessary to fully achieve this goal. Congress did not mandate that other Federal departments and agencies provide this data to the Department of Homeland Security. The Center has been left with publicly-available sources of information to inform their products, limiting its effectiveness. To illustrate this problem, the Department of Agriculture does not currently share the data it receives from States and the agricultural industry with the Department of Homeland Security.
- The BioWatch biological detection program has been in service for 22 years, dating back to its initial deployment by the George W. Bush administration to provide a modicum of biological detection capability against potential attacks in advance of the 2004 Presidential election. Located in about 35 metropolitan jurisdictions, the system collects air samples in outdoor public spaces that must then be manually gathered at least once every 24 hours. Public health laboratories then test the samples for the presence of 5 biological agents. However, the

equipment barely functions, and the system (including testing) takes too long to produce results. Hospital admissions would indicate a biological event long before the system definitively reported a positive test result. The system is operating with the same technology from its 2003 deployment.

After 7 years, CWMD in 2024 finally terminated BD21 (or Biodefense for the 21st Century), its troubled replacement program to identify, acquire, procure, and deploy replacement technology for the BioWatch program. Though CWMD continues to engage with stakeholders and industry to determine how best to improve upon the BioWatch program, they are no closer to a more capable national biological detection system than when I last testified before this very subcommittee 6 years ago. The Department of Homeland Security continues to spend more than $80 million in taxpayer money each year for the existing, flawed BioWatch program.

Recommendation 31 from our *National Blueprint for Biodefense* called for the development of an advanced environmental detection system to replace BioWatch. The Commission further examined the program and potential solutions in our 2021 report *Saving Sisyphus: Advanced Biodetection for the 21st Century.* Understanding the political reality that Congress will not terminate BioWatch without a replacement in place, *Saving Sisyphus* presents short- and long-term action plans to both deploy better technology right now and to create a technology development process to regularly refresh both the biological detection mission and technology. A research and development strategy that regularly reassesses the mission of the system and the needs of participating jurisdictions is also essential.

President Trump's fiscal year 2026 budget proposes eliminating CWMD and dispersing its programs to other elements within the Department. This is of little surprise to the Commission. We believe that the ability of the Department to counter weapons of mass destruction would not be meaningfully impacted by the closure of Office and the transfer of those capabilities to other components. However, the end of CWMD would not also mean the end of the Department's mission to address chemical, biological, nuclear, or radiological threats to the homeland, nor should Congress or the administration redirect WMD funding for non-WMD purposes. Biodefense (including agro-biodefense) should remain a priority for the Department of Homeland Security. Should Congress choose to accede to the administration's request to dissolve CWMD and redistribute its capabilities, enacting legislation should also establish regular review of Department of Homeland Security biodefense activities. Congress should require the Department of Homeland Security to compile and submit an annual report on its biodefense policies, programs, and expenditures as they align with the National Biodefense Strategy. As the Department of Homeland Security should already be providing much of this information in support of the Congressionally-mandated biodefense crosscut, it should be easy for the Department to provide this information to Congress as well.

Last, we cannot ignore the broader state of biodefense when discussing the defense of food and agriculture. Biological threats continue to increase. Our enemies can see for themselves the disruption that highly-pathogenic avian influenza has caused within the United States, as well as the damage done by other disease outbreaks throughout the world. Technology has made it easier to weaponize biological agents. Diseases are spreading more frequently and easily within and among countries, with increased likelihood of spillovers from one animal population to another, from animals to humans, and from humans to animals. Measles and other diseases are reemerging in the United States, including most recently tuberculosis, mumps, pertussis, and rubella, increasing the disease burden on our health care system and leaving us more vulnerable to the impacts of animal disease transmission to human populations.

Defending the Nation against biological threats that affect national security is not, and has never been, a top priority for any of the 15 Cabinet departments, 9 independent agencies, and 1 independent institution (the Smithsonian) that possess responsibilities for biodefense. Biodefense has always been disgracefully, woefully, and incomprehensively underfunded. We cannot continue to rely forever on emergency supplemental appropriations or withdrawals from the Commodity Credit Corporation to make up for weak defense against biological threats. As a Nation, we have never been adequately prepared for the biological events that have occurred, and we know that, because we never do seem to avoid the deaths of hundreds, thousands, and sometimes millions when those events occur. The implemented and proposed cuts to biodefense programs do not exist in a vacuum.

Biodefense is in crisis and has long been in crisis.

Our Commission has advocated in the past for reevaluation of Federal biodefense programs and policies, of exploring opportunities to find efficiencies in how the Government engages in activities to prevent, deter, prepare for, detect, respond to, attribute, recover from, and mitigate biological events. And we have suggested that

certain programs—such as BioWatch—need to be replaced or eliminated. Such reductions or realignments should be made thoughtfully, with an eye toward how we as a Nation can continue to meet the goals of the National Biodefense Strategy President Trump issued in 2018. The requirements are still the requirements, regardless of available resources and personnel, and we need to be able to meet those requirements. The Nation still requires biosurveillance. The Nation still requires diagnostics, vaccines, therapeutics, and other medical countermeasures. And the Nation still requires a well-equipped and well-staffed public health and animal health departments. The administration should strongly consider taking some of the funds they are saving from on-going cuts and reinvesting those funds in programs that actually work. The administration also needs to make future cuts with current and previous cuts in mind.

This concludes my written remarks. The Bipartisan Commission on Biodefense appreciates the subcommittee's interest in biological threats affecting food and agriculture, and the Department of Homeland Security's contributions to national biodefense. I would also like to take this opportunity to thank all of the organizations that support our efforts financially and otherwise. With this testimony, I am submitting 3 of the Commission's reports *(The National Blueprint for Biodefense, Defense of Animal Agriculture,* and *Boots on the Ground),** and the Commission's first annual *State of Biodefense Address.** Thank you again for inviting me to testify today. I look forward to answering your questions and working with you to defend the Nation against biological threats.

Chairman STRONG. Thank you, Dr. George.

Members will be recognized by order of seniority for the 5 minutes of questioning. An additional round of questioning may be called after all Members have been recognized. I now recognize myself for 5 minutes of questioning.

Dr. Wims and Dr. Young, it is great to have you both here today. Alabama A&M and Auburn University are pillars of strength in our State. I am proud to see you representing those institutions in this direction. Dr. Wims, you and I share concerns about foreign acquisitions of farmland. What do you see as the biggest risk when adversaries acquire U.S. farmland?

Mr. WIMS. Sorry, Mr. Chairman. Speaking from an 1890 landgrant perspective, we have farmers and producers throughout the Southeast and Southern Crescent. As you know, the focus, say, in Louisiana is catfish and/or crawfish, Arkansas rice. In Alabama we have a robust catfish production apparatus as well as cotton. In Georgia, you know, we have poultry farms. As you travel and visit and our extension agents and professionals work with those producers, you will find that they're very open and very vulnerable. That vulnerability, particularly for those who, if they lose a season, they essentially lose their wherewithal to support their family and to maintain the farm.

So we think that awareness, as well as education, technical assistance is very important. Technical assistance via our cooperative extension system with very clear and concise research produced, data-driven information from our researchers. But as my colleague said, that requires funding and there has to be a better and closer collaboration between research and extension, particularly relative to terrorism and the dangers that we face.

The challenge with us is being able to marry the agricultural sciences, our researchers, and our extension agents with our computer scientists and our people who are proficient and professional and prepared in artificial intelligence as well as cybersecurity. We have not done a good job of that. Again, resources and time.

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*[The information referred to is included in Appendix II.]

I also think that the type and way that we produce, process, and then distribute food and fiber has to be carefully studied in terms of the dangers that we face relative to a potential threat, having access to food systems and the way that we distribute and store food. I am a chief administrator at an institution of higher learning. On every day we have hundreds of pounds of food that we prepare and serve our students and our constituents. It is vulnerable and we need systems in place, whether it be artificial intelligence and/or cybersecurity, to make sure that we protect not just the production, but the distribution, dissemination, and storage of those food items.

Chairman STRONG. Thank you, Dr. Wims. Dr. Young, our research institutions and universities often partner with foreign institutions to conduct research and share information. Do you believe that American institutions can maintain these research partnerships while ensuring the safety of research and intellectual properties from foreign malign actors?

Dr. YOUNG. I do. But it takes some work, right? It takes deliberate effort. So I would point out that Auburn has made a very significant investment in vetting all the professors that come to Auburn, even to the point of separating some from research projects that they were involved in. So it has been really an effort of Auburn to strive to have clearable faculty working on the projects, Chairman, that we, you know, would work on in this space in particular.

Chairman STRONG. Across all of your experiences, what safeguards can be implemented to protect sensitive research while still enabling American scientists to engage internationally, particularly in addressing agriculture diseases that are that originate outside of our borders? How would you do that?

Dr. YOUNG. Yes. Well, I appreciate that question, Chairman.

I mean, I like hearing you say that, "outside of our borders." We were having a bit of a discussion about that before the hearing began that we need to project our surveillance outside. So just as an example for myself, I'm headed to West Africa in a couple of weeks and that's part of a project that's funded through the USDA, ARS. So when we're able to collect samples in other areas of the world, we cannot only keep track of what we know is occurring and potentially impacting our livestock and poultry, but we can also, you know, build a database that will allow us to notice emerging things. So, I mean, I think that's one of the best ways, yes, is get outside our borders and get after it.

Chairman STRONG. Thank you. Thank each of you for your testimony.

I now recognize the Ranking Member, the gentleman from New York, Mr. Kennedy, for his 5 minutes of questioning.

Mr. KENNEDY. Thank you again, Chairman, and thank you to all of you once again for your leadership, for being here for your testimony. It's extremely important. Also to those of you who are military veterans, thank you for answering the call.

FEMA's Preparedness Grant Program, I talked a little bit about FEMA and the issues that we are dealing with from this administration in my opening remarks. The State Homeland Security Program, the Urban Area Security Initiative, are part of those pre-

paredness grant programs. This is funding that is critical for activities of biodefense, including our first responders and detection technology, public health systems. Yet this year we saw grant funding frozen, delayed applications, withheld information about funding awards, cuts in many areas, including to urban areas that depend on this funding, as well as failed timely information about requirements.

So this question is for you, Dr. George. How do these delays and freezes, lack of transparency, impact localities and States' ability to plan and build capacity to defend against these biological and agroterrorist threats?

Ms. GEORGE. Thank you, Mr. Kennedy. I have to say that the way the system has been set up to date, those activities, planning, preparedness, preparing specifically for response and recovery and mitigation, they are dependent on FEMA grant funding as well as grant funding from other departments and agencies. As I said earlier, it takes two things in order to get the States, the locals, the Tribes, and the territories to be able to take on more responsibility and to execute on those plans. They need time and they need money. Now if you've decided, if someone has decided that the grant funding has to with do decrease and it has to go away, then the States can, they can step up and they can backfill, but they're not going to be able to do it very quickly.

So I suggest to you that even putting into the budget, and specifically the budget request and some of the other documents that have come out, statements saying that the funding needs to be cut is a clear indication to others outside of our country that now we've created a vulnerability, a vulnerability that the States are going to try and fill, but they're not going to be able to fill very quickly.

Mr. KENNEDY. Thank you. Dr. George, your organization, the Bipartisan Commission on Biodefense, released a report last year outlining national blueprint in biodefense. Can you talk about that report and the findings of the report, as well as what the funding means to the localities and their ability to respond to biological threats?

Ms. GEORGE. Sure, sir. So, yes, our National Blueprint for Biodefense is here and it's obviously way too large for anybody to absorb all at once. But it's a compendium of all of our recommendations over the years since we were implemented in 2014 and our first blueprint in 2015.

Some of our findings I covered earlier in terms of the threat. The biological threat has, including the food and agriculture threat, has only increased since 2014. So it's been 11 years of steady increase. We now have new threats on the horizon. AI combined with bio, as you all know, bio and chemistry becoming increasingly similar. The rise of the use of toxins to attack people, not just for assassination, but for other purposes. All of that is on the rise, as is this interest in offensive biological weapons programs by foreign adversaries.

In terms of the impact on the ability of the States, locals, Tribes, and territories to respond, you have a threat environment. We have increasing vulnerabilities and we have consequences that are huge and just simply not mitigated. They can't be mitigated by grants all by themselves.

Mr. KENNEDY. Dr. George, just for the sake of time, what happens and what is the risk if that funding disappears?

Ms. GEORGE. If the funding disappears, I think we're at risk of being attacked, period. Then we have a giant problem. We have a problem that Congress itself is going to have to step in to solve with emergency appropriations. But I think an event could get away from us very quickly. When it comes to food and agriculture you're not talking about something that would be constrained, like if we just dumped some chemicals somewhere. It would spread. It would spread all throughout the United States and not only affect our economic and national security here, but it would affect economic and national security throughout the world.

Mr. KENNEDY. Thank you, Chairman. I yield.

Chairman STRONG. The gentleman yields back.

I now recognize the gentleman from Oklahoma, Mr. Brecheen, for 5 minutes of questioning.

Mr. BRECHEEN. Thank you, Mr. Chairman. Thank you to our witnesses.

As you discussed, whether it be the Chinese Communist Party or Iran, North Korea, a number of actors could be a real threat using agroterrorism. What you all are discussing, you know, throws open the door to billions, hundreds of billions of dollars of economic harm. Just thinking it through, as was discussed during the times of the past, extended periods of warfare where this could be employed when you really have to rely on domestic production.

So with that real threat, what we do know is GAO has shared with the public about the massive amounts of land that has been purchased, some near military basis and the prosperity of our country that is so dependent upon production agriculture. I want to kind-of figure out, Dr. Vanier, where are we most vulnerable? Is it animal disease? Is it plant disease?

Then as a follow-up question, anybody else on the panel, is the purchasing of land, many times near military installations, does that factor in? Or is that just ancillary to the conversation for other potentially nefarious means? So Dr. Vanier.

Dr. VANIER. Thank you, Congressman.

Well, my orientation is animal health. Animal health certainly is a tremendous threat in the sense that we not only would have issues with livestock production, and you've seen that already with PEDV and swine, high path avian influenza, the idea that HPAI can now jump and infect dairy cattle. So there are all of those ancillary effects and, as Dr. George stated, it spreads. All of these things can spread so quickly that we can't get our arms around it.

I do, though, want to recognize threats that exist in the plant world and field crops. We have folks at Kansas State who do a significant amount of work looking at crop diseases and they tend to be the red-headed stepchild. It's not, if I could use the term, it's not nearly as sexy as an animal disease. The difference that we have, too, is that the crops don't get up and walk around. So it can be a little easier to control those because you've got the plants in place. But being able to diagnose these diseases quickly to get around the disease, to corral it, and be able to manage it before the crop is harvested, before the crop is transported, and allow for the potential for spread.

Mr. BRECHEEN. Does anybody want to follow up on my question relative to is the ownership, foreign ownership of land in the United States, could it factor in? Could they be utilizing that land for something nefarious relative to spreading it quickly on land that they control?

Dr. George, you look like you are nodding your head.

Ms. GEORGE. Yes. From a military perspective, this is what you would want to do. You don't just do recon. If you can put people on the ground and you can put people on the ground near facilities, near the universities, near where the research is going on, near where the vulnerabilities are, you would go ahead and do it.

You know, I'd give you a different example just quickly. I went to the University of Hawaii for my doctorate in public health. Hawaii, we wanted Hawaii because of the military significance that it has in terms of protecting our Nation. Yet lots of land has been sold to the Japanese and to the Chinese and many others. What happens when they own the entire State or most of it and we have all those military assets sitting there? It's the same thing here domestically or in the continental United States.

Mr. BRECHEEN. Just following up, I got 12 seconds left. So is it more so, if I am understanding, Dr. Vanier, your comments in tandem with Dr. George's comments, that animal husbandry on foreign-owned assets, that could be really an experimenting location to where you can spread animal disease really quickly?

Dr. VANIER. Yes, it could, once again, depending on the nature of the land that they've purchased. So in many cases, if it's grassland or they've purchased a feedlot, then, yes, that would be an animal disease issue. If the land they've purchased is cropland, then you're naturally going to think about the potential of a crop disease.

Mr. BRECHEEN. Thank you.

Chairman STRONG. The gentleman yields back.

I now recognize the gentleman from Pennsylvania, Mr. Mackenzie, for 5 minutes of questioning.

Mr. MACKENZIE. Thank you, Mr. Chairman, and thank you to all of our panelists for being here today.

Agroterrorism and the threat that we face in this sector is one that I have seen an increasing number of instances that raise concerns. So I think it is a very important topic that we are focusing here on today.

So just to build on the previous questioners' items, can you tell me just logistically which ports of entry, airports, land crossings do we believe are the most vulnerable right now? What are we seeing terrorism networks and other individuals utilize to gain access to our country?

Dr. YOUNG. Thank you. I think I would just sum it simply as whichever, I don't know the answer, but whichever port of entry has the most illegal immigration through it, that's our greatest risk.

Ms. GEORGE. Sir, I think it also depends on the consequences you're looking for. If you're looking for large-scale consequences in a high-population density place, then you're looking at the major metropolitan areas and the ports of entry there. If you're looking to affect agriculture, you're probably looking at the ports of entry

into places like Pennsylvania and Oklahoma, places where all of that is happening.

I would also say there's a question about staffing as well. You'd have to look and see where are all the agricultural inspectors, you know, in the airports? How many are there? How many do we still need? They're not evenly spread throughout all of that.

Last, I would say we have ports of entry in the territories as well. They historically receive less in the way of support for security, but they're part of the United States and people can get in through there as well.

Mr. MACKENZIE. In the history that you have seen these instances occur, where are they originating from and is it a concerted, organized effort or are they more typically lone actors?

Ms. GEORGE. Well, I suppose recently we've seen some of the experimentation by foreign nationals who brought in some stuff from China that we didn't want to have here and we said, no, you can't do it, but they came here anyway and decided to conduct that research in our facilities. But I would say to you, sir, there's probably more of it going on than any of us realize. We do not have an effective investigatory mechanism that is nationwide.

Even if you do investigate, we don't have a national attribution apparatus either. So maybe you find out about something, but, to answer your question, is it multiple countries or multiple people in specific countries? It's very difficult to tell because we don't have that apparatus in place.

Mr. MACKENZIE. I appreciate that, and I think you are correct that we do need to do more to understand the attribution of these cases.

So my final question is this. You have mentioned, a couple of you have mentioned more inspectors. We raised the idea here of doing more investigatory work for attribution. What are some of the other potential solutions that you would recommend that we should be taking up as Congress and also our administration?

Dr. VANIER. I don't want to make too fine a point of this, but along with the comments that you've heard, one of the things that I personally would like to see, when CBP agents intercept seeds, plants, animal products, whatever, at ports of entry, those items are not tested, those items are just destroyed. The concept seems to be it's OK, we got rid of it, no problem. I would like to see those items tested, one, to see if they are, in fact, carrying a high-consequence agent.

But second, what is the agent? It gives us a better sense of the actual risk that we're facing. We know we can't intercept everything, but if we can test the things that we do in fact intercept, then we should have a better idea of what's coming in, where it's coming from. Is it an agent that is of high consequence or not?

Dr. YOUNG. Yes, if I can add on to that. So, you know, I mentioned having the whole genome sequencing and having a repository and we have lots of those in different places in our country, but we don't bring all that data together. So if we could bring that together, over time we would have the opportunity to perhaps notice trends, emerging trends, and whether something's been manipulated with gain of function or CRISPR type work, or is it just downright engineered. So if we're taking advantage of those oppor-

tunities, when samples present themselves to catalog that material, it's advantageous for us.

Mr. WIMS. Our small and limited resource, farmers, producers, particularly those that are fruit and vegetable as well as farm to table, and those who are producing products for local outlets, whether it be the larger corporate grocery stores or even our campuses, in some cases, they need to be better trained and there has to be larger awareness of the threats. They are not aware, they have not been trained, they have not been taught. That takes resources, people, teachers, agents. We need more research on bioterrorism and to, again, marry our computer science and cybersecurity areas with agricultural scientists and experts.

Ms. GEORGE. Sir, I would just add two things. First, we need more diagnostics. We need more diagnostic tests. Our country has a tendency to wait until something happens and then throws medicine at it. That's OK, but we need to get ahead of it. So you'd want diagnostic tests that somebody could use right away, all the way down at the local level, all the way up to the feds. That's one.

Then the other is that we need to strengthen our law enforcement. The FBI is involved very much in dealing with this, but so is ICE and so is obviously CBP, the U.S. Secret Service, and so forth. They need some more resources to be able to investigate and interdict.

Mr. MACKENZIE. Fantastic. Well, thank you to all of you for those recommendations and for being here. Appreciate your testimony.

With that, I yield back.

Chairman STRONG. The gentleman yields back.

I concur with the Ranking Member Kennedy. You all have traveled a long distance to get here and we would like to do another round of questions if that is OK with each of you.

Dr. Wims, Alabama A&M, the national network of land-grant universities make critical investments in home-grown food security and the agriculture supply chain. You have said that, and I quote, "Farm security is national security." One piece of that is imported food. Are imported food products held to the same rigorous testing standards as home-grown food?

Mr. WIMS. Mr. Chairman, in some cases, yes, in some cases, no. I don't have specific data and I would yield to my colleagues if they have more concise information.

But, as you know, many of our vegetables and fruits are imported. Particularly in some sectors of our communities, in our Southern region, there are meats, i.e., goats and others, that are imported that don't necessarily meet the same standard of review by Food Drug Administration as others. So we certainly need to strengthen the testing and strengthen the assessment. We in the land-grant community certainly can support in that area.

We have a robust food safety security testing apparatus on the campus. We have a doctoral program in food science, food safety. We in the land-grant community stand ready to support USDA and the Food and Drug Administration with any efforts. But the simple answer is no, sir, we don't think that it's consistent.

Chairman STRONG. Thank you. Would any of the other witnesses like to add to that related to the standards related to here in America versus other foods that are being brought into America?

Ms. GEORGE. Sir, I would say the standards are the standards. It's a question of enforcement and the resources available to enforce those. I think we do not test every single piece of fruit, every piece of meat, every single piece of anything coming into the country. We just can't. So we use a sampling strategy. What have we seen? We see cases of food poisoning, et cetera, diseases coming into the country because we just can't get to all of it. That's why I think we need to have more diagnostic tests out there, even to the point of, you know, if we could, giving them to families and individuals so that if something happens, we can test, we can be trying to do it.

Chairman STRONG. Thank you. I yield and now recognize the Ranking Member from New York, Mr. Kennedy, for another round of questioning.

Mr. KENNEDY. Yes, just a couple quick questions. First of all, I think this will go for the entire panel. You did travel a long way. Again, thank you for being here. Thank you, Chairman, for doing another round.

We can start with any one of you who wants to take it on first. This is either a very easy question or a very difficult question. What is the biggest and most concerning agroterrorism threat that you feel exists in our country at this moment? Dr. George.

Ms. GEORGE. I think the biggest threat would be the use of a disease that is already endemic in the United States against our agriculture. I agree that I know the plant people won't be excited to hear me say that I think it's an animal thing, but I do think it is. We have plague, anthrax, tularemia, and brucellosis. Those 4 are all endemic to the United States and they're all on the high concern lists. Using something like that would immediately create a lot of confusion. Was it ours? Did it grow? Did something naturally occur to modify that organism? All of that would take a lot of time.

Mr. KENNEDY. Thank you. I'm going to move on. Others? Dr. Wims.

Mr. WIMS. Well, as an agronomist and former specialist that worked in a limited resource community, I always thought that our water source and how easily it's accessed, particularly in the recycling areas and the way that we irrigate, even our farms and then our catfish farms, our rice farms, you know, it's just so open and vulnerable.

Mr. KENNEDY. Dr. Young.

Dr. YOUNG. Lack of food animal veterinary services in the needed areas of rural America, and really critical infrastructure analysis where are our vulnerability points. I think those are the 2 biggest threats.

Mr. KENNEDY. Dr. Vanier.

Dr. VANIER. Well, to follow along with Dr. Young's comments, I would say our biggest threat is complacency and lack of vigilance. I would like to see diagnostics. I would like to see a more robust laboratory network system. I would like to see more training for our local responders and communication with our producers so that they can remain vigilant and not be complacent about the fact that, well, I have a small farm, no one's going to attack me. I think they need to understand that they are equally at risk.

Mr. KENNEDY. Thank you. One last question. Dr. George, if an agroterrorism attack occurred, FEMA would likely play a critical role in distributing vaccines, antibiotics, other medical countermeasures in that event. Yet this administration has repeatedly proposed eliminating or drastically downsizing FEMA without any transition plan to help States or localities.

What are the risks, you believe, with the Trump administration and that attack on FEMA? What are the risks of the national biodefense if FEMA's ability to distribute life-saving countermeasures are reduced? How realistic is it to expect States and territories to take on that role?

Ms. GEORGE. Well, I think if we were to eliminate FEMA entirely, we would be placing the Nation at much greater risk, if only because the requirements are the requirements. We have requirements. Whether FEMA's picking them up or somebody else is picking them up, they exist. If you eliminate the agency that's been responsible for fulfilling those requirements and don't have anybody else in place and nothing else is able to take over for that, then you're suddenly at a loss. The States and localities are not going to be able to pick up the responsibility as comprehensively. We're not talking about something happening in an individual State. We're pretty much talking about scenarios that are going to spread all throughout the States.

So to expect the States to then in the midst of response and recovery, trying to coordinate with each other and pull resources down from the rest of the Federal Government, I think that's just unrealistic. So you're creating an even worse threat-related situation.

Mr. KENNEDY. Thank you. Mr. Chairman, I yield back.

Chairman STRONG. The gentleman yields back.

I want to thank our witnesses for their valuable testimony and the Members for their questions. The Members of the subcommittee may have some additional questions for the witnesses and we would like to ask the witnesses to respond to these in writing. Pursuant to committee rule VII(E), the hearing record will be held open for 10 days.

Without objection, the subcommittee stands and is adjourned.

[Whereupon, at 4:09 p.m., the subcommittee was adjourned.]

APPENDIX I

QUESTIONS FROM CHAIRMAN DALE W. STRONG FOR DANIEL K. WIMS

Question 1a. Dr. Wims, you highlight the Rapid Detection System and Remote Sensing for Chemical and Biological Threats developed by Alabama A&M scientists. How exactly does this system work?

Answer. The detection system is based on special optical non-destructive technique that analyze light scattering when target samples are tested for its chemical structures. The targets can be solid, liquids, or gases.

Alabama A&M research scientists developed a portable spectrometer operating with a 785 nm laser and a 2-in. refracting telescope to test adulteration of liquid, olive oil. The pure olive oil was mixed with other contaminants with which is detected between 1 percent and 100 percent at a minimum concentration of 2.5 percent from a distance of 15 cm and at a minimum concentration of 5 percent from a distance of 1 m. The technique involves correlating the intensity ratios of prominent optical signal bands of pure oils at 1254, 1657, and 1441 cm—1 to the degree of adulteration. As a novel variation in the data analysis technique, integrated intensities over a spectral range of 100 cm—1 around the optical signal line were used, making it possible to increase the sensitivity of the technique. Due to the potential of this technique for making measurements from a convenient distance, the short distance stand-off optical technique has the promise to be used for routine applications in food industry such as identifying food items and monitoring contaminated food products at various checkpoints in the food supply chain and storage facilities.

Question 1b. How can this system improve the ability of State and local responders to detect diseases of high consequence and formulate adequate response plans?

Answer. This system can be improved by implanting the following:

1. Expanding on the library of contaminants/diseases tested. This will allow to identify wide range of signatures of the contaminants/diseases.
2. Assemble and manufacture multiple systems to place in different food industries such as crop harvesting and storage facilities, food processing facilities, Food distribution facilities, port entrees to test imported food products, and other facilities to test for contaminants/diseases.
3. Establish data center to collect data from all systems remotely and monitor testing.
4. Advance the system to implement Artificial Intelligence and Machine Learning to improve efficiency of responding.

Alabama A&M research scientists are ready to work on the above plans.

Question 1c. What other capabilities is Alabama A&M developing to protect the food supply chain and prevent agroterror threats in the region?

Answer. Alabama A&M has additional capabilities to protect the food supply chain and prevent agroterror threat in the region are testing laboratories to cover monitoring food supplies from farm to table. Our soil and plant scientists are implementing different smart technologies to monitor farms and protect them from threats. They use drones with different sensors crops diseases, water quality, soil contaminants, storage of supplies, and other threats.

Another novel capability is smart packaging to protect packaged food from external biological or chemical contaminants. Alabama A&M research scientists developed novel biocompatible materials to coat packaging surfaces.

Alabama A&M AI/ML are experienced in the development of algorithms from data collected to advance the protection operation from threats and make it more efficient.

The goal of Alabama A&M is to lead the Nation in protecting our food supply chain supplies from farm to table from biological and chemical threats through scaling all our capabilities. This will be achieved by Alabama A&M receiving fund to establish state-of-the-art Agroterrorism Center that can handle food supply chain

threats in different areas. The facility will be equipped advance equipment and technologies. This will include data center and allow expanding farm land and food distribution facility surveillance.

QUESTIONS FROM CHAIRMAN DALE W. STRONG FOR CRISTOPHER A. YOUNG

Question 1a. In your opinion, what value would a single comprehensive source of information add to current food security efforts at the national, State, and local levels?

Answer. A single comprehensive source of vetted information would be of inestimable value in serving the Nation's food security needs by fundamentally transforming its ability to better anticipate threats to food, agriculture, and water (FAW). FAW systems are inextricably interconnected in a food chain system of systems (food supply). FAW-related threat information gathering and analysis therefore needs to be conducted on a holistic basis, meaning that it addresses threats across the whole of the food chain elements, and at the equivalency level of other national security-related intelligence processes. As has been stated numerous times, "food security is national security." Currently, data is siloed, widely dispersed, inconsistent in quality and frequently difficult to access because of unreconciled authority and permissions. Two-way information exchange is a major issue within the Federal Government, for example agencies with full Title 50 authorities and capacities vs. agencies with limited Title 50 capacity (USDA, FDA), but also equally importantly from FAW-related businesses.

Access becomes a multi-tiered siloing conundrum not just within the Federal Government, but also at the State, local, and Tribal levels. FAW businesses also lack a comprehensive Information Sharing and Analysis Center, which could function as a trusted interface between the Government and business. Information sharing is further complicated by the fact that the relevant FAW-related agencies (USDA and FDA) have regulatory authority. This tends to be an obstacle to communication between businesses and Government. As the CEO of one of the top 5 food corporations said, "We don't talk to the Federal agencies, our lawyers do."

The totality of deficiencies mean that vetted information is consistently incomplete and often unavailable for review from vetted subject-matter experts in government (Federal, State, and local), academia, and business that could gauge its significance. In times of emergency involving natural disease outbreaks or food-borne illness, responses are reactive, meaning delayed, rather than being anticipatory, predictive, and proactive. This additional burden causes prolonged response tempo, slows containment, increases costs, and inadvertently increases the probability of potential spiraling and cascading fractures. Further this allows emergency events to rapidly expand risk across the food supply. Consolidation of food processing has increased to such an extent that the loss of a single plant can negatively impact the food supply.

The complexity of issues presently occurs within a peacetime environment. It should therefore be anticipated that the intensity, distribution, and frequency of frictions will increase exponentially during times of war, since a pacing adversary is highly likely to directly target the U.S. food supply using a multidomain strategy. Food-related emergencies in time of war will not simply be just larger in scale, but rather of an entirely unconventional character, meaning the rapid information collection, analysis, and distribution to targeted FAW constituencies will become even more critical to survival.

A comprehensive source of vetted information would positively impact threat-related information sharing. Additional value could be leveraged at all levels of governance and business.

NATIONAL LEVEL

More effective policy making.—A comprehensive data source would allow Federal agencies to have a real-time, holistic view of FAW systems and their state of biosecurity, as well as providing insight into the robustness and resiliency of the food chain.

- Enable proactive ("Left of Bang") FAW-related interventions by the Federal Government instead of reactive responses.
- Ensure policies and standards are tailored to harmonize the oftentimes competing needs of national security, specific regions, States and localities with corporate constituencies and commodities. Value must be demonstrated in all directions, including back to business, to quell the current adversarial relationship between business and the regulatory agencies.

- Provide a standardized, evidence-based approach that can support efficiencies by precisely targeting Federal resources, developing requirements, and planning new analytical programs.

Streamlined coordination.—With all data centralized and standardized, Federal, State, and local government agencies, national organizations, and commodity representative groups can better coordinate with FAW business, so that they can become contributing partners rather than just consumers of analytical findings. Data flow needs to become two-way. This centralization of data does not mean that multinational food corporations would gain access to Classified national security programs but would instead create multiple lanes by which vetted information can be shared with appropriate constituencies.

Improved data analysis.—Consolidating data would enable government analysts (Federal, State, and local) and vetted academic researchers to assemble a robust dataset to use for in-depth analysis, Tactics, Techniques, and Procedures (TTP) development, and modeling. Academia could also serve as the trusted intermediary with FAW-related companies for data analysis and development of creative means by which corporate data could be utilized in national security programs. Where denied, academia can serve as alternative data scouts, working with commercial providers of data.

STATE LEVEL

Enhanced resource allocation.—A comprehensive database would give State-level officials a clearer picture of Federally-acquired and -analyzed data related to FAW security issues within their respective States, enabling more strategic allocation of State resources.

Greater cross-agency collaboration.—Standardized data would facilitate collaboration between Federal and State government agencies, including State veterinary diagnostic systems and departments of health, National Guard, and law enforcement.

Accountability and program evaluation.—A sole source of FAW-related facts would enable States to measure the performance of both Federal and State security efforts more effectively. This in turn would open communication channels to ensure the products meet the needs of the States, while also setting up a trusted network of vetted officials who could receive and assist in data collection, analysis, and interpretation during times of peace, in anticipation of the operational ramp-ups that would be necessary in times of war. A vigorous food-related war gaming network (FAW–Red Team) should be made a priority, funded, and regularly exercised. This group should consist of vetted experts from appropriate Federal, State, and local governments, academia, and business and take place under strict non-attribution standards. Regulatory elements of Federal agencies should not be allowed to participate but instead be limited to those with national security-related responsibilities.

LOCAL LEVEL

Targeted community constituency trust building and response.—Local food retailers, food banks, and even consumers have no access to high-quality data which could be used to improve the security of their operations and thereby build a more robust and resilient local food supply. Dissemination of validated and timely food threat information at the retail or consumer level is largely non-existent. When shared (e.g., DHS, FBI, etc.) it is often considered dated and covering known threats. Currently, there is also no coordinated mechanism for the anonymous sharing of retail-level food security information with Federal, State, and local authorities.

Information sharing with State- and local-level agencies suffers from the same regulatory conundrum as it does with the Federal level, meaning there is a distinct impression within retail food that the sharing of any information could and probably will result either in civil liability or in regulatory backlash. Out of legal concern local food retailers make it a habit to share no information other than that which might be necessary to meet State or local regulatory requirements or request law enforcement engagement. The collective effect is that local information that might be indicative of adversarial coordination across multiple localities is lacking.

BUSINESS LEVEL

More informed programmatic and business planning.—Business-related security officials consistently report the need for "actionable information" which can be used for business development and continuity of business planning. What information is shared by the Federal Government is often quietly reported by business to be of low quality, dated and not directed to the needs of business, thereby of little value to the needs of corporate security.

Other commonly-reported data-sharing failures include:

- Federally-shared intelligence products are generalized and provide few if any specifics, cover known threats, and frequently ask the wrong questions for business.
- Political, regulatory bias and pressure is often perceived by business rather than objective assessments. For instance, animal agriculture is often interpreted as detrimental to the environment. When regulatory FAW agencies serve in information-gathering efforts, these biases can be co-mingled with security-related matters.
- A single data provider that is not charged also with regulatory authorities would help eliminate tacit biases that might otherwise be present or perceived as present and thereby lessen the current adversarial relationship between Government and business. This change in authorities could potentially help to rapidly facilitate data sharing.

Question 1b. How should this resource be created and how can voices from land-grant universities like Auburn University, as well as other stakeholders, including agricultural producers, the intelligence community, and various voices from within the Government, contribute to the creation of this resource?

Answer. Information sharing necessitates a collaboration between Government, business, and academia. Given that the bulk of the FAW enterprises are privately-owned, a data-sharing solution would best be accomplished through an Information Sharing and Analysis Center (ISAC) environment. Unfortunately, the food market is highly competitive, and food-related companies have as a result consistently shown a lack of trust with each other, perceiving the others, as trying to gain economic and market advantage. The food industry had in the early 2020's an ISAC, but it has been shut down for many years. There is currently a "Food and Agriculture ISAC," but this is somewhat of a misnomer because it is solely focused on cybersecurity rather than being a comprehensive Food and Agriculture ISAC. Given that, it cannot meet the needs discussed here. Beyond that, some of these same large multinational food corporations have been accused and prosecuted for coordinated price-fixing violations, bringing into question the value of the current ISAC model being applied to FAW.

Food companies have on occasion withheld or otherwise obfuscated information for a variety of reasons. This means that an independent source of validated information must be collected, analyzed, and offered as appropriate in a format that serves both Government and FAW-related corporate needs.

Additionally, it is important to recognize the multi-national character representing large portions of the U.S. food supply. Currently, there is no manner by which national security-related FAW information can be shared with a foreign-owned or -influenced food corporation that operates in the Continental United States or even within U.S.-owned food corporations that may have foreign employees in this or other parts of the world.

The validated information may not be appropriate to share with multinational corporations that are foreign-held or influenced. Even so, given these corporations serve the United States by providing large portions of its food supply (e.g., pork), some threat information may on occasion need to be shared. How or by what mechanism this can be accomplished are questions that must be settled by Congress.

The development of a coordinated U.S. Biosurveillance System that can provide a "persistent stare" comprehensive view of FAW would solve a multiplicity of problems and thereby serve multiple purposes:

1. A Federally-supported U.S. Biosurveillance System would provide information that can be disseminated as appropriate to Federal, State, and local government entities, FAW-related corporations and academia. In addition, this system will provide a mechanism for standardized collection, validation, analysis, and dissemination of actionable information.

Academic involvement in said system would provide expertise in data analysis, modeling, and technology development, bring novel approaches to detect outbreaks faster, improve situational awareness, and enable the creation of flexible, probabilistic forecasts of biothreats. This collaboration leverages academia's scientific talent for developing and evaluating new surveillance methods, such as those involving synthetic biology or artificial intelligence, and helps bridge gaps in current fragmented systems by offering diverse perspectives and a skilled workforce for data interpretation and visualization.

Advantages of academic engagement include:

Advanced Analytics.—Academia can develop sophisticated data analysis and modeling techniques for the detection of outbreaks in the preclinical States (i.e., "left of bang").

Probabilistic Forecasting.—Academia can help design and implement systems that provide explicit statements of probability and uncertainty, enabling more accurate forecasts which better inform decision making during biological threat events.

Reverse Engineering Biothreat Agents.—Academia can provide expertise capable of reverse-engineering biothreat agents and develop rapid countermeasures.

Novel Detection Systems.—Academia can lead in the development of new and novel biosurveillance systems.

Enhanced Visualization.—Academia can provide expertise in biological data visualization, thereby translating complex biological data into clear and accessible formats for policy makers and decision makers.

New Tools.—Academia can provide innovation and invention of new tools.

Diverse Perspective.—Academia can function as a disinterested third party for the validation of novel technology, processes, and novel data sources. In matters of analysis, academia can also act in an "Alternative View" or "Designated Contrarian" role.

Skilled Workforce.—Academia can train, educate, and provide a wide range of scientific and engineering talent, thereby helping to address personnel gaps and fragmentation of biosurveillance efforts across Federal and State agencies.

Gap Filler.—Academia can collaborate with Government agencies to develop systems, TTPs, and requirements that enable the rapid ingestion and integration of data from disparate sources.

2. A Federally-supported U.S. Biosurveillance System would ensure that a "Persistent Stare" intelligence operation is in place, which may if value can be proven to business incentivize the sharing of FAW business information that might otherwise have not been shared. Incentivization in data sharing could be further promoted by removal of the influence and potential of regulatory blowback.

3. An element of a Federally-supported U.S. Biosurveillance System could provide a model for food-related incident reporting by FAW corporations. This model could potentially be adapted from the existing and proven aviation incident reporting mechanism entitled the "Aviation Safety Reporting System "(ASRS). This program is managed by NASA (non-regulatory agency) and provides limited, conditional immunity from Federal Aviation Administration (FAA) penalties for unintentional rule violations, thereby encouraging aviation personnel to report safety issues without fear of reprisal.

A Food Security Reporting System (FSRS) could facilitate information in the following ways:

Voluntary and confidential.—FSRS could be designed as a non-punitive system where employees, corporate heads, and staff could voluntarily submit reports. The identity of the reporter would be kept confidential by a non-regulatory entity, which would act as a neutral third party separate from USDA and FDA.

Limited immunity.—USDA and FDA would waive penalties and processing certificate suspensions for inadvertent rule violations if the individual has filed a report with the FSRS entity. This limited immunity has several key restrictions:

The violation must have been unintentional and not a deliberate act.

The event cannot have involved any criminal offenses, accidents, or demonstrate a lack of qualification, competency, or willful violation of FAW regulatory requirements.

- A report must be filed with FSRS within 10 days of the incident.
- Immunity can only be used once every 5 years.

Enforcement protection.—If USDA or FDA initiates an enforcement action based on information from another source, the reporter can present the FSRS receipt as proof of a constructive attitude toward FAW safety. USDA and FDA will not then impose a penalty, though the violation may still be recorded in the individual's file.

Data collection.—The core purpose of the FSRS is to collect and analyze FAW-related safety and security-related data to identify systemic problems and hazards in the national FAW supply chains. This data would be de-identified before being used for safety and security research and published without attribution in reports, alerts, and newsletters. Additionally, this information would be fed into the consolidated FAW database.

Question 1c. The state of biosurveillance and agro-defense can change drastically in a relatively short amount of time. How quickly would this resource need to be updated, and how would it be determined what content needs to go into this resource?

Answer. Biosurveillance requires persistent surveillance, meaning that the updating of the system is continuous by applying the principles established within the United States. IC's "Persistence Paradigm." Given that strategy, all new information would be populated within the database and additionally used in the Research and

Development (R&D) phases which would evolve into a continuous loop Operational Quality Control testing regimen.

Phase 1.—Planning efforts should begin with the establishment of a "Biosurveillance Requirements Board" (BRB), consisting of IC, USG agency and academically based subject-matter experts. The BRB would be charged with developing a list of initial priority biosurveillance and agro-defense questions (i.e., requirements), as well as an initial target list. This set of priority topics be used in Phase 2 and Phase 3.

Example.—The BRB determines that the first biosurveillance priority for information model building is the detection of Avian Influenza (AVI). A question is developed, which states, "Can Hyperspectral Imagery (HSI) be used for the detection of animals infected with AVI?" The BRB next designates the target list, which in this example includes poultry and dairy cattle located in known AVI infection zones (as designated by USDA) versus those same species in areas where AVI infections had not taken place. The resulting target list would result in the development of additional questions: "Can HSI be used for the detection of AVI in dairy cattle?" or "Can HSI be used for the detection of AVI in poultry?" These questions would help identify current and future informational needs, which in time would be turned into requirements.

Phase 2.—This phase would consist of the BRB inventorying current IC national assets for historical HSI data to determine whether the signatures differ by region (AVI vs. No AVI). Additionally, the BRB would inventory the availability of commercial holdings of similar HSI data that include the designated regions of interest. HSI analysts would then be charged with comparing IC HSI data versus commercial HSI data to determine the respective value of each in answering the BRB Phase I question(s). At this point, no determination is being made as to whether AVI is present, but rather only whether there is a difference in the HSI signatures between the 2 regions. If no historical HSI data is available for the respective regions, whether within the IC or commercial HSI vendors, then a future requirement would need to be set for synchronized biosurveillance collection missions.

In a perfect world scenario, historical HSI data would be available in both the IC and Commercial HSI vendors and determined to be of identical value. If not identical, the HSI analysts would need to designate the more valuable data source (i.e., distinguishable HSI signature differences). Decision makers would need to designate what and with whom data and findings will be shared. Authorities and Permissions will need to be designated and reconciled by Congress where necessary. This process of reconciling Authorities and Permissions would need to be repeated with each type of data derived from national asset collections (e.g., SIGINT, IMINT, OSINT, etc.).

This phase would consist of the building of the artificial neural networks (ANNs), testing against known values (clinically diagnosed AVI infected poultry and dairy cattle in this instance), establishing sensitivity thresholds (HSI sensors), TTPs, and the tipping and cueing protocols.

The phase would involve the following personnel:

- BRB
- Neural Network Design Engineers
- Modelers and Epidemiologists
- State and Federal Diagnostic Laboratories
- Ground Truthers (in this case Veterinarians and Academic Subject-Matter Experts)
- IC Intelligence Discipline Experts
- Business Equivalent Clearable Data Source Experts
- Academic Subject-Matter Experts, involved in innovation, technology applications, and discovery.

This phase would also include the scouting of additional data sources that could be added to the neural network model and subsequently used for testing results. At maturity, the Biosurveillance System would be maintained as an agnostic (meaning not limited to a single target set) All-Source Intelligence functionality, thereby providing a comprehensive understanding applicable to both biosecurity and Agro-defense.

A Biodefense/Agro-defense system based on All-Source Intelligence provides the following advantages:

Comprehensive View.—Provides broader and deeper understanding through the fusion of diverse and disparate data sources.

Enhanced Accuracy.—Provides a means to cross-reference data from diverse sources, enabling the verification of findings, reduction of bias, and increasing reliability (ground truth).

Context and Nuance.—Provides decision makers with additional actionable information.

Informed Decision Making.—Provides finished FAW Intelligence products that serve decision makers (Government, military, State, and local officials) and policy makers concerned with biosurveillance and agro-defense.

Note.—Auburn University has developed a document that describes how current operational military Intelligence, Surveillance, and Reconnaissance systems and authorities (Title 32) can be adapted to rapidly serve Biosurveillance and Agro-Security requirements. Additional adaptation of said systems would further enable the rapid stand-up of a persistent stare Biosurveillance and Agro-Security capability that would serve Title 50, 10, and 22 authority-related needs. This document is available upon request.

Phase 4.—This phase would consist of making the Biosurveillance System operational. At this point analytical findings would be fed into the larger Intelligence Cycle:

- Planning, Direction, Needs, Requirements
- Collection
- Processing Exploitation
- Analysis
- Dissemination.

This phase would also require the development of a tear-line protocol by which appropriate all-source findings and products can be made available to business decision makers through sanitization and redaction.

Question 1d. How can this consolidated database be functionally utilized by Customs and Border Protection (CBP) agents for the purpose of screening and testing biological materials to determine if those materials have been synthetically modified or engineered, and what technology would be needed to enable that process?

Answer. CPB decision makers would have unfettered access to all Intelligence products and data included in the Biosurveillance and Agro-Security System. Additionally, they would have the opportunity to work with subject-matter experts to determine if existing system technology elements can be used for the detection of synthetically modified or engineered materials.

Modifications and adaptations of said technology, as well as development of new technology should be evaluated against materials verified as containing modifications of known interest. Testing and proof of principle demonstrations would ideally include the adaptability of the technology in detecting any deviation from baseline (i.e., differing from norm), to address present or future gaps in materials with yet unknown modifications.

An ideal location for a research and development pilot program would be Hartsfield-Jackson Atlanta International Airport (ATL) due to the volume of travelers, the frequency of restricted food (e.g., "bush meat" and live plant) encounters and the proximity to potential partnering major academic research institutions (e.g., Auburn University, Georgia Tech, etc.).

QUESTIONS FROM CHAIRMAN DALE W. STRONG FOR MARTY VANIER

Question 1a. Dr. Vanier, in your work with the National Agricultural Biosecurity Center, you have developed relationships between Kansas State University and State and Federal emergency management agencies, a topic of vital importance to this committee and subcommittee.

In your dealings with State and local emergency management agencies, what resources and information do these emergency managers need to successfully execute their missions to prevent, prepare for, mitigate, respond to, and recover from agricultural emergencies?

Answer. The single most important resource emergency management agencies need is information. Emergency managers have little to no exposure to bio- or ag security issues because they are not categorized as disasters. Food and agricultural events are generally managed by the relevant regulatory agency, i.e. public health, department of agriculture, animal health, or plant health, consequently there is little to no interaction between or among these agencies. This was borne out by the results of a survey that NABC did a number of years ago that revealed that county emergency managers assumed that food and agriculture emergencies would be managed by other agencies and emergency management would have no role. A solution we have employed in Kansas is routinely running scenario-based exercises that have elements that require the involvement of all entities—emergency management, animal health, public health, crop health, law enforcement, and public information.

As part of the survey mentioned above, NABC provided the county emergency managers with information on the value and economic impact of agricultural activity in their respective counties to emphasize agriculture as critical infrastructure and demonstrate that significant events would be viewed as disasters.

Better distribution of information at the State and county levels of government that identifies threats and risks to agriculture is needed for emergency managers. Again, there is plenty of information, but it tends to be stove-piped by response area, both vertically and horizontally. Finding ways to better utilize, for instance, the National Biosurveillance Integration Center at DHS to get threat information down to the State and local level is one example. The Kansas Intelligence Fusion Center has developed a methodology by which it can analyze Classified threat information and develop unclassified products that State-level decision makers can use in formulating response and recovery policy. Crop and animal disease diagnostic laboratories provide crucial information with regard to the disease threat and geographic scope of the disease incident.

The information must flow in all directions—up, down, and side-to-side. Locals will be the first to identify a problem. That information needs to not only go up the chain to State and Federal regulatory and response agencies, but the information needs to go sideways and back down the chain to inform other stakeholders and regulatory/response agencies. An integrated approach to this information flow will enhance response and recovery, and has the ability to prevent agricultural emergencies in the first place. This problem is most acute at the Federal level.

Question 1b. In your opinion, what can FEMA do to raise preparedness standards for agroterrorist incidents and other agricultural emergencies at the national level, and how can they perform better outreach to rural communities and other communities likely to be closely connected to these threats?

Answer. There are multiple ways FEMA might raise standards and perform better in agricultural emergencies; however, the current state of disarray at the agency makes these efforts quite problematic. The efforts include a greater emphasis by FEMA on understanding and supporting agricultural emergencies and providing appropriate training opportunities, supporting the Homeland Security grant program to allow States to practice and train for ag emergencies, and supporting food and ag scenarios in national exercises. In all of these cases, food and agriculture must be the primary emphasis, not an afterthought.

With the understanding that "all disasters are local" FEMA will truly have a support and logistics role. Local and State responders will be the first on the scene, executing their response plans that have been integrated with plans from the appropriate regulatory agencies which are in alignment with NIMS and ICS.

FEMA can improve its outreach to rural communities by increasing its attention on food and agricultural events and giving these events more prominence in its planning, training, and educational materials. This will drive necessary information to the FEMA audience—State and local emergency managers. In turn those emergency managers will need to collaborate with State and local regulatory agencies (food safety, animal health, plant health, public health, law enforcement) and subject-matter experts to plan, train, and exercise response plans.

Question 2a. Dr. Vanier, while direct actions by foreign actors such as the release of harmful pathogens or intellectual property theft are clear examples of agroterrorism, indirect threats can have wide-spread human and economic impacts. For example, invasive species such as the spotted lanternfly have caused millions of dollars in crop losses due to the infestation.

Could malign foreign actors exploit vulnerabilities at ports of entry to introduce invasive species or diseases?

Answer. Absolutely. It is well-known that only a small percentage of products are inspected at ports of entry. This creates a vulnerability not only for malign foreign actors to exploit, but also, and much more likely, for unintentional introduction of plant, animal, or pest invasive species.

Most of this is due to the nature of the international trade in agricultural products. We move massive amounts of plant and animal products into and out of the United States every day. Invasive species have created significant losses in annual agricultural output. We have depended on USDA/APHIS to identify and mitigate these impacts, but they have not been able to keep up with the volume of introductions due to a lack of resources.

Strengthening our national plant and animal disease diagnostic capabilities will allow for more rapid identification of invasive species and diseases, and therefore a faster response. Additionally, more integration across Federal and State departments and agencies will improve information flow and response support.

Question 2b. How can CBP harden vetting at ports of entry to interdict invasive species?

Answer. The sheer volume of agricultural products arriving at ports of entry on a daily basis precludes a 100 percent interdiction rate, so CBP needs to collaborate and integrate its processes with other stakeholder agencies at the Federal and State level to create a risk-based surveillance and sampling scheme; utilize State and Fed-

eral diagnostic capabilities to confirm suspicious interceptions and support its risk assessments; send information to and receive information from stakeholders on interdictions; and strengthen its interactions with State and Federal regulatory and response agencies, State and local emergency management, academia, and industry.

Question 3a. The Department of Homeland Security's Science and Technology Directorate's Office of National Laboratories operates several national laboratories with direct relevance to deterring animal and plant pathogens, including the Plum Island Animal Disease Center and the National Biodefense Analysis and Countermeasures Center.

These national laboratories play an important role in investigating agriculture-related crimes and assisting in performing biosurveillance, emerging biological threat characterization, information sharing, and enabling preparedness. How can the work of these national laboratories be improved upon to amplify the Federal Government's response to threats of an agroterrorist nature?

Answer. There are several critical roles these labs could perform in the protection of U.S. agricultural enterprise.

Beyond roles the labs play in biosurveillance, threat characterization, information sharing, and law enforcement attribution, the labs could extend their ability to test disease introduction scenarios for realism. These scenarios can be shared with responders at all levels, including emergency managers via FEMA planning and training materials. This look-over-the-horizon, coupled with the confirmatory diagnostic work at Plum Island Animal Disease Center and the National Plant Diagnostic Network would give Federal, State, and local responders the ability to get in front of a potential disaster.

There is a critical threat looming that could render my comments moot. The Plum Island Animal Disease Center is well beyond its envisioned life span and its successor laboratory, the National Bio- and Agrodefense Facility, is not operational. Any gap in the ability of the U.S. Department of Agriculture to provide confirmatory testing of a transboundary animal disease sets the country up for a high-consequence agricultural emergency. Likewise, the diminishing support for the National Plant Diagnostic Network would create the same result for the crop world.

Question 3b. Besides assisting through S&T's Office of National Laboratories, what do you see as the biggest supporting role that DHS can provide to the Federal Government and the Nation in deterring the threat of agroterrorism?

Answer. DHS has a unique and broad role in minimizing the impacts from both agro-terrorism and other high-consequence events related to the food and agriculture sector. The Securing our Agriculture and Food Act (Pub. L. 115–43) directed DHS, via its Office of Health Security, to " . . . carry out a program to coordinate the Department's efforts related to defending the food, agriculture, and veterinary systems of the United States against terrorism and other high-consequence events that pose a high risk to homeland security . . . and coordinate with other Federal departments and agencies as appropriate . . . ".

DHS's Science and Technology Directorate provided significant research support for efforts to mitigate the effects of transboundary animal diseases. This funding included supporting work at DHS Centers of Excellence devoted to transboundary animal diseases.

The DHS Office of Health Security is responsible for the coordination, oversight, and integration of all the Department's health, food, and agriculture efforts—to include agriculture emergencies and most recently, the National Biosurveillance Integration Center. It can drive planning, interact directly with key stakeholders, and fund resilience efforts to "harden" the food and agriculture sector.

DHS can link the food and agriculture sector into the broader critical infrastructure framework and examine the economic vulnerabilities, cascading effects, and national security mission disruptions caused by an incident in the food and ag sector.

All of this together allows DHS to inform planning across all levels of government.

Mr. Chairman and Members of the subcommittee, thank you for the opportunity to answer your questions. You will notice several themes that run through all of my answers. They are:

1. The importance of and need for effective communication and information sharing by all levels of government and across all response agencies, regulatory agencies, and stakeholder groups.
2. The importance of and need for round-the-clock, state-of-the-art diagnostic capabilities for animal, plant, and food pathogens.
3. The importance of and need for inclusion of crop systems given the dependence the livestock industry has on the availability of grain.

QUESTIONS FROM CHAIRMAN DALE W. STRONG FOR ASHA M. GEORGE

Question 1a. Dr. George, you note in your written testimony that the United States suffers many gaps in preparedness for dealing with future biological threats to agriculture. Among these, you identify that States do not employ the same responses to agricultural disease threats, creating uneven responses the likes of which we saw during last year's response to the outbreak of highly pathogenic avian influenza.

What problems result from uneven State responses to mitigating disease threats, and what role can the Federal Government take in setting national standards to encourage States to adopt a more even approach?

Answer. "Diseases know no borders" is an oft-repeated phrase, but one that is applicable to this question. States that fail to rigorously prevent, conduct surveillance of, detect, respond to, attribute, recover from, and mitigate food and agricultural disease threats are vulnerable to under- and undetected spread of those threats within their borders and, by extension, their neighboring States. As we saw last year with the spread of highly pathogenic avian influenza within the dairy cattle population, some States dedicated more personnel and resources to look for, and respond to, these outbreaks. It is no coincidence that States like Colorado and Michigan identified many cases earlier in the outbreak. These States took deliberative action to find cases and prevent further virus spread. When States choose not, or do not have the resources or programs in place, to act quickly and decisively, they unintentionally leave surrounding States and, by extension, the Nation at risk of additional disease spread and damage to the food and agriculture critical infrastructure sector.

Tepid response to agricultural disease threats also poses a risk to humans. More than two-thirds of emerging infectious diseases are zoonotic in nature. Pathogens like highly pathogenic avian influenza have can and often do subsequently affect humans and other types of animals. Disease outbreaks in States that are not proactive increase the risk to other populations.

The Federal Government previously used financial incentives to encourage State and industry cooperation with disease reporting. Indemnity programs for poultry producers have proven to be an effective tool for encouraging the identification and depopulation of infected commercial flocks. However, as we saw with the H5N1 outbreaks in dairy cattle last year, this approach currently requires producers to understand the threat, and indemnification as a policy only works if the livestock is very likely to die or suffer long-term harm from infection. The U.S. Department of Agriculture (USDA) previously established other financial incentive and assistance programs for dairy farmers, but those efforts took time to come into effect, giving the virus additional time to spread. The Federal Government should consider adding a requirement to standing agricultural assistance programs for producers and industry veterinarians to identify and report disease symptoms to State officials, particularly when there is a known outbreak or other threats to food and agriculture, in order to qualify for this assistance.

Question 1b. You also note that the Federal Government lacks speed and coordination in responding to these disease threats properly. How can the Federal Government's response operations best be improved?

Answer. USDA and the Centers for Disease Control and Prevention (CDC) are the 2 leading Federal entities addressing biological threats to food and agriculture, with occasional support from other departments and agencies. Unfortunately, while USDA and CDC sometimes coordinate their activities, their operations remain largely separate, with CDC usually deferring to USDA until a human is exposed to an animal pathogen such as H5N1. USDA, in turn, usually defers to State departments of agriculture and livestock producers, before eventually investing money from the Commodity Credit Corporation to incentivize case reporting. This is what occurred with regard to the recent spread of H5N1. USDA originally deferred to the departments of agriculture in States affected by H5N1 as late as the summer of 2024 and then finally required national bulk milk testing in December 2024 to detect H5N1 cases, 9 months after the first dairy cattle cases presented.

Though not a perfect solution alone, a good first step toward addressing issues with Federal response would be to create a food and agriculture biosurveillance planning committee to develop recommendations for strengthening USDA biosurveillance activities, as we propose in Recommendation 31b of the Commission's 2024 National Blueprint for Biodefense. Recommendation 31e from that same report calls for increased appropriations to support enhanced data sharing of food, agriculture, plant, and wildlife disease data.

Question 2a. Dr. George, in your written testimony, you write that "The Office of Health Security has been involved in Government-wide discussions regarding the protection of food and agriculture, but this office neither coordinates the Depart-

ment's activities in this space, nor do they possess the personnel and resources to effectively execute such a mission."

In your opinion, what role should the Office of Health Security play within agro-biodefense, and how will this role impact the roles of other DHS components already active in this space?

Answer. The Securing Our Agriculture and Food Act (Pub. L. 115–43) assigned responsibility for coordinating Department of Homeland Security (DHS) food, agriculture, and veterinary defense programs to the Assistant Secretary for Health Affairs, and later the Assistant Secretary for Countering Weapons of Mass Destruction. These responsibilities included outward-facing activities, such as coordinating with Federal departments and agencies outside of DHS on food and agriculture defense policy matters, pursuant to Homeland Security Presidential Directive 9 (Defense of United States Agriculture and Food) and later National Security Memorandum 16 (Strengthening the Security and Resilience of United States Food and Agriculture). This responsibility statutorily remains with the Assistant Secretary for Countering Weapons of Mass Destruction (CWMD), but DHS moved those duties to the Office of Health Security (OHS) following the creation of this office in 2022.

Whether it is CWMD or OHS, the responsibilities under Pub. L. 115–43 and National Security Memorandum 16 must not conflict with or duplicate responsibilities elsewhere within DHS. The administration and Congress only intended for DHS to coordinate food and agricultural security requirements during large-scale events that would require the participation of multiple Federal Departments and agencies and exceeded USDA capacity to do so itself. The food and agriculture leads in OHS should maintain awareness of what activities the DHS operational components contribute to food and agricultural security, and coordinate with them if and when called upon to address large-scale biological events affecting food and agriculture.

Question 2b. What resources does the Office of Health Security, and OHS's Health, Food, and Agriculture Resilience Directorate need to execute upon its mission more effectively?

Answer. The Office of Health Security would benefit from additional personnel who would allow the Office to more proactively coordinate within and outside of DHS on food and agricultural security.

Question 3a. Dr. George, as you know, the President's fiscal year 2026 budget request proposes transferring the National Biosurveillance Integration Center (NBIC) from the Countering Weapons of Mass Destruction Office to the Office of Health Security.

You note in your written testimony that NBIC suffers from insufficient coordination with the rest of the Federal Government in carrying out its mission set. How can this coordination be improved, and how will this impact NBIC's mission?

Answer. The National Biosurveillance Integration Center (NBIC) has historically lacked, and continues to lack, the necessary funding and authority to access data to effectively execute its statutory biosurveillance mission. Congress never mandated that other Federal departments and agencies actively share access to their non-public biosurveillance data. The result is a situation where NBIC must rely on open-source information already available to the rest of the Federal Government. Congress should mandate that Departments and agencies share their biosurveillance data with NBIC to improve the Center's ability to coordinate with the rest of the Federal Government in order to achieve its mission. However, it is unclear whether Congress would choose to dedicate the enormous amounts of time and effort required to overcome the hurdles associated with Congressional referrals needed to direct so many other Departments and agencies to share their biosurveillance data. NBIC personnel are doing the best they can with the resources they have, and the very limited access granted to date, but the current situation leaves the Center expending enormous effort for little return on investment.

Improving NBIC capabilities and coordination with other Federal departments and agencies also requires a substantial increase in data-sharing partnerships. Lack of access to public health data from the Centers for Disease Control and Prevention (CDC) and the Department of Agriculture (USDA), among other departments and agencies, will continue to limit NBIC's utility to Federal partners. Funding also remains a challenge, even with the increase in NBIC over the last 5 years, preventing NBIC from developing the necessary information technology infrastructure to store and process information from other Federal departments and agencies.

Recommendation 13 from our Commission's first and foundational 2015 report, *A National Blueprint for Biodefense: Leadership and Major Reform Needed to Optimize Efforts,* stated that the National Security Council should examine NBIC and its National Biosurveillance Integration System to determine whether funding for the program yields sufficiently useful biosurveillance information. In the Commission's 2021 report, *Biodefense in Crisis: Immediate Action Needed to Address National*

Vulnerabilities, we recommended evaluating and implementing necessary authorities to enable NBIC to be a true biosurveillance integration center, as originally envisioned by Congress. If data-use restrictions at USDA, CDC, and other Federal entities continue to prevent NBIC from developing more useful products for the Federal interagency, and if annual appropriations continue to inhibit NBIC from building necessary capacity and personnel, Congress should either remove those constraints or terminate the program.

Question 3b. If Congress transfers NBIC to OHS, how do you envision that this will impact the mission of both NBIC and OHS?

Answer. There may be an opportunity for OHS to leverage their relationships with other Federal departments and entities with food and agriculture equities to increase NBIC coordination. Otherwise, we would anticipate that NBIC and OHS would see slight changes in their respective missions due to any such transfer.

QUESTION FROM HON. PABLO JOSÉ HERNÁNDEZ FOR ASHA M. GEORGE

Question. Puerto Rico manufactures nearly 10 percent of the United States' prescription drugs and over 40 percent of the saline used in IV bags—supplies that are critical for treating medical conditions that could result from an agroterrorism attack. In 2017, Hurricane Maria destroyed much of Puerto Rico's pharmaceutical infrastructure, causing medical shortages and worsening an influenza outbreak that ultimately hospitalized over 30,000 Americans. Dr. George, if another disaster disrupted our medical supply chain, what concerns do you have about the impact on human and veterinary medicine? And are you concerned that our enemies might exploit this vulnerability?

Answer. The Commission remains gravely concerned about the resilience of our Nation's biodefense critical infrastructure and pharmaceutical supply chain. Efforts to identify and secure these assets from natural disasters and other threats that could disrupt operations and worsen the impact of and response to a biological event have been insufficient.

Puerto Rico is, indeed, responsible for a sizable portion of prescription drug and saline manufacturing. Puerto Rico possesses this important manufacturing capacity and has unique geographic needs that differentiate it from States and localities when it comes to disaster response and recovery. These circumstances raise alarms about the impacts of damage to these facilities, as well as about how long it will take to secure and reinstate them following a disaster.

Areas impacted by natural disasters are already at higher risk of disease outbreaks. Storm damage to manufacturing capabilities worsens the susceptibility of areas hit by natural disasters to subsequent biological events. Unfortunately, this plays out repeatedly. Hurricane Maria damaged the intravenous (IV) fluid and prescription drug infrastructure in Puerto Rico. Seven years later, in 2024, Hurricane Helene damaged a Baxter International facility in North Carolina that is also responsible for a large amount of IV fluid manufacturing, causing nationwide critical supply chain issues for hospitals. Our adversaries cannot help but notice the massive impact these disruptions have on our health care and public health infrastructure and readiness for future threats, biological or otherwise. We must assume that they will exploit this glaring vulnerability. The Federal Government can and should do more to assist States, localities, Tribes, territories, and industry, in protecting these assets from future disruption or destruction.

We are also concerned about the potential interruption of these operations caused by biological events, as demonstrated during the COVID–19 pandemic. In the Commission's 2021 report, *Insidious Scourge: Critical Infrastructure at Biological Risk,* we recommended that the director of the Cybersecurity and Infrastructure Security Agency (CISA) work with the critical infrastructure sectors to identify sector vulnerabilities biological threats that need to be strengthened. For the Chemical Sector, we recommend that CISA work with the Chemical Sector (which includes the manufacturing of pharmaceutical ingredients), Federal Bureau of Investigation, and Defense Threat Reduction Agency to develop a detailed plan to maintain operations safely and securely before, during, and after a biological event.

APPENDIX II

SUPPLEMENTAL MATERIAL SUBMITTED BY ASHA M. GEORGE

THE STATE OF U.S. BIODEFENSE—WRITTEN REMARKS BY DR. ASHA M. GEORGE

MAY 8, 2025—10:45 AM ET

Good morning, Commissioners. I come before you today to speak to the state of our Nation's Biodefense. As executive director of the commission, I frequently and privately brief you on the threats, vulnerabilities, and consequences that comprise biological risk to the Nation. However, with the current environment of uncertainty and apprehension about the fate of Federal biodefense programs—combined with ever-increasing biological threats—I felt it important to brief you during this public meeting and allow the biodefense community and those concerned about our national security to hear this address, as well.

While I realize that the administration's cuts and changes to government are top of mind, allow me to talk about the threat and the biodefense enterprise in general before talking about impacts, requirements, and shortfalls, as a starting point for conversations here and among policy makers about the direction of national biodefense in the 21st Century.

BIOLOGICAL THREATS

The Department of State recently released its annual compliance and verification report. (This is the one that addresses compliance with the Biological and Toxin Weapons Convention.) This year again, the State Department said that Russia and North Korea possess offensive biological weapons programs. The State Department also added more to their discussions of China and Iran, talking about their inability to prove that historic offensive programs ever ceased, their sociopolitical aims, and their dual-use research. We also know that China is investing tens of billions into their bioeconomy while we are not. We are about to be lapped by China with regard to biotechnology.

No self-respecting military person would ever assume that these are the only 4 countries in possession of, or actively pursuing, offensive biological weapons. Motivations for proliferation vary, from asymmetric advantage, to mutually assured destruction, to the takedown of society and global order, to the pursuit of something that does not require getting hold of more highly-regulated and tracked materials for use in weapons of mass destruction. Whatever the motivation, as a Nation, we must assume that more than just these 4 countries will develop their own programs or obtain their own weapons.

Bioterrorism remains an issue as well. Ricin events continue to occur throughout the country, threatening individuals, communities, populations, and America. Terrorist organizations, such as al-Qaeda and ISIL, continue to try and obtain biological weapons and agents to foster fear. Lone wolves see the value as well and have figured out how to create some of these agents by themselves. But we ought not to consider terrorists as always separate from nation-states. Nation-state-sponsored terrorism continues and we assume that extends to bioterrorism.

Accidents remain problematic. The debate about COVID origins continues, with staunch believers on every side of every argument. I remind you that the intelligence community remains divided as to the origins of COVID and our own Commission has declined to pass judgment because we simply do not have access to all of the needed information, classified and unclassified, to make that determination. But other proven accidents continue to occur in laboratories across the world, including in the United States. Fungi grow unobserved, produce toxins, contaminate our food supply, and in some cases, produce cancer. Cross-contamination, improperly disposed of biological materials, and too few people doing the jobs of too many in lab environments still lead to accidents and unintentional exposures.

This leaves us with one category—that of naturally-occurring diseases—and there is plenty to bring to your attention. Let us start with Highly Pathogenic Avian Influenza (HPAI). You have seen it spreading throughout avian populations with some scary symptoms, such as thousands of infected penguins flinging themselves off of glaciers. The disease has spread to mammals, including cattle, and there have been dozens of human infections in the United States, including at least one death. Tied up in this is fear about: (1) the impact on food and agriculture, and by direct extension, our economy; and (2) the impact on tourism. Our accusations about other countries not reporting their diseases have come home to roost. People are afraid to find out what is going on, so they are simply not finding out. The result is an incomplete picture of where the disease is, and, therefore, how to stop its spread. Of course, that does not seem to make a difference to a disease that has decided it is here to stay.

While we do not usually talk about diseases of purely public health concern—this is not the Bipartisan Commission on Public Health, it is the Bipartisan Commission on Biodefense—I do want to call your attention to the increasing disease burden in our country. We have lost control of diseases we thought we had a chance of eradicating. Measles, of course, comes to mind. The best thing I can say about it is that at least elected officials have stopped calling for measles parties after children started dying, but that is what it took, the deaths of children. Other diseases are reemerging in the United States, including most recently tuberculosis, mumps, pertussis, and rubella. I imagine that tetanus, polio, and meningitis are not too far behind. Mpox is now endemic here in the United States. And people are still dying from diseases like influenza and chicken pox.

Our disease burden is increasing and when that happens, the overall health status of our national population decreases. It is going to be hard to Make America Healthy Again while diseases we thought were previously under control are on the rise. Even worse, we are creating ideal conditions for our enemies to use biological weapons to attack our populations, and those weapons need not contain particularly devasting diseases at that. When individuals have weakened immune systems, they more easily fall prey to illnesses that ordinarily would not affect them very seriously or for very long. The same can be said for populations. Some military doctrines call for doing just this—weakening the population so that they are easier to overcome.

THE BIODEFENSE ENTERPRISE

Moving on from the threat, let me address how the biodefense enterprise is faring. Prior to the beginning of the current administration, over the last 10 years, we made it clear that all 15 Cabinet departments, 9 independent agencies, and 1 independent institution (the Smithsonian) possess responsibilities for biodefense. We will hear from one of those independent agencies—NASA—today about their unique responsibilities, particularly for planetary protection. Overall, the biodefense enterprise is in chaos. Everyone that has not been cut is diving for cover, putting out fires, and trying to simply survive.

Defending the Nation against biological threats that affect national security is not a top priority for any of these organizations, including those that most often come to mind—USDA, HHS, and DOD. But they all do recognize that biological threats to the Nation are existential and persistent.

The national biodefense enterprise also exists, but it cannot evolve, not in today's environment. Agencies are disintegrating, disappearing, changing, and moving.

In 2018, the previous Trump administration developed and released the first National Biodefense Strategy, the accomplishment of which President Trump was rightly proud. We called for that national biodefense strategy in our first Blueprint for Biodefense—it was our third recommendation. But we also called for a coordinating council and for that to sit at the White House. Our country could still use one. Dr. Gerry Parker, one of our former ex officios, is there now. I hope he can establish that council at the White House and use it to stabilize things. The national biodefense enterprise stands, but on increasingly wobbly legs.

IMPACT OF RECENT CUTS

So let me get on to the issue at hand—the impact of the cuts and changes to the U.S. Government. The administration has decided to prioritize cutting, cutting as much as it can, wherever it can.

I remind the commissioners that we have made recommendations to eliminate or replace Government programs that were (and are) not performing as originally intended by previous administrations and Congresses. We have done the work of leaning into Government efficiency when it comes to biodefense. For example, we brought attention to the shortcomings of our national system of biodetectors—

BioWatch—and called for replacing the 22-year-old technology or shutting the program down altogether. We also talked about the challenges that the Hospital Preparedness Program has experienced since its inception. In both cases the requirements were right—we need to detect biological agents in our major metropolitan areas, and we need to prepare hospitals for large-scale biological events. If programs cannot address these and other requirements successfully, though, we felt they should be shut down.

But the requirements remain and upon those requirements, we must remain focused.

Biodefense has always been disgracefully, woefully, and incomprehensively underfunded. As a Nation, we have never been adequately prepared for the biological events that occur, and we know that, because we never do seem to avoid the deaths of hundreds, thousands, and sometimes millions when those events occur. The cuts already implemented, the cuts revealed in the top line discretionary request (more commonly known as the skinny budget), the cuts we expect to find in the President's Budget Request, the cuts in the Reconciliation package, the cuts in Appropriations and Mandatory Spending, the cuts in personnel, and the cuts in things we thought were safe (like Medicare, Federal retirement benefits, intelligence operations, and defense spending) may feel good at the time to some, but do not, and will not, for long.

The biodefense community is in for the fight of its life to get the funding it needs. It was starving before. It is going to be anorexic soon.

I know you want to hear specifics. But the situation is changing daily, if not more frequently, and the facts remain unclear. And there is no doubt that this constant uncertainty is impacting and disrupting capabilities and operations. Decisions have not been made, or when they have been, some are undone. Sometimes there is follow-through, sometimes there is not. Sometimes responsibilities are reassigned, sometimes they are not. Announcements are made and then withdrawn. But this is what I can say.

Our Nation has certain requirements. Many in both the public and private sectors are driven by requirements. We engage in requirements-driven planning. We know we cannot do and pay for everything, so we identify what absolutely has to be done—requirements—and then set about fulfilling them. The requirements remain. And while the administration is making all of these cuts, the biodefense community cannot adequately fulfill those requirements.

The good people throughout and outside the Government are not just trying, they are struggling mightily, and they are fighting to defend the Nation against biological threats that are here now and coming on inexorably. You asked me what the impacts of the actions of the administration are as of now, and I will tell you.

- As of now, our grasp on biological intelligence is weak at best.
- As of now, we are losing programs that—by their very existence—were thought to serve as a deterrence.
- As of now, we are still not prepared to deal with large-scale and other biological events that affect national security.
- As of now, we are increasingly reverting to what I call the human sentinel surveillance system, in which we are waiting for people to get sick before we detect diseases that are emerging, reemerging, and spreading.
- As of now, we are not capable of responding efficiently and effectively to biological events.
- As of now, our ability to attribute biological events to sources, nation-states, criminals, and terrorists is compromised.
- As of now, we are still recovering from the last pandemic, while outbreaks, epidemics, and 7 other pandemics are either already here or on their way.
- As of now, the very last to ever get funding and support, mitigation, barely has a heartbeat.
- And as of now, talented public servants are being let go, with real pain and consequences felt across the country.

Biodefense is in crisis and has long been in crisis.

But the biodefense community has not given up and the public and private sectors are aware of, and engaged in, biodefense (to the extent they can be). They are doing their best to preserve capabilities in everything from biosurveillance to attribution to medical countermeasure development. We need to maintain those capabilities no matter where entities in the organizational chart land.

In addition to telling you that times are tough and that we are at great risk of losing millions again to the ravages of disease, I want to end with a few other observations.

Members of the national biodefense enterprise are all for efficiency. Most have had no choice for decades but to do the best they could with what little funding they

got. This is why we have advocated for so long to move money from failed programs to those that are successful. The administration needs to consider reinvesting some of the funds they are saving into programs that actually work. And the administration needs to make future cuts with current and previous cuts in mind.

I have told the Department of Defense for years that they can stand up and say that dealing with anything other than attacks on the United States is someone else's job, and that is fine, until those entities can no longer fulfill that responsibility. The Department of Defense needs to prepare for the worst, a situation in which they are left holding the bag. A situation in which all of biodefense becomes their responsibility. They will do it. They will continue to defend the Nation against all enemies, foreign and domestic. But that will come at great cost to that Department.

In addition to national defense, other areas are being affected that are not usually thought of as biodefense, such as emergency management, agriculture, and homeland security. The idea may be to save money, but we are not saving anything if all we are doing is shifting costs and that includes to the States. I know the Governors agree.

It is every administration's prerogative to reorganize the White House and reorganize the Executive branch. It is also Congress' responsibility to ensure that Congressional intent for the Departments and agencies in the Executive branch is not thrown out. The administration can make cuts and reorganize, but at the end of the day, they and Congress cannot allow the Nation to be caught flat-footed. They cannot allow America to cede the high ground to disease or any other enemy of the state.

As a former Congressional staffer, I may be biased, but the Dome still shines on the Hill. Congress is the stabilizing force in Government, not the Presidency. It still does the work of the people. And while all of this is going on, that work is crucial.

With regard to biodefense, there are ways for Congress to operate during this time of profound change. If Congress wants the best people to be named to political appointments, they do not have to give up that responsibility because they want to work with the administration. Saying no does not mean that the other party automatically wins. There are other Republicans in the country that can take those appointments.

Whenever the administration thinks there is a problem in the Government, the relevant Congressional committees can and should immediately open an investigation into that problem.

If Congress has concerns about all of this being too much and too fast, they are perfectly capable of conducting oversight.

If someone in Congress thinks that the Nation needs something other than the few must-pass bills that move, they do not need to wait to start drafting that legislation. They do not need anyone else's permission to draft legislation (like the reauthorization of the Pandemic and All Hazards Preparedness Act) and get ready for when those bills can be taken up again.

And the Constitution is clear. No matter what the President's budget request says, the power of the purse remains with Congress. Congress decides on mandatory spending and Congress decides on appropriations.

There are people holding the line. Our Government is the government of the people, by the people, and for the people. Nothing has changed about that.

Biodefense rests in the hands of State, local, Tribal, territorial, and Federal Governments, as well as academia, industry, and nongovernmental organizations. What they do is important. They themselves are important.

The Bipartisan Commission on Biodefense is a problem-solving, solution-oriented Commission. We stand up for biodefense and help in whatever way we can. We have a record of working with the previous Trump administration and with all administrations since 2014. We are willing to do so again but will say what cuts and other actions concern us, as well as what we agree with. We stand ready to assist and share the decades of the combined expertise of the Commissioners, ex officios, and staff with the administration and with Congress.

If Elon Musk called to ask our opinion about increasing Government efficiency in biodefense, we would take that call.

The former co-chair of this commission, Senator Joe Lieberman, often talked about the need to examine and learn from the past, while also looking to the future.

It is our duty to ensure the safety of all Americans, to anticipate threats, and to create strategies that safeguard our future. Together, we will meet any challenge, strengthened by past wisdom, present innovation, and hope for the future. Let us move forward with courage, and as the good Senator said, we and the national biodefense enterprise shall prevail.

REPORT

Defense of Animal Agriculture

Bipartisan Commission on Biodefense, October 2017

The full report has been retained in committee files and is available at *https://biodefensecommission.org/reports/defense-of-animal-agriculture/*.

REPORT

The National Blueprint For Biodefense

Bipartisan Commission on Biodefense, April 2024

The full report has been retained in committee files and is available at *https://biodefensecommission.org/wp-content/uploads/2024/05/National-Blueprint-for-Biodefense-2024__final__.pdf*.

REPORT

Boots on the Ground: Land-Grant Universities in the Fight Against Threats to Food and Agriculture

Bipartisan Commission on Biodefense, May 2022

The full report has been retained in committee files and is available at *https://biodefensecommission.org/reports/boots-on-the-ground-land-grant-universities-in-the-fight-against-threats-to-food-and-agriculture/*.