Michigan Alliance for Animal Agriculture
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Good morning. Thank you Chairman VanWoerkem and members of the committee for the opportunity to present today.

My name is George Smith, and I'm the associate director of Michigan State University AgBioResearch and the associate dean for research in the MSU College of Agriculture and Natural Resources. I am also on the leadership team for the Michigan Alliance for Animal Agriculture (M-AAA), a research and outreach initiative that operates on behalf of the animal agriculture industries in our state. Thank you for the opportunity to share the immense impact that M-AAA has had in its five years.

Animal agriculture represents a crucial component of Michigan's economy. According to the Michigan Department of Agriculture and Rural Development (MDARD), livestock and dairy production generates more than $5 billion annually.

To further strengthen the industry, animal agriculture and allied organizations banded together in 2014 to form the Michigan Alliance for Animal Agriculture. They invited MSU through the College of Agriculture and Natural Resources, MSU AgBioResearch, MSU Extension and the College of Veterinary Medicine to join and lend our research and outreach expertise.

It's been a rewarding experience with significant positive impact. A cornerstone of the M-AAA is a competitive grants program that provides funding to MSU faculty and Extension educators to conduct applied research and run educational programs that address the immediate needs of animal agriculture and its allied stakeholders in the state.

Under this partnership, MSU scientists have conducted relevant, timely research on behalf of producers in areas critical to the growth and sustainability of animal agriculture in the state. Through MSU Extension, research findings and recommended best practices have been relayed to farmers. These efforts are crucial to keeping our food supply safe, secure and affordable and to help our animal agriculture industries survive and thrive.

To expand the scope of the initiative, the state of Michigan provided much-needed funding over the past three years (FY2017-2019) for the competitive grants program. Unfortunately, the governor line item vetoed a $3 million appropriation for the M-AAA within the fiscal year 2020 MDARD budget. Furthermore, there is no funding for M-AAA included in the Executive Budget for 2021. We were unable to offer a new request for proposals this year and no additional grants are being funded at this time, leaving critical research and outreach programs in jeopardy.

This means that key challenge areas for our industries — such as animal productivity, health and disease, environmental stewardship, and workforce development — may not get the research and outreach support needed at a time when Michigan agriculture is in need of your support. Ability of

Michigan State University to respond in a timely fashion to new and emerging challenges in the animal agriculture sector is limited without this critical support.

Research through M-AAA has delved into a wide array of production challenges to beef, sheep, swine, dairy, poultry and equine sectors, and meat processing. Research and outreach programs have been conducted in partnership with roughly 80 farms, in more than 50 legislative districts throughout the state. The scope and impact of M-AAA extends broadly across animal agriculture and the state of Michigan as a whole.

This work includes studying bovine leukemia virus (BLV), a disease that weakens the immune system of dairy and beef cattle that can lead to significant production problems. In Michigan alone, economic losses from BLV total roughly $14 million per year.

With M-AAA funding, Phil Durst, a senior MSU Extension educator, has examined the prevalence of BLV in Michigan dairy herds in an effort to bolster awareness of the disease and options for mitigating its effects. MSU found an 88% prevalence of BLV in a survey of 113 Michigan dairy herds. Of these operations, the average within-herd cow prevalence was 33 percent.

Alongside Durst, MSU researchers Paul Coussens and Paul Bartlett conducted studies to uncover how BLV affects the immune system and susceptibility of cattle to other diseases. The promising results have leveraged additional federal grant funding, allowing MSU researchers to continue to gain insight and develop applicable management strategies for use on farm, such as single-use needles and examination sleeves, to lessen the likelihood of disease transmission.

M-AAA funded research in swine is developing new strategies to improve health and welfare of sows and facilitate adaptation to group housing standards being implemented statewide. The work of MSU researcher Madonna Benjamin is focused on development of automated low cost, non-invasive technology using video images to facilitate assessment of fighting, lameness and health indicators in group housed sows to aid swine producers in management decisions about culling, feed allocation and treatment. Complementary work by Juan Steibel and Janice Siegford is focused on use of such indicators as a tool for genetic selection of swine less prone to fighting and hence more compatible with group sow housing. M-AAA funded research is directly addressing challenges facing the Michigan swine industry.

To provide wider access to information, MSU Extension specialists, led by Richard Ehrhardt, are conducting relevant research and developing a web-based education center and multimedia educational materials for the MSU small ruminant (sheep and goat) Extension program.

The sheep and goat industries in Michigan are growing significantly (a 4% increase in sheep and a 6% increase in goat populations in 2017), and we must offer interested parties information in convenient ways. The MSU small ruminant Extension program has developed many educational materials covering an array of topics, including nutritional management, birth management, the non-traditional lamb and goat market, accelerated production, health, grazing systems, production economics and forage management.

In addition, Ehrhardt's M-AAA funded research delves into nutritional strategies to facilitate accelerated lambing and birth of offspring out of season increasing lamb crop and revenues for MI sheep producers.

M-AAA funded research and outreach programs have tackled a variety of issues important to horse owners in the state of Michigan. One such M-AAA funded program focused on development of the MSU Farrier School (led by Karen Waite). The equine industry in Michigan is thriving but has a lack of qualified farriers and training opportunities for such. Hoof conditions commonly go unrecognized by owners, and veterinarian farrier relationships are minimally developed much to the detriment of the horse's welfare. The M-AAA funded program consists of a series of workshops and outreach events for horse owners focused on lameness and hoof conditions and instructional programs designed to train new farriers in techniques necessary to provide quality hoof care to horse owners in the state of Michigan. This program directly addressed a critical workforce development issue for the horse industry in Michigan.

M-AAA funded research and outreach programs in poultry have tackled a breadth of critical management and health issues facing the industry, from assessment of influence of bird genetics and feeding regimens on welfare and performance of hens in different housing systems (work of Janice Siegford), to examining effects on egg production and bird health and welfare of management strategies to delay transfer of animals to laying facilities and reduce death loss during disease outbreak (work of Janice Siegford and Darrin Karcher), to testing of new composting protocols to cost effectively dispose of animals during disease outbreak and limit spread of disease (work of Zac Williams).

On the outreach side across species, Elizabeth Ferry, an MSU Extension educator, is using M-AAA funding to provide outreach and training on emergency response preparedness for accidents or emergencies that involve livestock. First responders often don't have the training or equipment to handle livestock trailer accidents. This training will help first responders know what equipment is needed and how to use it to safely and humanely move livestock.

These are two examples of the nature of projects made possible through state support for the Michigan Alliance for Animal Agriculture across many of our species, research directly tied to annual priorities and immediate needs of our animal agriculture industries here in the state. This program has addressed a host of relevant production issues, from productivity, to health and disease, to environmental stewardship, to training a skilled workforce to address needs on farm.

M-AAA funded research is impactful and has provided a significant return on investment. For example, the USDA Economic Research Service estimates > $10 in economic return for every $ invested in agricultural research. Mike VandeHaar recently leveraged an M-AAA funded project into a $2 million grant from the Foundation for Food and Agriculture research focused on genetic selection of dairy cattle for efficiency of utilization of feed. Furthermore, for the 2017 grants program and projects that just ended (2-year duration), every $ invested by the state in M-AAA research has already leveraged an additional $4 in grant funding. This strong return on investment is likely to further grow as analysis of results continues and related pending and future grants are considered.

Our M-AAA supported research and extension programs have already shown significant potential for economic return benefitting Michigan producers. Widely adopted nutrition programs integrating incorporation of supplemental feeding of specific fat types in dairy cow diets (work of Adam Lock) have been shown to increase milk fat content and potential revenues by over $50/cow/month for dairy farmers (>3:1 return on investment after consideration of feed costs). Likewise, increased revenues of > $140/cow/year are estimated for new dairy cow fertility programs being developed with M-AAA funding (work of Richard Pursley). This work has potential for industry wide impact of $42 million/year in Michigan. Development of programs designed to cost effectively increase revenues for Michigan dairy producers are now more important than ever given recent prolonged suppression of milk prices.

Funding for the M-AAA is also critical to provide tools and programs to respond to rapidly emerging challenges facing animal agriculture in the state. According to MDARD, 2019 was one of the worst growing seasons on record with disaster declarations made in 54 of Michigan's 83 counties. Wet weather in spring and fall wreaked havoc for livestock producers in terms of planting and or harvest of feed necessary to maintain their operations. Limitations in terms of amount and quality of feed available have emerged. A recently completed M-AAA funded study conducted by Adam Lock is directly relevant to this challenge. Locks' work looked at partial replacement of forage in dairy cow diets with a commonly available by product. His work showed that feeding of reduced forage versus conventional diets caused cows to eat less, but milk production was increased. Additional revenues of $1.80/cow/day were realized with the low forage diet after consideration of feed costs. Results of this study provide a plausible cost-effective solution for dairy producers with limited forage availability this year due to extreme weather challenges faced by Michigan producers in 2019.

Loss of funding for the M-AAA limits the ability of Michigan State University to provide solutions to ongoing challenges and emerging threats to animal agriculture in Michigan in the future and ability of our industries to survive and thrive.

Ongoing funding from the state of Michigan for M-AAA is critical for continuation of the M-AAA grants program and this strong partnership between Michigan State University and the animal agriculture industries in the state who depend on us.