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**Fiscal Year 2016 Outside Witness Testimony prepared for U. S. House of Representatives
Appropriations Committee, Subcommittee on Agriculture, Rural Development, Food and
Drug Administration, and Related Agencies**

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Mister Chairman and Members of the Subcommittee, thank you for this opportunity to present our statement supporting funding for the Department of Agriculture's Agricultural Research Service (ARS), and especially for its flagship research facility, **The Henry A. Wallace Beltsville Agricultural Research Center in Beltsville, Maryland. Overall, the facility includes the research operations of the Beltsville Agricultural Research Center and the Beltsville Human Nutrition Research Center. We strongly recommend full fiscal-year 2016 funding support for the research programs of The Henry A. Wallace Beltsville Agricultural Research Center.**

Beltsville research has consistently led the way to agricultural progress for well over a century. Whether measured as crop yield per acre, milk and meat yield per animal, or average output per farm worker, the productivity of U.S. agriculture is among the highest in the world. Economic analyses have found consistent evidence that dollars invested in agricultural research return high yields per dollar spent. Net social returns from agricultural research in the United States are estimated to be in the order of 35 percent or more annually. Those returns include benefits not only to the farm sector but also to the food industry and consumers in the form of abundant commodities and food at affordable prices. Still at the threshold of its second century, The Henry A. Wallace Beltsville Agricultural Research Center stands unequalled in scientific capability, breadth of agricultural research portfolio, and concentration of scientific expertise. Its location and close proximity to other Federal research agencies, the University of Maryland and

other major research and educational institutions provide a rich opportunity for joint research activities and the leveraging of resources.

We turn now to selected items within the President's FY2016 budget request. We are especially pleased that the President's budget includes \$37.1 million to **renovate and modernize of Building 307**, a recommendation that we also included in our testimony for the Fiscal Year 2015 budget.

The Henry A. Wallace Beltsville Agricultural Research Center has moved successfully in recent years to consolidate space and reduce costs. Further progress will be vastly aided by the renovation of Building 307. **That valuable building was vacated some years ago because of deterioration.** The proposed funding will support the design and construction of laboratory space and offices needed to consolidate research now housed in small, aging, energy-inefficient buildings on the research campus. Approval of funding for this purpose is highly recommended.

We also are very pleased the President's Fiscal Year 2016 budget includes increases in critically important research initiatives, which would lead to creating new jobs, enhancing American agriculture competitiveness in the global economy, assuring future food security, protecting crops and animals from diseases and reducing their vulnerability to climate change, while improving the economic and environmental sustainability of American agriculture. The scientists of the Henry A. Wallace Beltsville Agricultural Research Center are recognized world leaders in the scientific disciplines that are necessary to successfully execute the President's proposed research initiatives. Specifically, we would like to highlight the following initiatives which would enhance the Center's research programs.

Translational Livestock Genetics:

The proposed budget provides \$854,450 of new funding to intensify animal production using modern high throughput trait analyses and advanced genomic tools. The goal is to improve genetic selection of cattle and other ruminants through integrating traditional selection methods with modern DNA marker-based tools. New lines of animals would have greater growth, enhanced adaptation to extreme environments, better survival, and greater fertility. Other expected benefits are improved efficiency of nutrient-use in dairy cattle to lower feed costs and nutrient losses associated with milk production.

Antimicrobial Resistance:

The budget provides \$1,800,000 of new funding to protect public health by improving our understanding how antimicrobial resistance occurs in animals and the environment. Among expected benefits could be novel approaches to boosting animal natural immune systems for resistance to parasitic infections, gut stabilization against pathogens, or novel strategies using antimicrobial growth promoters to limit the consequences of host reactivity to pathogens, and to improve health.

Improving Agricultural Sustainability:

A total of \$900,000 in new funding is provided for the Henry A. Wallace Beltsville Agricultural Research Center to pursue research on benchmark watersheds, experimental pasture lands and research farms to strengthen the long-term Agro-ecosystems Research Network and to establish long-term experiments in agricultural sustainability. Using remote sensing, land surface modeling and ground-based observations, this research aims among other things to monitor the magnitude of agricultural drought and its impact on crop condition and yield as well as characterize the multiple-scale impacts of conservation practices on water quality.

Combating Antibiotic Resistant Bacteria:

The budget provides \$900,000 of new funding to The Henry A. Wallace Beltsville Agricultural Research Center to investigate protecting public health by preventing antibiotic resistance. This research aims at developing genetic biotechnologies that include novel antimicrobials for improved animal health and product safety, also for using functional genomics to control disease in animals, particularly in poultry.

Pollinator Health and Colony Collapse Disorder:

A total of \$900,000 in new funding is requested to develop, in cooperation with industry, best management practices for beekeepers. This research uses integrated laboratory and field approaches that among other things may lead to better diagnosis and mitigating disease, counteracting negative impact of environmental chemicals, and improved bee health through better nutrition.

Vertical Farming:

The budget has \$264,546 of new funding to provide new methods and technologies for insect and disease control related to greenhouse production.

Big Data:

The budget also requests \$180,000 in new funding for the Center to create a new research project that will facilitate the creation of scientific networks with shared research strategies and build a linked data collection through the Long-term Agro-ecosystems Research Network. Big Data is an emerging scientific field fueled by advances in data collection, transfer, curation, sharing, storage, and visualization. Big Data makes it possible to analyze data sets that are too large for

analysis with traditional data processing applications. The benefits can be numerous. In the environmental sciences, this technology allows scientists to discover new correlations and trends that may make it possible, for example, to prevent water contamination or other undesirable environmental changes.

In summation, Mr. Chairman, **we re-confirm that The Henry A. Wallace Beltsville Agricultural Research Center has forged a well-earned, distinguished reputation for successfully translating basic research into agricultural and human nutrition solutions and advances that benefit all of society.** Beltsville has become an indispensable national leader in the long agricultural research continuum that allows us to become ever-better stewards of land and water resources, to introduce new products based on agricultural commodities, and to make food and agricultural products more affordable, safer, and more readily abundant for all Americans. **Again, we recommend full funding for research programs of The Henry A. Wallace Beltsville Agricultural Research Center.**

Mr. Chairman, this concludes our statement. Thank you for consideration and support for the educational, research, and outreach missions of The Henry A. Wallace Beltsville Agricultural Research Center.

Sincerely,

James D. Anderson, Ph.D.

President, Friends of Agricultural Research-Beltsville