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Dedicated to Promoting the Research and Education Mission of the Henry A. Wallace  
Beltsville Agricultural Research Center, Beltsville, Maryland

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**Written Public Testimony for Fiscal Year 2011**  
**Subcommittee on Agriculture, Rural Development,**  
**Food and Drug Administration, and Related Agencies**  
**Committee on Appropriations**  
**United States House of Representatives**

**Submitted by Vernon G. Pursel, President, Friends of Agricultural Research–Beltsville**  
**March 18, 2010**

Madam Chair, and Members of the Subcommittee, thank you for this opportunity to present our statement regarding funding for the Department of Agriculture’s Agricultural Research Service (ARS), and especially for the Agency’s flagship research facility, the Henry A. Wallace **Beltsville Agricultural Research Center (BARC), in Maryland.** Our organization--**Friends of Agricultural Research - Beltsville**—promotes the Center’s current and long-term agricultural research, outreach, and educational missions. **In this request, we support \$13 million of increases proposed in the President’s budget for the Beltsville Agricultural Research Center. Also, we ask restoration of \$111,000 of decreases proposed for the U.S. National Arboretum, Washington, DC, and \$2,918,000 of decreases proposed for the Beltsville Agricultural Research Center. These actions, if approved, would restore the increases for the Beltsville Agricultural Research Center to \$13 million.**

Before turning to explanatory specifics, please allow us to note for the record that during this calendar year the Beltsville Agricultural Research Center will mark a great historical milestone, a milestone to celebrate the many great and small accomplishments that BARC research has contributed to the nation’s agricultural bounty and to the overall march of scientific progress. **A century has passed since 1910, the year research at Beltsville began with the assembly of a dairy cattle herd for research purposes. The ensuing BARC story is by all rights a great national story—a story of world-class accomplishment. BARC Director Joseph Spence and his staff are planning worthy events to commemorate the centennial year.**

The Friends of Agricultural Research - Beltsville (FAR-B) is honored to be both a participant in the centennial planning process and a contributor to coming events. We would be pleased, Madam Chair, **to answer any questions, to collect any information or documents the Subcommittee might wish regarding the centennial.**

**We now turn to the specifics of our testimony for FY-2011.** Most Fiscal Year 2011 increases in the President's budget for BARC appeared (sometimes under slightly different headings) in our testimony for Fiscal Years 2009 or 2010. **We strongly support all the proposed increases.**

**Animal Breeding and Protection, \$1,500,000.** The promise of understanding the genome of plants and animals is being fully exploited at Beltsville. In groundbreaking research conducted here, scientists have been able to quickly and accurately identify dairy bulls that will produce daughters that are the most efficient milk producers. Now a simple test at birth can predict at twice the former accuracy and at a cost of about \$250 the potential of a bull to sire high producing cows. Traditionally, bull prediction methods have required farmers to maintain and study cows for several years, at a cost up to \$50,000 per bull. The potential for developing and expanding this breakout technology is huge and at great savings to farmer and consumer alike.

**Colony Collapse of Honey Bees, \$500,000.** The loss of honey bees has and will continue to have a major effect on American agriculture. Crops such as almonds are entirely dependent on the honey bee for pollination. Research conducted at Beltsville is regarded as the most significant and effective at addressing the issue of colony collapse disorder and the funds will make use of the recently reported DNA sequence of *nosema*, a pathogen that is associated with colony collapse disorder. BARC scientists determined the DNA sequence for *nosema*.

**Crop Breeding and Protection, \$1,250,00.** A number of crops of great agronomic importance to the United States are at risk from emerging diseases that can devastate crop yield. Research to identify germplasm that is resistant to these emerging diseases is being conducted at BARC. The research combines BARC's unique germplasm resources with outstanding breeding research ability to develop improved crop varieties with resistance to emerging diseases.

**Food Safety, \$1,500,000.** The Beltsville Area has established the largest single food safety unit in ARS. This research unit will focus on a number of issues, including safety of fruits and vegetables and food safety issues related to organic agriculture. The ability exists at BARC to raise crops and animals under farm conditions, and then to process, store, and package the resulting products. The ability to propose and test interventions that greatly reduce pathogen exposure in foods, and ultimately in people, is a unique feature of the food safety research program at BARC.

**Global Climate Change, \$800,000.** BARC has unique growth chambers that can measure and observe plant growth at every stage or part from root to stem, and under every conceivable atmospheric condition. BARC is using these chambers to measure the effects of increasing atmospheric CO<sub>2</sub> and changes in environmental temperatures. Studies are underway not only on agronomically important crops, but also on invasive weeds. BARC research shows that environmental changes may enhance the rapid growth of invasive plants, thus threatening to exacerbate already costly problems for American agriculture.

**Human Nutrition, \$5,400,000.** Obesity negatively impacts the health and productivity of the American public. Moreover, obesity comes with greatly increased risk of chronic diseases that dramatically add to the economic costs of health care. The Beltsville Human Nutrition Research Center (BHNRC) is researching barriers and facilitators that may discourage or encourage Americans from following recommended *Dietary Guidelines*; that is, why adults and children from major U.S. racial/ethnic groups may or may not follow dietary guidelines. A major research emphasis is to prevent obesity through a better understanding of why people make the food choices they do. This research also will help USDA design and implement more effective food assistance programs. Furthermore, this research will help to define the progress of efforts to prevent obesity in children because it takes advantage of the unique national food consumption survey “What We Eat in America”, conducted by BHNRC and is the nation’s nutrition monitoring effort.

**Local Food Systems, \$500,000.** BARC scientists are working with farmers on Maryland’s Eastern Shore to learn how to improve on-farm conservation practices that will improve water quality in the Chesapeake Bay. The research goals—targeting the entire range of Eastern Shore farming practices—include reducing fertilizer and pesticide usage. A central goal is to create agronomic and animal waste management practices that will reduce fertilizer usage and control pollution runoff. Biocontrol studies are searching out ways to minimize the need for pesticides. Scientists also are using advanced remote sensing and hydrological technologies to protect the health of the Chesapeake watershed. Because BARC is a working farm and has established collaborations with producers on the Eastern Shore, BARC is an ideal place to study the utilization of farm-generated waste products. Farm-generated waste products can be environmentally harmful, have little or no value to the farmer, and be costly to dispose of. Work at Beltsville has led to the effective development of technologies and products that take waste by-products and convert them to valuable new products. Examples include biofuels and plastics made without petroleum.

**Plant, Animal, and Microbial Collections, \$1,250,000.** BARC maintains and expands the Federal government’s unique collections of biological materials and organisms that are of utmost importance in identifying pests and parasites in the United States and are critical for preventing unwanted pests from entering the United States through imports or by international travelers, as well as demonstrating that our exports are safe. These unique, irreplaceable collections include the invaluable reference collections of insects, nematodes, parasites, and fungi, and the national Germplasm Resource Information Network. These world-class collections and information systems attract leading experts from around the world in efforts to globally control diseases and pests. The continued availability of research in this general area of systematics is essential for trade, for homeland security, and for the protection of American agriculture.

**Reduce World Hunger, \$300,000.** This research will collect phenotypic data and use genome sequence derived markers to characterize germplasm for traits of importance in food animals. Of

most significance, this work will utilize BARC's Animal Improvements Laboratory, which is a truly unique research operation that builds on 100 years of expertise at BARC.

**Now we turn to proposed decreases, all listed as earmarks in the President's budget. We recommend restoration of these funds.**

**Medicinal and Bioactive Crops, \$111,000.** This funding is critical to continue research on the beneficial bioactive components in plants and herbs. These components have been shown at BARC to enhance human health.

**Biomedical Materials in Plants, \$1,700,000.** Plants can be used as factories to manufacture vaccines and other pharmaceuticals for animals and humans. This research focuses on development of alternative crops to produce these biomedical products.

**Bioremediation Research, \$111,000.** Munitions storage sites and bombing ranges in parts of the U.S. have left huge tracts of soils and lands contaminated by highly toxic residues from such explosives as TNT. Those soils and lands now are limited environmentally for commercial or agricultural purposes. These funds support ongoing research to determine if forage plants can remove TNT and its metabolites from contaminated sites. Beltsville is a world recognized leader in the field of bioremediation. This work is not done anywhere else in ARS.

**Foundry Sand By-Products Utilization, \$638,000.** Waste sands from the metal casting industry currently are dumped in landfills. This project is working with industry on guidelines for beneficial uses of these sands.

**Potato Diseases, \$61,000.** These funds are used for research activities on genetic improvement of potato and reducing diseases of potato. While a small amount of money, these funds are used to supplement ongoing efforts in this important area.

**Poultry Diseases, \$408,000.** Coccidiosis, a parasitic poultry disease, costs the industry almost \$1 billion per year. This research focuses on understanding the genetics of both the parasite and the host chicken to identify targets that will allow better disease prevention and control.

Madam Chair, that concludes our statement. We again thank you for the opportunity to present our testimony and for your interest and support.

Sincerely,



Vernon G. Pursel, Ph.D.  
President