

Remarks by Catherine Woteki, Ph.D.,  
Chief Scientist and Under Secretary for Research, Education, and Economics  
U.S. Department of Agriculture  
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Good morning. Thank you for that kind introduction, and thank you for inviting me here to speak. It’s a pleasure to be here today to recognize the extraordinary impact of the longstanding collaboration between USDA, Federal partners, private organizations, and our Nation’s great colleges and universities. Together, we’ve developed some of the sharpest minds in food and agricultural science, pioneered research, and left contributions that have had an undeniable impact on the face of American agriculture, and national and international global food security. And it’s important that we continue to build on these achievements to meet the enormous agricultural challenges ahead.

The Department of Agriculture (USDA) and the land-grant public university system

were both created in 1862 when President Lincoln signed the Morrill Act and welcomed the 1890s, Tribal colleges, and Hispanic-serving institutions (HSIs). And we have been partners ever since.

Today, that partnership continues with an even broader scope. USDA supports education in all 50 states and territories that focus on science, technology, engineering and math (STEM) through a variety of programs and grants. The Research, Education, and Economics (REE) mission area is the largest contributor and supporter of STEM education through a portfolio of elementary-high school, undergraduate and graduate classroom, extension and 4-H programs. The total investment in 2015 was more than \$2 billion in research and education, spanning all the agricultural disciplines including social sciences (economics and sociology). Of that, \$130 million is in direct support of STEM education.

As noted in the 5-Year Federal Science, Technology, Engineering, and Mathematics (STEM) Education Strategic Plan from the National Science and Technology Council, 'USDA has networks across the country through 4-H,

extension services programs, and regional networks and laboratories,’ providing ‘specific expertise and assets to the Federal STEM education investment.’

From the Food Safety and Inspection Service Volunteer Student Program (VSP) that provides students with career-related work experience in reducing foodborne illness to the Forest Service collaborations with school districts, organizations, and universities to give students hands-on training in forest management, every USDA agency contributes in some way to STEM education. These opportunities help fill the pipeline, contributing to developing the talent needed to meet the food and agricultural workforce needs. The total USDA educational efforts add up to \$615 million annually.

As Dr. Handelsman cited, this past spring, USDA’s National Institute of Food and Agriculture (NIFA) and Purdue University published their “Employment Opportunities for College Graduates in Food, Agriculture, Renewable Natural Resources, and the Environment” five-year outlook. This report estimated that in the next five years, 57,900 new jobs would open in the agriculture sector each year but that there would only be 35,400 new graduates to fill them. Meanwhile,

the number of public sector agricultural specialists, including those who teach and train the next generation of graduates, is on the decline as the Baby Boomer generation retires.

Many businesses in the food and agriculture sector know that their companies rely on the public sector to produce the research that underpins their product development and the educated professionals who make up their workforce.

These companies are already working in partnerships with universities to provide internships and hands-on experiences for students, as well as on-the-job training.

Some also provide graduate student fellowships, endowed professorships, and research grants.

The intramural labs also plays a role in STEM. Each year, Agricultural Research Service (ARS) scientists bring hundreds of students, including those seeking Master's and Ph.D. degrees, into our laboratories to conduct small-scale experiments, feed and care for our animals, help with the field work, and, in general, provide substantive support to ARS research. In turn, the students learn the research methods, procedures, and discipline needed for their future in scientific discovery.

Last year alone, ARS was involved in the training and mentoring of 270 Pathways Interns/graduates, 628 graduate students, 1093 undergraduate students, 306 post-docs. ARS scientists held 1,094 adjunct appointments and 667 of them served as student advisors.

On the extramural side, NIFA works to raise the profile of agriculture among the general population through support for youth programs like 4-H and Ag in the Classroom, as well as grant programs that support projects in the food and agricultural sciences. Last year, a NIFA grant supported the UConn Center for Land Use Education and Research to develop tools to address the impacts of stormwater runoff on communities and waterways. As a result of this grant, a computer science Ph.D. student programmed the CT Rain Garden app, which can be used to reduce stormwater pollution nationally. That student and the other computer science students now supporting this app, have been exposed to pressing, important challenges in agriculture and natural resource management.

But there's more work to do.

President Obama has asked us to out-educate the world. And at USDA, we are doing our part to reach this goal. I have faith that together, we will find new ways to broaden participation, increase the diversity of the workforce, and attract students interested in STEM subjects to discover the innovations that our country and the world are waiting for. Thank you and I very much look forward to receiving break-out session reports.