

**HEARING TO REVIEW THE SMITH-LEVER ACT  
ON ITS 100TH ANNIVERSARY**

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**HEARING**

BEFORE THE

SUBCOMMITTEE ON HORTICULTURE, RESEARCH,  
BIOTECHNOLOGY, AND FOREIGN AGRICULTURE

OF THE

COMMITTEE ON AGRICULTURE  
HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRTEENTH CONGRESS

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# HEARING TO REVIEW THE SMITH-LEVER ACT ON ITS 100TH ANNIVERSARY

TUESDAY, MARCH 4, 2014

HOUSE OF REPRESENTATIVES,  
SUBCOMMITTEE ON HORTICULTURE, RESEARCH,  
BIOTECHNOLOGY, AND FOREIGN AGRICULTURE,  
COMMITTEE ON AGRICULTURE,  
*Washington, D.C.*

The Subcommittee met, pursuant to call, at 10:05 a.m., in Room 1300 of the Longworth House Office Building, Hon. Austin Scott [Chairman of the Subcommittee] presiding.

Members present: Representatives Scott, Davis, Collins, Yoho, Schrader, DelBene, Fudge, and Kuster.

Staff present: DaNita Murray, John Goldberg, Mary Nowak, Tamara Hinton, Andy Baker, Anne Simmons, John Konya, Merrick Munday, and Riley Pagett.

## OPENING STATEMENT OF HON. AUSTIN SCOTT, A REPRESENTATIVE IN CONGRESS FROM GEORGIA

The CHAIRMAN. Good morning. This hearing of the Subcommittee on Horticulture, Research, Biotechnology, and Foreign Agriculture to review the Smith-Lever Act on its 100th anniversary will come to order.

In consultation with the Ranking Member, Dr. L. Washington Lyons, Executive Administrator for the Association of Extension Administrators, will be testifying in the place of Mr. Delbert T. Foster due to travel issues if there is no objection.

Seeing no objection, today's hearing of the Subcommittee on Horticulture, Research, Biotechnology, and Foreign Agriculture will review the Smith-Lever Act of 1914 on its 100th anniversary. Thank you all for being here to discuss our nationwide Cooperative Extension Service. We are pleased to have before us several witnesses who are involved and experienced the benefits of the Extension Service.

As we hear from our distinguished panel of witnesses today, we hope to gain an understanding of the role that our nation's land-grant colleges and universities continue to play in providing for the needs of the public through the resources and extension work established under the Smith-Lever Act. To better understand where we are, we have to understand where we have come from.

A century ago, Congress created a nationwide Cooperative Extension Service through the Smith-Lever Act to address rural agricultural issues. It formally established the partnership between the agricultural colleges and universities and the United States De-

partment of Agriculture to create a transformative education system. Specifically, the Act stated as its purpose: “In order to aid in diffusing among the people of the United States useful and practical information on subjects relating to agriculture, uses of solar energy with respect to agriculture, home economics, and rural energy, and to encourage the application of the same, there may be continued or inaugurated in connection with the college of colleges in each State, Territory, or possession . . .” At that time, more than 50 percent of the United States population lived in rural areas, and 30 percent of the workforce was engaged in farming.

Through the establishment of the National Cooperative Extension Service, the Smith-Lever Act helped to create a partnership between land-grant colleges who are conducting research and the farmer who could use the information to improve his farming systems, thereby improving the lives and leading the nation into an agricultural revolution. For example, in 1945, it took 14 labor hours to produce 100 bushels of corn on 2 acres of land. Today you can produce 100 bushels of corn on less than an acre.

Over time the Extension Service has adapted but continues to address a wide range of human plant and animal needs in both urban and rural areas. Today’s extension educational offerings are in the areas of 4–H youth development, agriculture, leadership development, national resources, family and consumer sciences, and community and economic development.

Before us today is a panel that will provide their unique perspective from many of the various components of our country’s Extension Services. We are honored to be joined by Mr. Delbert Foster, Acting Vice President for the Division of Land-Grant Services, directly involved in outreach and engagement to the citizens of South Carolina on behalf of South Carolina State University. Mr. Foster also represents the critical contribution of the 1890 land-grant community to the overall extension mission.

We are also joined by Dr. Sonny Ramaswamy, Director of the USDA’s National Institute of Food and Agriculture, who oversees NIFA awards, funds for a wide range of extramural research, education extension projects and addresses the needs of farmers, ranchers and agricultural producers.

Dr. Scott Reed, Vice Provost for University Outreach and Engagement at Oregon State University also joins us to discuss his involvement with a growing number of educational programs within the OSU Extension Service, which enhances the economic, environmental and social welfare of society.

Finally, I am pleased to welcome Tess Hammock, a sophomore at the University of Georgia—go Dogs—to share her experience and insight as a member of the Youth Council for the 4–H National Board of Trustees.

We appreciate the time each of you has given to prepare for this hearing. Your testimony will be important to evaluate the current state of the Cooperative Extension Service and ensure a successful model of cooperative extension education for years to come.

Thank you, and now I would like to recognize my friend and colleague from Oregon, Ranking Minority Member, Mr. Kurt Schrader, for any opening remarks he may have.

**OPENING STATEMENT OF HON. KURT SCHRADER, A  
REPRESENTATIVE IN CONGRESS FROM OREGON**

Mr. SCHRADER. Well, thank you, Mr. Chairman. I appreciate having this hearing today. Now that we are past the farm bill, which I enjoyed working with you on a lot and was a pretty decent piece of legislation, it is time to get back to meat-potatoes-type issues, things that make a difference on the ground every day in our districts. Smith-Lever allows us to do that. It really does allow us to do that.

I would like to welcome the witnesses also. Thank you for making the trek, especially in this weather. Good to have you all here, and two good friends of mine from back in my Oregon State legislative days. Scott, it is really good to see you guys here. I appreciate you coming out and being able to tell the story that's been so successful for us back home.

I think as we approach this 100th anniversary that authorized the cooperative extension programs, I think that is a big point. These are public-private partnerships that allow us to leverage taxpayer dollars to help us feed the world, and in this day and era, even though the urban population has increased and some of our rural population has decreased, it is important or maybe even more important for Extension to be out there because we are feeding a lot more people now that don't raise their food, and Extension talks about that.

Personally, I am a huge fan. I farmed for over 20 years. Oregon State University's Extension Service was critical to my early success as a strawberry grower trying to find out the right varieties and ways to go out about the cultivation. We actually have a huge master gardener following in our State of Oregon. A lot of urban counterparts are very excited about those opportunities, and it makes a nice symbiotic relationship and I think Smith-Lever has that ability that we have seen over the last 100 years to be relevant not just to rural America but urban America also.

And a case in point about how critical Extension is was the outbreak of the *Drosophila suzukii* issue with the stone fruit back in 2010. I was able to get the then-Chairman of the Committee to come to Oregon. We convinced him of the work that Oregon State could do. We were able to get a grant and stop a huge, huge pest from devastating some of America's agriculture that again helps feed the rest of the world.

So I am very excited about the opportunity here. I think it is going to be a great hearing, hopefully a great recognition of the work that is done and I look forward to hearing from the witnesses today, and again, thank you very much, Mr. Chairman.

The CHAIRMAN. Thank you, Mr. Schrader, and the chair would request that other Members submit their opening statements for the record so the witnesses may begin their testimony and to ensure that there is ample time for questions.

[The prepared statement of Mr. Peterson follows:]

PREPARED STATEMENT OF HON. COLLIN C. PETERSON, A REPRESENTATIVE IN  
CONGRESS FROM MINNESOTA

Good morning. Thank you Chairman Scott and Ranking Member Schrader for holding today's hearing on the 100th Anniversary of the Smith-Lever Act. And

thank you to today's witnesses for braving this Minnesota-like weather to join us today.

One hundred years after it became law, the Smith-Lever Act continues to play an important role in rural communities across the country. With the 2014 Farm Bill now being implemented, the work of Extension economists and crop and livestock specialists at land-grant universities is perhaps more important than ever. These folks do an excellent job in spite of some of the tough budget challenges they've recently had to endure.

The Smith-Lever Act also formalized 4-H Clubs to carry out the Cooperative Extension System's nationwide youth development program. Like many of us on this Committee, I was active in 4-H and they continue to do great work. Looking ahead, I hope that we can work with 4-H and Extension Service along with local companies and technical colleges, in addition to the land-grant universities, to help supply workers in rural areas with the skills needed for off farm job opportunities.

I'm also proud to be an original cosponsor of a Congressional Resolution commemorating the 100th anniversary of the Smith-Lever Act and I look forward to its consideration by the full House.

So, thank you again, Mr. Scott, for today's hearing on this important issue. I look forward to hearing from our witnesses.

The CHAIRMAN. For the panel, I would like to welcome our panel of witnesses to the table: Dr. Sonny Ramaswamy, Director, National Institute of Food and Agriculture, U.S. Department of Agriculture, Washington, D.C.; Ms. Tess Hammock, National 4-H Council Board of Trustees, Youth Trustee, University of Georgia, Athens, Georgia; Dr. Scott Reed, Vice Provost, University Outreach and Engagement and Director, Oregon State University Extension Service from Corvallis, Oregon, and Dr. Washington Lyons, Executive Administrator for the Association of Extension Administrators, North Carolina A&T University.

Dr. Ramaswamy, please begin when you are ready.

**STATEMENT OF DR. SONNY RAMASWAMY, DIRECTOR,  
NATIONAL INSTITUTE OF FOOD AND AGRICULTURE, U.S.  
DEPARTMENT OF AGRICULTURE, WASHINGTON, D.C.**

Dr. RAMASWAMY. Good morning, Mr. Chairman and Members of the Subcommittee. I really appreciate the opportunity to talk about something that is like talking to my own family here about this incredible enterprise that we have in the United States called Cooperative Extension Service.

As you noted, Mr. Chairman and Congressman Schrader, it is the 100th anniversary of this enterprise, and I would like to share with you a little bit of my thoughts and particularly share with you also where we want to go as we go forward looking at the future as well.

As you noted, the Smith-Lever Act was passed in 1914 and has been around for 100 years, and in my mind truly the global pre-eminence of America in general and particularly about the food and agriculture enterprise in large measure is attributable to that Cooperative Extension Service. Mr. Chairman, as you noted, the ability to grow food compared with what we are able to do 40 years ago, 50 years ago, 100 years ago with fewer people on smaller acreages of land is an incredible testimony to the kind of work that Extension has done.

So Cooperative Extension Service itself, it is a three-way partnership. It is a partnership with the Federal Government and the state government and the local government, so funding is provided by all three entities. The funding from the Federal Government is

provided by the National Institute of Food and Agriculture on behalf of the U.S. Government, the United States Department of Agriculture.

Now, I could go on and on and wax eloquent about thousands of stories and in fact, you have both shared some stories already, but what I would like to do is just take a couple of examples and speak to the amazing things that happened in Cooperative Extension Service and in large measure is responsible for the strength that we have as a nation as well as global preeminence. I will keep referring to that as I make my comments here as well.

Now, in terms of technical education to growers and land managers, this is an agricultural and natural resources area that Extension provides support in. Whether it is a backyard gardener or a farmer that farms maybe 1,000 acres of cotton or peanuts or a large rancher with thousands of acres of ranches in Oregon or other parts of our nation, these folks, they get their knowledge, their information from those local boots on the ground, our local boots on the ground of the Cooperative Extension Service, I will refer to as educators, county Extension agents as faculty. Depending on the state we are in, each one of them is called differently but all these folks, they get their knowledge from the boots on the ground, these local extension educators that we have. Or they might crowd-source the best knowledge from a whole community of practice that is part of what we referred to today as eXtension, this online community of practice that we have. Literally you can bring together a problem with horses or organic production systems or *Drosophila suzukii*, the insect that Congressman Schrader referred to. You can bring in the best breeds together as part of the community of practice to be able to address that, so that is the breadth of efforts that are contributed to by our Extension personnel across America.

I want to share with you a couple of examples from the State of California and from the State of Georgia as well in this ag and natural resources world. As you know, droughts have been afflicting our nation pretty much west of the Mississippi and particularly California and the West Coast. They epitomize the situation that we have, and our Extension personnel at the University of California System has undertaken applied research and extension efforts in coming up with more efficient irrigation systems. They have created an app, for example, for smart phones and tablets where the local producers working with water conservation districts and others can go ahead and bank the water in the winter-time when you have excess water and runoff and things like that, and then deploy that water that has been banked in the summer-time when you need the water for the crops to be grown, two quick, simple examples of the kind of work that is being done, and I can, as I said, go on and on about other states as well.

Another area, for example, Georgia itself, one of the examples that I would like to share with you, and I know Congressman Scott knows this particular example is the blueberry industry in that state. It went in a matter of about 10 years with the help of Georgia researchers, University of Georgia researchers and Cooperative Extension Service, has gone from a farm-gate value of about \$20 million to about \$150 million in a matter of 10 years. This has

come about because of the wonderful work done by the researchers at developing new varieties. There is a particular variety called Titan, and this variety, the blueberries, if you can believe this, they are as big as a quarter. The diameter of the blueberry is as big as a quarter, and I have the privilege of tasting them as well. They are fantastic-tasting as well. So it gives you the idea of things that are going on.

In the realm of family and consumer education, EFNEP is a program that works particularly with limited-resource families. Research recently has demonstrated that it has reduced health care costs, reduced absenteeism, reduced dependence on emergency food assistance as well.

In the realm of community development, in the State of Oregon, for example, we have a program, Extension runs a program called Recipe to Market, and that one works with entrepreneur, people wanting to be entrepreneurs and offering them a boot camp where they are learning about business plans, what kind of products to take to market, *et cetera*, and a consequence of that is, three individuals have a company that produces several million dollars' worth of economic activity as well, and that produces jobs and contributes to a number of jobs that are being created.

In terms of youth development, Tess Hammock is going to testify about 4-H, and she really to me epitomizes the amazing things that are going on with our youth. We have seven million children in America that are part of 4-H, and in large measure the success is because of the volunteers. We have about a half a million volunteers that work with 4-H as well.

[The prepared statement of Dr. Ramaswamy follows:]

PREPARED STATEMENT OF DR. SONNY RAMASWAMY, DIRECTOR, NATIONAL INSTITUTE OF FOOD AND AGRICULTURE, U.S. DEPARTMENT OF AGRICULTURE, WASHINGTON, D.C.

Mr. Chairman and Members of the Subcommittee, I am pleased to have this opportunity to discuss the role and relevance of the Cooperative Extension System.

As we mark the 100th anniversary of the Smith-Lever Act of 1914, which established our nation's Cooperative Extension System, I believe that Extension is well-positioned to build on the successes of its first 100 years.

The Cooperative Extension System is funded through a partnership between the United States Department of Agriculture's (USDA) National Institute of Food and Agriculture (NIFA), state land-grant universities, and local governments. Extension deploys science-based solutions to address problems in food, agriculture, natural resources, family and consumer sciences, youth development, and community economic development.

Today, I would like to use a few examples to highlight how Extension helps American agriculture, consumers, youth, and communities succeed and strengthen our nation.

#### **Technical Education to Growers and Land Managers**

Whether it is a backyard gardener or a farmer, rancher, or forester managing thousands of acres seeking information to address their particular problem, they can rely on unbiased, science-based technical information available from their local Extension agent. Or they can crowd-source knowledge via *eXtension*, the Extension system's national online interactive learning environment.

I'll cite two particularly compelling examples from California and Georgia, where technical information from Extension is making a difference.

In California, afflicted by the recent, severe droughts, Extension personnel are providing science-based information to help growers and other residents use their water resources more efficiently and effectively. With funding from NIFA, University of California Cooperative Extension refined conservation tillage practices to reduce water use on field crops through lower evaporation and higher irrigation efficiencies. At the same time, these practices have contributed to reduced production

costs while maintaining or increasing yields. Similarly, with funding from NIFA's Specialty Crop Research Initiative program, University of California Cooperative Extension personnel are testing new varieties of crops for salinity tolerance. This is especially helpful as we look to increase our use of reclaimed and recycled water. Finally, using a combination of NIFA, state, and local funding, in cooperation with USDA's Natural Resources Conservation Service, University of California Cooperative Extension specialists have created a soil-based "app" for smart phones and tablets. This app can help users in California locate optimal locations for "groundwater banking" in times of excess water supply, thus making that water available in times of drought. The app can also be used to optimize irrigation of agricultural crops. This saves water while maintaining agricultural productivity.

The Georgia Blueberry industry has undergone explosive growth in recent years—in just over a decade, farm-gate value of blueberries in the state has increased from \$22 million in 2000 to more than \$150 million in 2012. Research and Extension at the University of Georgia—funded by NIFA—has been a significant contributor to the growth of this cash crop. As University of Georgia researchers developed new cultivars, new pest management and harvest techniques, and ways to add value to grower marketing, Georgia Cooperative Extension helped growers turn those advancements into profits. Researchers have developed varieties that ripen quicker, get bigger, and are more marketable. One blueberry variety developed by the University of Georgia, *Titan*, when grown under suitable conditions can often grow to exceed the size of a quarter! Another recently developed University of Georgia variety, *Early Dawn*, offers the earliest maturing blueberry variety for commercial growers in South Georgia. Cooperative Extension funding has helped to demonstrate the advantages of these varieties and to provide other science-based information to growers, guiding them through variety selection and dozens of other grower decisions that represent the difference between a farm profit and loss.

#### **Consumer and Family Education**

In addition to producers, Cooperative Extension educates consumers, families, and communities. For example, NIFA's Expanded Food and Nutrition Education Program (EFNEP) currently operates in all 50 states and in American Samoa, Guam, Micronesia, Northern Mariana Islands, Puerto Rico, and the Virgin Islands. Across the nation, EFNEP reached 130,485 adults and 479,398 youth directly and nearly 400,000 family members indirectly in FY 2012. Obesity, poor health, and limited physical activity are major health concerns for many, and particularly so for limited resource families. EFNEP has improved the health and well-being of limited resource families and youth through better knowledge, skills, attitudes, and changed behavior regarding nutritionally sound diets. Additionally, EFNEP programs are contributing to public savings; for example, research shows that better health is associated with reduced health care costs, reduced absenteeism from work, and reduced dependence on emergency food assistance.

#### **Community Economic Development**

Prosperity and economic security for individuals and families, farmers and ranchers, entrepreneurs, and consumers across the country are key to a strong economy. NIFA funding and program leadership provide for Cooperative Extension activities that enable Americans to make sound financial management decisions, discover new economic opportunities, develop successful agricultural and nonagricultural enterprises, and take advantage of new and consumer-driven markets.

For example, Cooperative Extension helped Oregonians launch new food businesses through a program called *Recipe to Market*. This program helps local entrepreneurs become marketable to well-established companies. Throughout the 4 month Recipe to Market program, each participant builds a business plan, helps design a marketing campaign, and works one-on-one with local coaches to turn their dream into a profitable local business. In one rural, isolated coastal community, seven participants completed the first offering of Recipe to Market, which enabled them to launch three new businesses. These three businesses now generate almost \$1.2 million in combined annual gross income and provide employment for up to a dozen employees. The governor of Oregon has likened creation of such economic opportunity in rural communities to be equivalent to creating hundreds of jobs in metropolitan areas such as Portland.

A team of researchers and Extension specialists led by Cornell University is working to develop and test broccoli cultivars suited to the climate and soils from Maine to Florida and westward into Ohio and Tennessee. Estimates indicate that Eastern broccoli production will result in a 66 percent reduction in fuel used to transport the crop to market. This will save close to 2.3 million gallons of fuel per year and reduce carbon dioxide emissions by more than 51 million pounds annually. The

team expects that growers in the region will see increased profits of \$3,000 per acre per year, which translates to increased profits of \$40 million. The total annual economic impact on rural economies will be almost \$90 million.

#### **The Nation's Largest Youth Development and Empowerment Organization, 4-H**

The Cooperative Extension based organization reaches more than seven million 4-H youth in urban neighborhoods, suburban schoolyards, and rural farming communities. Supported by university-backed curricula, 4-H'ers engage in hands-on learning activities in the areas of science, healthy living, and food security. These future leaders are developing intellectual curiosity along with skills in math, science, and technology, as a result of hands-on learning in 4-H programs developed by our nation's land-grant universities. While Cooperative Extension professionals oversee the 4-H programs, it is local community volunteerism that really contributes to the success of the program. More than 500,000 4-H volunteers are helping to create life-changing experiences for young people in every county and community—all 50 states, U.S. territories and on military installations worldwide. In 4-H, farm kids, city kids, and kids of every race, economic, and family situation are acquiring the skills that will help them become the capable future workforce our nation needs. They're also developing the social values that lead to better futures. Research has demonstrated that compared with youth not involved in 4-H programs, 4-H'ers are twice as likely to go to college, twice as likely to pursue careers in science, and three times as likely to give back to their communities. More than 60 million of our nation's most successful statesmen, business leaders, scientists, and academics credit 4-H with setting them on a positive, productive path. This includes current Members of the United States Congress!

#### **Resources**

Historically, the two main sources of Federal funds that provide broad support for the Cooperative Extension System are from two line items in the NIFA budget: Smith-Lever 3 (b&c) and 1890s Extension. These Federal funds are matched by state and county funds. During the last several years, Cooperative Extension efforts across our nation have been strengthened with locally leveraged private funding sources, including fees. Additionally, NIFA has worked to integrate Extension directly into research projects that seamlessly deliver results to end-users. NIFA's largest competitive grants program, the Agricultural and Food Research Initiative (AFRI), is one such program that funds integrated research, education, and Extension activities that provide science-based solutions to address major agricultural challenges of national, regional, and multi-state importance. For instance, last week, Secretary Vilsack announced a new, 5 year, \$30 million water grants initiative through the AFRI program that will provide America's farmers and ranchers solutions to serious agricultural water challenges and improve the quality and quantity of our water resources.

#### **The Future**

I believe America's global preeminence in the food and agricultural enterprise is attributable in large measure to the effectiveness of the Extension system, which translates discoveries into solutions to address problems faced by end-users. This system, unparalleled and the envy of the world, is emulated by many; even today, many from around the world come to America to learn about Extension.

In recent years, some have questioned—in the age of Google and Wikipedia—the need for this public enterprise called Cooperative Extension. However, Extension, with its service to every one of the 3,100+ counties, parishes, and boroughs of our nation, has demonstrated over the last 100 years its ability to morph itself to provide evidence-based, third party validated, unbiased information in addressing problems faced by generations of the public. The challenges our nation and the world face in the context of the burgeoning population—from meeting food security to dealing with droughts and other environmental constraints, public health issues, youth, family, and community well-being, and economic well-being—our nation's Cooperative Extension System is ready and available to address the same and to help America continue to maintain its global preeminence over the next 100 years.

Mr. Chairman and Members of the Subcommittee, thank you for this opportunity to speak about Cooperative Extension in the United States. I look forward to working with you and the others around our nation to continue to protect the interests of farmers, ranchers, consumers, youth, and communities across America through a vital and effective Cooperative Extension System.

The CHAIRMAN. Thank you, Doctor.

Dr. RAMASWAMY. Thank you very much for that opportunity, Congressman Scott.

The CHAIRMAN. Ms. Hammock.

**STATEMENT OF TESS HAMMOCK, YOUTH TRUSTEE, NATIONAL 4-H COUNCIL BOARD OF TRUSTEES, ATHENS, GA**

Ms. HAMMOCK. Good morning, Mr. Chairman, Members of the Committee, thank you so much for inviting me to be here today to testify on the importance of the Smith-Lever Act, coauthored a century ago by a fellow Georgian, the late Senator Hoke Smith.

It is an honor for me to share my story this morning, and to tell you how the Smith-Lever Act and one of the world's most innovative educational ideas ever—the Cooperative Extension System of our nation's land-grant universities—has helped to shape my life and the person I am today.

As a young woman growing up in Georgia, I had access to a life-changing experience called 4-H, the youth development program of Cooperative Extension, the largest and one of the most effective youth programs in America. For more than 100 years, 4-H has stood behind the idea that young people are the single greatest resource we have to create a better world.

I am deeply grateful for the leadership skills I acquired in 4-H and the amazing adults who believed in me, including my county Extension agent and state program leaders. Without them, my life would have been very different.

Two questions that I want to answer for you today are: how did 4-H enhance my leadership abilities and skills and how am I putting those skills into practice today?

4-H taught me that being a leader begins with confidence, and there were three things that helped me develop confidence, and that was participating in public speaking competitions, serving as a state officer, and performing with the musical group Clovers and Company. 4-H gave me the opportunity to discover for myself what my gifts and talents are. Moreover, it gave me the tools, the opportunities and the platform to master and then to demonstrate those skills, just like today.

My passion is public speaking, and for millions of others in 4-H, it might be creating an enterprise garden in a food desert, cultivating a peer intervention program or designing a smarter robot. Whatever it is, 4-H'ers, in partnership with caring adults, are becoming confident, capable young men and women with purpose, changing and leading the world today and into the future.

There is proof that 4-H works also. According to a decade-long research study completed by researchers at Tufts University, 4-H'ers excel beyond their peers. They are nearly four times more likely to contribute to their communities. 4-H'ers are two times more likely to be civically active, make healthier choices and participate in science programs during out-of-school time. In addition, they are tackling issues that matter most in the areas of science—healthy living and food security—an issue that is important to me and is the reason I am pursuing my undergraduate degree in agricultural communications at the University of Georgia. Go Dogs.

Agriculture touches every person on the planet, every day. It has been part of our story since the beginning of time and it is vital

to our very existence. Agriculture has an important story to tell and I want to be one of the voices telling that story.

One in seven people in the world go to bed hungry every night. Food production must double by the year 2050 to meet the demands of our world's population growth. No one knows where the food, water or energy will come from but we do know that the farmer who will feed the world in 2050 is 13 years old today. This is just one example of why an investment in young people is the most important investment you can make.

These experiences I have shared with you today have brought me to this place and made me who I am. Because others have invested in me, I have a responsibility to make a difference in this world, a responsibility that I am well prepared for, thanks to my family, my faith and to 4-H.

There are more than 20 million 4-H alumni in this country, many right here in the halls of Congress, who are leading our communities and our country in remarkable ways.

As a Youth Trustee of the Board of National 4-H Council, I am passionate about empowering youth to serve their communities and to make a positive difference in their own lives and those of others. Our pledge at National 4-H Council is to increase access to the 4-H experience for millions more young people throughout the United States no matter where they live—on a farm, in an urban food desert, on a U.S. military base, or a tight-knit small town like Forsyth, Georgia where I grew up.

As we begin a second century of service, our mission is to share the incredible story of Cooperative Extension, the power of the 4-H program to change lives and save lives, and to highlight the urgent need for all of us to invest in young people.

Thank you, Mr. Chairman and Members of the Committee, for your support and the opportunity to tell my 4-H story.

[The prepared statement of Ms. Hammock follows:]

PREPARED STATEMENT OF TESS HAMMOCK, YOUTH TRUSTEE, NATIONAL 4-H COUNCIL  
BOARD OF TRUSTEES, ATHENS, GA

Mr. Chairman, Members of the Committee, thank you for inviting me to be here today, to testify on the importance of the Smith-Lever Act, co-authored a century ago by a fellow Georgian, the late Senator Hoke Smith.

It is an honor for me to share my story. And to tell you how the Smith-Lever Act and one of the world's most innovative educational ideas ever—the Cooperative Extension System of our nation's land-grant universities—has helped to shape my life and the person I am today.

As a young woman growing up in Georgia, I had access to a life-changing experience called 4-H—the youth development program of Cooperative Extension, the largest and one of the most effective youth programs in America.

For more than 100 years, 4-H has stood behind the idea that young people are the single greatest resource we have to create a better world.

I am deeply grateful for the leadership skills I acquired in 4-H and the amazing adults who believed in me, including my county extension agent and state program leaders. Without them, my life would have been very different.

Across our nation, there are thousands of professional Extension educators, who along with ½ million volunteers and mentors, make great things happen for more than six million young people each and every day.

Two questions that I want to answer for you today are—“How did 4-H enhance my leadership skills and how am I putting those skills into practice?”

4-H taught me that being a leader begins with confidence. There were three things that helped me develop confidence—participating in a public speaking competition, serving as a state officer, and performing with the musical group *Clovers and Company*. 4-H gave me the opportunity to discover for myself what my gifts

and talents are. Moreover, it gave me the tools, the opportunities and the platform to master—and to demonstrate—those skills.

My passion is public speaking. For millions of others in 4-H, it might be creating an enterprise garden in a food desert, cultivating a peer intervention program or designing a smarter robot. Whatever it is, 4-H'ers, in partnership with caring adults, are becoming confident, capable young men and women with purpose—changing and leading the world today and into the future.

There's proof that 4-H works. According to a decade-long research study completed by researchers at Tufts University, 4-H'ers excel beyond their peers.

They are nearly four times more likely to contribute to their communities.

4-H'ers are two times more likely to be civically active, make healthier choices and participate in science programs during out-of-school time.

In addition, they are tackling issues that matter most in the areas of science, healthy living and food security—an issue that is important to me and is the reason I am pursuing my undergraduate degree in agricultural communications at the University of Georgia.

Agriculture touches every person on the planet, every day. It has been part of our story since the beginning of time and it is vital to our very existence. Agriculture has an important story to tell and I want to be one of the voices telling that story.

One in seven people in the world go to bed hungry every night. Food production must double by the year 2050 to meet the demands of our world's population growth. No one knows where the food, water or energy will come from. But we do know that the farmer who will feed the world in 2050 is 13 years old today. This is just one example of why an investment in young people is the most important investment you can make.

The experiences I've shared with you today have brought me to this place and made me who I am. Because others have invested in me, I have a responsibility to make a difference in this world, a responsibility that I am well prepared for, thanks to my family, my faith and 4-H.

There's another number I want to share with you. There are more than 20 million 4-H alumni in this country—many right here in the Halls of Congress—who are leading our communities and our country in remarkable ways.

As a Youth Trustee of the Board of National 4-H Council, I am passionate about empowering youth to serve their communities and make a positive difference in their own lives and those of others.

Our pledge at National 4-H Council is to increase access to the 4-H experience for millions more young people throughout the United States no matter where they live—on a farm, in an urban food desert, on a U.S. military base, or a tight knit small town like Forsyth, Georgia where I grew up.

As we begin a second century of service, our mission is to share the incredible story of Cooperative Extension, the power of the 4-H program to change lives and save lives, and to highlight the urgent need for all of us to invest in young people.

Thank you for your support and the opportunity to share my 4-H story.

The CHAIRMAN. Thank you, Ms. Hammock.  
Dr. Reed.

**STATEMENT OF A. SCOTT REED, PH.D., VICE PROVOST FOR  
UNIVERSITY OUTREACH AND ENGAGEMENT, OREGON STATE  
UNIVERSITY; DIRECTOR, OSU EXTENSION SERVICE,  
CORVALLIS, OR**

Dr. REED. Chairman Scott, Members of the Subcommittee, it is my privilege to be representative of Extension leaders across the 106-member land-grant system, and as I begin, I would like to offer my thanks for your having moved Concurrent Resolution 86 that honors and inspires those who have spent their careers working as public servants on behalf of the Cooperative Extension Service.

Two months from now, we will recognize the signing of this historic 1914 Act that created a funding mechanism and a system unlike any other in our country. I would like to describe the Federal dollars as the hardest working. They are the first ones in the door that cause states and counties to make contributions to the same powerful system. This relationship connects knowledge resources to

issues. It is driven by national objectives but it is customized to meet local and state needs.

My own career is an example. I began working in the private sector in a pulp and paper company in northern Minnesota. I was running a small research department, and in that capacity, I was more of a problem solver. I had more problems than I could solve. To my aid came the land-grant university Extension Service that provided me with intellectual depth, research design, access to graduate students, all things I did not have. I provided access to land and researchable problems. Together we worked with the local county Extension office and developed an applied learning laboratory and did things together that neither of us could have done separately.

I am sure that back in your own states, you no doubt see the effects of Extension work all around you. While it is true that we count and report to you things like people reached, acres impacted and dollars saved or earned, we do all that, but the real durable effects of Extension work is on public value that manifests as healthy people, a healthy planet and healthy economies.

So what are some of the innovations that you might be seeing? In my home State of Oregon, the Extension Service brings together vineyard managers, winemakers and students in shared learning environments, a recent innovation. We bring those audiences together both in-person and online that helps to advance the dramatic growth in this agricultural sector. The result: wine grapes have catapulted to the 17th most important crop of more than 200 commodities in Oregon.

In Minnesota, concerns over the influence of climate change and weather patterns are driving Extension to develop and implement adaptation strategies. Community by community in Minnesota, Extension helps growers make plant selection decisions, how to deal with invasive pests, manage extreme variations in rainfall, and choose levels of crop insurance.

In Georgia, rising energy costs have made energy efficiency a high priority on farms, yet many farmers have trouble financing these kind of improvements. Energy assessments across 47 farms in Georgia provided by Extension assisted in \$3.6 million in grant requested renovations and projected annual savings of more than \$10,000 per farm.

And finally, in Oklahoma, development of best management practices regarding the intersection of cattle grazing and wheat production created decisions models and Extension education about their application that translated to \$285 million of savings from reducing lost production to wheat.

While it is true we have been teaching for the last 100 years, we have also learned and adapted our strategies for the 21st century. Today's issues are complex, and there are few simple answers anymore. Beyond simply sharing, we bring knowledge to the table developed by our research community that is stimulated by the work of this Subcommittee and then we partner with communities of place, communities of interest, communities of practice to adapt and share practices that are implemented across the landscapes. We are moving beyond simple outreach to what we call engagement. Outreach, we like to say, begins with an answer; engagement ends with one.

Our local presence allows for personal relationships and face-to-face education but Extension also thrives in the Web-based and socially networking world anywhere, anytime, any format defines our national network. As an illustration, this month we will answer 5,000 questions through the electronic Ask an Expert System, part of the eXtension program that is funded through a Congressional line that is called New Technologies in Agriculture. With leadership of visionary policymakers and annual appropriations of about \$300 million of capacity funds through the Smith-Lever Act, which I will point out is less than \$1 per American, we keep a local office open in more than 3,000 United States counties. We enroll seven million youth in the legendary 4-H program. We advance nutritional support to limited-resource families, and we focus on rapid response through Extension's Disaster Education Network, among other priorities.

Finally, while recognizing 100 years of Smith-Lever is important, this isn't about looking in the rear-view mirror. More critical is the windshield view of our adaptation to new issues, new audiences, new approaches. In the next 100 years, we will continue translating science for practical applications, we will engage learners to co-develop solutions, we will transform individuals, families, communities and businesses in both rural and urban environments. That is the work of Cooperative Extension.

[The prepared statement of Dr. Reed follows:]

PREPARED STATEMENT OF A. SCOTT REED, PH.D., VICE PROVOST FOR UNIVERSITY OUTREACH AND ENGAGEMENT, OREGON STATE UNIVERSITY; DIRECTOR, OSU EXTENSION SERVICE, CORVALLIS, OR

#### **Why Cooperative Extension?—Extending Knowledge, Changing Lives**

Mr. Chairman and Members of the Subcommittee, I am Scott Reed. My role at Oregon State University is to serve as vice provost for university outreach and engagement and director of the Oregon Extension Service. I am an example of many others who lead such programs at the nation's 106 land-grant universities as part of the Cooperative Extension System.

Two months from now, we will celebrate the May 8, 1914 signing of the Smith-Lever Act that put into place a funding mechanism unlike any other. Federal dollars that flow to Extension services lever additional appropriations from state and county governments and create a tripartite partnership that connects knowledge resources to issues and opportunities. This distinctive network identifies priorities through systematic assessments that, while driven by national priorities, customize responses to meet state and local needs.

My own career in Extension is an example. While working in the private sector, I was responsible for a small research department in a forest products company in northern Minnesota. In that setting, my job was a problem solver for our land managers—and I had more problems than I could effectively manage. To my aid came the land-grant university Extension Service that provided intellectual depth, research design support, and access to expanded knowledge, and graduate student support—all things I would not have on my own. My role was to provide access to land and problems that the local Extension Service used as an applied learning laboratory. Through this type of engagement, we accomplished things that neither of us could do separately. Working partnerships like this illustrate a key feature of how Extension has worked for 100 years.

Back home in your states, you no doubt see the effects of Extension's work across the landscape. While it's true that we count things like people reached, acres impacted and dollars saved or earned, the durable effects of Extension emerge as healthy people, healthy economies and a healthy planet. The impacts and outcomes associated with Extension work generate huge public value. So what are some of the innovations?

In my home State of **Oregon**, the Extension Service brings together vineyard managers, winemakers and students in shared learning environments—both in-per-

son and online in a virtual setting to advance dramatic growth in this agricultural sector. The result—wine grapes catapulted to the 17th most important crop of more than 220 commodities.

In Minnesota, concerns over the influence of climate change and weather patterns are driving Extension to develop and implement adaptation strategies. Community by community, Extension helps growers make plant selection decisions, how to deal with uninvited pests, manage extreme variations in rainfall, and choose levels of crop insurance

In Georgia, rising energy costs have made energy efficiency a high priority on farms, yet many farmers have trouble financing these improvements. Energy assessments across 47 poultry farms, dairies, turf and row crop farms provided by Extension assisted in \$3.6 million of grant-requested renovations and projected annual savings of more than \$10,000 per farm.

In Oklahoma, development of best practices regarding the intersection of cattle grazing and wheat production created decision models and education about their application that translated to \$285 million in savings from reducing lost production of wheat.

In Cooperative Extension's first 100 years, we've learned a few things and adapted our strategies to match the way people learn in the 21st century. Extension is moving *beyond outreach to engagement* with our audiences and partners. Outreach begins with an answer; engagement ends with one. Through engagement with those we serve, benefits are reciprocal and we learn as much as we teach.

We're about much more than information sharing—we're in the knowledge business, and we bring to the table results of our cutting edge research—much of which is stimulated by this Subcommittee. Then we partner with communities—communities of place—of interest and of practice to adapt and share practices that get implemented across our natural and human landscapes.

Without giving up the value of personal relationships and local, face-to-face education, Extension thrives in the web-based and socially-networked worlds too. **Anywhere, anytime, any format** defines our national network. As an illustration, this month, we'll answer five thousand questions through the electronic "Ask an Expert" system.

**Extension** is a classic American innovation envied the world over for its ability to change lives and improve the availability of safe and affordable food. **Extension** attracts Americans in partnership that dramatically expands our capacity. Nearly 100,000 Master Gardeners provide 4.5 million volunteer hours and more than 800,000 pounds of food for local food banks. **Extension** puts our youth on positive trajectories through the 4-H program where participants are twice as likely to go to college and three times more likely to contribute to their communities. And **Extension** raises people up through our Expanded Food and Nutrition Education Program where 90 percent of low-income adult participants and 60 percent of youth improved their food choices.

With the leadership of visionary policy makers and annual appropriations of approximately 300 million *capacity* dollars provided by the Smith-Lever Act, we accomplish much. Smith-Lever funds are hard-working dollars that generate state and county investments and help create the infrastructure that allows effective targeting of competitive grant monies. For less than one Federal dollar per American citizen, we

- keep a local office open in more than 3,000 counties,
- enroll nearly seven million youth in the legendary 4-H youth development program,
- advance nutritional food support to limited-resource families, and
- focus on rapid response through Extension's Disaster Education Network, among other priority programs.

Recognition of the first 100 year legacy of the Smith Lever Act is important—but this isn't about looking in the rear-view mirror. More critical is the windshield view of continual adaptation to new issues, audiences and approaches. The next 100 years will continue translating science for practical application; engaging learners to co-develop solutions to complex problems; transforming individuals, families, communities and businesses in rural and urban environments. That is the work of Cooperative Extension.

The CHAIRMAN. Thank you, Dr. Reed.  
Dr. Lyons.

**STATEMENT OF DR. L. WASHINGTON LYONS, EXECUTIVE ADMINISTRATOR, ASSOCIATION OF EXTENSION ADMINISTRATORS, GREENSBORO, NC; ON BEHALF OF DELBERT T. FOSTER, ACTING VICE PRESIDENT, LAND-GRANT SERVICES AND EXECUTIVE DIRECTOR, RESEARCH & EXTENSION PROGRAMS, SOUTH CAROLINA STATE UNIVERSITY, ORANGEBURG, SC; ON BEHALF OF ASSOCIATION OF EXTENSION ADMINISTRATORS**

Dr. LYONS. Mr. Chairman, Members of the Subcommittee, I would like to thank you for the opportunity to appear before you today on behalf of the Association of Extension Administrators. I would just like to take a few minutes to share with you the importance of Cooperative Extension to the state, to our communities and to this country as we celebrate 100 years of extended knowledge and changing lives. But first I would like to thank you, Mr. Chairman, and Members of the Committee for your support for the funding that you have provided to Cooperative Extension, capacity as well as the competitive funding.

Without the capacity funding, we would not be able to have the infrastructure that we would need to answer the questions and to provide the programs to change the lives of the people we work with. Without the capacity funding, we would not be able to be effective in implementing the competitive funding that we receive through NIFA at USDA.

The land-grant system was created by the Morrill Acts of 1862 and 1890. The 1862 Morrill Act created a land-grant university in each state and the 1890 Morrill Act extended the land-grant status to the Historically Black Land-Grant Universities in the southern states and the border states.

The Smith-Lever Act, as you know, gave rise to the Cooperative Extension Program in 1914, which is a unique partnership between the U.S. Department of Agriculture and the land-grant universities. However, when the Smith-Lever Act was passed in 1914, it created Extension at the 1862 land-grant universities. The Act did not provide funding for the 1890 land-grant universities at that time. In 1972, Congress appropriated the first funding to support Extension at the 1890 land-grant universities, and that gave rise to the support of both 1862 and 1890 land-grant universities sharing the responsibility of implementing Extension programs in the southern states as well as throughout this country.

Today I would like to focus my comments primarily on what the 1890 land-grant universities are doing to contribute to Extension programs in this country. The 1890 land-grant programs and Tuskegee, although Tuskegee is not an 1890, but it is an institution that benefits from the Land-Grant Act and carries on a great deal of work in support of Cooperative Extension and the land-grant mission.

In general, all the Cooperative Extension programs are designed to help people to develop the knowledge and skills they need to solve the problems they are facing, but the 1890 land-grant universities have a special mission and mandate. Many of these people have limited resources. They do not have the same opportunities as others so the 1890s focus on that client group.

The Cooperative Extension programs of the 1890s have programs that are comprised of a broad range of science-educational efforts, which have been proven to strengthen the food and agriculture industry, particularly small and limited resource farmers: by developing agricultural production systems that are efficient, sustainable and highly competitive in the global economy; enhance the health of families through diet and nutrition and food safety education and their economic well-being through practical financial education; enhance youth skills in science, technology, math, citizenship and leadership; and also foster strong, stable communities through leadership development efforts and encouraging entrepreneurship.

As Cooperative Extension continues in the future, the focus will be on addressing emerging and critical issues that are impacting families, youth, communities and agricultural producers. With the projected growth in the population there will be many issues and challenges that must be addressed in both rural and urban Cooperative Extension with the research base that the land-grant university will be in a unique position to help address those challenges and issues.

Mr. Chairman and Members of the Committee, the future of the land-grant system in this country looks great, and we look forward to continuing your guidance, your oversight and support during the next century of discovery, teaching and engagement. We clearly understand what we do is not about us but about the people we serve.

God bless you, the Members of this Subcommittee, and God bless America. Thank you.

[The prepared statement of Mr. Foster follows:]

PREPARED STATEMENT OF DELBERT T. FOSTER, ACTING VICE PRESIDENT, LAND-GRANT SERVICES AND EXECUTIVE DIRECTOR, RESEARCH & EXTENSION PROGRAMS, SOUTH CAROLINA STATE UNIVERSITY, ORANGEBURG, SC; ON BEHALF OF ASSOCIATION OF EXTENSION ADMINISTRATORS

Mr. Chairman and Members of the Subcommittee, I want to thank you for the opportunity to appear before you this morning on behalf of the Association of Extension Administrators. I would like to share with you, the importance of the work of Cooperative Extension to our communities, states and country as we celebrate 100 years of Extending Knowledge and Changing Lives.

First, I would like to thank you for your support of Cooperative Extension. The capacity and competitive funding that you provide for Cooperative Extension is crucial to providing the infrastructure and ability to generate the knowledge and programs needed to respond to critical and emerging issues impacting society.

#### **Background**

The land-grant system was created by the Morrill Acts of 1862 and 1890. The 1862 Morrill Act created a land-grant university in each state and the 1890 Morrill Act extended the land-grant status to the historically black public universities in the southern and border states, where due to segregation, African Americans were barred from attending the 1862 institutions.

Cooperative Extension is a part of the tripartite mission of the land-grant university, which is Teaching, Research and Extension. The Smith-Lever Act was passed in 1914 and gave rise to the Cooperative Extension System in this country, which is a unique partnership of the U.S. Department of Agriculture and the land-grant universities. There are three types of institutions that have the responsibility for implementing Extension programs. They are 1862 land-grant universities, 1890 land-grant universities and the 1994 tribal colleges.

However, when the Smith-Lever Act was passed in 1914, it created Extension at the 1862 land-grant universities. The Act did not provide funding for the 1890 land-grant universities, at that time. In 1972, Congress appropriated the first funding to support Extension at the 1890 land-grant universities. Now, the development and

implementation of Extension programs is the mission of the 1862s, 1890s and 1994 tribal colleges.

### **Program Overview**

Today, I will focus my comments primarily on the involvement of the 1890 land-grant universities and Tuskegee University in the delivery of Cooperative Extension programs.

Cooperative Extension provides useful and practical research based programs and information that address critical issues and problems that are impacting agriculture, families, youth, businesses and communities. When people are confronted with a major problem or issue, they want a trusted resource for unbiased information.

In general, all Cooperative Extension programs are designed to help people to develop the knowledge and skills they need to solve the problems they are facing, but the 1890 land-grant universities have a special mission and mandate. Many of the people the 1890 land-grant universities work with have limited personal or family assets, limited opportunities or they come from communities that have limited resources. However, none of this matters, because the task is to meet people where they are and move them to the next level. Moreover, the programs are designed to transform behavior and improve the quality of life.

In the early days of Extension, the pioneers used the Jessup Wagon or the Movable School, which was a horse drawn wagon and later a panel truck to deliver programs. Today, a variety of technologies are being used to deliver programs. Many of the universities have mobile units, which are school buses, in some instances, that have been transformed into classrooms that are equipped with satellites, computers, projectors and flat screens to deliver programs to under-served communities in both rural and urban areas. The units are used to deliver a variety of programs using technology that may not be available in some of the remote rural areas. For example, the units are used to teach families and individuals basic computer usage, business development skills, financial planning, farm planning, entrepreneurship development and food safety.

The 1890 Cooperative Extension programs are comprised of a broad range of science based educational efforts, which have been proven to:

1. Strengthen the food and agricultural industry, particularly small and limited resource farmers, by developing agricultural production systems that are efficient, sustainable and highly competitive in the global economy.
2. Enhance the health of families through diet and nutrition and food safety education and their economic well-being through practical financial education.
3. Enhance youth skills in science, technology, math, citizenship and leadership.
4. Foster strong, stable communities through leadership development efforts and encouraging entrepreneurship.

### **Small-Scale Agriculture**

Cooperative Extension has developed transformation programs that have improved the economic viability of small scale agriculture and reduced the decline of small minority-owned farms. Programs emphasizing agricultural diversification, marketing strategies and risk management have been of paramount importance to this client group. Many of the small farmers have diversified their operations to include vegetable production, fruits, specialty crops and animals to increase their cash flow.

For example, the development of a Natural Hog Growers Association increased its membership hog-sale income by over \$200,000 in North Carolina and they have entered into contracts with the Whole Food Market. The development of the Master Meat Goat Herdsman Program has saved producers over \$16,250, annually, in Florida in veterinarian and production costs.

In Alabama, farmers participating in a comprehensive program in record keeping, financial management, production management and farm planning have become more efficient producers. It was reported that 13 farmers acquired USDA farm ownership loans in the amount of \$2.6 million and ten acquired operating loans for nearly \$1.0 million. Without this training, the farmers would not have qualified for the loans. Programs of this nature enabled the limited-resource farmers in Kentucky to increase their net farm income by \$4,500.00.

### **Nutrition and Health**

Obesity is a serious health concern for both children in adults. Nutrition education programs, such as the Expanded Food and Nutrition Education Program (EFNEP), are being implemented to help families understand the importance of con-

suming more fruits and vegetables, making healthy food choices and engaging in physical activity. Programs have focused on helping individuals and families to understand that poor dietary choices and unhealthy life styles can lead to chronic diseases. This contributes to an increase in health costs for the family and others, if they cannot afford the care. Participants in the various programs have indicated that they are consuming more fruits and vegetables and preparing more healthy meals. The 1890 land-grant universities are making a difference, but there is still a lot of work to be done in this area.

#### **4-H and Youth Development**

Recent youth development research indicates a need to provide opportunities for young people to increase their leadership skills. Creating opportunities to engage young people in leadership roles is a priority of 1890 Extension. Moreover, through the development of the Teen Leadership Connection Curriculum in Texas, after school programs were established in partnership with selected public schools. Extension's work with 4-H volunteers has developed 4-H programs addressing the problem of low self-esteem, high dropout rates and juvenile delinquency. After School and summer 4-H enrichment programs have enhanced youth skills in science, engineering, technology, leadership and citizenship. In South Carolina, the Tech-Bridge Program is a 5 week summer technology/academic enhancement program for rising 6th and 7th graders. The participants are taught how to build a computer from the frame to a Computer Processing Unit (CPU). In addition, the students are required to load all of the academic software and are trained in CYBER-SAFETY and proper Internet decorum. As a result of their participation, youth reported success in setting goals, appreciating cultural differences, a better understanding of leadership, positive change in behavior, improved academic performance and an interest in STEM disciplines as a career.

#### **Economic Development**

Independently owned and operated business enterprises are a vital part of the local economy. Helping entrepreneurs to develop, launch and sustain their businesses is a primary goal of the economic development activities of Cooperative Extension at the 1890 land-grant universities. Programs have focused on developing business plans, enhancing business management skills, marketing and managing risk. The development of a **Virtual Entrepreneurship Center** (VEC) uses social media platforms to merge traditional methodologies with online resources to deliver a comprehensive entrepreneurship program in partnership with each of the state's land-grant institutions in Alabama. The Virtual Center located at Alabama A&M University, uses integrated conferences, entrepreneurship training and social media to expand delivery, widen customer bases and improve business interactions for the millions of online contacts reached since September 2012.

#### **Future Direction for Extension**

As Cooperative Extension continues, in the future, the focus will be to address emerging and critical issues that are impacting families, youth, communities and agriculture producers. With the projected growth in the population, there will be many issues and challenges that must be addressed in both rural and urban areas. Cooperative Extension with the research base at the land-grant universities is in a unique position to respond to the challenges and issues. Some of the issues to be addressed would include maintaining a safe and abundance food supply, protecting the environment to ensure water quality and quantity, helping to maintain a healthy society to reduce health care costs, providing opportunities for youth to become leaders and productive citizens, increasing the number of youth interested in the science, engineering, technology, and mathematics fields, helping to increase the sustainability and profitability of family farms and increasing energy independence. To remain effective, we must continue to develop and implement research based programs and use the latest technology in our delivery system.

#### **Conclusion**

In conclusion, Mr. Chairman and Members of the Subcommittee, I would also like for you to know that many states with multiple land-grant universities have a very productive history of working together in the development programs and activities. Effective Fiscal Year 2015, the USDA National Institute of Food and Agriculture (NIFA) has mandated that all states will submit a Joint Land-Grant State Plan of Work. This requirement ensures that the universities will provide stakeholders with the most cost effective and efficient Research, Teaching and Extension programs, services and activities. In addition, the Joint State Plan of Work will enhance program planning, implementation and evaluation, as well as eliminate the possibility of duplication.

The future of the Land-Grant System in the country looks great and we look forward to your continued guidance, oversight and support during the next century of discovery, teaching and engagement! **We clearly understand what we do is not about us, but about the people we serve!**

God bless you, the Members of the Subcommittee and God Bless America!

The CHAIRMAN. Amen, Dr. Lyons, and I see that Mr. Delbert Foster has joined us. I know that the weather and traffic caused you some problems, and thank you for being here, and I would like to ask unanimous consent that Mr. Foster be allowed to participate as a witness in the question-and-answer session of the Committee, and seeing no objection, Mr. Foster, we will be happy to have your participation in the question-and-answer session.

If you would like to make a brief statement since you came in late, we would be happy to allow you a couple of minutes for that, and then we will move into the questions.

Mr. FOSTER. Yes, Mr. Chairman. I really appreciate that. This is a prime example of what Extension does in this country, where Dr. Lyons will pick right up and take the baton and deliver what Extension is supposed to deliver. It is like an Extension agent in the country that may have had a flat tire or may have had a delayed meeting. The participants, the clients, the citizens are expecting Extension to produce, and we do it with a team effort in our states and our counties and in our districts. Thank you.

The CHAIRMAN. Thank you, Mr. Foster, and the chair would like to remind Members that they will be recognized for questioning in the order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in order of arrival. We will rotate between Democrats and Republicans, and I appreciate the Members' understanding. I now recognize myself to ask a question of the fellow Georgia Bulldog, if I may.

Ms. Hammock, as a leader in 4-H, which is one of my favorite organizations, I can't help but give credit to FFA as well as I sit here as a Member of the Agriculture Committee, what would you suggest are the greatest opportunities and challenges confronting the 4-H program as it begins its second century.

Ms. HAMMOCK. Honestly, I look back over the last century, 4-H, we started as a canning club in Crisp County in 1902, so I can't help but look at the rich history that we have to draw from, and you said challenges, but I look at this number. We serve seven million youth across the world. We are in 3,068 counties across the United States, so I don't see challenges, and even if there are challenges, I firmly believe that 4-H'ers are adequately equipped to handle those challenges of the coming century.

The CHAIRMAN. Thank you, ma'am.

Dr. Reed, Cooperative Extension rural *versus* urban, do you consider it still primarily a rural-focused organization, or can you speak to the areas where we are moving into an urban-type setting?

Dr. REED. Thank you, Chairman Scott. This Extension Service covers every acre of our nation. It is true that our history and our focus is in rural America, and when I look at the rural parts of my own state, Extension provides a critical service to rural communities and those managing the land. In many cases, we are the only provider of knowledge in town, and in that respect, it is a very re-

sponsible leadership position in order to continue to make that contribution to rural America.

We also, though, however, need to pay attention to the rest of the customers of the Extension Service, the residents of our state that may not live in rural areas but they depend upon rural areas, and so we are learning to adapt our programs and to use knowledge to react to the needs of urban citizens as well.

One of the particular themes of the conversation that is growing in Oregon is the concept of interdependence. I think we too often speak about rural and urban divides or technology divides. Instead, we are finding that residents of our state have a common future, and by co-committing to the value of, in this case, rural Oregon, our urban residents benefit as well.

The CHAIRMAN. Thank you, Doctor.

Dr. Ramaswamy, you mentioned the ability of the Extension System to adapt to the changing needs. How is USDA facilitating the Extension's adoption of new technologies and new ways to communicate with its customers?

Dr. RAMASWAMY. Mr. Chairman, in multiple different ways, one of which is, we have this program called eXtension that I referred to in my opening comments, and this basically allows for us to bring together the best brains, intellectual resources from around the country to address the questions that we have. And so that has created a network across the United States, an online network as well as local networks that have been created, and so USDA basically facilitates that effort through funding that we provide as well.

The CHAIRMAN. Thank you, Doctor, and I will tell you, somebody from the Farm Belt getting the information to the people who are actually putting the crop in the ground is extremely important, and I appreciate all of you being here to testify, and with that, I will yield the remainder of my time and turn it over to Mr. Schrader from Oregon for 5 minutes.

Mr. SCHRADER. Thank you, Mr. Chairman.

Going back to Dr. Ramaswamy here, where do you see the biggest growth of requests for information now from Extension agents in the Extension Service?

Dr. RAMASWAMY. Congressman Schrader, the biggest growth has been really in the realm of youth, families and nutrition area. You know, obviously agricultural questions continue to come as well but really the growth has been in issues pertaining to children and youth and nutrition.

Mr. SCHRADER. These are tough budget times, and we struggle here, as you know, here in D.C. to maintain a budget, and I know from my experience back in Oregon as budget chair, it was tough to fund some of these things. What is your experience with other states around the country in funding for Extension?

Dr. RAMASWAMY. Well, the funding for Extension has been, particularly in the last 3 to 4 years with the very deep recession that we had, has been very challenging. In fact, across America Extension has lost about  $\frac{1}{3}$  of its footprint. When I am talking about  $\frac{1}{3}$  of its footprint, I am talking about boots on the ground. These are Extension agents. These are the folks that really translate the knowledge and deliver it to the end-users, and we lost that, and we need to be very concerned that this global preeminence that I was

referring to is in jeopardy if we do not go ahead and turn things around, and we need to make the commensurate public investments, and it is just not the public investment. We are going to have to bring in private enterprise as well, and indeed across America, a lot of the different states have figured out different ways to bring in private investments along with public investments as well.

Mr. SCHRADER. Dr. Reed, you have often talked about going beyond outreach, trying to get people engaged and stuff. Could you elaborate a little bit on the engagement aspect you talk about?

Dr. REED. Yes. Mr. Chairman, Congressman Schrader, thank you for the opportunity. The concept in the word *engagement* is finding its way into our work more and more common. What it does is recognizes that we don't have a corner on all the knowledge but that we can work collaboratively with those that we are serving and partners in order to recognize and put that knowledge to work. It really seeks to make the universities a better community but establishing reciprocal benefits, so while we're contributing to the success of those we serve, we are also learning and becoming better over time.

As I mentioned in my testimony, the issues of today are so complicated, there is not a single answer to many of them, so we find ourselves developing with our partners a set of alternatives and consequences and then helping those that need to make the decisions make the one that is best for them.

Mr. SCHRADER. And Dr. Reed again, we have alluded to different core missions for Extension, and it seems, listening to the testimony from all the witnesses here, there is really a panoply of opportunities that Extension serves. Do you feel that is still the appropriate role for Extension, again, tough budget-limited environments, we are trying to make sure taxpayer dollar go as far as they can, is it possible for Extension to continue to have that broad continuum of services?

Dr. REED. Mr. Chairman, Congressman Schrader, it is true that we listen to people's issues and try to respond. However, it is more important for us to provide a focus on those issues that we have a capacity to respond to and so that we are utilizing our resources in the best possible way.

Mr. SCHRADER. That is good to hear. Sometimes it is tough to be all things to all people at the end of the day.

Dr. REED. I occasionally describe the Extension Service as sounding like the parable of the blind man and the elephant. People believe they know Extension based upon the part that they touch, and if you are a master gardener, you think that is all Extension is, but it is true that we serve a variety of audiences.

Mr. SCHRADER. I am glad you do.

Mr. Foster.

Mr. FOSTER. Yes, sir.

Mr. SCHRADER. Sir, you got in a little late, apologize for that, but in your written testimony you talk about that Joint Land-Grant State Plan of Work. Could you elaborate on that a little bit?

Mr. FOSTER. Yes, sir. We started in Clemson University in South Carolina in 1999 where our plan for the state, we meet, we coordinate our activities, goals and objectives so that there is not a sense

of duplication so that when we are speaking to our state legislators as well as our Federal legislators, that question becomes a new point, and now that Mr. Ramaswamy has taken over, all states will have to submit a state joint plan of work for the land-grant services and have it approved prior to receiving their appropriation, and we started that with Clemson. Two thousand was the first year that we have done it and every year since.

Mr. SCHRADER. Congratulations. That is a very smart way to go, especially in this environment.

Mr. FOSTER. Yes, sir.

Mr. SCHRADER. I have a quick question to our youngest witness up there. What should Congress be doing to better support 4-H? Great program.

Ms. HAMMOCK. Well, already this Committee does so much for Cooperative Extension continuing the work we do, adding another century onto what we already have. Obviously continuing to grow is very important to us, and one of the most exciting things that we get to see, and I get to see as a Youth Trustee, is the growth globally. I just got to visit Africa this past September, and this completely testifies to the life-saving principles of 4-H here in the United States. We measure success with a blue ribbon but they measure success by being able to eat dinner. So thank you very much for the work you do. It is much appreciated by seven million people around the world.

Mr. SCHRADER. Thank you very much, and I yield back, Mr. Chairman.

The CHAIRMAN. I now recognize the gentleman from Illinois for 5 minutes.

Mr. DAVIS. Thank you, Mr. Chairman, and thank you to each of you for being here today. Thank you, Mr. Foster, for making the long trek. Welcome to our world.

Mr. FOSTER. Yes, sir.

Mr. DAVIS. It was mentioned that the Smith-Lever Act was part of the beginning of one of the great things that happened in central Illinois when it comes to Extension Services, it comes to 4-H and it comes to land-grant universities like the one I represent, the University of Illinois. I am very proud of some of the partnerships that University of Illinois has been able to make in my community, and I have seen young people grow into great leaders who have gone through the same programs, Ms. Hammock, that you continue to tout today, and I am very thankful for that.

I want to get into the questions really quick. One of my priorities is food security and food insecurity in this country, and I urge each of you to read a book that I just finished written by one of my constituents, Howard Buffet, that is called *40 Chances* and talks about food insecurity issues globally and how to address them by using America's ingenuity, and many of the ideas that he talks about in that book would be applicable to some of the issues that you would address with the folks you serve every day.

Dr. Ramaswamy, you mentioned food security in your testimony too, and how have you seen the Extension Services successfully tackle some of the issues we are seeing in some of our poorest communities?

Dr. RAMASWAMY. Congressman Davis, thank you very much for that question. Just harkening back to the efforts that are going on in your state with the district that you represent as well and the fine work that is being done by the University of Illinois, for example, the Expanded Food and Nutrition Education Program, EFNEP, has been very successful in making sure that the limited-resource individuals, their needs are met, their health needs, nutrition needs, *et cetera*, are being met, and so there is one example of EFNEP actually reaching out and working with particularly limited-resource individuals. In addition to that, we have also got programs in family and consumer sciences and the nutrition area, and Supplemental Nutrition Assistance Program, SNAP, education, for example, the SNAP-Ed program that we have as well.

Again, our Extension colleagues in Illinois, they partner with the EFNEP colleagues and work collaboratively to make sure that there is good education about safe food, healthy food, food safety, *et cetera*, addressing the food security/food insecurity that you're referring to.

Mr. DAVIS. Thank you very much.

Ms. Hammock, you mentioned food security in your testimony too. What can you tell me that 4-H is doing to help address some of the issues that we see here in this country?

Ms. HAMMOCK. Absolutely. Thank you, Mr. Congressman. I am so excited actually that you asked that question. I had the opportunity to go to New York City this past April, and actually today several of our trustees and council members are visiting Tucson, Arizona, and one of the wonderful things that 4-H is doing is giving children and high schoolers the knowledge, the tools, the opportunity to grow in urban food deserts. So we got to visit the Food and Finance High School in Manhattan, and it is a five-story high school. I did not know high schools could go up. I thought they just went out. But it was just so amazing to see them use aquaponics and hydroponics to produce food for themselves and their communities and to sell that, so it is not only just food security, it is economic security because they are selling it, and I can't wait to hear about the Tucson trip when people get back later on this week, but that is just a little part of what 4-H is doing.

Mr. DAVIS. That is great, in Illinois, we take for granted that everybody knows where the food comes from that gets to the table, so to see you participate, to see 4-H participate in trips like that to highlight what is going on in urban areas is essential to addressing many of the food insecurity problems that we have in this country.

I only have a few seconds left, and I just want to say thank you to each and every one of you for what you do. It is a problem. The food security issue is a problem with so many kids. I am very concerned about the School Nutrition Program where we have seen kids have to get by on less calories, and those are some of the kids who need it the most. They are the most food-insecure kids that we have, those who rely on the free lunch program, and it frustrates me that many cafeterias in my district are limited in what nutritious foods they can actually give to our kids. Washington shouldn't be the barometer of what kids get to eat. It should be a local school district issue, and I appreciate what you do outside of the school

to highlight some of the food security issues, and thank you for being here, thank you for your time, and thank you for your service. I yield back.

The CHAIRMAN. I now will recognize the gentlewoman from Ohio for 5 minutes.

Ms. FUDGE. Thank you so much, Mr. Chairman, and I thank my colleagues for allowing me to go out of order.

I actually only have two questions, and they are both to you, Mr. Foster. In your testimony, you discussed how 1890 land-grant institutions have a special mission and mandate under the Act as opposed to 1862 institutions. Can you tell me what that special mission and/or mandate is as you see it and why it is necessary?

And second, many of the best jobs and our ability to compete globally in a global marketplace are related to STEM yet the number of minorities and women choosing STEM majors in college is disappointingly low. How can Cooperative Extension specifically at the 1890 institutions address this issue?

Mr. FOSTER. Thank you. Yes, ma'am. The first question, the special mission mandate is to serve those populations that traditionally have been under-served in our communities, and that goes to urban areas, limited resource base or income, education or other resources. That is the special mission that we see that we have as an 1890.

Second, in reference to STEM, most of our universities are having a problem attracting members in the STEM field unless we conduct a program like my former board member spoke about at 4-H development, and several 1890 universities have youth programs that introduce students and women to STEM-associated disciplines at an early age. In fact, in South Carolina we have Tech-Bridge, which is teaching 6th and 7th and some 8th graders where they actually build a computer, load all of the software, are taught all the ins and outs of how that CPU operates, and then are able to maintain a group of conscientious students and they teach those students and reteach those students and teach people in their communities. So that is just one of the examples of a STEM program that they really don't realize they are in STEM. They are just messing with gadgets. But at the final closing program to hear them articulate what they have learned in 5½ weeks and sometimes 6 weeks will let you see that they will truthfully garner that support they need at home and in their communities to pursue a STEM career.

Ms. FUDGE. Thank you. Mr. Chairman, I yield back.

The CHAIRMAN. Thank you. I now recognize the gentleman from New York for 5 minutes.

Mr. COLLINS. Thank you, Mr. Chairman. I guess I would like to share a little story with the group before I ask my question to Dr. Ramaswamy.

I was the County Executive up in Erie County elected back in 2007, very rural area, but I now represent eight counties including some small counties. The Erie County Cooperative really is a major supporter of Cornell and the Cornell Cooperative, which while it is located just outside my district has offices throughout. Now, when I was elected, our county was effectively bankrupt. The state had taken over our finances, and I go line by line on the budget and

I see this budget line for Cornell Cooperative. I don't know what that is. That was 7 years ago. So I put that on the list of items that just might not be funded. Lo and behold, no one comes to see me so when I go to work through that, I eliminated all the funding to Cornell Cooperative. I now know what I know and can't believe I did that. I think you can appreciate it.

Needless to say, I got a panicked phone call and found out if I didn't fund Cornell Cooperative through the county, they would get no Federal funding. So I put it back in the budget but my question is this: with tight finances around the country, certain New York State probably more than most, the rules are, if you don't have county funding to match the cooperative, in this case, Cornell Cooperative wouldn't get any funding. So I just have to wonder, are you hearing concerns from others? In the case of Erie County, we dwarf the size of the other counties. Without our support, Cornell Cooperative would not continue, and that is the lifeblood of most of our other counties, dairy, specialty crops. We have apples and peaches and our apple growers want to sell their apples to McDonald's, and Cornell has been very, very helpful in making sure they have what they need to meet the quality standards.

So I am concerned, going forward, meeting the county match, and I understand multiplying the dollars by having counties and states put the money in but priorities are different in every county, and I just wonder if you have heard that and if you share my concerns and have anything else to—if you have heard this kind of story elsewhere.

Dr. RAMASWAMY. Congressman Collins, thank you very much for that question. You saw a smile on my face as you were talking about it. I smiled in the sense of recognition of that situation that we have throughout America where many, many local communities have had difficulty in meeting the budgetary needs that we have as well, and not unlike Erie County, in Indiana and Oregon and Illinois, as I said, about  $\frac{1}{3}$  of our footprint has been lost across the United States. Washington State has lost about 50 percent of the Extension funding, for example. So this is the situation that we have.

So one of the things that has happened, sir, is that Cornell University or Oregon State University or others that have had a situation like this, and Linn County is one of the counties in Oregon that saw a similar situation as well, is that the universities, the state funding and the Federal funding were still available to be deployed and then the neighboring counties picked up the slack, as it were. It was not like they were left high and dry and walked away from and there was a need for a cash flow type of situation as well. So the folks at the land-grant universities are aware of this as are ourselves here in USDA as well, and we are trying to figure out a way to create a path forward.

Mr. COLLINS. Yes, and I can tell you after the scare that I put them in my first year, they came with a very detailed presentation each year after that, and they are in my office here, at least four or five times a year because they know that I know the issues as well and I am close to our legislators in the county and sometimes have to share with them through tough budgetary times.

I would like to also mention—maybe I should be one of your witnesses—the 4-H in our rural communities, when they don't have the same menu of options for the kids is very, very strong, well-attended. Those are our future farmers. Many of our farms are five, six generations old, and as such, it is just almost a given that the kids will continue, whether it is dairy farming or crop farming.

But I would just like to compliment Ms. Hammock because she represents what I have seen in many cases, young folks able to present themselves. You say public speaking is your passion, and I can see that it is. Most people don't share that passion. We have Members of Congress that won't give 1 minute speeches because they are afraid to talk in front of the world on C-SPAN. I am just making that up. But I just want to compliment you for coming, and thank you for coming in because you really do put a face on what is good about 4-H and all the funding that we have. I am just grateful that we have a 5 year budget now that has actually increased some of these fundings. You know, flat is the new win, and the fact that you have a little more money in there shows the bipartisan support for everything Smith-Lever does and the impact across the country.

So again, thank you all for coming in. It has been very interesting. Mr. Chairman, I yield back.

The CHAIRMAN. Thank you. I now yield 5 minutes to the gentlelady from Washington.

Ms. DELBENE. Thank you, Mr. Chairman, and thanks to all of you for being here today. I appreciate it.

Washington State University is the original land-grant university in my state, and I am fortunate to have an Extension up in Mt. Vernon in my district where they are doing great work, research as well as bringing members of the community together. They have a bread lab, bringing bakers and wheat growers together so they understand the impact the different crop varieties have on nutrition and the baking process and taste, *et cetera*. So there is a lot of great work happening up there, and a lot of the work they are doing is supported through programs like the Specialty Crop Research Initiative, and it does have a huge and lasting impact, not just to the local growers but to entire industries and broadly to the public. Research on improving crop yields through plant mitigation, sun exposure, irrigation, mulch, all have had a dramatic impact on our food supply, and so we see real results from the work they are doing.

That kind of leads me to a question for you, Dr. Ramaswamy. It is my understanding that after the last farm bill that you began, or the USDA began awarding multi-year research grants maybe more than it had done historically, and so I wondered, do you think that that is a successful path and are you still looking at awarding larger or multi-year grants, given that research is something that takes place over a longer period of time?

Dr. RAMASWAMY. Congresswoman DelBene, thank you so much for that question, and I want to congratulate you as well, and Washington State University has done some tremendous work in your state and in your district as well.

In regards to the multi-year research grants that we started doing as a result of the 2008 Farm Bill, yes, that is correct. What

we have done is, the question that you asked me, has it been beneficial, is it achieving what it set out to do. We have asked the National Academy of Sciences to actually look at that question, and they are going to be providing us with a report in June and we are going to take that report and determine whether or not that has been a successful model.\* But in the meantime, we have not quit. What we have done it to basically continue those multi-year investments but we have scaled it back down a little bit where we are doing \$30 and \$40 million grants. In fact, Washington State has received a few of those and University of Washington as well. We have scaled it back down to between \$5 and \$15 million, and we will continue to do those continuation awards as well because it allows us to invest. These challenges that we are addressing are really complex and it requires multiple individuals to come together, multiple disciplines to come together over multiple years, and so we will not walk away from that but we are trying to scale how much it is going to be and what sort of objectives might we be addressing as well.

Ms. DELBENE. That would be interesting to see the results of that because when I talk to our farmers and our researchers, they want to know that they have the investment, going forward, so they can really do the research well, and sometimes that means having the visibility, going forward. They know that they can complete the research they are doing, and it isn't always in a short-term time span that they look at.

One thing that we saw during the debate over the farm bill that while the importance of agriculture is widely understood, in some areas it may not resonate so much in other parts of the country. I was wondering, and maybe this is a question a little bit for everyone, how can we use tools like Smith-Lever to deepen and broaden the education across the country and that connection to agriculture that we all do have. In areas of my district, there is a deep connection, and in other places, people aren't as aware of what is happening close by in agriculture, and so I wondered what your thoughts are on what we can do to improve that, going forward.

Dr. RAMASWAMY. I will take a shot at it very quickly. Indeed, the Cooperative Extension Service is the translator of knowledge and the deliverer of that knowledge to the end-users and they have done that exquisitely well over the last 100 years, and part of that is to educate the populace as well, and we need to continue to foster that. Along with that, we also have programs like 4-H, for example. Ag in the Classroom is another outstanding program that enables particularly young kids to develop the knowledge as well. So it is going to have to be a multipronged approach. You know, earlier we had a question about science, technology, engineering and math. I myself like to throw the letter A into it for agriculture, and in fact, in America, a lot of the challenges that we see today are in part—about obesity and things like that are in part due to lack of understanding about food and where food comes from. So we really need to do everything we can to convey that sense of the

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\*The report referred to is in process, the information concerning the basis of the study can be found at: <http://www8.nationalacademies.org/cp/projectview.aspx?key=49505>.

education that we need, and the Smith-Lever Act and Cooperative Extension Service have really allowed us to do that very well.

Dr. REED. Mr. Chairman, Congresswoman DelBene, thank you for the question, and it is all surrounding food. It has become almost a tired phrase, that while only two percent of Americans farm, 100 percent of us eat, but it is true that people care about food and the food systems that surround them. The Pacific Northwest is a very foodie area, and to the point where some farmers markets are now labeling the food with how many miles it has traveled to get to people. And so I believe that we have a teachable moment for Americans in order to help them understand the consequences and the interdependencies that all of us have on our farmers and farmers markets. In fact, at Oregon State just 2 weeks ago, we hosted what we called the Small Farms Conference, and there are a large and growing number of individuals farming relatively small parcels, and they were regarded at this conference as rock stars. I mean, there was clearly a sense of pride and identity that I hadn't seen before.

Ms. DELBENE. Thank you. It looks like my time has expired. I yield back. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you. I now recognize the gentleman from Florida for 5 minutes.

Mr. YOHO. Thank you, Mr. Chairman.

I appreciate you all participating today, and you guys will agree that God intended us to live at 70° and above. Being from the great State of Florida where we have the University of Florida and IFAS, which is the Institute of Food and Agricultural Science, and we are blessed to have 67 different Extension agents throughout the state with the 67 counties. Having a diverse ecosystem from the Florida Keys where we have key limes, coconuts, tropical plants and of course, margaritas are down there, all the way up to the Georgia line to a more moderate temperate zone and the second biggest industry in Florida is agriculture, and we are proud of that. My background is, I am a veterinarian for the last 30 years, and I hold my roots with agriculture very dear to me, and I appreciate the effort and the work you guys have done to strengthen the Extension agents and the work that they do, especially you, Ms. Hammock, with the 4-H. My question that I would like to ask you is, what challenges are you seeing in extending the youth programs, especially in the inner city areas where we just need to get into those areas so much more. You were talking about Manhattan with the five-story high schools and hydroponics. I think that is a great way to break into an area, but to get people involved in ag, especially today, when we see so many people—agriculture is something they buy at a store, and we all know that you can't have a secure nation without a secure food source, so I would like to hear what your thoughts are on the challenges that you have seen.

Ms. HAMMOCK. Absolutely, and the challenges I have seen have actually sparked my interest in my major, which is agricultural communication, and this kind of goes back to your question about educating the population about why agriculture is so important, and those challenges are very evident. They are very pronounced. Like Dr. Reed said, two percent of population feeds 100 percent, and so that is an obvious challenge, and that is the first step of

getting into the high schools in Manhattan and the large inner city areas of Atlanta, Manhattan, San Francisco, all of the larger cities, and this is a great starting point, and I am very proud of 4-H and the work we have done through the Cornell Cooperative Extension in Manhattan, but it is a starting point.

Mr. YOHO. Have you seen specific challenges that we can address or maybe help? I know funding is the big issue. You know, more funding will solve a lot of these things. But just getting into a program, are you running into resistance?

Ms. HAMMOCK. Program such as—

Mr. YOHO. Like in the inner cities to develop a 4-H program or ag programs, or anything like that.

Ms. HAMMOCK. There has actually been no resistance at all, which is great, absolutely. But there has really been no pushback on this. It is one of those things that people are very welcome to do and we as agricultural communicators are trying to make that story a little bit better.

Mr. YOHO. Okay. Dr. Ramaswamy, you were talking about something you brought up, and I see this in Florida dealing with IFAS on nutritional counseling as it deals with the nutrition programs. What we see is, there is not only undernutrition in some areas but there is malnutrition that you brought out that leads to type 2 diabetes. You see a big role of the IFAS or the Extension agents going out and educating people. Do you want to elaborate on that, what else we can do?

Dr. RAMASWAMY. There are multiple areas where our Extension agents, our Extension educators might often be involved, are involved in many, many states including your state as well through IFAS, and obviously it is in the production of healthy food. Specialty crops particularly are known to have very significant positive health benefits. So you have Extension agents involved in that part of it and making sure that specialty crops are grown, they have healthier traits, the genetics part of it being incorporated as well. That is one area.

The second area is the education piece of it. Through the Supplemental Nutrition Assistance Program—Education, SNAP-Ed and EFNEP, the Expanded Food and Nutrition Education Program, so that they are reaching out to the young people through schools, through faith-based and other non-governmental entities, and we need to continue to foster that education as well.

The third area is in the type of agriculture we practice as well in terms of health impacts on the communities that live around where food is being produced as well. So education is a very significant part of this and then Extension certainly has in all these different domains been providing the knowledge necessary, reaching out to multiple conduits, as it were.

Mr. YOHO. Right. We just had a director from one of the food banks come into our office today, and we were talking about canning. You know, on the farm today, we have farm communities and their families, they go into canning, they are putting up beans, corn and all that, and that is an art that is being lost that I hope we continue to promote throughout our population so we can produce our own foods. My wife and I when we were at the University of Florida, we were poor as a church mouse, and we had a gar-

den plot that we went out there they had where you could go out and garden. And so we took advantage of that, and I think that is something we need to promote more.

I appreciate all of you. I am proud to be associated with the Extension agents, and the Smith-Lever Act, I am proud of their heritage. Thank you all, Mr. Chairman.

The CHAIRMAN. Thank you. I now recognize the gentlewoman from New Hampshire for 5 minutes.

Ms. KUSTER. Thank you very much, Mr. Chairman and Ranking Member Schrader, and thank you to all of the witnesses today. This has been a very enlightening hearing, and I appreciate the work that you do. I represent New Hampshire, western New Hampshire and the University of New Hampshire is our land-grant university, and we have farmers and foresters across the state that are working with the Extension. I wanted to mention to Ms. Hammock that I served on the board of the 4-H in New Hampshire a few years back, and I am very impressed by the program. My town has the largest state fair, and so 4-H and all that goes with it has been a big boon for us.

I think we are all amazed and impressed by Congressmen Smith and Lever over 100 years ago to have been thinking about this and come up with a program that was so sustainable and so effective in so many different environments, and I am sure those of us here today would like to be a part of something that has that kind of longevity.

I want to focus my questions briefly here on this discussion about healthy people, healthy planet, healthy economy, and how that is tied together. I represent a district that has a mix of urban, suburban and rural, but the challenge for me, and this came out during the farm bill, is that it is the rural areas where we tend to have the challenges with access to healthy food, and I find that somewhat distressing because this has happened over the course of my generation. When I was a girl, everyone had a garden and people raised animals and raised food, but now part of it is just people's lives are so busy and we have lost some of that. And so I guess my question is directed at the panel, anyone that would like to respond, on what we can do to put healthy food back into people's lifestyles, and I want to commend my colleague, Marcia Fudge, who had an amendment that we did pass on food deserts and that will be helpful in the rural communities as well. But I welcome your thoughts.

Dr. RAMASWAMY. Congresswoman Kuster, indeed, as you said right towards the end of your opening comments, that we have the situation with food deserts in rural areas in a country where we know how to grow food and we can feed the entire world, and thus, it is a mind-boggling situation that we have. We have these food deserts, and in part, it is the logistical aspects that we need to be addressing of food distribution that needs to occur as well along with education, access to safe and secure food. These are things that our Extension folks are really addressing. If you go across the United States, even within New Hampshire itself, the University of New Hampshire very clearly is addressing these sorts of questions of making sure that people that have no or low access to food, their needs are being met as well.

One other example about this connectivity between healthy people, a healthy planet and a healthy economy is, University of New Hampshire has an excellent program that works on greenhouses. The greenhouse industry in New Hampshire is about a \$250 million industry that employs about 12,000 people, and the work that is being done with the greenhouses to grow crops, fruits and vegetables and things like that, and incorporated into that is more effective and efficient means of energy use, and so there is a 10 to 15 percent reduction in the cost of energy producing these healthy foods that now is being made available for distribution, and it creates jobs as well.

Ms. DELBENE. Great. Thank you. Excellent example. Yes, Dr. Reed?

Dr. REED. Yes, Mr. Chairman, Congresswoman Kuster. I often use healthy planet, people and economy to sort of help frame conversations because you might recognize them as the pillars of sustainability but they are all interdependent and we need to work on all in order to advance kind of social welfare. And while this is only a partial answer to your question, it seems to me that compared to yesteryear, society today is some time-driven in both urban and rural areas that we simply can't find easy ways to take the time to produce the food that I think we would all enjoy seeing in rural or urban environments. So if we could figure out a way to slow down the clock, that might be a way to make some progress.

However, seriously, our master gardener program, which was our most successful and significant volunteer training program has made a dramatic and observable shift to food production where historically it had been focused more on the environmental side of things and something that is central to the stock and trade of Extension education is to work in peer-to-peer education because individuals can accomplish sometimes more than we can, and so it is my hope that we could adapt the master gardener program to find a place in urban environments to do exactly what you described.

Ms. DELBENE. Thank you. My time is up, and I have a guest from the food bank, so I am going to have to step out. But thank you so much for your testimony. I appreciate it.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, ma'am.

Before we adjourn, I invite the Ranking Member to make any closing remarks that he has.

Mr. SCHRADER. Well, I appreciate that, Mr. Chairman. What a great hearing. Tough times in our great country. It is nice to see positive influence. Continue to take no prisoners and continue to be a leading guiding light in food production, leadership, and for our younger generation, see them grow and develop the way they do through 4-H is just emblematic of I hope what the future of this country is all about.

I had the privilege of being guided through my educational career by three different land-grant institutions—Illinois, Cornell and, of course, my Oregon State—go Beavs—and really appreciate that opportunity, and everyone has been influenced and impacted more than they probably realize by the work these ladies and gentlemen do every day under tough circumstances.

So happy 100th anniversary to you all.

The CHAIRMAN. Thank you, Mr. Schrader, and ma'am and gentlemen, thank you for being here. I am proud to be a Member of the Agriculture Committee where, as you can see, we are able to work closely together. We understand that food security is a part of national security, and we understand that this Act has helped us as Americans and as a country to provide that nutrition that Americans need in a very efficient and effective manner.

Ms. Hammock, thank you for representing 4-H in the manner that you do. Such a professional. I have a tremendous amount of respect for that organization and the young leaders that come out of that and look forward to the day when people like you are representing us in Congress.

With that said, any written statements from the witnesses shall be made part of today's record, and under the rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional material and supplemental written responses from the witnesses to any questions posed by a Member.

This hearing of the Subcommittee on Horticulture, Research, Biotechnology, and Foreign Agriculture is adjourned.

[Whereupon, at 11:20 a.m., the Subcommittee was adjourned.]

[Material submitted for inclusion in the record follows:]

## SUBMITTED STATEMENT BY AMERICAN SOCIETY FOR HORTICULTURAL SCIENCE

Happy Birthday Smith-Lever Act! You are the conveyer of our research programs, and a positive facilitator of progress and prosperity. The American Society for Horticultural Science (ASHS), the world's premier professional society for horticulture science, education, and training, considers Extension to be an inestimable gift for agriculture research and the entire land-grant system. You convert our discoveries into applicable deeds. From our extensive research and analysis, you provide tools translating critical data into applied science—educating and training current and future farmers to be good stewards of the land, and wise protectors of their resources. Without Extension assistance, we might not enjoy benefits from 4-H Clubs educating our youth. Or training Master Gardener volunteers who provide regional-based horticulture counsel. Or Family and Consumer Science programs which sustain so many rural and urban communities. For land-grant institutions, your outreach and support verifies the very essence of their continued legacy to our nation.

With Senator Hoke Smith (D-GA) and Rep. Asbury Lever (D-SC) as your first patrons, and President Woodrow Wilson as midwife, you were born on May 8, 1914 in the crucible of a new century, as demographic shifts and waves of immigration signaled new challenges and demands for agriculture. Three years before America's entry into World War I, you taught us how to plan and create urban gardens, preserve and prepare food, and create new energy sources that would see us through dynamic and transformative times ahead. Embarking upon your second centennial, Extension remains a vibrant and integral part of the trifecta fueling innovation and growth for American agriculture.

With education and training as core principles, Smith-Lever disseminates information far and wide, from print manuals and videos to online services and on-site training. This broadens agriculture research's knowledge-base sphere, and educates the general public about the many uses and benefits emanating from food and plant science.

Transforming our work from laboratories to practical on-site demonstrations, you prove that quality Extension works in tandem with quality research. This confirms the complimentary companionship Extension and research will continue having among all land-grants and affiliated stakeholders. Smith-Lever programs taught by dedicated personnel—from 1862 and 1890 colleges to 1994 Tribal institutions—offer practical knowledge translating science into action and production into profits.

So congratulations and take a bow Smith-Lever. ASHS wishes you all the best. For those in the land-grant community, and in other research fields across our land, this observance marks a singular moment. Yet it also celebrates successful models of cooperative partnerships between government, academia, and private industry—partnerships that will continue for the well-being and enrichment of all Americans. On this occasion, we blow out the candles for your first 100, and relight them for a bright and productive future ahead.

