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RECOGNIZING THE CONTINUING CONTRIBUTIONS OF THE 1890S LAND-GRANT UNIVERSITIES ON THE 125TH ANNIVERSARY OF THE PASSAGE OF THE SECOND MORRILL ACT

HEARING

BEFORE THE

COMMITTEE ON AGRICULTURE
HOUSE OF REPRESENTATIVES

ONE HUNDRED FOURTEENTH CONGRESS

FIRST SESSION

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RECOGNIZING THE CONTINUING CONTRIBUTIONS OF THE 1890S LAND-GRANT UNIVERSITIES ON THE 125TH ANNIVERSARY OF THE PASSAGE OF THE SECOND MORRILL ACT

WEDNESDAY, JULY 15, 2015

HOUSE OF REPRESENTATIVES,
COMMITTEE ON AGRICULTURE,
Washington, D.C.

The Committee met, pursuant to call, at 10:00 a.m., in Room 1300, Longworth House Office Building, Hon. K. Michael Conaway [Chairman of the Committee] presiding.

Members present: Representatives Conaway, Lucas, Rogers, Thompson, Gibbs, Austin Scott of Georgia, Crawford, Gibson, Hartzler, LaMalfa, Davis, Yoho, Allen, Rouzer, Abraham, Newhouse, Kelly, Peterson, David Scott of Georgia, Walz, Fudge, McGovern, DelBene, Vela, Lujan Grisham, Kuster, Nolan, Bustos, Aguilar, Plaskett, Adams, Graham, and Ashford.

Staff present: Carly Reedholm, Haley Graves, Jackie Barber, John Goldberg, Mary Nowak, Mollie Wilken, Scott C. Graves, John Konya, Keith Jones, Liz Friedlander, and Nicole Scott.

OPENING STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

The CHAIRMAN. Well, good morning. This is hearing of the Committee on Agriculture to recognize the continuing contributions of the 1890s land-grant universities on the 125th anniversary of the passage of the Second Morrill Act, will come to order. I have asked David Scott to open us with a prayer. David.

Mr. DAVID SCOTT of Georgia. Thank you, Mr. Chairman. May we bow our heads, please.

Dear Heavenly Father, we come before your throne of grace to give thanks. We have so much to be thankful for. We want to thank you, dear Heavenly Father, for the leadership of this Agriculture Committee under the leadership of Chairman Mike Conaway and Ranking Member Collin Peterson, for their stewardship, for their care, and for the consideration of our 1890s African-American colleges and universities. We thank you for that.

And now, dear Heavenly Father, in our prayer to you this morning, we lift up those magnificent words, the words that were spoken by that famed and wonderful scientist, an agricultural pioneer and American legend, George Washington Carver, when he said to Booker T. Washington, "Mr. President of Tuskegee Institute, I

pledge to you that I will do everything through God and Christ that strengthens me to better the condition of our people."

Dear Heavenly Father, we are here to carry on that mighty work that these extraordinary founders of the 1890s established to improve and better the condition of all of the American people. We thank you, dear God, for this day, this historic day, to have the 19 African-American Presidents of 1890s land-grant universities to testify before the Congress of the United States.

Oh, thank God Almighty for this extraordinary blessing you have given to us this morning, and all we can say is thank you, God. Amen.

The CHAIRMAN. Amen. Thank you, David.

Well, I want to welcome our panelists, as well as the other Presidents who are here today. The Committee on Agriculture will shift its focus from legislation and oversight to one of a less political nature, but of significant importance nonetheless.

Land-grant institutions are often characterized as 1860, 1890, and 1994 institutions based on the date of legislation that designated most of them with land-grant status. August 30 marks the 125th anniversary of the enactment of the Morrill Act of 1890, commonly referred to as the Second Morrill Act. This law authorized additional direct appropriations for the land-grant colleges of agriculture that had been established under the Morrill Act of 1862.

The most significant feature of the Second Morrill Act was that the 1862 schools could receive the additional funds only if they admitted blacks into their programs or if they provided separate but equal agricultural higher education to black students.

In the period following the Civil War, 16 southern states established separate land-grant colleges of agriculture for black students under this Act. Congress designated Tuskegee University an 1890 institution at a later date. Today in honor of the continuing contribution of these important institutions, we would like to hear directly from their leaders regarding not only the successes of the individual institutions, but likewise, the successes of the 1890's in general.

This hearing is a result of David Scott's vision or dream to have this happen. When it became apparent that I was going to be the Chairman of the Agriculture Committee for this term, David came to me and said, "I have a terrific idea for a hearing, a full Committee hearing, in which we would highlight and show the American people the impact that the 1890 schools are having on production agriculture and all the jobs associated with agriculture, but more importantly, the students that go through those schools and then become responsible citizens in this country." And so I said all right let's do that.

I came down the hall a second ago with David and Collin; I have never seen a crowd as big as this one of folks trying to get into this hearing this morning. And we have folks in the overflow audience. So this is a direct result of David's work. If it goes really well, he and I will get the credit. If it goes really bad, he gets the blame. But this is a great, great day for the Agriculture Committee, and we appreciate everybody being here.

In the coming months, we will further evaluate the land-grant system looking for ways to strengthen their capacity to improve our

agriculture research extension and educational programs. While six of the 1890s Presidents will testify this morning, we are fortunate in that the Presidents from 18 of the universities are in attendance today, and they also are prepared to answer questions should any Member ask them. That is a little unusual. Normally our questions are asked of just the folks at the table, but given the significance of all the Presidents who are here, Members are advised that they may ask any of the university Presidents in the room questions during the questioning.

In addition to our witnesses joining us today, we have Dr. Andrew Hugine from Alabama A&M in Normal, Alabama. We have Dr. Alfred Rankins, President, Alcorn State University, Lorman, Mississippi. We have Dr. Cynthia Jackson-Hammond, President of Central State University in Wilberforce, Ohio. We have Dr. Harry Williams, President of Delaware State University, Wilmington, Delaware. We have Dr. Raymond Burse, President of Kentucky State University from Frankfort, Kentucky. We have Dr. Kent Smith, President of Langston University from Langston, Oklahoma. We have Dr. Kevin Rome, President of Lincoln University in Lincoln City, Missouri.

We have Dr. W. Franklin Evans who is President of South Carolina State University in Orangeburg, South Carolina. We have Dr. Ray Belton, President, Southern University System, Baton Rouge, Louisiana. We have Dr. Laurence B. Alexander, Chancellor, University of Arkansas, Pine Bluff, Pine Bluff, Arkansas. We have Dr. Pamela Hammond, Interim President, Virginia State University, Petersburg, Virginia. And finally we have Dr. Brian Hemphill, President of West Virginia State University, Institute, West Virginia.

If there are others in attendance and I didn't mention your name, please know that the Committee values your contributions, and we will get your name if you are not here, and I will recognize you later in the program.

[The prepared statement of Mr. Conaway follows:]

PREPARED STATEMENT OF HON. K. MICHAEL CONAWAY, A REPRESENTATIVE IN CONGRESS FROM TEXAS

Good morning.

Today, the Committee on Agriculture will shift its focus from legislation and oversight, to one of a less political nature, but of significant importance nonetheless.

Land-grant institutions are often categorized as 1862, 1890, and 1994 institutions, based on the date of the legislation that designated most of them with land-grant status.

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While six of the 1890's Presidents will testify this morning, we are fortunate in that the Presidents from 18 of the universities are in attendance today and are prepared to answer Members' questions:

In addition to our witnesses, we have joining us:

Dr. Andrew Hugine, Jr., President, Alabama A&M University, Normal, AL.

Dr. Alfred Rankins Jr., President, Alcorn State University, Lorman, MS.

Dr. Cynthia Jackson-Hammond, President, Central State University, Wilberforce, OH.

Dr. Harry L. Williams, President, Delaware State University, Wilmington, DE.

Dr. Raymond M. Burse, President, Kentucky State University, Frankfort, KY.

Dr. Kent J. Smith, Jr., President, Langston University, Langston, OK.

Dr. Kevin Rome, President, Lincoln University, Jefferson City, MO.

Dr. W. Franklin Evans, President, South Carolina State University, Orangeburg, SC.

Dr. Ray Belton, President, Southern University System, Baton Rouge, LA.

Dr. Laurence B. Alexander, Chancellor, University of Arkansas Pine Bluff, Pine Bluff, AR.

Dr. Pamela V. Hammond, Interim President, Virginia State University, Petersburg, VA.

And finally, Dr. Brian O. Hemphill, President, West Virginia State University, Institute, WV.

If there are others in the audience that I didn't mention by name, please know that the Committee values your contributions.

It is now my pleasure to recognize the Ranking Member for any comments he wishes to make.

The CHAIRMAN. So with that, I would like to recognize the Ranking Member, Collin Peterson, for any comments he may wish to make.

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

Mr. PETERSON. Thank you, Mr. Chairman. Good morning everybody. I am glad to be here today to celebrate the anniversary of the enactment of the Second Morrill Act. And I am pleased that our 1890 land-grant university Presidents could join us today, including the President of the newest land-grant university, Dr. Cynthia Jackson-Hammond, from Central State University in Ohio. Thank you all for the good work that you do.

As the Chairman said, the land-grant universities play an important role in agricultural research, extension, and educational programs. Research, as we know, is vital to agriculture. USDA's research, education extension programs help increase productivity, prevent plant and animal disease, improve human nutrition and health, and discover and utilize new technologies.

So I look forward to hearing from all of you today and look forward to future hearings on agriculture research. Again, welcome to today's witnesses and all the other folks that are here. I look forward to the testimony and yield back.

The CHAIRMAN. I thank the gentleman.

The CHAIRMAN. It is now my pleasure to recognize the gentleman from Georgia, David Scott, and the instigator of all this madness today. So, David, any comments you would like to make.

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

Mr. DAVID SCOTT of Georgia. Yes I would Mr. Chairman. The first comment I would like to make is just a tremendous thank you for your help on this. It may have been a germination of a seed coming from me, but its growth, its development, and to make sure this happened, comes from you.

And it is very important for everybody to know that this extraordinary, historic hearing today would not have happened if it were not for the hard work and the help, tremendous help, and the leadership of Mike Conaway, our distinguished Chairman. I wish you would join me in giving him a round of applause.

And, of course, it would not be possible if we did not have an extraordinary Chairman on the Democratic side, who for many years has toiled in the vineyards and have helped us on this Committee and throughout this nation in putting the interests of African-American 1890s land-grant colleges at the forefront, and I am speaking of who is now our Ranking Member, Collin Peterson, who is a former Chairman and provided so much leadership; and as he just mentioned to me, everything I did, David, I just did what the colleges wanted me to do, and that is Collin Peterson. Why don't you give him a hand.

It is so important for us to recognize, ladies and gentlemen, that this is a bipartisan effort. You see before you Democrats and Republicans who care about our 1890s. That has been the history of it. It was through bipartisanship, Republicans and Democrats, if you all remember the Senator, I believe, Morrill, who started this first. And then he came back during the time when there was the Separate But Equal Doctrine and made sure that it was written into the law. As a United States Senator, he did that to say that the funds going into the 1890s would not be separate nor discriminate against and to make sure that there is funding for these 1890 institutions.

And so we stand here, Democrats and Republicans, looking out at this wonderful audience, and as the Chairman has said, I have never seen such a crowd. And that is important for they understand how important the education of all of America's people is.

And so, Mr. Chairman, I am delighted to be here, and I want to thank your staff, who did an extraordinary amount of work. And I want to thank my staff and Arthur Tripp. Arthur, are you here? Fantastic. Why don't we give our staffs a hand. Thank you.

And so I close with this reminder. I want everyone to know that there are hundreds of thousands of African-American successful contributors to this nation and the world who would not have achieved that success if they did not have that way out towards education, that the 1890s provided for us African-Americans. And so we thank you for carrying on this extraordinary pilgrimage and honor and distinction of carrying forth and making sure that deep in our hearts those words that I mentioned in my prayer is echoing through this room.

The words of George Washington Carver rang true when he spoke to Booker T. Washington; and let us remember them today when he told Booker T. Washington that, "Mr. President, I pledge to you that I will do everything I can through the strength of

Christ who strengthens me to better the condition of our people." We are here to carry that charge. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, David. I appreciate those comments.

I also, too, want to thank our staffs. You and I make decisions; Collin and I make decisions, but our staffs are the ones who do all the work and put this together. The chair requests that other Members submit their opening statements for the record so that our witnesses may begin their testimony and to ensure there is ample time for questions.

Now, turning to the witnesses at the table. I did not leave you all off the list of Presidents who were here. We just had a different time to introduce you.

First off is Dr. George C. Wright, President, Prairie View Agriculture and Mechanical University, Prairie View, Texas. Dr. Jessica Bailey, Interim President, Fort Valley State University, at Fort Valley, Georgia. I have asked Ms. Alma Adams to introduce our next witness.

Ms. ADAMS. Thank you, Mr. Chairman. As the Chancellor of America's largest historically black university, and my alma mater, North Carolina A&T State University, Dr. Harold Martin, Sr., has dedicated his career to helping students succeed in higher education.

He is a native of Winston-Salem, North Carolina. He received his Bachelor's and Master's of Science in electrical engineering from North Carolina A&T, and Ph.D. from Virginia Polytech Institute and State University. He has held numerous positions in university administration at North Carolina A&T, at Winston-Salem State University, and the University of North Carolina at Chapel Hill.

President Obama named Chancellor Martin to the Board of International Food and Agricultural Development, a board that advises the United States Agency for International Development on agriculture and higher education. Dr. Martin leads this premier 1890 land-grant university with passion and purpose promoting global and cultural competency and social awareness.

Today A&T is growing both in terms of student enrollment and in investment. And since 1999, A&T has expanded its investments in facilities and infrastructure, transforming the campus into one of Greensboro's main economic engines.

Today we recognize the importance of 1890 land-grants and all that it has done to create and sustain historically black colleges and universities. In April, North Carolina A&T celebrated the 125th anniversary of the Second Morrill Act of 1890, established the funding mechanism and framework for providing access to education.

As a two-time alumnus of North Carolina A&T, and as Mr. Scott has said, I did my later work, my terminal degree, at the Ohio State University because of the North Carolina A&T. So I welcome my distinguished fellow Aggie to the Committee today to share more about this amazing institution and his experiences with us this morning. Thank you, Mr. Chairman. I yield back.

The CHAIRMAN. Thank you to the gentlelady. I ask the gentlelady from Florida, Ms. Graham, to introduce our next witness.

Ms. GRAHAM. Thank you, Mr. Chairman. I am so honored to have here today my dear friend, Dr. Elmira Mangum, President of Flor-

ida A&M University, located in my district. Go Rattlers. Under Dr. Mangum's leadership, FAMU and other 1890 institutions are leading the way in innovative research that will keep American farming practices at the forefront of the industry.

FAMU has a history of excellence in agriculture, research, and development; and today the university boasts programs that span a wide range of issues that impact farmers and farm practices in the U.S. and worldwide. And I have been very honored to have an opportunity to be with Dr. Mangum on multiple occasions to hear about all of those.

FAMU hopes to secure a land transfer agreement with USDA that would provide 3,800 additional acres for the university to expand its critical work. The land would be a training tool where new and beginning farmers will learn the latest in farm practices in biotechnology.

I am so proud to have you here today, Dr. Mangum, to share FAMU's accomplishments with my colleagues on this Committee. We owe it to our farmers to continue supporting the institutions that keep American farming practices competitive. Thank you for being here, and I look forward to hearing your testimony. I yield back.

The CHAIRMAN. The gentlelady yields back. We also have Dr. Brian Johnson, President, Tuskegee University, in Tuskegee, Alabama; and Dr. Juliette Bell, President of the University of Maryland Eastern Shore in Princess Anne, Maryland.

So, thanks to everybody for being here. Dr. Wright, whenever you are ready to begin, the microphone is yours.

STATEMENT OF GEORGE C. WRIGHT, PH.D., PRESIDENT, PRAIRIE VIEW AGRICULTURE AND MECHANICAL UNIVERSITY, PRAIRIE VIEW, TX

Dr. WRIGHT. Good morning, Mr. Chairman, Ranking Member, and Members of the Committee, thank you for the opportunity to address you today. I am George C. Wright, President of Prairie View A&M University.

Prairie View A&M University is the second oldest public institution of higher learning in Texas. On August 14, 1876, the Texas Legislature established the Agriculture and Mechanical College of Texas for Colored Youths and placed responsibility for its management with the Board of Directors of the Agriculture and Mechanical College of Bryan, present day Texas A&M University, linking the 1862 and 1890 universities together.

Prairie View A&M will have some 9,000 students this fall. During its 139 year history, some 60,000 academic degrees have been awarded. Prairie View A&M University's agricultural program prepares students to enter careers in the human sciences, animal, crop, and environmental sciences, and agriculture and resource economics. Students work with PVAMU faculty who are actively engaged in research that includes but is not limited to: increasing the shelf life of dairy products, protecting fruits against sun rays, advancing knowledge in the use of medicinal plants to improve health, securing water resources, and developing strategies to enhance watershed functions in a sustainable way.

Because of the large population of Texas, and with the state having the largest number of farms, Prairie View receives the largest funding portion of any of the 1890 institutions for its various programs. For an example, in the past year, Prairie View received some $11 million from USDA. Over the past 10 years, Prairie View received $42 million for agriculture research, $35 million for agricultural extension, and $14 million to construct new facilities. Federal funding has enabled Prairie View to be involved in a number of programs that benefit young people not just in rural Texas, but in urban Texas as well. For instance, our program for 4–H Youth Development works with some 200,000 students throughout the State of Texas in a wide range of areas.

I will conclude by saying that I am honored to have this opportunity to testify before you today, and on behalf of the faculty, staff and above all, students of Prairie View, thank you for this wonderful opportunity; and we appreciate all the support we have received from you over the years. Thank you.

[The prepared statement of Dr. Wright follows:]

PREPARED STATEMENT OF GEORGE C. WRIGHT, PH.D., PRESIDENT, PRAIRIE VIEW AGRICULTURE AND MECHANICAL UNIVERSITY, PRAIRIE VIEW, TX

The History of Prairie View A&M University as a Land-Grant University

Mr. Chairman, Ranking Member, and Members of the Committee, thank you for the opportunity to address you today. I am George C. Wright, President of Prairie View A&M University. For those not familiar with Prairie View, please allow me to share a brief bit of our history.

Prairie View A&M University is the second oldest public institution of higher education in Texas. On August 14, 1876, the Texas Legislature established the "Agricultural and Mechanical College of Texas for Colored Youths" and placed responsibility for its management with the Board of Directors of the Agricultural and Mechanical College at Bryan (present day Texas A&M University, linking the 1862 and 1890 land-grant universities).

The University's original curriculum was designated by the Texas Legislature to be that of a "Normal School" for the preparation and training of teachers. This curriculum was expanded to include the arts and sciences, home economics, *agriculture,* mechanical arts and nursing after the University was established as a branch of the Agricultural Experiment Station (Hatch Act, 1887) and as a land-grant college (Morrill Act, 1890). Thus began the tradition of agricultural research and community service, which continues today.

The University's enrollment now exceeds 8,000 including more than 1,500 graduate students. Students come from regions throughout the United States as well as many foreign countries. During the University's 139 year history, some 60,000 academic degrees have been awarded.

Prairie View A&M University's Agriculture Program

Prairie View A&M University's agricultural program prepares students to enter careers in the human sciences, animal, crop and the environmental sciences, and agricultural and resource economics. The University has a deep sense of responsibility and is committed to using its talents and resources to apply knowledge that will help advance the State of Texas in the global economy. PVAMU faculty are actively engaged in research that includes but not limited to: increasing the shelf life of dairy products, protecting fruits against sun rays, advancing knowledge in the use of medicinal plants to improve health, removing allergens from peanuts, securing water resources, and developing strategies to enhance watershed functions in a sustainable way. For instance, researchers at PVAMU are developing a set of management tools to enable watershed managers, regulators and other stakeholders to predict various short- and long-term land management scenarios and the impact of extreme weather conditions. Additionally, PVAMU researchers are developing water management strategies to optimize crop water use and minimize excess water losses. Funds allocated to PVAMU have resulted in nine patents being granted over the past 17 years to agricultural researchers in the food and plant sciences. Three of the patents deal with infusing fish-oil-based food emulsions into foods (milk and

milk products, apple sauce, tomato sauce, and salad dressings) to increase oxidative stability and consumer acceptability of omega-3 fatty acids that are essential for maintaining human health.

Currently PVAMU extension agents are located in thirty-five counties in Texas with plans in place to expand to sixty additional counties. PVAMU agents work primarily with limited-resource Texans. In 2010, USDA established a StrikeForce Initiative for Rural Growth and Opportunity to address specific challenges associated with rural poverty. There are 96 counties in Texas considered by USDA as StrikeForce counties. PVAMU proposed expansion is directed toward working with citizens of those counties.

Over the last decade, the Community Economic Development Program (CED) has reached 25,000 rural residents, helping to create 800 new jobs, which have in turn infused over $30 million into Texas' economy. Last year, the CED worked with thirty-eight Texas families to apply for home ownership or rehabilitation funding through USDA and $2.5 million was approved.

Support from the United States Federal Government

Because of the large population of Texas and with the state having the largest number of farms, Prairie View receives the largest funding portion of any 1890 Institution for its programs. In total, PVAMU receives about $11 million annually from USDA. Over the past 10 years, Prairie View received $42.2 million for agricultural research, $34.5 million for agricultural extension and $14.1 million to construct new facilities or renovate existing ones in the College of Agriculture and Human Sciences.

Impact

With its Federal financial support, the PVAMU 4–H Youth Development Program since 2012 has, over the last 5 years, reached more than 181,000 youth in both rural and urban counties across the state through educational programs and activities focused on increasing Science, Technology, Engineering, Agriculture, and Mathematics (STEAM) awareness, civic participation, and healthy living habits. The PVAMU Family and Consumer Sciences Program, along with the 4–H Program, have created a core of 622 youth ambassadors who reached more than 35,000 other youth and family members. Also, the Agriculture and Natural Resources Program conducted workshops and assisted 54 small and limited-resource Texas farmers in submitting applications for loans totaling up to $7.8 million, and to date $4.9 million have been approved.

Major Challenge

Securing the total state match continues to be a major challenge for PVAMU to receive the full USDA allocation. Each biennium PVAMU has to work assiduously with the State Legislature to secure the match. Unfortunately over the years the University has not been successful in securing the match and has had to request a waiver from USDA to receive its full allocation.

Concluding Statement

I will conclude by saying that I am honored to have had this opportunity to testify before you today and on behalf of faculty, staff and students associated with the agriculture program at PVAMU thank you for your continuous support.

The CHAIRMAN. The gentleman yields back, and the chair recognizes that he left 2 minutes on the clock. So, Doctor, I thank you very much for that. We appreciate that. Those of you that are just new to this process, that is a big deal. So thank you, Dr. Wright.

Dr. Bailey, you are recognized for 5 minutes.

STATEMENT OF JESSICA M. BAILEY, PH.D., INTERIM PRESIDENT, FORT VALLEY STATE UNIVERSITY, FORT VALLEY, GA

Dr. BAILEY. Thank you. Chairman Conaway, Ranking Member Peterson, and Members of the House Committee on Agriculture. My name is Jessica Bailey, and I serve as the interim President of Fort Valley State University. I would like to just highlight some of the wonderful work that is being done at Fort Valley State University.

Fort Valley State is supporting USDA Strategic Goal 1 by researching renewable energy and biobased products. In particular we are doing research on the *Paulownia elongata* tree, forestry woods, and switchgrass. In addition, biodiesel processing basics have been introduced to over 500 4–H and FFA students in Georgia.

Through Project GREEN, Fort Valley State has been able to save Georgians thousands of dollars through energy audits, equipment efficiency savings, and weatherization upgrades. We are also involved in the process of recruiting and training a new generation of agricultural and food scientists. For example, young people come to our institution to receive communications and professional skills training. We have programs that reach out to K through 12 levels of students and give them hands-on experience in molecular biology techniques.

Also, all of these programs serve as a pipeline to our stellar programs in veterinary technology and agricultural biotechnology. We are also diligent in supporting USDA Strategic Goal 2, because we collaborate with other entities to support minority forest landowners. We increase the overall knowledge through training and money management skills, estate planning, marketing, and other necessary skills, and by doing so, we have contributed to the efficient distribution of millions of dollars.

We support Strategic Goal 4 by promoting healthier diets and reducing the risk of foodborne illnesses. More than 12,000 youths in Georgia have been given training in food education. Also, the university conducts world-renowned research on sheep and goat herds, as well as the development of healthier livestock products.

We have done groundbreaking research in peach trees, identifying factors that contribute to tree survival and fruit production. We also have programs that do training to educate farmers and ranchers about the offerings of the USDA. We have a mobile information technology center that assists the elderly and shut-ins.

Last year it is estimated that we were able to save Georgians more than $5½ million. We appreciate the support that we have received in the past, and we know that increased funding can enable us to become a unique demonstration farm for resource-constrained small farmers and ranchers.

Producers must become environmental stewards, and so we envision that we can create a dynamic nutrient-cycling system for sustainable, organic, small-scale production. It can save costs. We can produce food to be consumed on our campus, and also we can assist in helping the United States fortify its position as the world leader in food production.

Thank you for allowing me the opportunity to report on what Fort Valley State University has done and can do. Thank you.

[The prepared statement of Dr. Bailey follows:]

PREPARED STATEMENT OF JESSICA M. BAILEY, PH.D., INTERIM PRESIDENT, FORT VALLEY STATE UNIVERSITY, FORT VALLEY, GA

Testimony on the request to the Task Force for **$37 Million Each Year for Five Years in the Areas of Motivating and Educating Students for Achievement; Innovative and Sustainable Small Farmers, Ranchers and Landowners; and International Engagement and Development** before the U. S. House of Representatives for the Committee on Agriculture July 13, 2015.

Chairman Conaway, Ranking Member Peterson, and Members of the House Committee on Agriculture. My name is Jessica Bailey and I serve as the Interim President of Fort Valley State University.

It is indeed an honor to be here along with my fellow colleagues to testify on the impact of United States Department of Agriculture (USDA) funding on the 1890 land-grant universities. Fort Valley State University was established in 1895 and was designated a land-grant university pursuant to the Second Morrill Act of 1890. The school's College of Agriculture, Family Sciences and Technology offers undergraduate programs in eight areas and graduate programs in Animal Nutrition, Reproductive Biology, and Animal Products Technology, Plant Biotechnology, Animal Biotechnology and Applied Biotechnology.

Thank you for the opportunity to share our work and offer insights into how USDA funding received via Evans-Allen Program, 1890 Institutions Extension, 1890 Capacity Building Grants, McIntire-Stennis Cooperative Forestry, Cooperative Extension, Teaching Grants, and other research grants has been impactful and how, if enhanced, we could be even more effective.

With regards to **USDA Strategic Goal 1, assisting rural communities to create prosperity so they are self-sustaining, re-populating, and economically thriving,** FVSU has supported development, production and consumption of renewable energy and biobased products. The National Institute of Food and Agriculture (NIFA) states the importance of sustainable bioenergy describing it as "valuable to the nation's ability to create new jobs and promote rural prosperity". USDA Federal funding has helped FVSU address the challenges in the production of sustainable bioenergy.

Additionally, FVSU researchers have been working on developing a sustainable bioenergy system using *Paulownia elongata* trees as an alternative fuel. Our current research indicates that there is immense potential for *Paulownia* as a bioenergy crop for farmers and growers in the southeastern United States. Our preliminary studies indicate that *Paulownia* can be harvested as a short rotation tree crop after 18–20 months for the production of ethanol or bio-gasoline and for timber in a 7–8 year rotation.

FVSU and Oklahoma State University are also evaluating sweet sorghum as a potential renewable energy crop for ethanol production. This high carbohydrate producer crop can be cultivated on marginal lands, has low input requirements and is adapted to nearly all temperate climates.

Several power generation companies have visited our experimental research farm to see the potential application of our bioenergy research in moving toward biomass-based power generation. We have introduced biodiesel processing basics to over 500 4–H and FFA students in Georgia with one high school student winning a county-wide science fair and competing in an international science fair.

Fort Valley State University has been able to educate over forty low to moderate income families on Energy Audits and to distribute energy related publications to over 240 Georgians through its Project GREEN, which stands for Georgia Residential Energy Efficiency Network. Through the GREEN Project, residents received 12 free energy audits providing for an additional savings of $4,800.00, 14 free energy kits that provided an energy efficiency saving of $20,007.68, and 484 CFL's were distributed to Georgia residential homes resulting in a $32,525.00 energy efficient equipment cost savings. FVSU also partnered with the Middle Georgia Community Action Agency to perform weatherization upgrades valued at more than $10,000 for eligible senior citizens.

Additionally, FVSU has initiated an investigation on the use of forestry woods and energy crops (switchgrass) as renewable energy sources for power generation through combustion for greenhouse heat. In fulfilling Objective 1.1 of enhancing rural prosperity, including leveraging capital markets to increase government investment in rural America, FVSU has provided Stronger Economies Together training to Georgia's designated SET teams. As a result of the SET training both teams received approximately 40 hours of technical assistance to aid them in the development of their high quality plans to address an aspect of their region's community and economic development deficiencies. The teams' coverage area encompassed 24 counties, of which approximately 96% are designated as StrikeForce counties.

Another objective of USDA Strategic Goal 1 is to protect the foundation of the Agricultural System. In order for this to happen, the nation must recruit and train a new generation of agricultural scientists and also increase the number and diversity of students entering the agricultural and food sciences fields. Fort Valley State University is involved in this effort in many ways.

Through one grant, FVSU has increased awareness of career opportunities in food and agriculture among high school students in Georgia and increased the number of minorities in the agricultural economics professional workforce by providing un-

dergraduate agricultural economics students the opportunities for professional development which translates into higher retention rates and higher graduation rates. Results of this program included one FVSU agricultural economics major being on the second place team at the Southern Agricultural Economics Association quiz bowl. Additionally two FVSU students won second and third places at the Biennial Research Symposium of the Association of 1890 Research Directors student paper competition.

Under another grant, FVSU is enhancing the number and quality of underrepresented populations in agricultural economics to satisfy the demand for highly qualified personnel in the workforce and in graduate education. Results during the first year included an enhanced appreciation for the scope of agriculture and participation in the MANRRS National Conference to further develop communication and professional skills and an enhanced understanding of the scope of agriculture.

A separate grant had as its objective to enhance the quality of animal science undergraduate and graduate degree programs by incorporating hands-on experience in molecular technologies in instruction. An additional goal is to expose K–12 students to agricultural biotechnology through mini-projects and workshops. Such students with practical experience in molecular technology will be better prepared to (a) make career decisions, (b) pursue graduate studies and, (c) seeking employment in industry, academia and government agencies. As a result of this program, an 8th grader from Fagan Mill Middle School in Houston County conducted a research project entitled, "Plasmid DNA transformation in *E. Coli:* effect of microwave on transformation efficiency". The student received first prize for his project in a regional science fair and was selected for the Georgia State Science Fair at the University of Georgia where he also received two prizes. Workshops have been conducted at local high schools to inspire students to major in Ag biotechnology.

A grant whose goal is to empower youth by assisting them in developing leadership, career and interpersonal skills will include a summer weeklong tour of agribusiness firms, government agencies, and 1862 research institutions. After completion of the 8 month program students will be expected to apply for summer research internships with 1862 and 1890 institutions, governmental agencies or industry.

Another of FVSU's projects aims to increase recruitment and retention of minorities in veterinary medicine at all levels. FVSU offers the only accredited Bachelor of Science degree in veterinary technology in the University System of Georgia, and the only accredited Veterinary Technology Program at a Historically Black College and University.

In an additional future grant, FVSU aims to enroll and graduate at least 15 students in agricultural biotechnology at FVSU through systematic and proven outreach to local high schools focusing on underrepresented students. The project will advance the institution's and NIFA's missions to recruit, retain and graduate higher numbers of professionals in plant biotechnology.

FVSU has submitted and been permitted to develop a proposal for a Food Science BS program. While we are awaiting final approval, the establishment of this new Food Science program was recommended by the project evaluation committee at the beginning of this funded teaching project.

Our U.S.-Honduras partnership has the goal of strengthening global competence of students and faculty in food and agricultural sciences, expanding their global awareness in a Central American culture, and introducing them to a new global vision through collaborative partnerships with Honduran institutions.

As a result of all of these grants FVSU has been ranked No. 11 in producing agricultural undergraduate degrees; No. 28 in producing electronic engineering technology undergraduate degrees; and No. 47 in producing family and consumer science undergraduate degrees for persons of African-American descent. FVSU is also ranked No. 34 in producing agricultural undergraduate degrees for all minority races. In graduate programs, FVSU is ranked No. 25 in producing graduate degrees for persons of African-American descent, in the biological and biomedical sciences programs, which would include our graduate programs in public health, animal science and biotechnology.

With regards to **USDA Strategic Goal 2,** to ensure our National Forest and private working lands are conserved, restored, and made more resilient to climate change, while enhancing our water resources, one of the objectives that helps accomplish this goal is through the improvement of the health of the nation's forests, grasslands and working lands by managing natural resources. Of Georgia's 24.7 million acres in forestland, nearly 18 million acres are owned by private non-industrial landowners. Timber is the highest valued vegetative crop in Georgia. Georgia's forest resource creates a $12.7 billion direct economic impact in the state.

FVSU's Cooperative Extension Program is collaborating with the University of Georgia Cooperative Extension Service, USDA Rural Development, USDA Forest

Service and other agencies to address the issues of minority forest landowners not receiving any technical assistance and/or information that will assist them in their operation of maintaining and managing their forestlands to maximize their operation's income. The impact of this program is an increase in the overall knowledge of 350 landowners in the following topic areas: wills and estate planning, timber management and marketing, USDA cost-sharing programs, wildlife management, and land management including surveying. Additionally, factsheets on the Tree Assistance Program have been developed and distributed throughout the FVSU Extension 30 county area.

Landowner Initiative for Forestry Education or (LIFE) Program resulted in twenty workshops being conducted for more than 1,300 landowners. FVSU hosted ten estate planning clinics, which resulted in 45 estate plans saving Georgians over a quarter of a million dollars and succession plans involving $33 million in homes and assets.

In relation to **USDA Strategic Goal 4,** which is to ensure that all of America's children have access to safe, nutritious, and balanced meals, FVSU has promoted healthy diets, physical activity, and the improvement of access to nutritious food. A key priority of NIFA is addressing the causes of obesity and finding effective interventions. We believe that if we can address the obesity problem in children, then we will have healthier adults. FVSU, as part of the Expanded Food and Nutrition Extension Program (EFNEP), is helping parents feed their children healthier meals and snacks, save money on food and reduce the risk of foodborne illnesses. Nutrition education is also provided to youth ages 4 through 18. **USDA Evans-Allen Funding** has helped FVSU develop economically viable nutritional strategies that result in healthier goat products and sustainability of small goat farms. The impact of this work is that dairy goat farmers can replace a large amount of corn with smaller amounts of soybean oil in goat diets to produce milk with a healthier fatty-acid composition.

The FVSU 4–H program has engaged 3,000 youth in healthy living activities resulting in improvement of dietary choices, improvement of attitudes toward and understanding of healthful foods, increased willingness to try new nutritional foods, increased understanding of the elements of sound nutrition and daily caloric need *versus* physical exercise, and increased participation by the family in eating together. In 2014, the FVSU 4–H program also engaged 12,543 youths in experiential learning opportunities in an effort to increase their knowledge, skills, competencies, and experiences. The impact of the Program resulted in raising enough money to contribute to rebuilding a fire damaged local library and gaining national recognition. Also, FVSU is in the process of creating a Mobile Food and Nutrition Unit that will expand our food safety, nutrition and health education outreach programs. This is in addition to our on campus facility that supports teaching, research and extension programs.

Fort Valley State University works with farmers in order to reduce infection by gastrointestinal nematodes that threaten the economic viability of the farmer and the health of the sheep or goat. Because of the work of Fort Valley State University and a consortium of others, farmers have greatly improved the sustainability of their sheep and goat production systems through the use of *Sericea lespedeza* and other condensed tannin-containing plants. This has helped farmers reduce synthetic drug usage by up to 90 percent which saves approximately $150–$200 per 100 animals per year and identify and retain parasite-resistant breeding stock. Anemia detection has also been made easier for sheep and goat producers because of work of the consortium.

Fort Valley State University researchers have demonstrated the use of non-thermal technology for the destruction of *E. coli* on goat carcasses and continue to evaluate cost-effective pathogen reduction strategies and food safety training for small and very small meat processors in Georgia. The impact of this project to Georgia's agriculture is the enhanced safety and marketability of meat products through the improvement of processing intervention treatments or a combination of treatments applicable to small and very small processors and an increased knowledge of food safety practices.

Fort Valley State University is researching the sustainability of the dairy goat industry and limited resource dairy goat farmers through the development of goat milk infant formula, reduced fat and reduced cholesterol goat cheeses and yogurts, iron fortified and CLA enhanced goat cheeses. Additional Federal funding is allowing the development of nutritionally enhanced small ruminant meat and dairy products with high levels of antioxidants and longer shelf stability.

FVSU Agricultural Research on winter cover crops based dryland and irrigated farming systems for the production of field and vegetable crops has contributed to increased use of winter cover crops in the cultivation of important cash crops, such

as cotton and corn in Georgia. More than 35 years of FVSU research on peach tree short life and rootstock has accomplished a wider understanding of biotic and abiotic stress factors responsible for reducing tree survival, orchard longevity, and fruit production. FVSU's biotechnological investigations, involving development of *in vitro* plant regeneration protocols amenable to genetic enhancement, indicates that peach is a highly recalcitrant species.

To provide support to beginning farmers and ranchers in agriculture and to improve outreach and communication to military veterans about farming and ranching opportunities, FVSU has conducted three quarterly workshops impacting Georgia's StrikeForce counties that have engaged 245 participants on USDA programs, GAP/GHP certification, organic and sustainable food production, conservation and assistance available from USDA and local farm support agencies. FVSU has several agreements with USDA agencies to assist beginning farmers and small and limited resource farmers. FVSU also provides technical assistance to under-served farmers in the development of farm conservation plans.

Additionally, the 2014 Farm Bill provides support for conservation practices. FVSU research has demonstrated that cover crops improve soil quality by increasing soil organic nitrogen and carbon composition, and can also enhance spring soil microbial activity essential for release of nutrients for a subsequent summer cash crop. County extension agents serving 34 counties (primarily StrikeForce Counties) assist small and limited resource farmers, as well as veterans and ranchers in a variety of ways. Family and Consumer Science Agents afford homeowners opportunities relating to safety, food preparation, and nutritional planning.

FVSU has an 18 acre organic farming system where farmers are exposed to organic tree, shrub and vine fruit growing, organic barrel gardening, organic small plot gardening, organic hoop house gardening, and organic animal production. We have year-round breeding of goats, genetic manipulation in goats that can lead to production of goats with larger muscle mass, year-round marketing of dairy goat products and recognition from the American Dairy Science Association. Sheep breed evaluation resulted in the establishment of additional flocks of sheep in the Southeast. Meat/goat/buck performance testing by our researchers in studying growth and muscle development, internal parasite tolerance, behavior, and reproductive capacity of bucks of different breeds has created an awareness of the importance of using scientific data, in addition to physical appearance of animals, in selection programs. FVSU work has helped producers understand the extent of genetic differences within a herd and its relationship to performance.

The Georgia Small Ruminant Research and Extension Center (GSRREC) at Fort Valley State University (FVSU) is the largest such facility east of the Mississippi River and is recognized as a national leader in goat research. Small ruminant scientists, producers, and individuals interested in goat production visit the facility from all over the world.

Our Mobile Information Technology Center educates communities on record-keeping and accessing USDA information on the web. It is also used to assist in providing services to veterans and others who need to utilize technology to access government services via the web. Additionally, working with the State Health Insurance Assistance Program and the Senior Medicare Patrol, we have saved Georgians more than $5½ million.

Life on the Farm (LOTF) is a live animal mobile exhibition providing firsthand knowledge of farm life and how it affects each person on a daily basis. The Life on the Farm educational program is presented throughout the state at locations such as schools, daycare centers, public libraries, churches, town festivals, fairgrounds and other public meeting places. Life on the Farm completed 50 visits to sites in 18 different cities. Across Georgia, 6474 youth and 1154 adults participated in the Life on the Farm experience.

We appreciate the long-running support that this Committee has shown for agricultural research, extension, and higher education at Fort Valley State University. A continuation of funding for Fort Valley State University will allow the university to (1) contribute significantly to the United States being a world leader in the production of bioenergy and at the same time provide a source of revenue for small and limited resource farmers and ranchers, (2) improve the economic viability of rural families through reducing energy consumption and an diversification of agricultural products, (3) increase the number of students of color into the agricultural industry while also offering these students the global knowledge and skills necessary to operate in today's global economy, (4) increase the nutrition, diet and health of limited-resources families with an emphasis on reducing obesity, (5) enhance 4–H and youth skills in science, technology and math, (6) improve technology proficiency for farmers, senior citizens, youth and other rural Americans, and (7) provide education op-

portunities for landowners in sustaining and/or increasing their land productivity. These are things we have done and will continue to do.

But our service to the State of Georgia and to this nation can expand with your increased assistance. It will enable Fort Valley State University to become a unique showplace as a demonstration farm for small farmers and ranchers who are resource constrained. Small and limited resource farmers make up a majority of the farms in the United States. In the Southeast, many of these farmers are former tobacco producers, interested in growing other high-value crops for better long-term economic stability. Many farmers, both organic or conventional, are concerned about energy costs, fertilizer costs, soil management, water use and quality, invasive species management, alternative pest control methods, climate change, and the production of crops on their farms. Developing integrated agriculture production systems (plant and animal) which address these factors for small-scale producers and entrepreneurs would greatly benefit farmers in rural and economically depressed regions of the United States. FVSU's goal is to develop an integrated plant and animal agriculture production system as a model for small-scale producers and entrepreneurs to improve sustainability in these regions.

With increasing fertilizer costs and environmental consequences of nutrient runoff, developing low cost sustainable nutrient management systems is important for limited resource farmers not only for cost savings, but for environmental stewardship. In order to create a dynamic nutrient cycling system for sustainable/organic small farm production integrating plant and animal systems, FVSU could establish a 50 acre demonstration farm to (1) identify agricultural waste for compost and feeding for soil nutrient management and animal production, (2) develop safe and sustainable effluent and aquaponic systems with vegetable crops and an aquaculture species, (3) develop a sustainable forage-based small ruminant management practice, and (4) assess the economic sustainability of the proposed integrated system of production. By combining plant and animal systems, agro-diversity and profitability will be optimized by creating year-round income for small producers, dynamic food webs, and nutrient systems with high-value crops in economically depressed regions. Additionally, food produced on this model farm will be served at our campus dining establishments, which will contribute to developing a campus culture that promotes sustainable foods and environmental stewardship. Last, FVSU will be making a contribution to helping the U.S. incrementally fortify its status as the world leader in agricultural innovation.

The CHAIRMAN. Thank you, Dr. Bailey.

Dr. Martin, your 5 minutes.

STATEMENT OF HAROLD L. MARTIN, SR., PH.D., CHANCELLOR, NORTH CAROLINA AGRICULTURAL AND TECHNICAL STATE UNIVERSITY, GREENSBORO, NC

Dr. MARTIN. Good morning, Chairman Conaway, Ranking Member Peterson, Members of the House Committee on Agriculture. With special recognition being given to Congressman David Scott for his commitment to 1890 land-grant institutions, Congressman David Rouzer of North Carolina, and North Carolina A&T University graduate, Congresswoman Alma Adams, who has served as a Representative and advocate for more than 20 years, both in the North Carolina General Assembly, and now in the U.S. House of Representatives.

I am Harold Martin, Chancellor of North Carolina A&T State University; and, Mr. Chairman, I am absolutely pleased to be here to testify before this Committee today.

Today's hearing provides 1890 land-grant institutions the opportunity to highlight the innovative research being performed by our outstanding faculty, discuss the return on investment we provide to our local, state and regional economies through the education, research, and outreach we provide, and I will offer recommendations for ways the Federal Government can further support the 1890 community.

Established in 1891, shortly after the passage of the Second Morrill Act, North Carolina A&T State University is a university with a variety of academic and research programs, serving approximately 10,700 students. Provides throughout its history ladders of opportunity to high-achieving students seeking a superior education and ensuring the betterment of under-served communities in North Carolina and beyond.

In an era when family farms and farmland are rapidly disappearing from the American landscape, farm Census data shows that African-American farms in North Carolina are on the rise. Despite these successes challenges still loom for the small and minority farm communities. The A&T provides these farmers opportunities to enhance their success through dedicated and knowledgeable extension agents, deploying new science and innovative farming techniques, developed by faculty and other institutional partners.

Three examples illustrate the outstanding work that our faculty and staff do. First, the Piedmont Triad region where the university is located was ranked one in the nation for food insecurity by the Food Research and Action Center. USDA has also designated 24 food deserts in the City of Greensboro. In recognizing that need, A&T has partnered with the City of Greensboro to establish the city's first urban farming enterprise to serve residents of longstanding food deserts.

A&T is now training those residents in best practices for urban farming, providing communities with nutritional programming aimed at reducing obesity, diabetes, and other chronic diseases. The expectation is that this site will become a model for other communities across the state.

Second, in October 2014, *National Geographic* published an extensive exposé on North Carolina's persistent hog waste and the challenges it created for fisheries and water resources. Heeding the call to action, A&T's swine unit used research, supported by the Evans-Allen program, developed new technologies to attack this problem.

As a result, the Bioadhesive Alliance, an A&T spin-off company, was established to market technology for hog-waste derived bioasphalt and bioadhesives that performs better and is produced at a fraction of the cost of petroleum-derived asphalts and adhesives. This product, which has been named PiGrid, has the potential to convert North Carolina's 15.5 million tons of hog waste from a costly environmental issue into a green source of revenue for our state and our farmers.

Such innovative research underscores A&T's relevance to North Carolina's economy where agriculture is the largest industry, contributing $78 billion to the state's economy.

And finally A&T's USDA federally-funded research has resulted in notable success important to allergy sufferers. Food scientists in our School of Agriculture have developed a post-harvest process for reducing the major allergens in peanuts. This research has produced the University's newest spin-off company, AlrgnBio, which is now marketing hypoallergenic peanut technology to technologies for food companies. The same A&T research team hopes to expand its research to allergen-reducing processes for soy, wheat, and tree

nuts for the benefit of millions of Americans who suffer from these dangerous food allergies.

Mr. Chairman, Ranking Member, and Committee, as you can see, the investments made to A&T through USDA National Institute of Food and Agriculture funding have led to scientific breakthroughs and innovations in agriculture that have created a real return on investments for our taxpayers. To sustain the level of innovation I have described, competitive funding is essential.

A&T fully supports President Obama's Fiscal Year 2016 NIFA budget request which includes an increase from Fiscal Year 2015 to support Central State University, the newest 1890 land-grant university, and encourages Members of Congress to continue to make overall NIFA funding a high priority.

A&T and its fellow 1890 institutions have always about done more with less. However, it has never been by choice. Secretary of Agriculture Thomas Vilsack recently cited studies that show that every dollar invested in agriculture research returns $20 to the nation's economy. Unfortunately, each year ½ or more of the 1890s do not get the full match from the states they serve, and most are required to complete burdensome waiver documentation to become eligible for at least a portion of Federal funds allocated. A&T requests that Congress provide additional oversight to ensure that states meet their obligation for providing the one-to-one match, a requirement to encourage states to provide eligible formal funding to each land-grant university in each state.

Mr. Chairman, Ranking Member, and Members of the Committee, thank you for this opportunity to testify before the Congress.

[The prepared statement of Dr. Martin follows:]

PREPARED STATEMENT OF HAROLD L. MARTIN, SR., PH.D., CHANCELLOR, NORTH CAROLINA AGRICULTURAL AND TECHNICAL STATE UNIVERSITY, GREENSBORO, NC

Chairman Conaway, Ranking Member Peterson, and Members of the House Committee on Agriculture; with special recognition being given to Congressman David Scott for his commitment to 1890 land-grant institutions and North Carolina Agricultural and Technical State University graduate—Congresswoman Alma Adams, who has served as a representative and advocate for our university for more than 20 years, both in the North Carolina General Assembly and now in the U.S. House of Representatives.

I am Harold L. Martin Sr., Chancellor of North Carolina Agricultural and Technical State University (N.C. A&T) in Greensboro, North Carolina. Mr. Chairman, I am pleased to submit my written testimony for the official hearing record.

Mr. Chairman, today's hearing provides 1890 land-grants the opportunity to highlight the innovative research being performed by our outstanding faculty, discuss the "return on investment" we provide to our local, state and regional economies through the education, research and outreach we provide, and offer recommendations for ways the Federal Government can further support the 1890 community.

Background: N.C. A&T and the Second Morrill Act of 1890

Yesterday

In 1890, Congress passed the Second Morrill Act, which included the stipulation that African-Americans be included in the U.S. land-grant higher education system without discrimination. With southern and border states unwilling to admit African-American students to their universities, many of states established second land-grant institutions. The Agricultural and Mechanical College for the Colored Race—now N.C. A&T—was established as that second institution in the State of North Carolina by an act of the General Assembly, ratified on March 9, 1891. Originally operating in Raleigh as an annex to Shaw University, the college made a permanent home in Greensboro. In 1915, state legislators changed the college's name to the Ag-

ricultural and Technical College of North Carolina; and in 1967, they elevated it to university status. A&T became a constituent university of the University of North Carolina in 1972.

Today

N.C. A&T is a learner-centered community that develops and preserves intellectual capital through interdisciplinary learning, discovery and engagement, and is committed to fulfilling its fundamental purposes through exemplary instruction, scholarly and creative research, and effective public service and engagement. A&T is dedicated to providing "ladders of opportunity" to high-achieving students seeking a superior education and is committed to creating a campus climate that fosters student satisfaction and a sense of community. The university's academic and outreach efforts illustrate how campus and community collaborations enhance the quality of life for the citizens of North Carolina, the nation, and the world. Through the years, A&T has adapted its curriculum to strengthen science, technology, engineering and mathematics (STEM)—its academic core and foundation. Riding the crest of the technological revolution, A&T has moved rapidly to blend its academic and research programs with the needs of society and industry, forming a symbiotic relationship.

A&T is ranked by the Carnegie Classification System as a "doctoral/research university" and, for the past 9 years, has ranked third among The University of North Carolina system's member institutions for sponsored research funding. With an enrollment of nearly 11,000 students, A&T is recognized as the largest among the nation's historically black colleges and universities, and the School of Agriculture and Environmental Sciences at A&T is the largest school of its kind among the nation's HBCUs. A&T ranks No. 1 in the nation for the number of baccalaureate degrees in engineering awarded to black or African-Americans (American Society for Engineering Education) and is the top producer of African-Americans with undergraduate degrees in STEM disciplines, arts and humanities, and education. Notably, the Carnegie Foundation for the Advancement of Teaching selected A&T for its 2015 Community Engagement Classification.

Tomorrow

A&T considers the social, economic and global challenges facing higher education as opportunities for a new 21st century renaissance. The goals established for its future, recognize the importance of embracing diverse populations of students and pursuing research agendas that focus on the solutions to critical world issues such as poverty, health care, adequate and secure foods, clean water and other problems that challenge global sustainability. Educational delivery methodologies will continue to transcend older limitations imposed by time and space. As laid out in our strategic plan, "A&T Preeminence 2020," A&T is a university committed to embracing the history, traditions and outstanding accomplishments of its rich past and creating a future as a global driver of technology-enhanced scholarship, teaching, learning, and engagement.

A&T's Commitment to Under-Served Communities

In an era where family farms and farmland are rapidly disappearing from the American landscape, North Carolina farm Census data shows that African-American owned farms in North Carolina are on the rise, having increased in number from 1,491 in 2007, to 1,637 in 2012. Overall acreage under cultivation in these enterprises has increased by nearly 20,000 acres. Despite these successes, challenges loom for North Carolina's small farming community, and particularly, for new farmers. According to North Carolina farm Census data, 86 percent of African-American farms had gross sales of less than $50,000 and 51 percent of those farmers' sole source of income is farming. Small farmers of all races are also aging and nearing retirement and unfortunately, only three percent are under 34 years old. A&T is committed to providing the education and training needed to attract and retain the next generation of farmers and has done so through effective community outreach and innovative undergraduate and graduate programs.

A&T is striving to make small farming in North Carolina more profitable and more attractive, while continuing its unique mission to serve minorities in rural communities. Through new ideas like our Small Farms Collaborative and Local Foods and Health Initiative (funded through the 1890 Facilities Program), A&T plans to use its 492 acre farm as a strong community education resource for local food production. Elements of the farm plan mentioned include a food processing facility to teach entrepreneurs how to add value to North Carolina agricultural products, a pasture-based dairy and creamery producing A&T-branded yogurt, ice cream and artisanal cheeses for revenue production, an organic vegetable production research and demonstration site, a student-run farm, and land for community gardens that will be available to residents of the surrounding communities.

A&T's Commitment to the Piedmont Triad Region

The Piedmont Triad where A&T is located, was recently ranked No. 1 in food insecurity in the nation by the Washington-based Food Research and Action Center. USDA has designated 24 food deserts in the city of Greensboro and many more than that exist across the state. In recognizing a need, A&T has partnered with the city of Greensboro to establish the city's first urban farming enterprise to serve residents of long-standing food deserts. The city has already provided land and committed additional resources, and A&T has engaged several enthusiastic and well-established community groups, which the agriculture school will train in best practices for urban farming. The expectation is that this site will become a model for other communities across the state.

A&T's School of Agriculture faculty have also been active in getting a new Guilford County Food Council chartered, which is dedicated to strengthening the local food system by supporting local farms, growers and other food businesses to create access to healthy food to all communities.

In addition to assisting small farms with newly created agriculture technologies, A&T's Cooperative Extension service is also helping families and communities, particularly in impoverished rural counties, with nutrition programming aimed at: reducing obesity, diabetes and other chronic diseases; parenting classes for troubled families; financial literacy training; and youth development through 4–H programs. Cooperative Extension specialists at A&T have also partnered with Wal-Mart for research and farmer education on organic strawberries. In addition, the Cooperative Extension Program is developing organic vegetable production technologies and conducting research to serve small-scale meat producers with assistance from 1890 extension program funding.

A&T's Commitment to North Carolina

In October 2014, *National Geographic* published an extensive exposé on North Carolina's persistent hog waste problem and the challenges it creates for North Carolina's fisheries and water resources. Heeding the call to action, A&T's swine unit used preliminary research supported by the Evans-Allen program to develop solution oriented technology. As a result of those efforts, The Bioadhesive Alliance—an A&T spin-off company—was established to market the technology for hog-waste derived bioasphalt and bioadhesives that perform better and can be produced at a fraction of the cost of petroleum derived asphalts and adhesives. This product, which has been named PiGrid, has the potential to convert North Carolina's 15.5 million tons of hog waste from a costly environmental issue into a profitable, green source of revenue for our state and our farmers, and will create savings for Departments of Transportation and industries that rely on adhesives.

A&T's Commitment to All

A&T's USDA federally-funded research has resulted in notable success important to allergy sufferers. From the university's Carver Hall, a building named after agricultural researcher George Washington Carver, who is renowned for his work with peanuts, A&T food scientists are continuing his legacy. They recently developed a post-harvest process for reducing the major allergens in peanuts by 98 percent or more. This research has produced the university's newest spin-off company, AlrgnBio, which is now marketing the hypoallergenic peanut technology to food companies. This same A&T research team hopes to move on to research allergen reducing processes for soy, wheat and tree nuts, for the benefit of millions of people who suffer from these dangerous food allergies. Such innovative agricultural research underscores A&T's relevance to North Carolina, where agriculture is the largest industry, contributing $78 billion to the state's economy, accounting for more than 17 percent of the state's income, and employing 16 percent of the workforce.

FY 2016 Budget Request

1890 land-grant universities provide much of the research and education that sustain U.S. food production and delivery, while addressing many urgent and important local, regional, and national needs. Financial support for this global innovation comes from both public and private sources, but the most significant funding source is the Federal-state partnership managed by the National Institute of Food and Agriculture (NIFA).

A&T fully supports President Obama's FY 2016 NIFA budget proposal request (which includes an increase from FY15 to support Central State University—the new 1890 land-grant university) and encourages Members of Congress to continue to make overall NIFA funding a high priority and specifically requests funding for the six core NIFA priorities (Agriculture and Food Research Initiative, Smith-Lever 3(b)–(c) Hatch Act, Evans-Allen, 1890 Institutions Extension, McIntire-Stennis Co-

operative Forestry, 1994 Institutions Research and Extension) that support research, education, and extension efforts at America's land-grant universities.

Evans-Allen One-to-One Match Oversight

A&T and its fellow 1890s institutions have always done "more with less." However, it has never been by choice. Since being signed into law in 1977, the Evans-Allen Act and the National Agricultural Research Extension and Teaching Policy Act (NAREPTA) of 1977 have provided critical base funding for agricultural research and Extension programs at 1890 institutions. The investments made in 1890 universities by Evans-Allen and NAREPTA funding have led to scientific breakthroughs and innovation in agriculture that has created a real return on investment. Secretary of Agriculture Thomas Vilsack recently cited studies that show that every dollar invested in agricultural research returns $20 to the economy.

Unfortunately, each year ½ or more of the 1890s do not receive the full match from the states they serve. This shortage means that each year, ½ or more of the 1890 institutions are confronted with a burdensome need to produce waiver documentation in order to become eligible for at least some of the Federal farm bill funds allocated over the 50 percent threshold. According to the Association of Public and Land-grant Universities' (APLU) policy briefing entitled *Land-Grant but Unequal: State One-to-One Matching Funding for 1890 Land-Grant Universities;* "From 2010 to 2012, 56 percent of the 1890 land-grant institutions did not receive 100 percent of the one-to-one matching funds from their respective states for either extension or research. The loss of funding to 1890 land-grant universities due to states not meeting the one-to-one match requirement for between 2010 and 2012 is nearly $57 million."

At this time, A&T requests that Congress provide additional oversight to ensure that states meet their obligation for providing the one-to-one match requirement and to encourage states to provide equitable formula funding to each land-grant university within each state.

Conclusion

In conclusion, Mr. Chairman, Ranking Member, and Members of the Committee, thank you for the opportunity to be one of six 1890 university Presidents and Chancellors to testify before you today. It is my hope that the opportunities for improvement and recommendations mentioned today are considered as you move forward with budget negotiations.

The CHAIRMAN. Thank you, Dr. Martin.

Dr. Mangum, you have 5 minutes.

STATEMENT OF ELMIRA MANGUM, PH.D., PRESIDENT, FLORIDA AGRICULTURAL AND MECHANICAL UNIVERSITY, TALLAHASSEE, FL

Dr. MANGUM. Good morning, Chairman Conaway, Ranking Member Peterson, and distinguished Members of the House Committee on Agriculture. Thank you, Representative Graham, for the kind introduction and also for your service to Florida and the nation.

On behalf of our board and 10,000 students, 3,000 faculty and staff, and 70,000 alumni, including the Honorable David Scott, thank you, Mr. Chairman, for this invitation.

The strength of Florida's $120 billion agricultural industry is due in part to the strength of the state's two land-grant institutions, Florida A&M University and the University of Florida. With the research of these institutions, we have been able to improve our methods of production. Our extension services share the technologies and techniques born in the labs and classrooms with Florida urban and rural communities. One beneficiary of Florida A&M's research is Jasmine Hall, a recent graduate. Federal funding allows FAMU to foster early research experiences to undergraduates like Jasmine. Working with Professor Violeta Tsolova at our Center for Viticulture and Small Fruit Research, Ms. Hall has earned public recognition as the first young scientist to clone a

gene from the muscadine grape. Identifying and using grape's antioxidants as a dietary supplement will help to reduce cancer, obesity and improve human health overall.

FAMU holds nine patents in agriculture, including one for the distinct cultivar of the muscadine grape plant, the Majesty Grape. The vines of this cultivar are vigorous, productive, and disease resistant.

Our research programs through our four research centers contribute to the advancement of new knowledge and scientific discoveries that have national and international implications through a variety of initiatives, including developing biological strategies to control invasive pests and plants like the honeybee mite. These invasive species interrupt agricultural production, as you know.

Our researchers are also working on developing best management practices for efficient use of fertilizers in tomatoes and field corn that reduce water contamination and enhance farm profitability. Partnering with agencies such as the USDA Natural Resources Conservation Service and the USDA Animal Health Inspection Service, FAMU is poised to play a more prominent role in helping to promote agriculture in Florida, the nation, and the world.

Our Vet Tech Program and Biological and Agricultural Systems Engineering Programs are just two examples of this partnership. At FAMU, the NRCS has been the lifeblood of the base program, and APHIS has been the lifeblood of the Veterinary Medicine Technology Program.

BASE is a biologically-based engineering discipline that integrates agricultural, biological, chemical, environmental, life, and engineering sciences. It focuses on solving problems and designing systems related to the preservation and enhancement of natural resources and the environment, as well as biological and agricultural production and processes.

Approximately 65 percent of all African-American doctorates in BASE programs are graduates of two ABET accredited programs, North Carolina A&T University and Florida A&M University. The Cooperative Extension Program at the College of Agriculture and Food Sciences serves as the outreach arm of FAMU. This program provides services throughout the entire State of Florida.

A few examples of these programs include the Farm to School Program, FAMU Statewide Small Farm Program, School and Community Gardening, and the Family Resource Management Program. These programs have reached approximately one million children in Florida and adjacent states, improved sales, developed community gardening and farming skills and assisted approximately 300 individuals with home ownership.

The transfer of the 3,800 acres in Brooksville, Florida by the USDA Agricultural Research Service to Florida A&M will be the single largest land transfer to a historically black college in history. The transfer will enable FAMU to develop educational training and developmental programs for new and beginning farmers and ranchers and to teach them the latest biotechnical innovations.

With your continued and enhanced support, we will continue to use these resources to expand our teaching, research, and exten-

sion programs to serve the increasing needs of our state and our nation.

We have adopted a university wide commitment to advancing agricultural innovations, drawing on the strengths of our many colleges and institutes. To realize this vision, FAMU will leverage its research across the State of Florida, including extension programming at satellite locations and research and development at the Brooksville property.

FAMU is well-positioned to help Florida and the nation meet the agricultural demands of the 21st century and beyond. And, again, on behalf of Florida Agricultural and Mechanical University, I thank you, Mr. Chairman, and Committee for this opportunity.

[The prepared statement of Dr. Mangum follows:]

PREPARED STATEMENT OF ELMIRA MANGUM, PH.D., PRESIDENT, FLORIDA AGRICULTURAL AND MECHANICAL UNIVERSITY, TALLAHASSEE, FL

Introduction

Good morning. Chairman Conaway, Ranking Member Peterson, and distinguished Members of the House Committee on Agriculture. Thank you, Representative Graham, for your kind introduction and your service to Florida and the nation.

On behalf of our more than 10,000 students, 3,000 faculty and staff, and 70,000 Alumni, including the Honorable David Scott, the Honorable Corrine Brown, the Honorable Alcee Hastings, and the Honorable Al Green. Thank you, Mr. Chairman, for this invitation.

Founded on October 3, 1887, we are proud of our 127 year legacy of providing access and opportunity for thousands who but for FAMU would never have had the opportunity to fulfill their dream of getting a college degree. More than 65 percent of our students are Pell Grant recipients and come from households with income below $40,000 annually.

Agriculture, as you know, is a critical component of Florida's and America's economy. Data provided by your former colleague Commissioner Adam Putnam of the Florida Department of Agriculture and Consumer Services show that Florida has 47,000 commercial farms, encompassing a total of 9 million acres, and contributes more than $120 billion to our state's economy and supports two million jobs.

The strength of Florida agriculture is due, in part, to the strength of the state's two land-grant institutions—Florida A&M University and the University of Florida.

With the research of these institutions, we've been able to improve our methods of production. Our extension services share the technologies and techniques born in the labs and classrooms with Florida urban and rural communities.

One such beneficiary of FAMU's research is Jasmine Hall, a recent graduate. Federal funding allows FAMU to foster early research experiences to undergraduates like Jasmine. Working with Professor Violeta Tsolova at our Center for Viticulture & Small Fruit Research, Ms. Hall has earned public recognition as the first young scientist to clone a key gene from muscadine grapes. Identifying and using the grape's antioxidants as a dietary supplement will help to reduce cancer, obesity and improve human health overall. Ms. Hall's breakthrough work will appear in an upcoming issue of the *Journal of Biotechnology & Biomaterials.*

FAMU holds the patent for the distinct cultivar of the muscadine grape plant, the Majesty Grape. The vines of this cultivar are vigorous, productive and disease resistant.

Our research programs through our four research centers contribute to the advancement of new knowledge and scientific discoveries that have national and international implications through a variety of initiatives, including developing biological strategies to control invasive pests and plants like the Tropical Soda Apple, Japanese Beetle, Asian Longhorn Beetle, Asian Black Carp, Hydrilla and many others that interrupt agricultural production, tourism, recreation, and commercial fishing. These invasive species also diminish local property values and threaten our $15 billion honeybee industry.

Our researchers are also working on developing best management practices for efficient use of fertilizers in tomatoes and field corn that reduce groundwater contamination and enhance farm profitability.

Partnering with agencies such as the USDA Natural Resources Conservation Service—the NRCS, and the USDA Animal and Plant Health Inspection Service, or

APHIS, FAMU is poised to play an even bigger role in helping to promote agriculture in Florida, the nation, and the world.

Our Vet Tech Program and Biological and Agricultural Engineering Systems (BASE) Program are just two examples of this partnership. At FAMU, the NRCS has been the lifeblood of the BASE Program and APHIS has been the lifeblood of the Vet Tech Program. I will talk briefly about BASE.

BASE is a biology-based engineering discipline that integrates the agricultural, biological, chemical, environmental, life, and engineering sciences. It focuses on solving problems and designing systems related to the preservation and enhancement of natural resources and the environment, as well as biological and agricultural production and processes. Because of this diverse background, BASE students are uniquely qualified to understand the many different facets of a project from an engineering perspective. This diverse background also enables them to function exceptionally well on multidisciplinary teams.

Approximately 65 percent of all African-American doctorates in BASE programs are graduates of two schools—North Carolina A&T University and Florida A&M University. Forty-five (45) percent of all BASE graduates have gone on to pursue graduate degrees at over 21 different colleges nationwide; most were on undergraduate scholarships provided by the NRCS.

The Cooperative Extension Program at the College of Agriculture and Food Sciences serves as the outreach arm of FAMU. This program serves the entire State of Florida. A few examples of these programs include:

- Farm to School Program.
- FAMU Statewide Small Farm Program.
- School and Community Gardening.
- Family Resource Management Program.

These programs have reached approximately one million children in Florida and six adjacent states, improved sales, developed community gardening and farming skills and assisted approximately 300 individuals with home ownership.

The transfer of 3,800 acres in Brooksville, Florida by the USDA Agricultural Research Service to Florida A&M University will be the single largest transfer of land to a historically black college or university in history. The transfer will enable FAMU to develop educational training and developmental programs for new and beginning farmers and ranchers and to teach them the latest biotechnological innovations and other key initiatives.

With your continued and enhanced support, we will continue to use these resources to expand our teaching, research and extension programs to serve the increasing needs of our state and nation.

We have adopted a university wide commitment to advancing agricultural innovations drawing on the strengths of our Colleges of Agriculture and Food Sciences, Pharmacy and Pharmaceutical Sciences, the Schools of Business and Industry and the Environment, and the Institutes of Public Health and Sustainability.

To realize our vision, FAMU will leverage its reach across the State of Florida, including extension programming at satellite locations and research and development at the Brooksville property.

With additional funding to support our research and outreach initiatives, we can help to provide solutions to our food security and safety, energy and water resource problems, increase agriculture output through new and improved farming techniques and biological pest control and management, improve local economies by training small ranchers and farmers, and address health issues by providing nutritional training and growing healthy food in our community gardens.

FAMU is well positioned to help Florida and the nation meet the agricultural demands of the 21st century and beyond.

Again, on behalf of Florida Agricultural and Mechanical University thank you, Mr. Chairman, for this opportunity.

The CHAIRMAN. Thank you, Dr. Mangum.

Dr. Johnson, 5 minutes.

STATEMENT OF BRIAN L. JOHNSON, PH.D., PRESIDENT, TUSKEGEE UNIVERSITY, TUSKEGEE, AL

Dr. JOHNSON. Chairman Conaway, Ranking Member Peterson, Members of the Congressional Committee, on behalf of Tuskegee

University, I am very pleased to report to you on this day regarding Tuskegee University and its work with 1890s.

Tuskegee University is pleased to report that funding received from the agricultural research and extension have resulted in innovations in science, education, and economic development of importance to the State of Alabama, the southern region and the nation. Agricultural programs, as Congressman Scott pointed out, began in Tuskegee in 1896 when George Washington Carver joined the Tuskegee faculty and pledged to serve alongside of Booker T. Washington. Carver contributed significantly to southern agriculture through his research and extension activities.

Now there are roughly 3,100 students at Tuskegee University; 2,100 of these students are in STEM or STEM-related fields. Research and extension programs at Tuskegee University focus on fruit and vegetables and food animals produced by small farmers with emphasis on profitability. This program is important because it is a partnership of socially disadvantaged and under-served farmers working together in clusters with Wal-Mart, Lipman, Pura Vida, W.P. Rawls and other commercial marketers to provide fresh, locally grown fruits and vegetables to commercial retailers.

Importantly, Tuskegee University assisted the farmers in passing farm audits for the GAP, Good Agricultural Practices Harmonized Food Safety Standards required by commercial markets. This partnership has demonstrated potential for bringing jobs and economic development to persistent poor counties in Alabama and other states. The results are an excellent illustration of effective use of 1890 land-grant capacity funds to support farm and agribusiness based on economic development in rural communities.

Tuskegee University scientists continue work on peanuts through genome analysis focused on disease resistant gene identification and mapping; sweet potatoes through breeding new varieties, enhancing nutrition through plant biotechnology, and developing new crop uses for food and fuel. Tuskegee researchers have targeted reduction in parasites in meat animals by using molecular and genetic-based technologies and through a patented system that uses a plant bark as an effective natural feed supplement.

A patented chemical treatment enhances reusability for poultry litter for application to land by reducing excess phosphorous levels by 90 percent. Another patent Tuskegee researchers have developed detects foodborne pathogens in poultry in hours *versus* days or weeks, thus potentially preventing human illness.

Agroforestry research is assessing the dual impact of pine stand control, caprine parasite control, and related economic viability of long leaf and loblolly pine stands. And diet, nutrition, and exercise programs are focused on intervention strategies to reduce obesity and cancer and improve the overall health of youth and adults.

One project targets 8 to 15 year old children in multiple counties to determine food preferences and influence the food access and food quality in rural counties.

We are pleased that recent data indicates Tuskegee University ranks number 1 in the nation in African-American graduates in agriculture, agriculture operations, and related sciences, number two in African-American graduates in natural resources and conservation, number 1 in graduating African-Americans in veterinarian

medicine and is among top producers in African-American engineers.

Our funding challenges and opportunities: Our work with small farmers is important because they represent 90 percent of all farmers, control more than 50 percent of the land, and have the potential to increase jobs and economic development across many rural communities, especially if they work together. The models we are developing can be duplicated in other states and regions of the United States, especially in areas with persistent poverty. This would simultaneously assist the commercial markets and consumers because of savings in energy and transportation costs and the increased local product quality and freshness can be passed on to consumers.

One final remark, in 1998 and 1999, Congress made provisions for an 1890 land-grant university to obtain one-to-one matches from states for Capacity Research and Extension Grants. Fifteen years later, this is a work still in progress for many states. For Fiscal Year 2015–2016, Tuskegee University will be at a .87-to-1 ratio, the highest ratio obtained since the required match inception, and we are grateful to all involved.

Once again, we thank Congress for its support of not only Tuskegee University, but its sister 1890 institutions.

[The prepared statement of Dr. Johnson follows:]

PREPARED STATEMENT OF BRIAN L. JOHNSON, PH.D., PRESIDENT, TUSKEGEE UNIVERSITY, TUSKEGEE, AL

Historical Perspective

Tuskegee University is pleased to report that funding received for Agricultural Research and Extension has been instrumental in developing agricultural research programs of importance to the State of Alabama, the "Southern Region, and the nation." Tuskegee University's agricultural programs began in 1896 when famed scientist, George Washington Carver joined the Tuskegee University faculty and pledged to Booker T. Washington to do "all I can through Christ who strengthens me to better the condition of our people." Carver contributed significantly to southern agriculture, through his research and Extension activities on peanuts, cotton, sweet potatoes, southern peas and other commodities. His testimony before Congress in 1921 was well received and helped to protect U.S. farmers. Carver's Bulletin #43 *Nature's Garden for Victory and Peace* published during World War II helped provide nutrition information during times of scarcity and his design of the first "Wagon on Wheels" led to the Jesup Wagon and selection of the first demonstration agent, Thomas Campbell in 1906, a forerunner of the Cooperative Extension, which was formally established in 1914 by Congress. Carver's work set the tone in the south for using science based information to improve agricultural production by farmers, including African-American farmers who were struggling to survive and make a living during challenging times.

Carver, the scientist and humanitarian never lost sight of his mission for going to Tuskegee . . . "to help his people," and in so-doing helped the entire south through promotion of peanuts and other legumes as rotation crops for cotton and (2) introducing sustainable agricultural practices that permitted small (mostly tenant) farmers to survive. It was not until 1967 that the 1890 land-grant universities received their first funding for agricultural research from USDA. This amount was increased slowly by Congress over many years. During this time Tuskegee University developed areas of research and Extension that focused on counties with persistent poverty, commonly called Black Belt Counties, both because of its dark, Prairie soils and also the relatively high African-American populations. This strategic selection of geographic and demographic foci complemented and did not duplicate research and Extension activities by other institutions in the state.

Current Research and Extension Successes

In recent times integrated Extension and research programs at Tuskegee University have focused on fruit and vegetables and food animals produced by small farm-

ers with *emphasis on profitability.* This important program has developed into a partnership of socially disadvantaged and under-served farmers working together in clusters with Wal-Mart, Lipman, Pura Vida, W.P. Rawls and other commercial markets to provide fresh, locally grown fruits and vegetable to commercial retailers. Importantly, Tuskegee University assisted the farmers in passing farm audits for "Good Agricultural Practices (GAP) Harmonized Food Safety Standards," required by commercial and other markets. This relatively new partnership of small farmer clusters and commercial markets has demonstrated great potential for bringing jobs and economic development to persistent poor counties in Alabama and other states. The current progress is based upon many years of Tuskegee University's research and Extension staff working with small farmers and rural communities because of Capacity Research and Extension funds. *The results are an excellent illustration of effective use of capacity funds to support farm- and agribusiness-based economic development in poor rural communities.*

Today Tuskegee University scientists continue work on: peanuts through genome analysis focused on disease resistant gene identification and mapping; plant breeding of sweet potatoes to produce new varieties; enhancing crop nutrition through plant biotechnology and developing new uses of crops for food and fuel. Research by Tuskegee scientists has targeted reduction in parasites in meat animals such as goats and sheep using two approaches: (1) molecular and genetic-based technologies are being used to find effective solutions and (2) a system was patented that uses plant bark as a natural feed supplement. Another recent patent is a chemical treatment that makes reusable poultry litter better for application to the land by reducing excess phosphorus levels by about 90 percent, while retaining the other essential elements needed for plant growth. Still another patent by Tuskegee scientists detects different foodborne pathogens in poultry in hours *versus* days or weeks. This time-saving invention can be used to rapidly find out which pathogens may be present in poultry samples and prevent human illness.

Agroforestry research is uniquely assessing the dual impact of pine stand control and caprine parasite control on economic viability and fire suppression on long leaf and loblolly pine stands via controlled foraging by food animals. Integrated Research and Extension Programs are assessing the impact of diet, nutrition and exercise on youth and adult obesity and cancer. One project targets 8 to 15 year old children in multiple counties to determine food preferences and influence the food access and food quality in rural counties. The goal is to develop effective intervention strategies to reduce obesity and improve their overall health.

Innovations and Successes in Education and Service

We are pleased that recent data indicates Tuskegee University ranks *number one* in the nation in African-American graduates in "Agriculture, Agriculture Operations, and Related Sciences", number two in African-American graduates in Natural Resources and Conservation; *number one* in graduating African-Americans in Veterinary Medicine and is among top producers of African-American Engineers.

We are pleased to report that eight USDA agencies joined with Tuskegee University to form the *Carver Integrative Sustainability Center* at Tuskegee University that brings together faculty and staff from all disciplines to work on problems systemically associated with small social disadvantaged and under-served farmers and rural communities. We are learning to work together across agency and university department lines to better serve the public and protect our natural resources. Students of all levels (K–12, community college, undergraduate and graduate levels) are integrally involved and receive invaluable "hands on" experiences and other programs. A benefit of such partnerships is that students are gaining interest in agriculture, including seeking food and agricultural careers such as agronomy, horticulture, animal science, food science, natural resources and agribusiness. There is high demand for food and agriculture majors by the food and agriculture industry and recent data indicates the need for such majors is increasing. Universities such as Tuskegee University and other 1890 land-grant universities provide much needed talent and diversity for such industries.

We take special note of our successful integrative graduate programs and their success in producing outstanding scientists, engineers and health professionals. In particular our *Materials Sciences and Engineering* Ph.D. Program and leadership were cited by both President George Bush and President Barack Obama for its long-term research and student development that have served our nation and industry well. The *Integrative Biosciences* Ph.D. students address agriculture, and related environmental and health problems from multi-disciplinary approaches; these students serve as great role models for undergraduate students and the Integrative Biosciences graduates are serving our nation in key government, academic and private sector positions. Newer graduate programs in *Interdisciplinary Pathobiology, Agri-*

cultural and Environmental Sciences Engineering, and *Integrative Public Policy and Development* will produce well-trained agricultural scientists, engineers and policy specialists needed by our nation to address challenges of the future, including preparing for a global world population increase from seven billion to a nine billion population by 2040. *Enhanced funding for such innovative programs will strengthen the diverse undergraduate and graduate pipeline needed by the private sector, government, academia other sectors as documented in recent reports.*

Funding Challenges and Opportunities

Our work with small farmers is important because they represent 90% of all farmers, control more than 50% of the land and have the potential to increase jobs and economic development across many rural communities, especially if they work together for optimum volume, scale, efficiency, sustainability of operations and marketing. Most socially disadvantaged farmers gross under $10,000 and very small farmers make a profit. This is contrasted with the top 15% of farmers classified as large farmers who make 90% of the profit. The models we have developed can be duplicated in other states and regions of the United States, especially in areas with persistent poverty. *If funds are enhanced we could reach more small farmers and impact more communities in a positive way.* This would simultaneously assist the commercial markets and consumers because of reduced transportation and storage costs associated with distance based supply of perishable goods like fresh fruits and vegetables. These savings in energy and transportation costs and the increased product quality and freshness can be passed on to consumers. There are many gaps along the supply chain that require integrated research and Extension solutions. We have the momentum and passion to get the job done and have presented a plan to USDA that involves all states with 1890 land-grant universities working together. We look forward to your support.

As a final note, in 1998–99 Congress made provisions for 1890 land-grant universities to obtain 1:1 matches from states for Capacity Research and Extension Grants. Fifteen years later this still is a work in progress for many states. For FY 2015–16 Tuskegee University will be at a 0.87:1 ratio, the highest ratio attained by Tuskegee University since the inception of the required match and we are grateful to all involved. We look forward to next year going "over the top"!

The CHAIRMAN. Thank you Dr. Johnson.

Dr. Bell, 5 minutes.

STATEMENT OF JULIETTE B. BELL, PH.D., PRESIDENT, UNIVERSITY OF MARYLAND EASTERN SHORE, PRINCESS ANNE, MD

Dr. BELL. Chairman Conaway, Ranking Member Peterson, and Members of the Committee, good morning. My name is Juliette Bell. I am the President of the University of Maryland Eastern Shore, and I also have the pleasure of serving as the chair of the Council of 1890 Universities and the co-chair of the USDA 1890 Task Force established by the Secretary of Agriculture.

On behalf of the 1890 universities, thank you for this great opportunity to testify before this Committee as we celebrate our 125th anniversary of the Second Morrill Act which established the 1890 universities. Today the 1890 universities continue to focus on teaching of practical agriculture, science, and mechanical arts to improve and uplift our communities. Collectively the 1890s have led the way in innovation, discovery, and outreach and have provided access to educational opportunities for countless thousands of students across this country.

For more than a century, the University of Maryland Eastern Shore has embraced and advanced the land-grant mission. The funding we received has enhanced the university's capacity to deliver practical education and training for our students. There are three critical areas where the funding has had the greatest impact.

These are in workforce development, research and innovation, engagement and outreach.

Today the challenge of developing an educated, diverse, highly-skilled, and innovative workforce remains a top priority. With 67 percent African-American students, UMES is one of the most diverse campuses of the University System of Maryland, ensuring access to all students. We offer eight baccalaureate degrees, four master's, and three Ph.D. degrees in Critical Science, Technology, Engineering, Agriculture, and Mathematics areas.

Our role in providing access and opportunities for many who otherwise may not have had the opportunity to attend college is critical. UMES and the other 1890 universities face great challenges compared to our 1862 counterparts in providing a quality education for many students who are first-generation, economically disadvantaged, and often under-prepared for college, and we do this with less funding.

UMES has leveraged its annual Federal research capacity appropriation of about $1.5 million to establish nationally recognized programs in key areas such as food security and safety, obesity prevention, forestry, and conservation of coastal and marine living resources. Our unique geographic location between the Atlantic Ocean and the Chesapeake Bay on the Delmarva Peninsula has positioned the university to strategically provide critical research and serve as an economic engine for our region. For instance, given the importance of food and water security, our scientists are exploring how unmanned aerial vehicles, UAVs, can be used in precision agriculture to improve the efficiency of water use and the application of nutrients to large farm plots.

Given our location in the heart of Maryland's billion dollar poultry industry, our faculty and students have been invaluable in generating knowledge on food safety. Our extension faculty are working directly with the seafood industry, another important sector in Maryland, to support the safety of seafood products.

Through our strong extension and outreach programs, we continue to address the challenges related to rural poverty and health services of under-served populations in urban areas. For many years UMES has conducted a small farms outreach initiative for farmers in the region with the goal of improving the economic conditions of small-scale, limited-resource, and socially disadvantaged farmers to provide educational programs that improve their farm management skills and expedite their participation in USDA farm programs.

Continued strategic investment in the 1890s at the state and the Federal level will allow us to carry on our mission. Greater investment will allow us to be more competitive and effective at producing a diverse workforce to engage in the research and outreach that addresses the many issues facing our world today and tomorrow.

As we celebrate this momentous 125th anniversary of the signing of the Second Morrill Act of 1890, we look back with pride on our accomplishments and forward to the many challenges that our 1890s universities can and will address with your continued support. Strategic investment in the 1890s is investment in the future.

Again, I thank you for your continued commitment and support of the University of Maryland Eastern Shore and all of the 1890s universities. Thank you.

[The prepared statement of Dr. Bell follows:]

PREPARED STATEMENT OF JULIETTE B. BELL, PH.D., PRESIDENT, UNIVERSITY OF MARYLAND EASTERN SHORE, PRINCESS ANNE, MD

Meeting 21st Century Challenges for Innovation in Agriculture, Science, Engineering and Technology

To each of you, the Members of the United States House of Representatives, good morning/afternoon.

My name is Dr. Juliette B. Bell and I am honored to bring you greetings not only as President of the University of Maryland Eastern Shore, but also as the Chair of the Council of 1890 Universities of the Association of Public and Land-grant Universities, and as Co-chair of the USDA/1890 Taskforce, established by the U.S. Secretary of Agriculture.

Congressman Justin Morrill, one of the founders of the Republican Party, authored the Land-Grant College Act of 1862, "in order that colleges be established for the endowment and support of the education of the "sons of toil;'" that they should be educated not only in classical studies and military drill, but also in the mechanical arts, and agriculture, which Morrill described as "the foundation of all present and future prosperity."

Enacted in the midst of the Civil War, The Morrill Act, as this legislation would become known, did not provide for the education of the African-American citizenry, as segregation of races prohibited the admission of African-Americans to these land-grant colleges.

Following the Civil War, in the years of reconstruction, Senator Morrill continued his advocacy for the "sons of toil", this time seeking to include those citizens of color who were not provided for under the original Act.

Thus, in 1890, with the enactment of the Second Morrill Act, funds from the sale of public lands were set aside for "the more complete endowment and maintenance" of land-grant colleges except that no funds would be distributed to states where there was a "distinction of race or color" in admissions. However, the Act did stipulate that "the establishment and maintenance of such colleges separately for white and colored students" would be considered compliant with the Act provided the state "equitably divided" those funds between the institutions.

And so, in Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Ohio, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia, 19 universities, founded primarily for the education of African-American "sons and daughters of toil", were designated land-grant institutions, with the notion that educational opportunity was not reserved for an elite few, but available to all, regardless of race or class.

Today, these 19 universities celebrate the 125th anniversary of the Second Morrill Act, which made it possible for each of these universities to fulfill Senator Morrill's mission.

Indeed, the land-grant mission, established more than a century ago, remains as relevant today as it was in 1890. Today, the 1890 universities continue to focus on the teaching of practical agriculture, science and mechanical arts to improve and uplift our communities in a time when race and class remain obstacles for so many.

Collectively, the 1890s, as these universities are called, have led the way for innovation, discovery, and outreach and have provided access to education and opportunities for countless thousands of students across the country.

Founded in 1886 as the Delaware Conference Academy with a mission focused on educational opportunity for former slaves and freemen, the University of Maryland Eastern Shore was designated as Maryland's "1890" university.

For more than a century, the University of Maryland Eastern Shore has embraced and advanced the land-grant mission.

At this time, I would like to take a few moments to introduce you to the University of Maryland Eastern Shore, our programs and our accomplishments as a result of the funding we receive to advance the land-grant mission.

Statistical Information

- Located on more than 1,100 acres on Maryland's Delmarva Peninsula.
- Over 4,200 students.
- 270 full and part-time faculty.

- 14:1 student to faculty ratio.
- 78% of our students are Maryland residents, with a significant number from others states and some 30 nations.
- 67% African-American, 33% other race students.

Our Programs

- 38 undergraduate majors including: Agriculture and Agribusiness.
- 22 graduate programs including masters and doctoral degree programs in Food and Agricultural Sciences, Food Science and Technology and Marine and Estuarine Sciences, Natural Resource Sciences and Quantitative Fisheries and Resources Economics.

Funding

The university's annual operating budget is approximately $141 million.

For FY 2015, UMES received $3,861,253 in Federal capacity support for research, extension, facilities and forestry while our sister institution received $6,867,792 for its capacity programs.

Impact of Funding

The funding we receive has enhanced the university's capacity to deliver practical education and training for students, particularly in areas of innovation in science, engineering and technology. But, perhaps most critical have been the developments in agriculture, food and natural resources sciences.

In the next few minutes I would like to address three critical areas where the funding has had the greatest impact. These areas are:

- Workforce Development.
- Research and Innovation.
- Engagement and Outreach.

Workforce Development

Clearly the nation's emphasis on the development of human capital has been the most essential ingredient in ensuring continued growth. Today, the challenge of developing an educated, diverse, highly skilled, and innovative workforce remains a top priority. The foresight of Senator Morrill was truly inspired.

As an 1890 institution, UMES' role in providing access and opportunities for many who would otherwise not have had a college education is critical. Today, UMES is one of the most diverse campuses in the University System of Maryland, as we continue to focus on our core mission, while ensuring access to all. We offer eight baccalaureate degrees, four master's, and three Ph.D. degrees in critical Science, Technology, Engineering, Agriculture, and Mathematics (STEAM) areas.

In many ways institutions such as ours face even more hurdles in comparison to our 1862 counterparts in ensuring that we provide quality education to many students who are often under-prepared for college. Such students often require greater attention and support—a challenge we have embraced by being innovative in our educational approaches.

Research and Innovation

UMES has leveraged its annual Federal research capacity appropriation of about $1.5 million to establish nationally recognized programs in key areas such as food security and safety, water security, obesity prevention, forestry, climate change mitigation, and conservation and use of coastal and marine living resources. Using our unique geographic location between the Atlantic Ocean and the Chesapeake Bay on the Delmarva Peninsula, we have positioned ourselves strategically to provide critical research and serve key constituents in our region.

Our scientists have continued to position themselves at the cutting edge of new innovations. For instance, given the importance of food and water security, our scientists are exploring how unmanned Aerial Vehicles (UAVs) can be used in precision agriculture to improve the efficiency of water use and application of nutrients to large commodities such as corn with very promising results.

Just over a decade ago we established a state of the art research facility with Federal and state support. This facility and its nationally recognized faculty have become a nucleus for critical research on poultry and seafood safety and quality, Dr. Salina Parveen, one of our food safety specialists, serves on the Secretary of Agriculture's National Advisory Committee on Microbiological Criteria for Foods.

Given our geographic location on the Eastern Shore, in the heart of Maryland's $8.5 billion poultry industry, our faculty and students have been invaluable in generating knowledge on food safety. Our extension faculty are working directly with

the seafood industry, another important sector in Maryland to support the safety of seafood products. More recently and in collaboration with USDA ARS and FDA, UMES is at the heart of critical research on fresh produce safety, as well.

Our research enterprise extends to a number of other important areas, and the potential for growth is immense.

Engagement and Outreach

It is critical for us as a land-grant university to address the many national challenges and one of these has to do with rural poverty and health. Through strong extension programs, we have over the years strengthened our services to small farms and rural communities as well as the under-served in urban areas.

Thus, recognizing the importance of providing a firm foundation for our children, our youth development programs provide a supportive setting for all youth to reach their fullest potential. Through 4–H and STEAM initiatives, youth learn beneficial cognitive and life skills through community-focused, research-based experiential educational programs.

UMES participates in the Expanded Food and Nutrition Education Program (EFNEP), with initiatives targeting both youth and adults and thus achieving the primary goal of improving the diets of limited resource families and thus enabling them to enjoy better health, an improved quality of life, and increased productivity.

For many years, UMES has implemented a Small Farm Outreach Initiative for farmers in southern Maryland and along the Delmarva Peninsula with the primary goal of improving the economic conditions of small-scale, limited-resource, and socially disadvantaged farmers by providing educational programs and training that improve their farm management skills and expedite their access to and participation in USDA farm programs.

The Future

We continue to seek ways to enhance our ability to deliver solutions in key areas. Indeed, this year we have initiated a process of consolidating our capacity in key areas where we can deliver meaningful outcomes. To this end we have recently launched four centers.

- Chesapeake Water Quality Center,
- Center for Obesity Prevention,
- Center for Agribusiness and Economic Development, and
- International Center for Personal Protective Equipment.

These centers will allow us to form strong and enduring partnerships to deliver solutions for the people of Maryland, the nation and world.

Continued strategic investment in the 1890s at the state and Federal levels will allow us to continue carrying on the mission that was envisioned by Senator Morrill. Greater investments will allow us to be even more competitive and effective at producing an educated and diverse workforce to address the many issues that face our world today. As we celebrate this momentous 125th anniversary of the signing of the Second Morrill Act of 1890, we look back with pride on our accomplishments and we [look] forward to the many challenges that our 1890 universities can and will address, with your continued support.

Strategic investment in the 1890s is investment in the future.

Again, thank you for your continued commitment and support of the University of Maryland Eastern Shore and all of 1890 universities.

The CHAIRMAN. Well thank you, Dr. Bell.

I want to thank all our witnesses. Great stories across all six institutions. I know if the other 12 Chancellors and Presidents could have made an opening statement, they would have similar stories. The record of the hearing will be open for 10 days for any of the other universities who want to make a statement. We will include those in the record as if you had actually testified.

The chair will remind Members they will recognized for questioning in order of seniority for Members who were here at the start of the hearing. After that, Members will be recognized in order of arrival. I appreciate the Members' understanding.

We do have all 18 Presidents with us today, so if Members would like to ask a President who is not seated at the witness table a question, they will be welcome to do so.

I now recognize myself for 5 minutes. Again thank you very much, each of you, for being here.

Dr. Wright, could you talk to us a bit about how Prairie View A&M works with the other institutions, the other A&M's, as well the other institutions in Texas, to coordinate and not duplicate and not overlap each other?

Dr. WRIGHT. Okay. Prairie View is a member of the Texas A&M system, and as such, we are fortunate in being located no more than 40 miles away from Texas A&M University. Therefore, some of the facilities they have, world class facilities, our students go there and use those facilities in meat processing, dairy activities, and the like.

Also, Tarleton University, West Texas A&M University, other system universities, our agriculture deans and faculty meet on a regular basis, and so they interact. If you look at the Hispanic-serving institutions of Texas, Prairie View often works with those institutions when it comes to research projects; and so consequently there are instances where Prairie View may be the lead, other times one of the other institutions, whether it is Texas A&M or one of the other Hispanic-dominated schools will as well, so we find it very important.

And I would also add that Langston University in Oklahoma and Prairie View were involved in a goat and sheep project in Ethiopia for 5 years where we introduced in seven different regions of that massive country—which is twice the size of Texas, to give you a sense—that we introduced tens of thousands of new goats and sheep, which were ⅓ larger than the animals there in Ethiopia, which made a big difference there.

I would close on this point by saying, with the fellow HBC institutions, we compete against them in athletics, but when it comes to other activities, we work closely with them on various research projects.

The CHAIRMAN. I appreciate that. Dr. Martin, you and I were having a brief conversation about the way you link in with small farmers and the production, you mentioned a pretty great success story on hog waste and the impact—excuse me, Dr. Davis, or Mr. Davis—the hog waste issue that you talked—can you flesh out that about how you get the ideas, how you link in with what is actually needed on the farm to what you are doing at your university?

Dr. MARTIN. Thank you, Chairman Conaway. One of the things that our university does, first, is we brand extension activities collaboratively with our colleagues at NC State, the 1862 in North Carolina.

We also spend an inordinate amount of our time deploying members of our faculty and staff and administration and extension agents out into the communities where there is the greatest need throughout our state to meet with community leaders, to meet with the farmers of those communities on their land. Assessing with them what their greatest needs are, whether it be soil-related issues, business planning models, or whether it be transitioning from one set of crops to a new set of crops, to understand what those farmers' needs are. We invite them to our campus to understand what their greatest needs are as well.

And through those interactions, we frame strategies for a collective group of the farmers in a particular region and particular singular plans for a particular farmer to meet that farmer's needs, quite frankly.

And so this is an ongoing, regular conversation with our constituents so that we are better understanding the needs of our farmers; and through the research we do in working collaboratively with our partners, we deploy best science, best technology.

The CHAIRMAN. I appreciate that. Dr. Rome, would you mind stepping up to a microphone and answering a question real quick?

RESPONSE OF KEVIN D. ROME, SR., PH.D., PRESIDENT, LINCOLN UNIVERSITY, JEFFERSON CITY, MO

Dr. ROME. Yes.

The CHAIRMAN. Yes, sir. Could you visit with us about what is the top success story at your institution?

Dr. ROME. Thank you, Mr. Chairman, for asking that. We pride ourselves in organic farming, and so all of our farms, everything we do is organic, and we have a commitment to maintaining that.

The CHAIRMAN. All right. Thank you. I yield back the balance of my time. The gentleman from Minnesota is recognized for 5 minutes.

Mr. PETERSON. Dr. Johnson, you mentioned in your testimony the need for additional funding to reach out to small farmers?

Dr. JOHNSON. Yes.

Mr. PETERSON. Are you receiving funds through the Agriculture and Food Research Initiative or through the smaller programs like the Section 2501 outreach grants and the beginning farmer and rancher development programs?

Dr. JOHNSON. Yes. The last part of your question I could not quite——

Mr. PETERSON. All right. The Section 2501 outreach grants, which is tied to the beginning farmer-rancher development programs, are——

Dr. JOHNSON. I am not quite familiar with that particular section, but I will certainly follow-up with both you and your staff immediately following.

Mr. PETERSON. Are you getting funds through the Agriculture and Food Research Initiative programs?

Dr. JOHNSON. Yes, we are.

Mr. PETERSON. Okay. The other thing I noticed in your testimony is that you are the number one producer of African-American veterinarians in the country. That is something in Minnesota we have prided ourselves in and we have a tremendous veterinary school. It is, however, a real challenge in getting enough, especially large animal veterinarians, to fulfill the need. Your veterinarians, are they large animal, small animal practitioners?

Dr. JOHNSON. Well, I am not exactly sure of the percentage, but certainly we have a number of students who have graduated and have gone into large animal work. I would be happy to give you the exact percentages of who is involved with small animal *versus* large animal.

Mr. PETERSON. Thank you. Dr. Wright, you mentioned the challenge of getting state matching funds. Can you walk me through

what parts of this require state matching funds and how that all works exactly and what the problem you are having with it?

Dr. WRIGHT. Okay. Okay. Years ago—I am in my 12th year as President of Prairie View—there was no match requirement, but eventually it became a 25 percent, so the State of Texas would have to put up X amount for us to then get Y amount. So if we were getting $10 million, the state would have to match with $2.5 million.

Mr. PETERSON. Do you know what year that happened?

Dr. WRIGHT. It has been over, I would say over a 10 year period. It has gone from 25 to 50 to 75, and now it is at 100. Well, what USDA has done fortunately is that when we have not made the match—we have not made the match the last two times—they have given us a waiver whereby they look at our effort to receive the match, and then they have the discretion to waive it.

Mr. PETERSON. So they are up to 100 percent now?

Dr. WRIGHT. Yes.

Mr. PETERSON. So in other words, whatever we are going to provide, the state has to come up with 100 percent?

Dr. WRIGHT. Right. That is my understanding. So our legislature has finished, and if my memory is correct, we are something like $3 million short. This time we needed $11 million, and we received more like $8 million, so we are in the situation now where we will contact USDA and ask again for the match.

Mr. PETERSON. Are these on all the grants, or are these on some specific areas?

Dr. WRIGHT. It is on our research and extension area.

Mr. PETERSON. Is this required—I should know this, but is this required of the other land-grant universities throughout the whole system?

Dr. WRIGHT. Yes, it is. And the Texas A&M for instance, in our system, they have a much larger operation, and so they receive various pools, and so consequently they are able to make their match in that regard, from a number of different things. We just don't have as large a pool.

As you may know, Texas A&M is one of the largest public universities in the country with some 55,000 students, and they are located in every county in Texas. Prairie View is not, but we have 8,000, almost 9,000, and we are located in only 30 counties.

Mr. PETERSON. Thank you. Thank you very much. I yield back.

The CHAIRMAN. The gentleman yields back. Mr. Scott from Georgia, 5 minutes.

Mr. DAVID SCOTT of Georgia. All right. Thank you, Mr. Chairman. Mr. Chairman, I have a memo I would like to insert for the record and have passed out just for point of discussion.

The CHAIRMAN. Without objection.

[The information referred to is located on p. 57.]

Mr. DAVID SCOTT of Georgia. Thank you very much. I will pass this to the Members and to the college Presidents.

And it addresses a concern. I have read all of your testimonies, and there is such a concern about additional funding, particularly as we grapple with the issues of beginning farmers, the average age of the farmer.

And so basically the first part of my 5 minutes I want to spend with just going through this. Currently, the 1890 land-grant institutions received the majority of the United States Department of Agriculture funding through the farm bill every 5 years, and these funds are to be used for three general purposes, research, education, and extension.

As a result of the current farm bill, on February 9, 2015, the United States Department of Agriculture Assistant Secretary for Civil Rights, Joe Leonard announced the availability of more than $18 million for the 19 historically black land-grant colleges and universities in an effort to recruit, educate, and train African-American students for careers in agriculture.

What I am proposing in this memo is just a small language addition. The proposed language addition would be to add one additional use to the current funding structure because in order to encourage, recruit, and train more African-American students for careers in agriculture, farming, and agribusiness, this additional use of the funds would be helpful and necessary to help achieve Assistant Secretary Joe Leonard's and our objective, which is to recruit, educate, and train more African-American students for careers in this very important critical and growing fields of agriculture, farming, and agribusiness.

So the proposed new uses of funds, if we are able to add this language, will read as follows. These funds will be used for the following purposes, teaching, research, extension. The new addition would be "student scholarships and student loan forgiveness."

Now let me give you the rationale for this proposed language addition. Knowing that the average age of agricultural farmers in the United States is 60 years of age, ladies and gentlemen, this is a national security issue. Agriculture is the food we eat, it is the clothes we wear, it is our energy, it is our whole financial growing system through commodities exchanges. Lord knows when we have a commodities exchange like ICE that has purchased the New York Stock Exchange, you know agriculture now is the single most important industry in the world. It is leading part of the economy of 44 of the states in the United States now.

So, in addition to knowing that we face this challenge of the farmers' age going up towards 60 and knowing the difficult challenges facing beginning farmers and knowing the critical need to increase the number of African-American students seeking careers in agriculture and farming, therefore the United States Congress recognizes that we, the United States Congress ourselves, must play a critical role in reducing the average age of farmers, providing greater assistance for beginning farmers, and provide financial scholarships and loan forgiveness to bring more African-Americans into the flourishing careers of farming and agricultural business.

In conclusion, thus through this language addition, that funds can now also be used for student scholarships and loan forgiveness for 1890 students, we are also helping to bring down the average age of farmers over time and open the door of opportunity for more beginning farmers.

I submit this memo, and I appreciate your allowing it to be a part of the record as a point of discussion for us to move forward

as something we collectively, as 1890 institutions, and in the bosom of this House Agriculture Committee, to discuss and to see how we might be able to make this additional language change and provide just this fourth area that funds may be used.

I guess my time is up.

The CHAIRMAN. The gentleman's time has expired.

Mr. DAVID SCOTT of Georgia. Thank you, Mr. Chairman.

The CHAIRMAN. The gentleman's time has expired.

Mr. Rogers from Alabama, 5 minutes.

Mr. ROGERS. Thank you, Mr. Chairman. And I take pride in having Dr. Brian Johnson from Tuskegee University here today. As you heard earlier, the Tuskegee University and staff have been continuing the creation of Booker T. Washington and George Washington Carver, and we are thrilled not only with the University but with our new President and look forward to working with him for a long time to come.

One of the focuses of my energy as a Member of Congress in recent years has been on promoting public-private partnerships. We have a lot of economic challenges in this country, and I am convinced that whether it is transportation, our national defense, telecommunication, security, or agriculture, public-private partnerships are going to be a creative avenue where we accomplish a lot of the goals that we need to focus on as a country.

Tuskegee University is home to an award winning research program that remains competitive in receiving grants, and given that Tuskegee, unlike most of the HBCUs here from 1890 legislation are public, Tuskegee is private, so you have some unique challenges in funding.

So my question, Dr. Johnson, is, how do you see the future of research changing with regard to private funding as well as public-private partnerships with universities?

Dr. JOHNSON. Congressman Rogers, thank you for the question, and I look forward to working with you as well. I want to give you a couple of examples. Currently, our wonderful faculty in the agriculture area is working with the private corporation, Wal-Mart, working with small farmers so that they can gain some profitability.

One of the issues that consistently face small farmers is that they can produce items but they can't generate enough revenue to sustain their farms throughout the years, and so essentially what our faculty are doing is working with these small farmers on the private side. So that is an example of a private partnership.

With the Federal Government, we are pleased that recently eight USDA agencies have come together to help form what we describe as the Carter Integrative Sustainability Center. This sustainability center will allow members of the USDA to have offices on a campus, on our campus, and also allow our faculty researchers to work there alongside of them.

Mr. ROGERS. Well, I am curious, anybody who has ever visited your campus can see that there is a history of corporate partnership with your university. Do you have an infrastructure that you are a part of that opens lines of communication to corporate America to help you familiarize yourself with what their needs are in a way that you could possibly be a partner in helping them resolve

those concerns, or is there such an organization? There may not be. I am asking.

Dr. JOHNSON. Well, obviously, we rely upon the 1890 Council for insight into what is happening nationally with corporations that we can continue to develop more and more partnerships with, but internally and internal to the institution, frankly, we work individually, corporation by corporation. Obviously, increased funding will help us to develop such an infrastructure that will enable us to do it faster.

One of the things my colleagues and I would agree on is that we receive a lot of our ideas about how to make these corporations and partnerships work, but however, we need additional personnel, we need additional funding, we need the technology infrastructure to streamline in order to form, as it were, a clearinghouse whether it be shared by an 1890 institutions or whether it is unique and intrinsic to the university.

So let me just say that obviously we draw on what available consortiums we are a part of to note and see what corporate needs are nationally, but internal to the university, frankly, we work a partnership at a time to those who are willing to partner with the institution.

Mr. ROGERS. Well, I have the honor of chairing, along with Gerry Connolly of Virginia, the Public-Private Partnership Caucus, and we have been in place about 3 years now, and I look forward to reaching out to your institution as well as all the institutions here to establish a dialogue as to how we can better promote your partnership with the private sector in trying to accomplish some of the challenges we have as a nation.

But with that I yield back, and thank you all for being here.

The CHAIRMAN. The gentleman yields back.

Ms. Fudge from Ohio, 5 minutes.

Ms. FUDGE. Thank you very much, Mr. Chairman, and I thank you all so much for being here today. Mr. Chairman, I ask unanimous consent to enter into the record an APLU policy brief which I will be referencing in my remarks today.

[The information referred to is located on p. 57.]

The CHAIRMAN. Without objection

Ms. FUDGE. Thank you very much.

Let me just first congratulate all of the HBCUs, 1890s that are here today for the remarkable work you do under circumstances that are not always the best, and I especially want to thank you for taking a chance on students that most universities would not take a chance on, especially those who have low test scores or low GPAs. You, if no other institution does, recognizes that there is talent in a lot of these young people and that all they really need is an opportunity to succeed.

I understand that we have students coming to your institutions who need some remedial or special work, and let me just say to you, that is probably going to get worse, and that is one of the reasons we do need to start giving more resources to your institutions because I also sit on the Education and the Workforce Committee, and we just passed out of committee a bill that is going to cut K–12 funding, which is going to make this problem worse, as well as they are going to block grant all title I funding, so it is going to

be a major problem for young people coming into your institution. So again I thank you and ask that you would continue to invest in young people.

The APLU report that I referenced, Mr. Chairman, indicates that from 2010 to 2012, only 61 percent of 1890 land-grant institutions received the 100 percent match from their states. The totals over that period of time some $57 million that 1890 land-grants did not receive because their states did not give a match.

Now, there has never been a problem with states giving a full 100 percent match to 1862s, and it is something that we need address, and I want to say today that my colleague, Mr. Davis from Illinois, has been working with me on how we can get states into a posture by which they could give the 100 percent match. So bipartisan efforts are going on to make sure that we can help with that, as well as the fact that we know that since 1890s do not have very large endowments, there are resources that are needed in these institutions that are not needed in 1862s.

Let me just ask a question to whoever would choose to answer it. I didn't hear much about the hurdles that are faced by 1890s as it relates to funding and what happens when you don't get the funding. Anyone who chooses to answer it, please feel free. Don't be shy. Okay. Come on, Dr. Bell.

Dr. BELL. Thank you for that very important question. One of the challenges that our institutions face that has to do with funding is the lack of adequate personnel to help carry out some of the extra duties that are required when we serve the population of students that we serve.

As you indicated, many students do come to our universities needing remedial help or other kind of attention, and that takes people to work with them directly as well as to guide them in the appropriate way to learn those study skills and other skills that perhaps they did not pick up while they were in high school.

So one of the challenges is to have adequate personnel so that we can then use our faculty to engage in the research and teaching efforts that are necessary to help move the mission of the 1890s forward. Many of our faculty who are outstanding researchers have inadequate time to be able to do the high quality work that is going to help drive the 1890 agenda and the land-grant agenda forward because of the excessive teaching loads that they carry. Most faculty are teaching 12 credit hours per semester at our institutions, which is an enormous load. So those are just some of the challenges that we face as a result of inadequate funding.

Ms. FUDGE. Thank you, Dr. Bell.

And Dr. Martin, you talk about, in your testimony, of the burden of documentation when waivers are required, and I know my colleagues really don't like very much—they hate paperwork, right, we hear this all the time, so I am hopeful that we can address that issue for you.

Last, let me just say, again, thank you, and on behalf of my colleague, our assistant Minority Leader, Mr. Jim Clyburn, who really wanted to address you today and was not able to do so, I want you to know how interested he is in what you had to say today, and on his behalf, I thank you as well for being here.

Mr. Chairman, I yield back.

The CHAIRMAN. The gentlelady yields back. The other Mr. Scott from Georgia, 5 minutes.

Mr. AUSTIN SCOTT of Georgia. Thank you, Mr. Chairman, and before I get into the questions, I want to just get a thank you to an old friend of mine, Lynmore James, who I served with for 14 years in the state legislature. I know my colleague David Scott knows Lynmore. He was a graduate of Tuskegee, and he was a tireless advocate for Fort Valley State and certainly worked very hard on behalf of veterinary programs and other things for Fort Valley State.

And so I haven't seen him in awhile, but Dr. Bailey, when I saw you today, it just reminded me of that friendship, and I actually have just sent him a text to make sure he knew I was going to be talking about his work on behalf of your institutions while we had you here today.

I was at Fort Valley State in October of last year and had an interesting conversation with some of the veterinarians there. You have a tremendous research facility for ruminants, we would call those sheep and goats in south Georgia. I hope I pronounced the other word correctly. But I had a very interesting conversation with the veterinarian there, and I know one of your faculty members actually went to Afghanistan and translated some of the veterinary books into their languages so that they could understand how to better take care of their sheep and goats in that part of the world, and that good will has tremendous impact for America and our relationships in other parts of the world in helping them do that.

But if you would just speak to the a program that you have that is called, *Stronger Economies Together* that Fort Valley State has been involved in. Would you be willing to share that with us on your leadership there and what Fort Valley State is doing with that?

Dr. BAILEY. Yes. Thank you for that question, Congressman. This particular program, *Stronger Economies Together,* Fort Valley State University has taken the lead, and what they do is they focus on those counties that are most economically depressed, what we call the StrikeForce counties. And the main thing that they do is bring rural leaders together so that they can cooperate, collaborate, and make decisions that will advance the economies.

And so we have been quite successful in that because we have been able to get teams out to the eastern part of the state as well as the southwest part of the state, pulling the leaders together in order to make progress for the economies of those areas.

Mr. AUSTIN SCOTT of Georgia. I represent over 20 counties in that area, and I want to thank you for your work there, and it is pretty—when we lose one manufacturing facility, the impact in our area is much greater than certainly if they lose an individual manufacturing facility in a metropolitan area, and so certainly bringing manufacturing back is one of those things that we want to continue to work on.

But the agricultural sector is what has been the bright spot for the rural parts of the country lately, and I want to thank you for being there for that in the research, and I want to thank you for your relationship with 4–H. I now we had a lot of 4–H students

here today. That is a wonderful organization that does a tremendous amount of good for our country and our youth.

Any other suggestions that you would have for us, Dr. Bailey, before we go? I am down to one minute, with regard to extension? I know Ms. Fudge brought up funding. Any suggestions on the funding related issues?

Dr. BAILEY. Yes. We have done a lot of training, food education training, especially through the 4–H and as well as FFA, so we are reaching young people. We need additional funding so that we can bring their families into the discussion because we know that it is a long-term investment in eating right and better healthy behavior, but also it is one that really permeates the entire culture.

So additional funding will allow us to reach more counties, more students, more families as we move towards making a healthier and more economically prosperous state.

Mr. AUSTIN SCOTT of Georgia. Thank you, and thank you for being here, and I look forward to being at Fort Valley State again, and hopefully my friend Lynmore James can join us there for lunch one day. Thank you. I yield the remainder of my time.

The CHAIRMAN. The gentleman yields back. The gentlelady from North Carolina, Ms. Adams, for 5 minutes.

Ms. ADAMS. Thank you, Mr. Chairman. And thank you all for your testimony today. We appreciate having you. I have a very serious interest in HBCUs. I did my bachelors and masters at North Carolina A&T. I spent 40 years on the campus of Bennett College. Clearly it is in my blood.

I did want to touch on something that Dr. Martin and some of the others talked about, and that is the funding, but since Ms. Fudge mentioned it, I am not going to pursue it so much, but just to say that there was a required match to states, and the states just aren't doing it, and ten southern states in particular withheld about $57 million, as you said, and so there is no penalty.

We might need to look at that, not that I want to be punitive, but when we try to find ways for states to help with that funding, I think we need to look at that a little more seriously, so I won't dwell on that. But it has been a lot of money that our schools have lost, and in terms of the research and the other kinds of things that they could be doing, we do need this money, and it is about fairness because the other schools are getting it, and we want to make sure that everything is fair.

And Mr. Scott, I want to thank you for the information that you provided. I think it is a very good suggestion.

But Dr. Martin, let me just ask you, because you mentioned the food insecurity and food access, and we know that there are several problems in Greensboro and the Triad. I am pleased that my alma mater A&T is using its 492 acre farm as a community education resource in all that you are doing.

And I commend you for that, but you mention barriers to young and minority farmers, and I guess my question, first of all, is what challenges do you see for A&T, for new farmers in North Carolina?

Dr. MARTIN. Thank you very much, Congresswoman Adams. A variety of the areas we find are critical to small farmers in general, certainly minority farmers in particular, include making a living, a reasonable living from the soil of the land these farmers own, and

what we have sought to do is provide both significant understanding of business opportunities for our small minority farmers and helping them find the best use of their land and crops to grow on those, on their property, and then connecting them with outlets to market their produce so that they are able to derive sufficient return on their investment on their farms as well.

We have endless examples of where we have taken work with a small farmer who once produced one set of crops, say tobacco, for example, and help them understand the importance of transitioning to other opportunities for their land.

For example, using the land to create a set of crops related to vegetables that are critically important in connecting the produce derived from that farm to some of the grocery store chains and outlets and farmers' markets so that they may then get a greater return on the produce of their farms. Or transitioning them from growing tobacco to creating fisheries, for example, to derive profit from growing prawns or producing catfish, or creating mushroom farms.

We have a world class mushroom expert on our campus who has developed the technology that has then transferred to some of the small farmers in our region to help them learn to produce mushrooms, very important, very high quality mushrooms, producing these mushrooms, and then selling these mushrooms to grocery store outlets and chains as well.

And these farmers are now doing better, are more prosperous, quite honestly, and that is critically important for us, obviously. That makes a difference in the economy for those regions of our state as well.

Ms. ADAMS. Thank you very much. Before I run out of the time, I am sure you are aware that the reauthorization of the Higher Education Act is before the Congress, and can you share with us any priorities that you think we may not have on our radar screen that may be unique to North Carolina A&T?

Dr. MARTIN. Thank you again for that excellent question. We believe that, obviously, the reauthorization of the Higher Education Act is critically important to higher education in general, certainly important to the 1890s and HBCUs in particular. There are core areas, first and foremost, related to financial aid, the Pell Grant, and ensuring that there is consideration given to expanding Pell Grant, the level of Pell Grant awards.

We lost the opportunity to make Pell Grant awards during the summer months, which we think are critically important for our students and students we serve, and so if we could see opportunities to reintroduce that opportunity.

Title III funding: Title III funding is part of the Reauthorization Act, critically important to HBCUs in particular, quite honestly. So restoring fully and expanding Title III funding, continued funding for the graduate education component of Title III that runs out this year. We are looking for another 5 year restoration of that funding, continuation of that funding, we think, will be critically important for us.

Ms. ADAMS. Thank you very much. Mr. Chairman, I yield back.

The CHAIRMAN. The gentlelady's time has expired. The gentleman from Pennsylvania, Mr. Thompson, 5 minutes.

Mr. THOMPSON. Mr. Chairman, thank you so much. Each of the panelists, thanks to each of you for your leadership, your leadership marshalling our land-grant universities, pathways to opportunity, but also our land-grant universities are just great problem solvers. Some would say traditionally for rural America, I would say it is raw America, given the types of problems that our land-grant universities work on, so thank you so much.

My question is, and I will open this up to whoever would like to respond. Do you believe that separate funding lines for the 1890 and 1862 land-grant institutions are still a necessity or is there a more efficient way to appropriate Federal agricultural research and extension funding?

Dr. BAILEY. Thank you for that question, Congressman. The idea of the separate funding is still appropriate. We have two groups of universities, but they have two very different missions, and the separate funding right now should continue.

Mr. THOMPSON. Very good. Any other thoughts?

Dr. WRIGHT. I would like to add. George Wright from Prairie View A&M University. There are instances in our state where Texas A&M and Prairie View are located in the same county and in the same office, so you will have Texas A&M and Prairie View, yet the agents from both of those two institutions will say that they seem to be touching different constituencies.

And so consequently, even though Prairie View does everything it can to open its doors to everyone, at the same time we do see a special need there to work with that community. I might also add that in many instances, the situation for Hispanics, many of them are newcomers to this country, mirror the same situations for African-Americans, and so if you look at some of the parts of Texas that do not have emergency care, do not have hospitals, or are missing some of the youth programs and so forth, then it is Prairie View agents who are doing it.

I think it is fascinating that people only think about our program as doing the rural kind of things, but we are very involved in abuse of women, of bullying, of diet issues, and things like that, so there are some issues that we do see, yet at the same time we do understand the need to work collaboratively

Mr. THOMPSON. Dr. Johnson.

Dr. JOHNSON. Congressman, I would also like to echo Dr. Bailey's remarks. Being situated in Tuskegee, Alabama, I do recommend that these funding lines remain separate. We are situated in one of the poorest counties in one of the poorest states, and obviously, disproportionately African-American.

And so not only would it remain separate but even be increased because of the unique issues Tuskegee, for instance, are confronted with, confronted with not only the rural farming problem but situated with the lack of capacity even within the city to assist not only our students but even for us to be a much more vital community partner with our local county and city.

Mr. THOMPSON. Thank you. Dr. Mangum.

Dr. MANGUM. Thank you. I would also like to respond to that question. I do believe that we should have separate lines of funding for a couple of reasons.

One, mainly because the capacity building funds is extremely important to our institutions. You probably know, as many do, that our endowment funds don't nearly match up to the endowment funds available to many of the 1862s which provide them with additional resources to be able to address the agriculture and other issues associated with the agricultural industry.

So the capacity building funds have continued, and we certainly hope that they are expanded, would allow us the opportunity to become more competitive as we build out our institutions and build out our agricultural programs. Thank you.

Mr. THOMPSON. Well, once again, thank you to all the panel. And Mr. Chairman, I yield back.

The CHAIRMAN. The gentleman yields back. The gentlelady from Florida, Ms. Graham, for 5 minutes.

Ms. GRAHAM. Thank you so much. I want to thank everyone who is here today, and I also believe we have a pretty large overflow room as well, so thank you to those in the overflow room for being here.

I would like to just say to Dr. Mangum again what an honor and a pleasure it has been to get to know you and to work with you, and as Rattler-in-chief, you are making all of us very proud, so thank you very much.

My question, you mention the USDA land transfer, and one of the issues that I am very interested in as well is helping our veterans with employment opportunities as they come home, and farming is a natural opportunity, particularly in north Florida.

What components of the USDA transfer are you thinking about potentially benefiting those veterans as they transition back from active duty into veteran status?

Dr. MANGUM. Thank you, Congresswoman, for that question. With the land transfer of the 3,800 acres, we need to partner with many people to establish the small farms and the ranches in that region, and the veterans association in our area has been pursuing us, in fact, when the opportunity became available.

The idea of establishing small farms and allowing opportunities for our veterans to establish farms as a way to transition back into society is a great opportunity for us, and we are really looking forward to being able to do that.

So we have several partners that we are looking to partner with to establish those farms in that area and those ranches.

Ms. GRAHAM. Well, thank you, and I just wanted to make sure that we had that on the record because I am so proud of all that FAMU is doing, in addition to now working with our veterans in that capacity, so thank you again. And I yield back the balance of my time.

The CHAIRMAN. The gentlelady yields back the balance of her time. The gentleman from Florida, Mr. Yoho, for 5 minutes.

Mr. YOHO. Thank you, Mr. Chairman. I appreciate everybody being here on the panel and all the other Presidents being present today. I am a graduate from the University of Florida land-grant university, and I appreciate Dr. Mangum being here with your rivalry of FAMU, and it is always good to see another great Florida school present here in Washington.

What do you see as the biggest challenge getting students involved in the agricultural sector in your school? What have you come across?

Dr. MANGUM. Thank you for the opportunity to answer that question as well. I think one of the biggest obstacles is making agriculture attractive to young people. We need additional resources to enhance our offerings, enhance the experiences of our students to be able to become involved in it, to show them and have them experience the value of agriculture and show them the value of it in the future.

Food safety, food security, and being able to have food that is healthy is a very important part of us being able to tell the story, having the laboratories, the greenhouses, and the facilities that would attract them to the agriculture industry is a challenge for all of us in a high-tech world where technology is taking over, but agribusiness is also extremely important. For us to be able to turn them onto those types of opportunities, we need to invest more in their world and exposing them to agriculture.

Mr. YOHO. And it is such a critical thing that we all do because, as George Washington said, you have to have food security to have national security. And when I first came up here and I shared this story with somebody, they were arguing the farm bill, and one of the Congressmen from obviously a non-farming state or not very big one said, what do we need a farm bill for, why don't we import our food.

I think we tried that with oil, and I don't want to try that with our food, and so it is so important to get people involved in that. And it is a fun, and you know, on the campaign trail, one of my competitors said people don't want their kids working in the fields anymore, and I am like, heck, I have been doing that since I was 15 years of age, it is okay, and it is just something we need to promote more and more.

Dr. Johnson, with your veterinary program—in fact, I had a classmate of mine, his wife went to Tuskegee, and she graduated in 1982. I believe it was Cindy Silas. Are you doing anything to get people to go into large animal medicine because as doctor—or my colleague, Mr. Peterson brought up, there is a shortage, and it is hard work. It is great work, though living there, working on the farms, working with people that make a living on our farms, feeding America and the world.

Do you have any special emphasis that you are bringing people in there, knowing that the USDA has a loan forgiveness program for people that do rural animal medicine?

Dr. JOHNSON. Sure. Thank you for that question, and in fact, I wanted to follow up with Ranking Member Peterson that our graduates are approximately 30 percent within the large animal field in terms of what areas they go into, and then approximately 70 percent small animal.

With respect to trying to develop that pipeline, it is always a difficult challenge. I know that we have two deans, Dean Walter Hill and Dean Ruby Perry at both of the vet schools, as well as the agriculture. One of the things that they are thinking about is developing unique innovative ideas and partnerships about how to get

veterinarian students as well as agriculture students working together.

Obviously, your cattle, your animals benefit from the nutrients of the soil that they derive from and the food that they are eating, and so one of the things that I know that they are working in cooperation with is applying for more USDA funding to support that sort of work so that they can create additional pipelines, but we will certainly follow up and give you even more information if you need.

Mr. YOHO. That is great. I appreciate it, and my affinity is that I am a veterinarian, so the more people—large animal, too. The more people you can put into that, the better off we will all be.

And if you guys can, weigh in on this. One of the things we see is the benefit of the GMOs, genetically engineered, genetically modified, transgenic, whatever you want to call. We see the benefit. Less fertilizer, more yield, more nutrition. I assume you are all doing research in that.

What we need to help us in this Committee is to get that word out, the benefits of GMOs, and to have spokesmen like you and your colleges that you are representing say it is okay, it has gone through research, it has gone through the development, and they are feeding the world, and they are using less pesticides, and if you guys could weigh in on that, and of course, I am out of time, but if you will help us do that, it would be greatly appreciated, and I thank you for your time and your efforts and all you do. I yield back.

The CHAIRMAN. The gentleman yields back. The gentlelady from the Virgin Islands, Ms. Plaskett, for 5 minutes.

Ms. PLASKETT. Yes. Thank you, Mr. Chairman, and good morning still to all of the Presidents. I want to thank you all for the tremendous work that you do in educating our young people and bringing young people to be leaders here in this country.

Mr. Chairman, if you would allow my indulgence, I wanted to do a little housekeeping myself. Dr. Lawrence Alexander, I want to thank you for taking care of my son. I have a son, Ariel Duffy who is a student at your university. He is the great nephew for O.C. Duffy. He is doing very well and you all are treating him very good, but I am watching. He is not the youngest child in my family, but he is the baby, so he is in Vespers Choir and really enjoying his time at University of Arkansas at Pine Bluff where his grandfather graduated and is an agricultural scientist before retiring, so thank you all for the work that you have done in that area.

And I wanted to just thank you all for what I think is the commitment that you all have to the communities as well that you are in. My oldest son was at the University of the Virgin Islands, which is also a land-grant university, and did some work with not just the farmers but the fishermen in our areas and assisting them in statistical analysis that was needing for their yields from their fishing.

And this the kind of work that you all engage in is really being a part of the communities in the land-grant, fulfilling that mission, and being a part of rural development in many of the areas that you are in. So I was going to ask you, whomever would like to answer the question, regarding the farmers and rural residents. What

is the assistance in the work that you see yourselves really performing the most and the activities that your, not just the students but the professors in your extensions have the most need for among the rural farmers in the areas in which you are working?

Dr. BELL. I would like to start.

Ms. PLASKETT. Yes, Dr. Bell.

Dr. BELL. Thank you for that question. On the Eastern Shore of Maryland, one of the major concerns that our rural farmers have is on their use of fertilizer and impact on the Chesapeake Bay, and so helping those farmers to identify ways to modify their use of primarily poultry litter and to cut down on the phosphorous runoffs that occur as a result of that so that they can meet the regulatory requirement is a critical research area for us.

We have been able to come up with some new technology that allows the poultry fertilizer to be used in a different way that does not produce the same level of runoff and odor that typically violates the regulations, and so it is an educational program for our small farmers.

We have a poultry association that meets regularly on our campus to help bring them the latest technology as well as to help them to manage their farms and to be more competitive for USDA funding.

Ms. PLASKETT. Thank you. Do you see the area of the students entering into agribusiness to really provide assistance in this area or how are the students really using the degree of agribusiness that you find, those that are engaged in it? Is it being utilized here in the United States, or I know so many instances where students are using it more in developing nations and other areas.

Dr. MARTIN. Thank you very much for the question. Quite honestly, the demand for our undergraduates by the agribusinesses we partner with are overwhelming. The demand is very high, and many of our undergraduates have just incredible high paying jobs, and many of them are going on into the marketplace, quite honestly.

What we try to do as part of our educational engagement with our students is to get them involved in undergraduate research so that we are enabling and encouraging many of them to get involved and through their research to go on to graduate school and getting involved in work related to our extension activity. They may then see an opportunity to pursue graduate education, get involved in higher education career opportunities and then work in our research and connect what we do in our research laboratories and innovation we discover there and transitioning that research to the benefits and betterment of the farmers we work with as well.

The scope of needs of our small farmers are quite varied across areas including limiting use of pesticides, developing crops where there is limited need for irrigation, and enhancing the use of a different set of more resilient seed in producing more abundant crops and capturing those crops and connecting our small farmers to outlets where they may then sell their produce.

It is a varied set of expectations. They have limited hands on their farms to now farm the farm, if you will, and produce crops, so we are developing strategies to help them develop more efficient

ways to grow produce and deliver their produce in a more abundant way to the marketplace.

Ms. PLASKETT. Thank you. Thank you all so much for your work, and I yield back the rest of time. Thank you.

The CHAIRMAN. The gentlelady's time has expired. The gentleman from Georgia, Mr. Allen.

Mr. ALLEN. Thank you, Mr. Chairman, and it is always a great privilege to be here, and I want to thank each and every one of you for what you are doing in education.

My mom and dad were involved in education, and thank goodness they were involved in education, although there were many challenges there. Before that, we farmed, and of course back in those days what motivated me to get an education is we were dirt poor, but things worked out. And of course, I went to school at Auburn University over there in Alabama, and a great land, great land-grant university, and then of course, my folks graduated from the University of Georgia, another great agricultural school.

So yes, I guess my question would be this. There are lots of opportunities in the agribusiness world, and we have heard about those over and over and over again, and students—we talk about funding and we talk about that we need money for this or we need money for that.

And I guess my question is, outside of funding, what can we do to help motivate young people, or what is the biggest challenge we have with young people today, motivating them to take a look at this industry and the opportunities available to them? And I would be glad to offer that question to whoever would like the tackle it on the panel.

Dr. WRIGHT. Okay. I would like to give it a shot. It seems to me that so many of our young people, and I don't know where it comes from, have grown up with a stereotypical view of what agriculture equates into farm life means.

One of the things our dean, who is here with me, tries to do is, someone made this comment earlier, I think it was Congressman Scott, in saying that it is about food, it is about clothing, it is about water, it is about security, it is about all of those things. It is also about working in forestry and so forth, so we try to show them the wide range of opportunities available.

At Prairie View, roughly around May the 1st, the first Saturday in May, we have what is called "Goat Day," and that is the day that brings everyone in our community to the university. We are very happy that a lot of white and Hispanic young people come because we want them to see Prairie View and consider coming there. We wish we could get more African-Americans to come. We showed them all the things you can do with a goat. Anything you can do with a cow, you can do with a goat, and probably more, but it is very important to do that.

So for us, it is just educating them about the opportunities that are available. We even talked to them about job possibilities here in Washington, working in USDA, working as attorneys, working in all sorts of things, and as one of my colleagues was just mentioning, we definitely try to show them how graduate education is possible, and all the different kinds of opportunities throughout this country are available, so it really is——

Mr. ALLEN. How could we help you get that message out? How could this body help you?

Dr. WRIGHT. Again, I think a lot of it falls on us ourselves.

Mr. ALLEN. I see.

Dr. WRIGHT. At Prairie View, like many of these, we try to say the "A" is there for a very important reason, and the "A" has been there from the beginning, that it is agriculture, and agriculture is more than someone tilling the soil.

Mr. ALLEN. Yes, I am on the Education and the Workforce Committee as well, and I was in one of our schools, and I asked the kids what is the largest industry in our district, and a little fella raised his hand, he said Wal-Mart.

So Mr. Chairman, we have to get the word out that agriculture—of course, agriculture is our largest industry. Any others like to address that need?

Dr. MANGUM. May I——

Dr. BAILEY. Yes, I would like to just add that you asked what can we do to help, and I would like just to add that agriculture is not Google, and it is not one of these high-tech very attractive areas that young people want to be in, but it has to really start—the education has to start at the young ages, and so making sure that the message even goes down to——

Mr. ALLEN. That is a great idea.

Dr. BAILEY.—K through 12 so that they realize that this is so important. It is a matter of survival but that their familiarity grows——

Mr. ALLEN. Right.

Dr. BAILEY.—early and strong.

Mr. ALLEN. And promote it, yes.

Dr. BAILEY. Yes.

Mr. ALLEN. Okay. Well, I will have to yield my time back. My time is out. Thank you again so much for being here, and keep up the good work. We want to help any way we can.

Thank you, Mr. Chairman. I yield back

The CHAIRMAN. The gentleman's time has expired. Ms. Kuster, for 5 minutes.

Ms. KUSTER. Thank you very much, Mr. Chairman.

And thank you to all of you. I will take you to a different part of the country. I am from New Hampshire in the northeastern part of the state, but we have a wonderful land-grant university, the University of New Hampshire which is doing great things with agriculture.

Two points: One is that I just want the say for those who don't think that government programs work, 125 years is a pretty good record, and I imagine the number of people that have been educated and certainly the security and the variety of our food industry is pretty extraordinary.

I want to take a somewhat different look at young people. I am very proud of the fact that New Hampshire has a five percent growth rate in small farms. And by the way, all farms are small farms in New Hampshire by any of my colleagues' reckoning.

And one of the reasons is that we have a resurgence in organic farming, farm-to-table, farmers' markets, we have a resurgence in our consumers wanting to know where their food is coming from

and what is in it. And with all due respect to my colleague, Mr. Yoho, we might have a different perspective on the research that he has asked you to—and the advocacy that he is asked you to take on.

What I see in my district, and certainly the polling bears this out, but the reality of our lives bears this out, people want to understand what is in their food, and the fastest growing restaurants in the country right now are Panera, Chipotle, people want to actually watch their food being prepared. They want to see what is going into it.

So I wanted to ask you, this is what is inspiring young people, and then they are getting—the rest of us are catching up to CSAs and how to go back to cooking great food and real foodies. This is what is driving the economy for us in New Hampshire.

I would like to ask you, are you seeing this? Do you see people interested in organics or natural foods or being closer to their food, and how are any of you, and this is just wide open, how are any of you responding to that?

Dr. MARTIN. Congresswoman, thank you very much for that excellent question. We in North Carolina are seeing significant growth in farmers' markets. The attendance at our farmers' markets are overflowing because of the interest of individuals in wanting fresh vegetables and fresh produce and wanting to know what is in their food.

We also are working very closely with our partner institution, 1862 institution, North Carolina State and research and centers of research and food production and partnering with all of our food outlets in North Carolina in our restaurants to gain commitments from them to bring to the table in our restaurants all over our state a certain percentage of their food grown in North Carolina.

So we are seeing an accelerated interest and excitement about first partnerships in collaboration, but also food-to-table through our work with our food producers, small farmers, larger farmers, and producers, and the outlets, our restaurants and grocery chains and the like in North Carolina. Lots more excitement and enthusiasm about growth in quality of food and safety of food.

Ms. KUSTER. Great. Thank you. Thank you very much. Any others?

Dr. BELL. I would like to add that at the University of Maryland Eastern Shore, one of the initiatives that we are working on is what we call high tunnel greenhouse farming, and so we have a number of those high tunnel greenhouses that have been instituted around the region working with farmers who are then contracting directly with area outlets such as Whole Foods and others. And we have also introduced that into some of the school systems to help with the school age children, help them to become accustomed to growing food and seeing how it naturally develops. So it is a very interesting project.

Ms. KUSTER. Yes. And getting consumers and children closer to their food again. I have heard stories where children didn't know what our food looked like. They didn't know the name of it. They hadn't seen fresh food, so——

Dr. BELL. Absolutely.

Ms. KUSTER. Dr. Bailey, I have 10 seconds.

Dr. BAILEY. Yes. I just wanted to add that at Fort Valley State University, we have devoted 18 acres to local farmers so that they can go out, grow their own fruits and vegetables, and we have a farmer's market associated with that. It is very successful.

Ms. KUSTER. Terrific. I think that is a great way to attract young farmers and attract young people to it.

So thank you, Mr. Chairman.

The CHAIRMAN. The gentlelady's time has expired. The gentleman from Illinois, Mr. Davis, 5 minutes

Mr. DAVIS. Mr. Chairman, thank you, and I will not use all my time because I actually have to be on the House floor chairing proceedings at noon, but I do want to say, I had a chance to watch much of your responses to the questions while I was conducting some other meetings during this hearing, and it is just amazing to me some of the progress that you are making at your universities.

And the focus, I do want to add to what my colleague from Georgia, Mr. Allen, said about focusing on agriculture. I come from Illinois. Obviously no one here is from the State of Illinois in representing an institution there, but Illinois is kind of a hub of where our land-grant universities came from and where they are today, and as a matter of fact, a former professor at Illinois College in Jacksonville, Illinois, an institution I went to for 1 year, and no, they didn't kick me out, Mr. Chairman, I left on my own volition.

But Illinois College, Mr. Turner is credited by historians with helping Mr. Morrill come up with the idea for land-grant universities. So what you do is tremendous for us, and we are glad to partner with you in the great State of Illinois, especially on behalf of my land-grant university that I am proud to represent, the University of Illinois.

I want to make sure that you have all the opportunities that you need to talk about some of the advances. What I care about most is being privileged to be the Subcommittee Chairman for the Subcommittee on Biotechnology, Horticulture, and Research. These issues of ag research are priorities of mine and at all of our land-grant institutions.

I am going to throw this out, and if I get up in the middle of your response, I apologize because I do have to go, but I am going to yield back the balance of my time and allow you a chance to be able to maybe think about some of the issues that you would want our Subcommittee to address, and if you could, follow up with me later. Send a letter, send some correspondence, come see me, let me come see your institutions because what you do is an integral part of what we are able to do to make your institutions more successful in the future.

And I would have to thank my colleague, who is not here, but she was instrumental in many of the issues that your institutions are facing, and we are working very closely together on some other issues regarding with our fellow appropriators, and that is my good friend Marsha Fudge from Ohio who I know had some very kind words for each of you earlier today, and thank you again for being here. Thank you for what you do for making agriculture such a priority, and thank you for educating so many students and turning them into great American professionals and giving him an opportunity and a career.

Mr. Chairman, I yield back.

The CHAIRMAN. The gentleman yields back. The gentleman from Louisiana, Mr. Abraham, for 5 minutes. I am sorry. I misspoke. The gentleman from Oklahoma, Mr. Lucas, former Chairman of the Committee.

Mr. LUCAS. Thank you, Mr. Chairman, and this is a very important hearing we are having. I always like to remind my colleagues what our Presidents out there know, which is that the wonders of the land-grant system, prior to the original 1862 Act being passed, unless you were the child of a rich person in this country or for that matter anywhere in the world, an advanced education was not available to you, and with the 1890 Act and 1994 Act, we have made that available to everyone in this great nation, and that is really kind of the fundamentally amazing thing that we began in this great country.

So we should all be very proud of all the land-grants. I have the privilege of representing Langston University, an 1890 in Oklahoma, and I believe, Mr. Chairman, you said it would be all right to address some questions to the Presidents who are not at the table.

The CHAIRMAN. Yes, sir.

Mr. LUCAS. Dr. Wright did a very good job discussing the goat program, but if I could call upon Dr. Smith, perhaps, to touch on that just a little bit more, we are very proud in Oklahoma of that particular research program at Langston, and if you could expand a little bit on that, Doctor, and perhaps Dr. Wright also, if he would care to, talk about this building relationships in foreign countries and the trust that comes from that in a time when perhaps Americans are not always the most trusted individuals around the planet.

RESPONSE OF KENT J. SMITH, JR., PH.D., PRESIDENT, LANGSTON UNIVERSITY, LANGSTON, OK

Dr. SMITH. Thank you very much, Congressman. And we are very proud to have you as our Representative.

We are proud of the partnerships we have domestically, but we are equally proud of the partnerships that we have established at Langston University and particularly with our goat research area. We are in Haiti; we are in Israel; we are in Africa. And these are partnerships that are literally transforming lives internationally.

As mentioned by my colleague, we tend to think of the goat very differently in the United States of America. But when you go abroad, the goat is one of the most used animals out there. And when you talk about the impact both from a dairy standpoint but also from a meat standpoint, from clothing and what have you, it is nothing short of phenomenal what can happen in an underserved community when they are introduced to the possibilities that goat research and having goats available to them could provide.

So we are heavily involved internationally at Langston University through our goat research program, and we are doing many of the things that my colleagues have mentioned domestically as well.

Mr. LUCAS. The opportunities there for your students, both graduate and faculty, to participate in those international trips, could

you expand on that a little bit, because I suspect a typical land-grant university in this day is still much like Frank Lucas was several decades ago, had not spent a whole lot of time outside of his state, certainly not outside of the country, but it has to be a mind-expanding experience for the student?

Dr. SMITH. I will give you a personal example that just happened to me. It was July 4, and the reason I know that is I was outside with my young children, and we were popping fireworks on the campus, and literally six students walked up, well, about six students, and turns out they were students from Africa, exchange students from Africa, who had just gotten onto our campus the day before and they were there as a result of our faculty members' research and involvement in Africa, and they are here for the summer; and we started having a dialogue.

And for my personal children, they got to interface with some people who were different from them, who were from another part of the world, and many conversations. Fast forward to the interactions that our students are having this summer with students from Africa, that is what being prolific in the area of research and going global can have on your campus. Our faculty is getting to interact in ways they would not have had otherwise.

So it is a tremendous opportunity that is provided. When you give, you get back tenfold in terms of the research. So it is allowing us as a land-grant institution to talk about the university globally, but to interface with what is happening in education throughout the world.

Mr. LUCAS. Thank you, Dr. Smith, and thank you, Mr. Chairman. I yield back the balance of my time.

The CHAIRMAN. The gentleman yields back. Now Mr. Abraham, from Louisiana, for 5 minutes.

Mr. ABRAHAM. Thank you, Mr. Chairman. Being a rural physician in the Louisiana Delta, I cannot tell you how important agriculture and land-grant universities have been to our state in the southeastern United States. We are very fortunate today, we have representation from Southern University.

Dr. Belton, if you will just stand up for a minute, sir, I would love to recognize you. He is the newly appointed President and Chancellor of the Southern University System. And again, for me it is an honor for him to be here representing Southern. Southern is a shining star, not only in our State of Louisiana, but in the southeastern United States and really throughout the nation. It has directly and indirectly benefited, farmers, ranchers, agribusiness; and every resident the state, I can assure you, has been touched through the graduates and the work that Southern does.

I in fact, I have an intern working with me this summer, Perez Pickney; he is a student of Southern University. So thousands of our students in Louisiana and across the nation have graduated with degrees from Southern, successfully employed, gone out and become just fantastic businessmen and businesswomen, leaders of our community, leaders of the nation's community. And additionally Southern has been recognized and accredited from the Urban Forestry and Natural Resources Department that offers a B.S., M.S., and Ph.D. in urban forestry and natural resources; and to

date more than 300 students have received degrees from just this department, and they are heavily recruited by the USDA.

So, again, I just can't say enough about Southern being an integral part of our university system in the State of Louisiana but also in the state of the nation, and I am proud to have Dr. Belton and his representatives here to do that.

And I will get to my question. Dr. Bailey, you alluded to this, but agriculture now is not what it was when I was growing up as far as getting a degree in agriculture. It is so much more. I couldn't begin to expound on the possibilities and the probabilities that are available in agriculture now. I guess my question is, of all the fields in agriculture that are new and upcoming, where do you guys see the most growth, and are there jobs available for these graduates when they get out? And anybody that wants to hit first, go right ahead.

Dr. BAILEY. Thank you for that question. I personally have a background in business, and that might make me favor agricultural economics. I think it is the basic area, the foundation. I know that there are career opportunities for our students in that area as well. It is an asset to the decision-making, and I think that it will help all of the decision-makers, the leaders, to hit the correct balance with regard to investment in food or fabric or shelter. Its importance simply cannot be minimized, and I would say that probably is where we need to go.

Mr. ABRAHAM. I agree totally. Anybody else? Yes, ma'am. Go ahead, Dr. Mangum.

Dr. MANGUM. Thank you. I would also like to expand on that question. I think scientists are needed in agriculture. Much of what we do, developing the biological controls, if we are going to protect the food supply and production, we need more students in the research area.

Mr. ABRAHAM. I totally agree. I think it is a national security issue, our food safety now; so you are spot on exactly with that. It has become that important. Anybody else——

Dr. BELL. I was going to just add that food safety and security is a prime area on our campus, in particular given the industries that we serve in the region, and so we think that that is an area of growth for not just our region, but for the whole nation and the world actually.

Mr. ABRAHAM. Go ahead, Dr. Wright.

Dr. WRIGHT. I was going to mention water management is very important. It just so happens that in Texas we have had a lot of rain this year, but if you look over the last 5 or 6 years, we have more or less had droughts. And the fact that on our campus we have people very interested in that area is so important. It is again a research area, but water management is so important.

Mr. ABRAHAM. Yes. Look at California and what happened. I appreciate y'all's great work. Mr. Chairman, I yield back.

The CHAIRMAN. The gentleman yields back. Before we adjourn, I turn to my colleague and friend, David Scott, for any comments he might have to close out the hearing.

Mr. DAVID SCOTT of Georgia. Oh, well, thank you, Mr. Chairman. First, again, thank you very much for your leadership in providing

this hearing. We are very, very appreciative of that and with what we have to do.

I was just sitting here and this whole morning, and I want everyone to know that this has been a hearing of soaring magnitude and historical significance, and we have accomplished a lot. We have strengthened the bond and relationship of the 1890s with the Congress of the United States. You genuinely see the interest and the concern that Members of Congress have expressed, their knowledge, the work they did in getting their own research. You could tell by the in-depth questions that they asked.

The other extraordinary part about this hearing that made it of soaring magnitude is that you all came so well prepared to talk about what you have done and are doing with the Federal funds that you are receiving. And furthermore, the talk that you have brought to explain the great efficiencies for how you are getting so much out of the amount of money and funds that we are giving.

And, third, the fine recommendations of what you and what we can do to do, as I echo the words of George Washington Carver, what we can to better the condition of the American people.

Now, one of the most prevailing things that have come out of this meeting is the urgency and the total understanding that we are facing here an issue of grave national security. That is why this is so important, and the role of the 1890s, going forward, will play a very critical role in addressing this national security area.

One, the age of our farmers, those who produce our food, is continually escalating up, as I said, to 60 years of age. The 1890s can play a critical role in that. The whole concern about beginning farmers, just for an acre of land now, it costs $8,000. So we in Congress must understand that we have to look at this as a national security area and get the resources out into your hands so that you can do the job of opening up these opportunities and dealing with this final issue of showing the proper image of agriculture to the African-American community.

This was the final point that was made, and the gentleman from Prairie View A&M addressed it so succinctly when you said the stereotypical image of agriculture must be erased so we can show all of the greatness of agriculture, the significance of agriculture, the extraordinary jobs and opportunities that are all too often being bypassed by the African-American community because of this stereotype. As I said, it is the food we eat, the clothes, the energy; it is everything. And so I say to you, ladies and gentlemen, God bless you. This has been extraordinary. We say onward and forward.

Again, thank you, Mr. Chairman.

The CHAIRMAN. One of the worst things you can do is to follow a Baptist preacher. David, thank you for those comments.

I too want to add my thanks and congratulations to the system for 125+ years. Some of those schools have been around a bit longer than that but at least from the 1890 version and supports given from that legislation. Congratulations on that. We probably won't have to wait for another 125 years to have you back to talk to Congress. This has been a really terrific hearing. You saw from the interest of the crowd outside when we all got here, we transitioned from the reception, the keen interest in that.

Universities are at their core tools, tools to prepare kids for the future. I had a chance to meet with four young folks that are back there this morning to talk to them about what their plans are, where they are going, and the fact that they need to be really good because my generation and the one just below me and the one ahead of me have screwed this place up; and they are going to have to be really good to save us from ourselves in effect for all the problems that are out there that's going on.

I marvel at the impact that teachers and administrators have on mentoring and teaching and training and loving and prepping young men and women for those tasks that will, in fact, make this country a better place and all of our lives better and then the ripple effect, because they will teach and train and mentor and love and hug, and do all those things.

So thank you for being a part of that and being here. You have a great story to tell. It folds really nicely into the overall agricultural story. As we look at the future of the 2018 Farm Bill, we have to create that awareness among folks who live in urban America and don't really have that link, other than eating three or four times a day, to agriculture and the impact it has on their lives.

And so how do we make them aware because they already benefit from the cheapest, most abundant and safest food and fiber supply of any developed nation in the world based on the efforts of you and training those young farmers and all that they do. They just don't know it yet, and several of you mentioned the fact that this idea that they don't know where food comes from other than the grocery store and have no idea how it shows up there.

And as we gentrify our country, more and more, and that is what is happening, and we lose that direct contact back to the land, that we run the risks of not appreciating just what agriculture does for us every single day. I may have told one of you I was in a conversation with one of our colleagues when I first got here, and I was talking about being on the Agriculture Committee; and she said, "Well, I represent an urban area, and I don't have any agriculture issues in my district." I said, "Does no one in your district eat?" And she looked at me and she said, "Well, yes." And I said, "Well, it seems they have a keen interest in the successful production agriculture industry in this country."

So I hope you have had a great time in Washington, D.C. I hope this has been beneficial for you to come and be a part of this. It has clearly been beneficial to us. And we appreciate all of your efforts to make that happen. As I mentioned earlier, the other schools, if you want to prepare an opening statement much like you would have been able to present under the rules of the Committee, the record of today's hearing will remain open for 10 calendar days to receive additional material as supplemental written responses from the witnesses to any question posed by a Member.

Thanks everyone for being here today. This hearing of the House Committee on Agriculture is adjourned.

[Whereupon, at 12:14 p.m., the Committee was adjourned.]

[Material submitted for inclusion in the record follows:]

SUBMITTED MEMORANDUM BY HON. DAVID SCOTT, A REPRESENTATIVE IN CONGRESS FROM GEORGIA

Memorandum

To: The United States House of Representatives Agriculture Committee
From: U.S. Congressman, David Scott
Date: July 15, 2015

Re: The 1890 Land-Grant African-American Colleges and Universities' funding proposed language addition

Currently:

The 1890 land-grant institutions receive the majority of their United States Department of Agriculture funding through the farm bill, every 5 years, and these funds are to be used for three general purposes: research, education, and extension.

As a result of the current farm bill, on February 9, 2015, the United States Department of Agriculture Assistant Secretary for Civil Rights Joe Leonard announced the availability of more than $18 million for the 19 historically black land-grant colleges and universities in an effort to recruit, educate, and train African-American students for careers in agriculture.

Proposed Language Addition:

The proposed language addition is to add one additional use to the current funding structure. In order to encourage, recruit, and train more African-American students for careers in agriculture, farming, and agribusiness, this additional use of the funds would be helpful and necessary to help achieve Assistant Secretary Joe Leonard's, and our objective, which is: to recruit, educate, and train more African-American students for careers in the very important, critical, and growing fields of agriculture, farming, and agribusiness.

The proposed new uses of funds will read as follows:

These funds will be used for the following purposes; Teaching, Research, Extension, **Student Scholarships and Student Loan Forgiveness.**

Rationale for proposed language addition:

Knowing that the average age of agricultural farmers in the United States is 60 years of age. And, knowing the difficult challenges facing beginning farmers, and knowing the critical need to increase the number of African-American students seeking careers in agricultural business and farming; therefore, the United States Congress recognizes that, we, the United States Congress, ourselves, must play a critical role in reducing the average age of farmers, provide greater assistance for beginning farmers, and provide financial scholarship and loan forgiveness to bring more African-Americans into careers in farming and agricultural business.

Thus, through this language addition that funds can now also be used for student scholarship and loan forgiveness for 1890 students, we are also helping to bring down the average age of farmers, over time, and open the door of opportunity for more beginning farmers.

SUBMITTED REPORT BY HON. MARCIA L. FUDGE, A REPRESENTATIVE IN CONGRESS FROM OHIO

The Office for Access and Success Policy Brief

Report No. 3000–PB1

September 2013

By:

JOHN MICHAEL LEE, JR., PH.D., *Vice President,* APLU.
SAMAAD WES KEYS, *Program Assistant,* APLU.

This OAS Policy Brief highlights the inequities that exist in state matching Federal formula funding to our nation's 1890 land-grant universities and provides policy recommendations to fix the systemic inequities in the nation's land-grant system.

Land-Grant But Unequal State One-to-One Match Funding for 1890 Land-Grant Universities

Highlights

- From 2010–2012, 61 percent of 1890 land-grant institutions did not receive 100 percent of the one-to-one matching funds from their respective states for extension or research funding.
- Between 2010–2012, 1890 land-grant universities did not receive more than $31 million in extension funding due to states not meeting the one-to-one match requirement.
- From 2010–2012, 1890 land-grant universities did not receive more than $25 million in research funding due to states not meeting the one-to-one match requirement.
- Combined, 1890 land-grant universities did not receive almost $57 million due to states not meeting the one-to-one match.

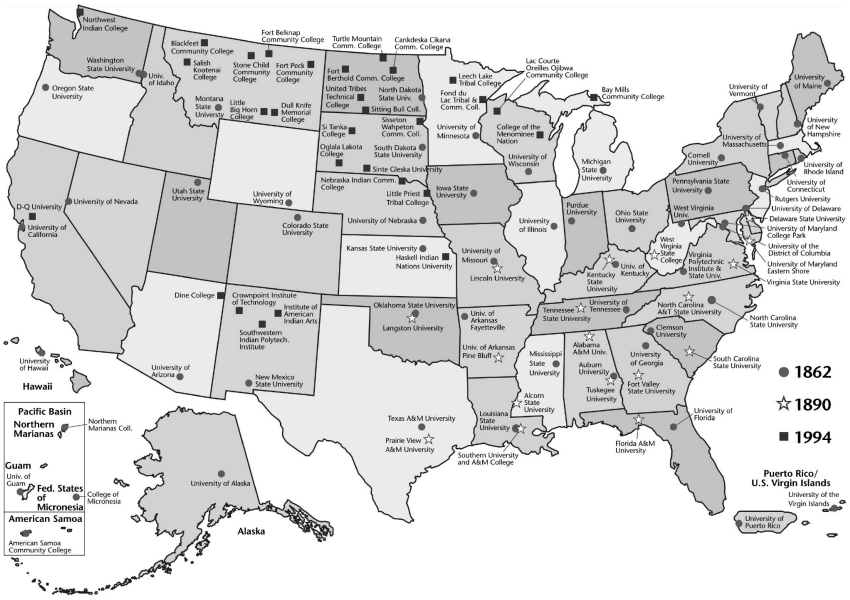
Introduction

On July 2, 1862, President Abraham Lincoln signed the Morrill Act into law, forging a new partnership between the Federal Government and the states to create the backbone for what is today the public system of higher education in America. Before the establishment of the state-university system of higher education, private institutions primarily provided higher education to Americans and access was afforded only to the well off at a few institutions such as Harvard, Yale and Princeton (APLU, 2012).

For more than 150 years since that historic event, the nation's land-grant colleges and universities have provided a "liberal and practical education" and these institutions have helped open the doors of access and empower students with the education they need. These institutions have also developed ground-breaking research that has moved our country forward and these institutions continue to provide rural communities in each state with robust solutions to the challenges they face—both agriculturally and socially. There is at least one land-grant institution in every state and territory in the United States and the District of Columbia (see *Figure 1*). Today, land-grant colleges and universities continue their mission to provide equitable access to education and develop innovations that continue to strengthen individual states and the country as a whole. Americans lead richer, productive and more prosperous lives because of the contributions of the land-grant university system.

Under the 1862 Morrill Act, which created the vast majority of land-grant institutions, and the Morrill Act of 1890, which established 18 black land-grant universities, the Federal Government committed to providing financial support to schools so long as states matched that level of support. Although 1890 land-grant universities produce talented students, innovative research and state-of-the-art practices in agriculture and STEM disciplines that are geared toward improving life in rural and high-risk communities, states are failing to provide the nation's 1890 historically black land-grant universities the same level of one-to-one matching dollars they provide other land-grant institutions that receive Federal funding.

Figure 1: U.S. Land-Grant Colleges and Universities



Source: U.S. Department of Agriculture Cooperative State Research, Education, and Extension Service, Washington, D.C. Based on U.S. Department of Agriculture map: m2783, June 2003.

The purpose of this policy brief is to highlight the disparities that exist in the matching of Federal formula funding to our nation's 1890 land-grant universities and to provide policy recommendations to fix this systemic disparity in the nation's land-grant system. The brief gives a history of the land-grant system, offers detailed information about land-grant matching funds to 1890 universities, highlights survey data and concludes with four recommendations for policymakers to strengthen the land-grant system. While this brief compares and contrasts state one-to-one matching funds to 1862 and 1890 universities, it does not suggest a zero sum game of taking needed funds from 1862 universities. Instead, the land-grant system is strongest when all universities—1862s, 1890s and 1994s—are funded adequately to carry out the land-grant mission.

The First Morrill Act of 1862

The Morrill Act is named after the U.S. Congressman from Vermont, Justin Morrill, who led the passage of the legislation that established the land-grant institutions for each state known as the First Morrill Act (Allen & Jewell, 2002; Brown, Donahoo, & Bertrand, 2001; Redd, 1998; R. Wilson, 1990). Though Congressman Morrill introduced his first version of the bill in 1857 and secured passage in 1859, it was vetoed by President James Buchanan (APLU, 2012). The passage of the First Morrill Act in 1862 reflected the demand for an expanded focus on agricultural and technical education in the United States that opened the doors of education to the agricultural and industrial workers. In the Morrill Act the purpose of the establishment of the land-grant system is stated in the following words:

> ". . . the endowment, support, and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in such manner as the legislatures of the states may respectively prescribe, in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions in life" (Morrill Act of 162, sec. 4).

This purpose was fulfilled and what started as a system of colleges to educate the industrial class, is today a system of comprehensive colleges and universities that are centers for research, teaching, agricultural innovation and the liberal arts. Many

land-grants are also flagship institutions such as the University of Florida and The Ohio State University. Ultimately, most land-grant colleges have become large public universities that today offer a full spectrum of educational opportunities. However, there are some land-grant colleges that are private schools, including Cornell University, Massachusetts Institute of Technology and Tuskegee University.

The Second Morrill Act of 1890

African-Americans could not benefit from the passage of the First Morrill Act in states that did not allow them to attend institutions of higher education. These states were primarily in Southern and border states. In fact, it was not until the passage of the subsequent legislation known as the Second Morrill Act of 1890 that African-Americans were able to attend land-grant institutions in many states. The Morrill Act of 1890 prohibited the distribution of money to states that made distinctions of race in admissions unless at least one land-grant college for African-Americans, was established, and thus brought about the establishment of 19 public black colleges (Allen & Jewell, 2002; Provasnik, *et al.,* 2004; Redd, 1998; Roebuck & Murty, 1993). It should be noted that several institutions outside of the South and border states provided access to African-American students long before the Morrill Act of 1890. Prior to the establishment of the black-land-grant system in 1890, access to higher education for African-Americans in the United States was primarily limited to private universities such as Howard University and Fisk University.

1890 Land-Grant Universities

A second Morrill Act was passed in 1890, aimed at the former Confederate states. This Act required each state to show that race was not an admissions criterion, or else to designate a separate land-grant institution for persons of color. Among the 70 colleges and universities which eventually evolved from the Morrill Acts are several of today's historically black colleges and universities. Though the 1890 Act granted cash instead of land, it granted colleges under that act the same legal standing as the 1862 Act colleges; hence the term "land-grant college" properly applies to both groups. However, many did not receive land nor money.

1994 Land-Grant Universities

Later on, other colleges such as the University of the District of Columbia and the "1994 land-grant colleges" for Native Americans were also awarded cash by Congress in lieu of land to achieve "land-grant" status.

1890 Land-Grant Universities

- Alabama A&M University (AL)
- Alcorn State University (MS)
- Delaware State University (DE)
- Florida A&M University (FL)
- Fort Valley State University (GA)
- Kentucky State University (KY)
- Langston University (OK)
- Lincoln University (MO)
- North Carolina A&T State University (NC)
- Prairie View A&M University (TX)
- South Carolina State University (SC)
- Southern University System (LA)
- Tennessee State University (TN)
- Tuskegee University (AL)
- University of Arkansas, Pine Bluff (AR)
- University of Maryland Eastern Shore (MD)

- Virginia State University (VA)
- West Virginia State University (WV)

Land-Grant But Unequal: State Matching Funds for 1890 Land-Grant Institutions

Over the years, land-grant status has implied several types of Federal support. The first Morrill Act of 1862 provided grants in the form of Federal lands (30,000 acres or equivalent in scrip for each Representative and Senator) to each state for the establishment of a public institution to fulfill the Act's provisions. At different times money was appropriated through legislation such as the second Morrill Act of 1890, which funded the establishing of the nation's public historically black land-grant colleges and universities; and the Bankhead-Jones Act of 1935 which provided an increase in Federal funding to land-grant colleges and universities during the depression.

The nation has significantly expanded its contributions to land-grant colleges and universities. This support includes funding for research through the Hatch Act of 1887 and the Smith-Lever Act of 1914 that created the extension system at 1862 land-grant universities. However, because 1890 land-grant institutions are not eligible to receive funding provided by the Hatch Act or the Smith Lever Act, the Evans-Allen Act was established in 1977 (90 years after the Hatch Act of 1887) to support agricultural research at 1890 land-grant institutions with funds equal to at least 15 percent of the Hatch Act appropriations. Institutions currently receive about 21 percent of Hatch Act funding through the Evans-Allen Act.

The National Agriculture Research, Extension and Teaching Act of 1997 (NARETPA)—established 83 years after the Smith-Lever Act of 1914—provides Federal funding for agricultural extension programs and activities at 1890 land-grant institutions similar to those of 1862 universities under the Smith-Lever Act. NARETPA provided this funding directly to 1890 institutions for the first time. The United States Department of Agriculture (USDA) plays an integral role in the administering of Federal land-grant funds and the coordination of agricultural land-grant activities at the national level. USDA's National Institute of Food and Agriculture (NIFA) awards research funding through a combination of formula funding, non-competitive and competitive grants.

Important Federal Land-Grant Legislation

Hatch Act of 1887

A key component of the land-grant system is the agricultural experiment station program created by the Hatch Act of 1887. The Hatch Act authorized direct payment of Federal grant funds to each state to establish an agricultural experiment station in connection with the land-grant institution in order to increase agricultural research. The amount of this appropriation varies from year to year and is determined for each state through a formula based on the number of small farmers in the state. A major portion of the Federal funds must be matched by the state.

Smith-Lever Act of 1914

In order to disseminate information gleaned from the experiment stations' research to the farmers and other industrial workers in the state, the Smith-Lever Act of 1914 created the Cooperative Extension Service associated with each 1862 land-grant institution—1890 land-grant institutions did not receive this funding (APLU, 2013). Extension programs at land-grant institutions are the community and rural education programs that provide a direct impact to the citizens of each state and include programs to support small farmers and agricultural business development in every state. This Act authorized ongoing Federal support for extension services, using a formula similar to the Hatch Act, to determine the amount of appropriation. This Act also requires states to provide matching funds in order to receive the Federal monies.

Evans-Allen Act of 1977

The Evans-Allen Act of 1977 provides capacity funding for food and agricultural research at the 1890 land-grant universities in a manner similar to that provided to the 1862 universities under the Hatch Act of 1887. Research conducted under the Evans-Allen Program has led to hundreds of scientific breakthroughs of benefit to both the unique stakeholders of the 1890 Institutions and the nation as a whole [7 U.S.C. 3222, (Sec. 1445, Research Act of 1977)].

The Evens-Allen Act was created to support continuing agricultural research at colleges that were created under the 1890 Morrill Act. Its purpose is to promote efficient production, marketing, distribution and utilization of products of the farm as essential to the health and welfare of people and to promote a sound prosperous agriculture and rural life.

The National Agricultural Research, Extension, and Teaching Policy Act NARETPA) of 1977

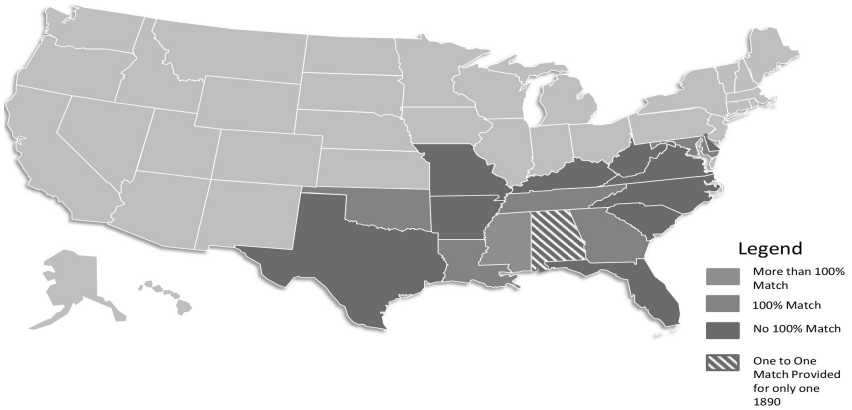
The National Agricultural Research, Extension, and Teaching Policy Act of 1977 (NARETPA) as a law, provides the basis for Federal funding for agricultural extension programs and activities at 1890 land-grant institutions.

Though these funding sources have been made available to the nation's land-grant colleges and universities, this funding also requires the home state of the land-grant institution to match all formula based funding received from Federal funds on a dollar-to-dollar basis commonly referred to as the one-to-one match requirement. While one-to-one matching is a requirement for all states with land-grant universities, states often do not fulfill the matching requirement for its 1890 land-grant institutions while meeting and in many cases exceeding the matching requirement for 1862 land-grant institutions in the same state. Federal legislation allows institutional waivers for the one-to-one match requirement for 1890 land-grant institutions while 1862 land-grant institutions are not eligible to receive waivers. As a result, from 2010–2012, 1890 land-grant institutions did not receive almost $57 million in Federal matching funds for research and extension activities.

The Matching Disparity

The one-to-one matching inequity that is being experienced by 1890 land-grant institutions is not in any way caused be the Federal Government or the U.S. Department of Agriculture. In fact, Congress established the matching requirement so that all land-grant institutions would receive one-to-one matching funds from their respective state. This inequity in funding to HBCUs by states has been well documented since the founding of these institutions, and funding at these schools was very poor and not equitable compared to white institutions (Allen & Jewell, 2002; Redd, 1998). While all states are meeting the one-to-one matching requirement for their 1862 institutions, the majority of states do not meet this obligation for 1890 land-grant universities (see *Figure 2*) requiring these institutions to apply for a waiver of the one-to-one match requirement or forfeit their funding. The U.S. Department of Agriculture still requires 1890 land-grant institutions to come up with at least 50 percent of the match.

Figure 2: Evans-Allen and Extension One-to-One Matching Status to 1890 Land-Grant Universities by State, 2012



Source: Association of Public and Land-grant Universities Office of Access and Success analysis of U.S. Department of Agriculture extension and Evans-Allen Funding, 2013.

Note: In some cases though institutions may not have received a waiver, the match comes from general funds instead of a specific line-item.

From 2010–2012, 61.2 percent (11 out of 18) of the 1890 land-grant institutions did not receive 100 percent of the one-to-one matching funds from their respective states for extension or research funding. In terms of dollars, 1890 land-grant universities did not receive $31,828,918 in extension funding due to states not meeting the one-to-one match requirement (see *Table 1*) between 2010–2012, and 1890 land-grant universities did not receive $24,798,282 in research funding due to states not meeting the one-to-one match requirement (see *Table 2*) from 2010–2012. Combined, this is a net loss of $56,627,199. It is also not clear if the remaining eight states where 1890 institutions have not applied for a waiver are also losing millions of dollars because many do not have a specific line-item that provides these matching funds and they are taken from the institutions general agriculture allocation. For example, in FY14, Maryland will provide the University of Maryland Eastern Shore (UMES) with a specific line-item match for USDA matching funds for the first time. Historically, the match for the agriculture funds at UMES was derived from the general agriculture appropriation and was not specifically identified as a match. When these funds are not identified as a match and are taken from general funds, it results in a net loss to the institution. Budget reductions to state institutions general funds also requires institutions to reduce their state match significantly. Without a separate line-item allocation to ensure that the one-to-one match is met each year, it is unclear if the requirement is being met by all states, including those that have not required a waiver. While the matching provided by states to institutions has increased significantly over the last 2 decades, 1890 land-grant universities in many states still do not receive the funding necessary to meet the one-to-one requirement.

Table 1: 1890 Land-Grant Universities Extension Funding 2010–2012
2010–2012 Totals

State	Institutions	Total to State	100% Match Requirement Total	Total Waiver Requested	State Actual Match Total	State Percent Match Total
AL	Alabama A&M	$6,337,562	$6,337,562	$0	$6,337,562	100%
AL	Tuskegee	$6,337,562	$6,337,562	$2,195,669	$4,141,893	65%
AR	University of Arkansas, Pine Bluff	$5,555,679	$5,555,679	$1,867,658	$3,688,021	66%
DE	Delaware State	$3,486,215	$3,486,215	$0	$3,486,215	100%
FL	Florida A&M	$5,435,344	$5,435,344	$2,717,632	$2,717,713	50%
GA	Fort Valley State	$7,575,368	$7,575,368	$0	$7,575,368	100%
KY	Kentucky State	$9,473,491	$9,473,491	$3,569,427	$5,904,064	62%
LA	Southern University	$4,971,901	$4,971,901	$0	$4,971,901	100%
MD	University of Maryland, Eastern Shore	$3,943,556	$3,943,556	$0	$3,943,556	100%
MS	Alcorn State	$5,931,055	$5,931,055	$0	$5,931,055	100%
MO	Lincoln University	$9,559,897	$9,559,897	$5,033,586	$4,526,311	47%

Table 1: 1890 Land-Grant Universities Extension Funding 2010–2012—Continued
2010–2012 Totals

State	Institutions	Total to State	100% Match Requirement Total	Total Waiver Requested	State Actual Match Total	State Percent Match Total
NC	North Carolina A&T State	$10,736,846	$10,736,846	$3,756,038	$6,980,808	65%
OK	Langston University	$5,856,454	$5,856,454	$0	$5,856,454	100%
SC	South Carolina State	$5,448,885	$5,448,885	$2,724,443	$2,724,442	50%
TN	Tennessee State	$8,411,095	$8,411,095	$0	$8,411,095	100%
TX	Prairie View A&M	$12,562,718	$12,562,718	$6,055,922	$6,506,796	52%
VA	Virginia State	$7,097,437	$7,097,437	$2,270,574	$4,826,863	68%
WVA	West Virginia State	$4,025,156	$4,025,156	$1,637,969	$2,387,187	59%
Grand Totals		**$122,746,221**	**$122,746,221**	**$31,828,918**	**$90,917,304**	**74%**

Source: U.S. Department of Agriculture, 2013.

Table 2: 1890 Land-Grant Universities Evans-Allen (Research) Funding 2010–2012
2010–2012 Totals

State	Institutions	Total to State	100% Match Requirement Total	Total Waiver Requested	State Actual Match Total	State Percent Match Total
AL	Alabama A&M	$6,678,810	$6,678,810	$0	$6,678,810	100%
AL	Tuskegee	$6,629,632	$6,629,632	$312,615	$6,317,017	95%
AR	University of Arkansas, Pine Bluff	$5,734,629	$5,734,629	$1,234,076	$4,500,553	78%
DE	Delaware State	$3,132,109	$3,132,109	$0	$3,132,109	100%
FL	Florida A&M	$5,287,691	$5,287,691	$3,068,010	$2,219,682	42%
GA	Fort Valley State	$7,640,470	$7,640,470	$0	$7,640,470	100%
KY	Kentucky State	$9,124,875	$9,124,875	$1,677,140	$7,447,735	82%
LA	Southern University	$5,086,583	$5,086,583	$0	$5,086,583	100%
MD	University of Maryland, Eastern Shore	$3,836,233	$3,836,233	$0	$3,836,233	100%
MS	Alcorn State	$8,022,396	$8,022,396	$0	$8,022,396	100%
MO	Lincoln University	$7,307,444	$7,307,444	$3,735,087	$3,572,357	49%
NC	North Carolina A&T State	$10,513,898	$10,513,898	$2,845,912	$7,667,986	73%
OK	Langston University	$5,860,825	$5,860,825	$0	$5,860,825	100%
SC	South Carolina State	$5,691,927	$5,691,927	$3,304,647	$2,387,280	42%
TN	Tennessee State	$8,322,683	$8,322,683	$0	$8,322,683	100%
TX	Prairie View A&M	$12,382,874	$12,382,874	$6,315,445	$6,067,429	49%
VA	Virginia State	$7,096,901	$7,096,901	$913,367	$6,183,534	87%
WVA	West Virginia State	$3,757,225	$3,757,225	$1,391,983	$2,365,242	63%
Grand Totals		**$122,107,205**	**$122,107,205**	**$24,798,282**	**$97,308,924**	**80%**

Source: U.S. Department of Agriculture, 2013.

Table 3: 1890 Land-Grant Universities Combined Extension & Evans-Allen Act Funding (Research) 2010–2012
2010–2012 Totals

State	Institutions	Total to State	100% Match Requirement Total	Total Waiver Requested	State Actual Match Total	State Percent Match Total
AL	Alabama A&M	$13,016,372	$13,016,372	$0	$13,016,372	100%
AL	Tuskegee	$12,967,194	$12,967,194	$2,508,284	$10,458,910	81%
AR	University of Arkansas, Pine Bluff	$11,290,308	$11,290,308	$3,101,734	$8,188,574	73%
DE	Delaware State	$6,618,324	$6,618,324	$0	$6,618,324	100%
FL	Florida A&M	$10,723,035	$10,723,035	$5,785,641	$4,937,394	46%
GA	Fort Valley State	$15,215,838	$15,215,838	$0	$15,215,838	100%
KY	Kentucky State	$18,598,366	$18,598,366	$5,246,567	$13,351,799	72%
LA	Southern University	$10,058,484	$10,058,484	$0	$10,058,484	100%
MD	University of Maryland, Eastern Shore	$7,779,789	$7,779,789	$0	$7,779,789	100%
MS	Alcorn State	$13,953,451	$13,953,451	$0	$13,953,451	100%
MO	Lincoln University	$16,867,341	$16,867,341	$8,768,673	$8,098,668	48%
NC	North Carolina A&T State	$21,250,744	$21,250,744	$6,601,950	$14,648,794	69%
OK	Langston University	$11,717,279	$11,717,279	$0	$11,717,279	100%
SC	South Carolina State	$11,140,812	$11,140,812	$6,029,090	$5,111,722	46%
TN	Tennessee State	$16,733,778	$16,733,778	$0	$16,733,778	100%
TX	Prairie View A&M	$24,945,592	$24,945,592	$12,371,367	$12,574,225	50%
VA	Virginia State	$14,194,338	$14,194,338	$3,183,941	$11,010,397	78%
WVA	West Virginia State	$7,782,381	$7,782,381	$3,029,952	$4,752,429	61%
Grand Totals		**$244,853,426**	**$244,853,426**	**$56,627,199**	**$188,226,227**	**77%**

Source: U.S. Department of Agriculture, 2013.

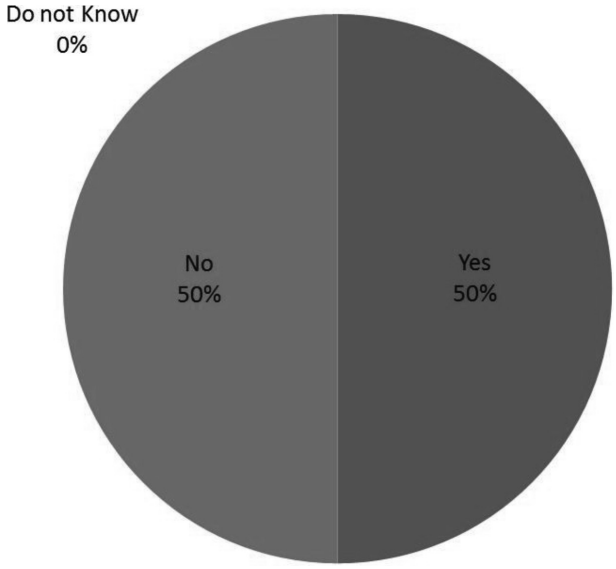
Survey of 1890 Land-Grant Universities

In a 2013 survey of 1890 land-grant universities conducted by the APLU Office for Access and Success, 50 percent of institutions indicated that they did not receive

one-to-one matching funds from their state (See *Figure 3*) and 70 percent of institutions indicated that they had requested a waiver between 2008 and 2013 (see *Figure 4*). Further, only ten percent of respondents (one institution) indicated that the 1890 land-grant institutions received more than a one-to-one match (see *Figure 5*), and 80 percent of respondents noted that the 1862 land-grant institutions receive more than a one-to-one matching of funds from their state (See *Figure 6*). This further underscores the under-funding of 1890 land-grant institutions in comparison to 1862 land-grant universities in the same state. *Figure 7* shows that since 2008, there has been an increase in 1890 land-grant institutions receiving waivers for the one-to-one matching requirement. When asked what entity in the state makes the final decision on whether or not your institution receives matching funds, 90 percent of survey respondents indicated that the state legislature was responsible for the making the decision on matching funds while only ten percent indicated the governor as the final decision maker. The survey also asked respondents to briefly describe the process to secure matching funds in their state (See *Figure 9*). The responses received ranged from a request being made to the legislature by the university to the absence of any formal process to secure matching funds. The responses show that there is a need to standardize the process of how requests for funding for matching funds are handled on a state-by-state basis.

Figure 3: Land-Grant Universities Matching Survey, 2013

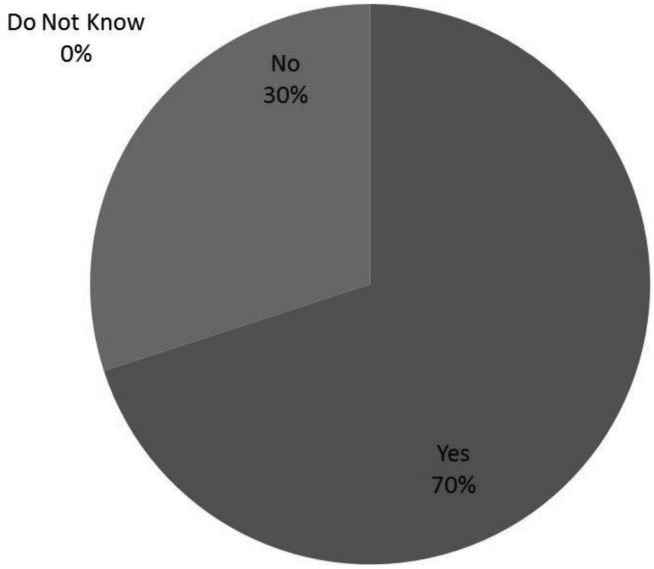
Question: Does your institution receive 100 percent of one-to-one matching funds from your state for the Agriculture funding received from USDA?



Source: Association of Public and Land-grant Universities, Office of Access and Success 1890 Matching Survey, 2013.

Figure 4: Land-Grant Universities Matching Survey, 2013

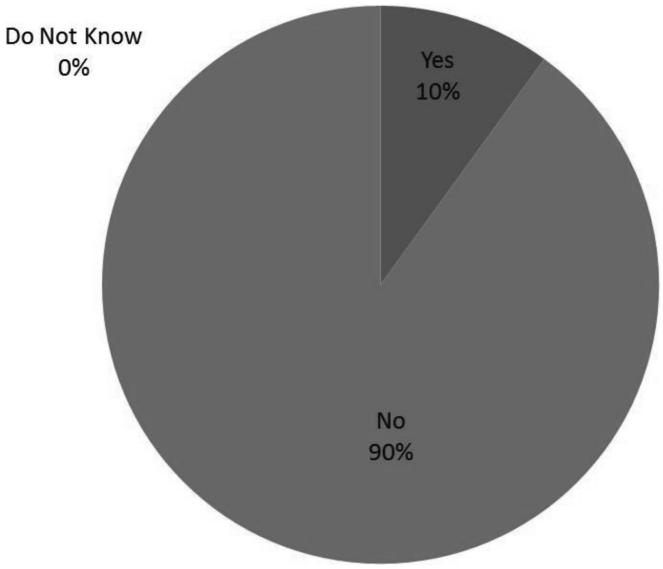
Question: Has your institution ever requested a waiver from USDA for not meeting the One-to-One Matching Requirement between 2008 and 2013?



Source: Association of Public and Land-grant Universities, Office of Access and Success 1890 Matching Survey, 2013.

Figure 5: Land-Grant Universities Matching Survey, 2013

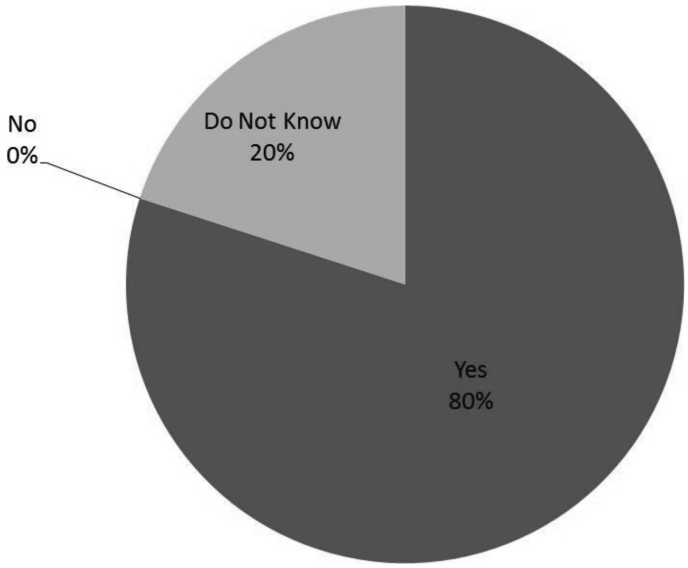
Question: Does your institution receive more than 100 percent of one-to-one matching funds from your state for the Agriculture funding received from USDA?



Source: Association of Public and Land-grant Universities, Office of Access and Success 1890 Matching Survey, 2013.

Figure 6: Land-Grant Universities Matching Survey, 2013

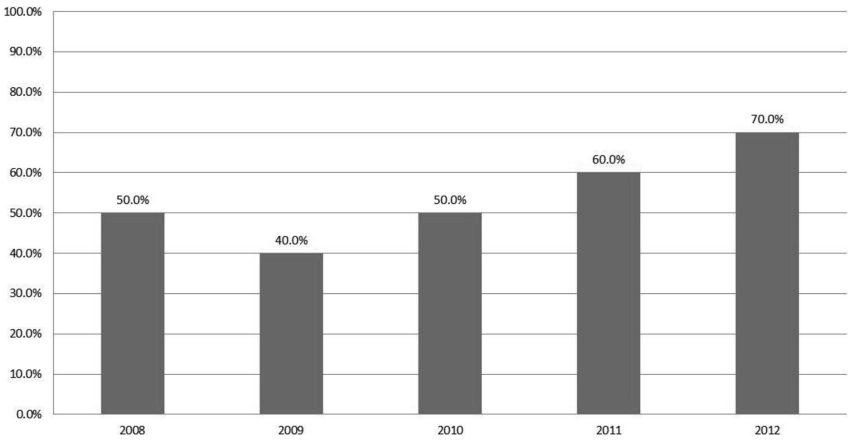
Question: Does your state's 1862 land-grant institution receive more than 100 percent one-to-one matching funds from your state for Agriculture Funding received from USDA?



Source: Association of Public and Land-grant Universities, Office of Access and Success 1890 Matching Survey, 2013.

Figure 7: Land-Grant Universities Matching Survey, 2013

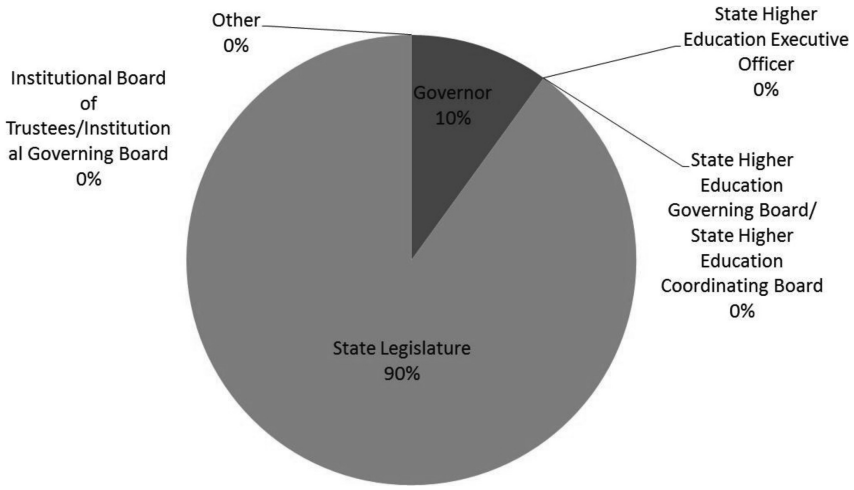
Question: In what year(s) has your institution received a waiver from USDA for the One-to-One Match Requirement? (Select All That Apply)



Source: Association of Public and Land-grant Universities, Office of Access and Success 1890 Matching Survey, 2013.

Figure 8: Land-Grant Universities Matching Survey, 2013

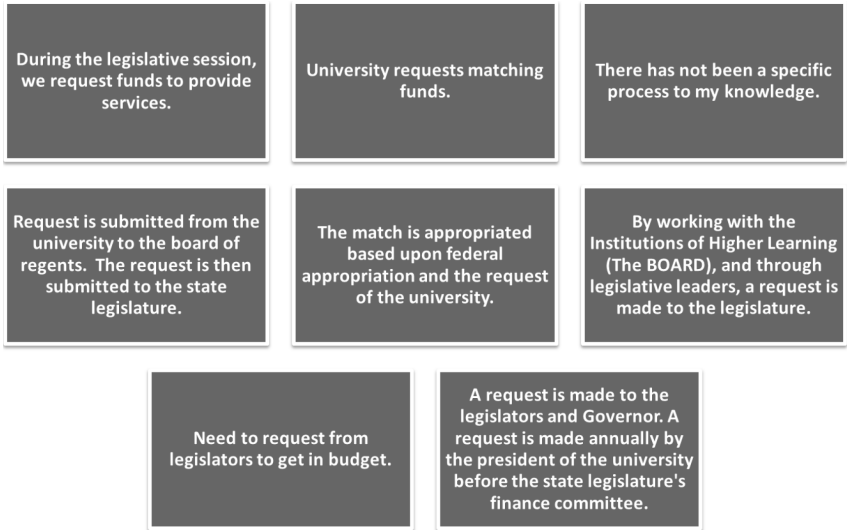
Question: What entity in your state makes the final decision on whether or not your institution receives one-to-one matching funds?



Source: Association of Public and Land-grant Universities, Office of Access and Success 1890 Matching Survey, 2013.

Figure 9: Land-Grant Universities Matching Survey, 2013

Question: Please briefly describe the process to secure matching funds in your state?



Source: Association of Public and Land-grant Universities, Office of Access and Success 1890 Matching Survey, 2013.

Moving Forward: Recommendations for Policy Makers

The disparities in matching funds in the nation's land-grant system must be corrected. States must meet their obligation that was established under the Morrill Acts to equally fund the land-grant system in their states that provide research and extension services that benefit rural farmers and communities in their respective states. More must be done on both the Federal and state level to ensure that match

funding for 1890 land-grant institutions is brought to parity with their 1862 land-grant counterparts. We do not aim to introduce through these recommendations a zero sum game where money should be taken from 1862s to accomplish the goal of parity for 1890s. The money received by both sets of institutions is important to the overall strength of the land-grant system and the contributions of both are important to the state. It is in the best interest of the state to fully fund the land-grant system, and we propose the following policy recommendations to strengthen the entire land-grant system:

Recommendation 1

States should ensure that 1890 land-grant Universities receive the One-to-One Matching of Funds from the state in a separate line-item budget.

State legislators, governors and system and institutional governing boards should ensure that yearly budgets to 1862 and 1890 land-grant universities automatically include a separate line-item to match the Federal dollars received for land-grant institutions. This would not only ensure that all 1862 and 1890 land-grant universities receive the one-to-one match that is required under Federal law, but also ensures that universities do not have to make up the deficit for the funds through general operating dollars that are intended to be spent on academic programs.

Recommendation 2

States should ensure that both 1862 and 1890 land-grant universities receive the percent of matching funds in their appropriation dollars.

State legislators, governors and system and institutional governing boards should ensure that the percent of formula funds matching is the same for 1862 and 1890 land-grant universities because this is the only way that parity in funding can be reached. While each institution receives their grant allocations from the Federal Government based on a Federal formula, some states go above and beyond the matching requirement for their 1862 land-grant institutions but do not even meet the minimum 100 percent one-to-one match requirement for many of their 1890 land-grant institutions. This means that while an 1862 institution (which receives more in land-grant funding based on institutional size and other factors) can receive 2:1 or 12:1 matching funds, the corresponding 1890 institutions receive less than and up to a one-to-one match. The under-funding of HBCUs has been a persistent problem for many 1890 land-grant institutions in general, and it is time that these institutions receive their Federal match. This does not mean that 1862s should not continue to receive the funding they currently receive, but it does mean that more money should be invested into 1890 institutions in these states.

Recommendation 3

States should ensure that the process to request and receive matching funds is the same for 1862 and 1890 land-grant universities.

States should create standardized and automated processes for the request and receipt of matching funds from the state. The results of the survey show that the processes that are currently used by states vary greatly and can often be different for 1862 institutions *versus* 1890. For example, one 1890 land-grant institution noted that while it had to specifically make a request for matching funds to the state legislature, the same funding was provided to the 1862 land-grant university without making a specific request before the same legislature and received much more money than required by the one-to-one matching requirement. The process in each state should be reviewed to ensure equity in funding.

Recommendation 4

Federal legislators should provide oversight to ensure that states meet their obligation for providing the one-to-one matching requirement and should incent states to provide the same percentage of formula match funding to both 1862 and 1890 land-grant universities within their state.

States should no longer be allowed to not meet their obligation of providing matching funds to 1890 land-grant institutions. The Federal Government should provide more mechanisms to ensure that institutions receive the matching funds from their states. It should not be left up to 1890 land-grant institutions themselves to use the waiver process in lieu of not receiving matching funds from the state.

Conclusion

The above recommendations represent a path forward to ensure that 1890 land-grant universities can finally receive the one-to-one matching funds. To be **land-grant but unequal** is a strange place to be for a land-grant system that was created to bring education to agricultural and industrial citizens in each state. Staying

true to the original intent of the Morrill Acts, 1890 land-grant universities have contributed and continue to contribute greatly to research, extension services and academic training to citizens and farmers. However, many of these institutions have been doing so in states that have not met their obligation to provide matching funds to these institutions. This must be changed and rectified. Each state has an obligation to ensure these changes not only for the 1890 land-grant institutions but also for the citizens and farmers of each state that are served by these universities.

For the executive summary, visit *www.aplu.org/OASresearch*.

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About the Authors

John Michael Lee, Jr. is Vice President for the Office for Access and Success (OAS) and is responsible for advancing Public Black Universities, Hispanic-Serving Institutions, and Tribal Colleges and supporting the APLU Council of 1890 Universities; Commission on Access, Diversity and Excellence; and the OAS Advisory Board. His research interests include student access, participation, and success in higher education; student recruitment, retention, and graduation; student development; minority serving institutions (HBCUs, HSIs, and Tribal Colleges); higher education diversity; and education policy.

He earned a Ph.D. in higher education administration from New York University, an MPA with a concentration in economic development from Georgia State University, and a bachelor of science in computer engineering from Florida A&M University.

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He is currently a doctoral candidate at the University of Georgia's Institute of Higher Education. He earned a master's degree from Central Michigan University in educational curriculum and instruction and a bachelor of arts degree from Morehouse College in psychology.

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About APLU

The **Association of Public and Land-grant Universities (APLU)** is a research, policy, and advocacy organization representing 223 public research universities, land-grant institutions, state university systems, and related organizations. Founded in 1887, APLU is the nation's oldest higher education association with member institutions in all 50 states, the District of Columbia, four U.S. territories, and Canada. Annually, member campuses enroll four million undergraduates and 1.2 million graduate students, award over one million degrees, employ over one million faculty and staff, and conduct $39 billion in university-based research.

About The Council Of 1890 Universities

APLU's **Council of 1890 Universities** collectively represents the interests of 1890 land-grant institutions including the University of the District of Columbia and the University of the Virgin Islands. The Council seeks to maintain, insure and increase funding, to present a unified approach for presentation of views regarding these institutions and to serve as a forum to share ideas and resources. The Council works with other 1890 associations in developing a comprehensive agenda for APLU regarding Congressional and Federal policies and programs impacting 1890 institutions.

About OAS

APLU's **Office for Access and Success (OAS)** is dedicated to equity, access, and educational excellence for all Americans with a special focus on under-served students and minority-serving institutions. OAS is primarily responsible for supporting the APLU Council of 1890 Universities; the Commission on Access, Diversity and Excellence (CADE); Hispanic-Serving Institutions; and the OAS Advisory Board. To reach the authors, please e-mail *oas@aplu.org*.

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PREPARED STATEMENT OF LAURENCE B. ALEXANDER, J.D., PH.D., CHANCELLOR, UNIVERSITY OF ARKANSAS AT PINE BLUFF, PINE BLUFF, AR

Thank you Honorable Chairman Conaway, Ranking Member Peterson, and Members of the House Committee on Agriculture for providing this opportunity for me to provide written testimony for the Congressional hearing.

My name is Laurence B. Alexander and I am the Chancellor of the University of Arkansas at Pine Bluff.

The University of Arkansas at Pine Bluff is an 1890 land-grant, historically black college/university (HBCU) with a diverse student population of more than 2,500 students, more than 30 undergraduate and graduate degree offerings, including a Ph.D. Program in Aquaculture/Fisheries. Our talented faculty members are among the most diverse of any university within the state. As the second oldest higher education institution in Arkansas, our aim has remained the same over the years—to provide a high quality, affordable education with a personal touch.

For more than 140 years, the University of Arkansas at Pine Bluff has worked to create an environment that infuses excitement into learning, affords opportunities for personal growth and productivity while providing a basic need to its students—a chance to advance. The 15:1 student-to-teacher ratio makes it possible to maintain a learning environment with close interaction between students and faculty while offering challenging curricula which encourage our students to seek and fulfill their potential. Our land-grant academic programs and STEM Academy lead the charge in these areas.

Out-of-class experiences and student involvement includes more than 120 student organizations, an internationally renowned Vesper Choir, Marching Band, Concert Bands, Wind Symphony, nationally recognized spirit and debate teams, award-winning theater department and accomplished athletics program.

Land-Grant Programs

The School of Agriculture, Fisheries and Human Sciences is an integral part of the University of Arkansas at Pine Bluff and administers the 1890 research and extension land-grant programs at the University. The School consists of three academic departments: Agriculture, Fisheries and Human Science. Approximately $7.7 million in combined Federal and state funds (Evans-Allen, Extension and State Match) support 15 approved ongoing research and extension projects. While most of the research is conducted at the UAPB campus site, some activities are occurring at the UAPB Lonoke and Marianna farm sites. Additional research studies were conducted on private cooperating farm sites in Jefferson, Lee, St. Francis, Monroe and Phillips counties and in collaboration with other institutions such as the Felsenthal National Wildlife Refuge. Through collaborations with other colleges and universities, both in the U.S. and internationally, *the School of Agriculture, Fisheries and Human Sciences strives to help improve the quality of life for people in Arkansas, the nation, and the world. The School's Office of International Programs, is vital to achieving global effectiveness and success.*

Seven new Evans-Allen research projects conducted by School researchers were approved and seven Evans-Allen projects were completed. The knowledge gained by these research activities is extended to families and communities through a variety of outreach and Extension programs. The extension program has structured programs in 29 counties with staff housed in ten of those counties.

Research and Extension in Agriculture are conducted in the areas of biotechnology, plant science, animal science, water quality and agricultural economics. The efforts in the Department of Human Sciences are directed toward human nutrition, food safety and family life. A newly developed project in the textiles program includes the utilization of new applications for biomaterials such as traditional fibers and new modified regenerated proteins like spider silk and cellulosic fibers in relation to aspects of sustainability of materials.

The Agriculture and Human Sciences components of the Research and Extension programs are designed to provide information and assistance to small-scale and limited resource farmers and disadvantaged families and youth.

Last, but not least, our nationally known Aquaculture/Fisheries program supports both the state's aquaculture industry and recreational fishing. The latter serves as an avenue for enhancing tourism as an economic engine for the state.

Selected Land-Grant Impacts

Some of the impacts that our land-grant research and extension programs have yielded center around sweet potatoes, rice, catfish, bait fish and locally grown produce. I will briefly detail the more significant impacts we have had in the above mentioned areas with a sampling of the research conducted at UAPB:

UAPB is working to identify a number of major viruses that detrimentally affect the sweet potato crop in the state of Arkansas. Our researchers can now advise producers to not use their own seeds over a period of time as higher accumulation of viruses may lead to yield loss. This knowledge could save producers thousands of dollars over a period of time.

To help solve inefficiencies in commercial production of baitfish and keep down feed costs, UAPB scientists are testing new diet ingredients and feeding strategies using prebiotics with golden shiners. The study will direct producers to a feed that can produce a hardy, disease-resistant product that will increase profitability.

A UAPB study examined the increased demand for fresh and chilled/frozen seafood while the market size and share of U.S. farm-raised catfish were declining. It found that the catfish industry needs to develop market-specific strategies to gain further market share in the U.S.

Through a collaborative effort between UAPB, the East Arkansas Enterprise Community and the Arkansas Delta Seeds of Change, several schools now have fresh, locally grown fruits and vegetables to meet the "color my plate" guidelines. As a result, school districts in Arkansas have added more fresh fruits and vegetables to school lunch and summer feeding programs to meet USDA guidelines and to provide healthier choices to school children.

STEM Scholars Academy

I would also like to call attention to our STEM Scholars Academy at UAPB. The Academy is a well-integrated set of enrichment programs designed to help meet local, state and national human resource needs in STEM areas. The STEM Scholars

Academy reflects the land-grant mission and the University's mission with a particular emphasis on helping to increase the pool of well-prepared underrepresented minorities in STEM majors and careers.

Currently, there are three enrichment initiatives, including the NSF-funded HBCU–UP Comprehensive Implementation grant which is foundational to the STEM Academy; the NSF-funded Arkansas Louis Stokes Alliance for Minority Participation grant which is reflective of best practices learned in the HBCU–UP STEM Academy; and the U.S. Department of Education funded M.Ed. degree in Science and Mathematics Education Program. All are designed to help meet research, teaching and industry needs in science areas, with a particular emphasis on diversity in these critical areas. The Arkansas Science and Technology Authority is also a major partner in these initiatives.

Key components of the STEM Academy initiatives include a Guest Lecture Series, Advisory Board, Pre-First Year Summer Institutes/Academy, hands-on research/mentoring experiences, internships, study groups, curricula and infrastructure upgrades. Currently, the STEM Academy has 229 undergraduates and six graduate students. The disciplines include: chemistry, mathematics, physics, computer science, biology, plant science, animal science, and industrial technology.

The UAPB STEM Scholars Academy has helped to transform education efforts within the science, engineering and mathematics disciplines at the University by producing a well-designed model of intervention that sharpens the students' skills in teamwork, research, STEM content, technical writing and professional presentations. As a result, we have experienced an increase in STEM enrollment from 21.3% to 33.2% (Fall 2005 to Fall 2014). The number of bachelor degrees conferred in STEM majors has increased from 76 to 124 (2005–2014), a 63.2% increase since the development of the Academy.

Today, the STEM Scholars Academy serve as strong beacons to students, their parents, organizations and agencies, shedding light on the importance of STEM research and educational programs. These programs are critical for creating well prepared and diverse STEM graduates. These programs also provide a spring board for STEM career growth while at the same time helping the U.S. to remain competitive in the global economy.

Continuing Challenge

One of the major challenges that our university faces is securing the full state match for the university's annual Evans-Allen and Extension funding. The annual effort to secure the full match deters the university from more fully serving its clientele through research and Extension efforts. Each biennium the University has to diligently work to secure the state match. Since the inception of this Federal requirement, the university has not been successful in securing the state match and has had to request a waiver each year from USDA–NIFA to receive our full Federal funding allocation.

We are concerned that any decreases in Evans-Allen and Extension funding will further hamper our ability to serve our clientele through our research and Extension efforts.

Concluding Statement

I will close my written testimony by saying that I am honored to have the opportunity to submit my testimony for the Congressional hearing. On behalf of all of the students, faculty, staff and citizens of the great State of Arkansas who are associated with our land-grant programs and mission, we at the University of Arkansas at Pine Bluff thank you for your continued support.

PREPARED STATEMENT OF DR. RAY L. BELTON, PRESIDENT AND CHANCELLOR, SOUTHERN UNIVERSITY AND A&M COLLEGE SYSTEM, BATON ROUGE, LA

Mr. Chairman, Honorable Members of the Committee, fellow 1890 land-grant university leaders, ladies and gentlemen, good morning! I am Ray Belton, the President and Chancellor for the Southern University and A&M College System of Louisiana. It is an honor for me to be here today to participate, observe and to share some comments on such an important and historical occasion—125th celebrations of 1890 land-grant institutions, where Southern University and A&M College is recognized as one among these great institutions.

It is my pleasure to provide this testimony to the House Agriculture Committee of the United States House of Representatives. My testimony consists of a brief overview of the Southern University A&M College System, it's five campuses, and highlight some features of agricultural and related programs as they exist. Moreover, this testimony will address future goals and funding opportunities needed to

help Southern University continue to provide quality educational, research and extension services to the citizens of Louisiana.

Southern University and A&M College is the only HBCU System in the United States of America. The System consists of five campuses: **Southern University and A&M College—Baton Rouge,** a comprehensive institution offering 4 year, graduate, professional, and doctorate degree programs; **Southern University at Shreveport Louisiana,** a 2 year junior commuters college, designed as an extension of Southern University—Baton Rouge for the students in the Shreveport—Bossier City and surrounding areas; **Southern University—New Orleans,** a 4 year urban institution that offers personalized co-curricular programs; **Southern University Law Center,** a traditional law program inclusive of outstanding clinical and externship, joint degree and studies abroad programs; **Southern University Agricultural Research and Extension Center,** an entity whose mission is to conduct basic and applied research and disseminate such information nationally, as well as statewide.

The agriculture and related programs are housed on the SUBR and Ag Center campuses. First, let me provide a few general highlights of SUBR, our flagship campus. It consists of five colleges with bachelor degree programs in various disciplines to include agricultural, family and consumer sciences. It also provides eighteen (18) master degree programs and five (5) Ph.D. programs. The University's College of Nursing and Allied Health has been ranked among the top 10 producers of African-American nurses in the nation. It was named Nursing School of the Year by reputable association, the Louisiana State Nurses Association and the Louisiana Nurses Foundation. The Southern University's Marching Band—the Human Jukebox—was recognized among the top marching bands in the 2015 *Historically Black Colleges and Universities Digest*'s national awards competition.

The College of Engineering is one of the country's top 10 producers of African-American engineers, and its graduates hold significant, creative and administrative positions in such companies as IBM, ExxonMobil, Entergy Corp., Caterpillar Corp., Raytheon, Dow Chemical, Chevron and others. Noted alumni include the following: Russel L. Honoree, retired Lieutenant General, U.S. Army and leader of the 2005 Task Force Katrina; the late Freddye Scarborough Henderson, founder of the first African-American travel agency in the country; and Joseph Steward, former Vice President, Kellogg Company. These are some examples of noteworthy graduates from Southern University A&M College programs.

Many of the graduates of the division of Agricultural, Family and Consumer Sciences hold responsible positions within USDA and private industry. Southern University's first patent emanated from the Division of Agricultural, Family and Consumer Sciences in which a method and apparatus of reducing calcium in aquatic waste to be used as plant and animal feed. In 2014, the Urban Forestry program helped Southern University to earn the designation of Tree Campus USA, becoming the first HBCU in Louisiana and only the 4th in the nation to receive the designation.

Academics, Research and Extension at Southern University: Southern University has directly and indirectly benefits students, farmers, agribusiness men and residents of Louisiana through programs funded in large measures through the House Agriculture Committee to the United States Department of Agriculture, for the enhancement of the land-grant programs.

Thousands of students have graduated with Bachelor of Science degrees in agriculture and are successfully employed throughout USDA, the private sectors, self-employed as farmers and owners, and practicing agribusiness men in farm related businesses. Additionally, Southern University has a nationally recognized and accredited Urban Forestry and Natural Resources department, one of a few in the United States, that offers a B.S., M.S. and Ph.D. degrees in Urban Forestry and Natural Resources. To date, more than 300 students have received degrees at the various levels from this department. These graduates are highly recruited by the USDA, the university community and the private sector. The Division of Agricultural, Family and consumer Sciences (DAFCS) ranks first in undergraduate student retention out of the university's nine undergraduate degree colleges and schools; first in average grant funding per faculty over the last 6 years; and seventh in the number of African-Americans with bachelor's degrees in the agricultural sciences among 1890 land-grant universities. Southern's first patent was received for method and apparatus of reducing calcium in aquatic waste to be used as plant and animal feed. In 2014, the Urban Forestry program helped Southern University to earn the designation of Tree Campus USA, becoming the first HBCU in Louisiana and only the 4th in the nation to receive the designation.

As stated earlier, the Ag Center's mission is to conduct basic and applied research and disseminate the discovered information nationally, as well as statewide. The

Center's practices are based on practical research, qualitative and quantitative research results. The research and extension programs support the academic offerings by promoting faculty and student research; outreach leading in the various disciplines of agriculture and natural resources. Further, it also provides our students with real global experiential learning and competencies. Beyond supporting academic programs, research and extension continue to connect farmers, rural communities, and urban residents with opportunities for success. For example, given the importance of beef cattle production to small farmers in Louisiana, Southern University is engaged in a major research program designed to maximize income for small land holders by improving efficiency in land use through upgraded pasture production and, expanded grazing practice, by having both beef cattle and goats to sequentially graze the same pasture. The results of this project are being well received by our farmers.

Niche crop production and value-added commodities such as hibiscus and mushroom are providing several promising opportunities for farmers to have other profitable crops to put in crop production mix.

Additionally, the cooperative extension program has graduated over 65 small farmers from across the State of Louisiana in a 20 hour whole farm-planning curriculum through the State Leadership Development Institute. As results of this training, small farmers are realizing increased farm productivity and income.

Finally urban agriculture and gardening are being integrated into a research, educational and nutritional program. With Louisiana ranking 49th in the country in obesity and having sixty-four percent of its adults either overweight or obese, Southern University AgCenter has developed interactive hands-on group sessions and in-home nutrition notes on dietary quality, physical activity and safety are also being provided to under-served families in rural and urban communities.

Future Goals and Funding Needs: The funds are essential for the future of agriculture and forestry in Louisiana and America as well as having helped to improve technology transfer abroad to a growing population and decreasing availability of land; growing demand for sustainable urban forestry, urban agriculture and the need to restore vast amount of urban and urban-rural interface ecosystems (including restoration of our wetlands). Additionally, the cooperative extension program has graduated approximately 65 small farmers from across the state of Louisiana in Whole Farm Planning sessions through the Regional and State Leadership Development Institutes. The farmers received in excess of 200 hours of instruction and traveled throughout the southern states and the State of Louisiana to become more familiar with best practices in agriculture. The Cooperative Extension Program works with farmers assisting them with specialized/individualized training to meet their needs. The overall goal of trainings and workshops is to increase the profitability and sustainability of the small farm operations. Instructional areas provided by agents, specialists and external collaborators include record keeping, variety selection, production, resource inventory, and estate planning and risk management. Research and extension programs will be critical to help develop successful models where farming, environmental issues, urban living can all co-exist while improving access to quality affordable food.

Many challenges exist that affect efforts to address needed issues of clientele groups through land-grant programs at the university. Additional resources are needed to fully support on-going and expanded initiative at the university. Some are as follows:

- continue and expand the work on increasing profitability among small farm families.
- continue efforts to address obesity and related issues.
- continue the work toward enhancing economic development activities in underprivileged and unfortunate communities.
- enhance the work of preparing students for career opportunities in the food, fiber and agricultural industries.

In addition to a need for resources to expand these on-going initiatives, similar resources and funding opportunities are needed to support proposed centers of excellence:

- Create an integrated center to benefit Small Farms, Ranchers and Forest Landowners in high poverty areas.
- Establish a virtual center to support the science, technology, engineering, agriculture, and mathematic (STEM) pipeline of students and to address the growing need of talented career candidates to meet future workforce needs.

- Create a center the satisfy the nation's need in the areas of international engagement and global food security to increase international cooperation, trade and development.

It has been observed and recognized that many of the 1890 land-grant institutions including Southern University A&M College have not, on a consistent basis been awarded the required 1:1 Federal match funding of land-grant programs through state appropriation. This has been a challenge for Southern University as it has been for many institutions when securing the required and deserved match of dedicated funding. Therefore, we join others in support of proposed legislation to amend current Federal mandates which could strengthen and close the gap of disparity in receiving match funding requirements for 1890 colleges and universities in the future.

Again, thank you for affording me the opportunity to share comments about Southern University; present programmatic engagement in land-grant initiatives, future goals and funding opportunities, and above all the need for enhanced funding.

PREPARED STATEMENT OF RAYMOND M. BURSE, PRESIDENT, KENTUCKY STATE UNIVERSITY, FRANKFORT, KY

The 1890s—Building on Yesterday, Finding Answers Today, and Preparing for Tomorrow—Celebrating 125 Years of Providing Access and Enhancing Opportunities

To Chairman Mike Conaway, Ranking Member Collin Peterson, and Members of the House Committee on Agriculture, I am Raymond M. Burse, President of Kentucky State University, and I am honored to submit my written testimony for the official hearing record.

This recognition of the 125th anniversary of the Second Morrill Act serves as an opportunity to highlight the innovative research and significant contributions of the 19 land-grant universities across the country. The Second Morrill Act of 1890 has afforded this network of universities 125 years of access to education and excellence, an achievement that we celebrate today.

Kentucky State University Historically

From its modest beginnings as a small normal school for the training of black teachers, Kentucky State University has grown and evolved into a land-grant and liberal arts institution that prepares a diverse student population to compete in a multifaceted, ever-changing global society. The university, chartered in May 1886 as the State Normal School for Colored Persons, was only the second state-supported institution of higher learning in Kentucky. During the euphoria of Frankfort's 1886 centennial celebration, when vivid recollections of the Civil War remained, the city's 4,000 residents were keenly interested in having the new institution located in Frankfort. Toward that end, the city donated $1,500, a considerable amount in 1886 dollars, and a site on a scenic bluff overlooking the town. This united display of community enthusiasm and commitment won the day. The new college was located in Frankfort in spite of competition from several other cities.

With the passing of the Second Morrill Act in 1890, KSU became the second land-grant institution in Kentucky, a designation that allowed the school to establish home economics, agriculture and mechanics departments.

Kentucky State University Today

Today, KSU serves a student population of approximately 2,000 through the College of Agriculture, Food Science, and Sustainable Systems, the College of Arts and Sciences, the College of Business and Computer Science and the College of Professional Studies. KSU's 882 acre campus includes a 204 acre agricultural research and demonstration farm and a 306 acre Environmental Education and Research Center.

KSU, building on its legacy of achievement as a historically black, liberal arts and 1890 land-grant university, affords access to and prepares a diverse student population of traditional and non-traditional students to compete in a multi-faceted, ever-changing global society by providing student-centered learning while integrating teaching, research, and service through high-quality undergraduate and select graduate programs.

Kentucky State University is committed to keeping relevant its legacy of service by proactively engaging the community in partnerships on civic projects driven by the objective of positively impacting the quality of life of the citizens of the commonwealth.

The College of Agriculture, Food Science, and Sustainable Systems at KSU works to uphold the mission of the university through its commitment to research, service, and teaching in the food and agricultural sciences. The College is organized around five divisions including, Agriculture and Natural Resources, Aquaculture, Environmental Studies and Sustainable Systems, Food and Animal Science, and Family and Consumer Sciences. Each division works to resolve agricultural, educational, economic, and social problems of the people of the Commonwealth of Kentucky while fulfilling the principles upon which the Morrill Act was founded: research, extension and teaching.

KSU boasts the largest multi-disciplinary organic agriculture program in the 1890's land-grant system with nationally and internationally recognized research programs in aquaculture, organic agriculture, sustainable biofuel feedstock production, alternative fruit and nut crops, ecological entomology, alternative pesticides and water quality, goat production, obesity and human health, and apiculture.

Leading Research in Aquaponics

With interest in aquaponics having grown considerably in recent years, KSU's Aquaculture Program, our "Program of Distinction," is widely recognized as a leader in the field. More specifically, the program has led research in the areas of paddlefish culture, freshwater prawn culture, Koi breeding, production of feed-trained largemouth bass, and fish meal replacement research. Using a customized raft design based on the University of the Virgin Islands system, the six rafts available to researchers and housed in the KSU Aquaculture Research Center, provide the unique ability to conduct replicated research trials. Upcoming research will evaluate the microbial profile of the aquaponics system and screen for potential harmful bacteria at different points in the system. Additional aims include the development of an online academic course in aquaponics that will cover aspects such as the design, construction and management of the aquaponics system, fingerling and plant production, economics, and food safety.

Meeting the Needs of Farmers and Consumers

Taking on a problem common among both commercial and home vegetable and fruit growers, identifying and managing insect pests and diseases, KSU researchers are working to develop biologically-based, sustainable insect pest management options and strategies for sweet corn and blackberry production.

Promoting Healthy Living Through Outreach Across Kentucky

According to the Center for Disease Control and Prevention, approximately 30% of the adult population in Kentucky and 25% of Kentucky's children are either overweight or obese. In both cases, Kentucky ranks in the top ten of most obese states in the nation. In an effort to combat this epidemic, researchers and Extension specialists at Kentucky State University's College of Agriculture, Food Science, and Sustainable Systems have developed programs to teach and encourage healthy eating habits and physical activity in youth and families. SHAPE UP KSU, a program through which 376 undergraduate students have received health screenings for their height, weight, waist circumference, body mass index (BMI), body fat percentage, blood pressure, and fasting lipid and glucose concentrations was developed to this end. A second program, the Center for Family Nutrition and Wellness Education, has boosted KSU's College of Agriculture, Food Science, and Sustainable Systems' efforts in better addressing the obesity challenge among the vulnerable populations in the Bluegrass Region. And yet a third endeavor, KSU's Expanded Food and Nutrition Education Program, summer programs enrolled students in grades ranging from kindergarten to eighth grade and provided them education on health and nutrition and the importance of physical activity. Such innovations have been made possible by research made possible in part by land-grant funding.

Conclusion

In conclusion, it is my hope that you will consider the gains made by all 1890 universities as well as the potential for further advancement as you move forward in this process. With continued funding and support, Kentucky State University is poised to set itself as a leading institution of research an innovation in agriculture. Thank you, Mr. Chairman, Ranking Member, and Members of the Committee, for your time and consideration.

PREPARED STATEMENT OF PAMELA V. HAMMOND, PH.D., INTERIM PRESIDENT, VIRGINIA STATE UNIVERSITY, PETERSBURG, VA

Mr. Chairman, Ranking Member, and Members of the Committee, thank you for the opportunity to address you today and include our testimony in the record. I am Dr. Pamela V. Hammond, Interim President of Virginia State University (VSU). Founded in 1882, when the Virginia Legislature passed a bill to charter the Virginia Normal and Collegiate Institute. After several years of legal battles and name iterations, in 1979, the legislature passed a bill changing our name to the present Virginia State University. By our centennial year, we were fully integrated with a student body of nearly 5,000, approximately 250 faculty, a library of over 200,000 books, a 236 acre campus and the 416 acre Randolph Farm.

The Importance of VSU as an 1890 University: We play a significant role in addressing agricultural, educational, health and STEM issues throughout Virginia and in partnerships with other states. We are uniquely prepared and positioned to address the critical needs of diverse, limited resource and challenged communities; we have the ability to adapt and adjust to the changing needs of clientele; and we have the research and scientific knowledge and community engagement credibility to solve complex and ordinary issues. While we are positioned and ready to address many critical issues, more often than not, we continue to receive inadequate Federal and state funding to accomplish goals. To put it simply, if we had more, we are talented and creative enough to accomplish more. The 1890 universities have a role to play in addressing the five national priorities identified by USDA/NIFA (National Institute of Food and Agriculture):

- Global Food Security and Hunger.
- Childhood Obesity.
- Sustainable Energy.
- Climate Change.
- Food Safety.

We have unique niches in the areas of alternative and sustainable agriculture, value-added production, aquaculture and small ruminants (sheep and goats), and small fruits and vegetables with an ability to add diversity, local impact and safer foods to the food supply chain. We have strengths in environmental and water quality, natural resource management, and family, community and youth development. Our close connections and credibility with small farmers and rural communities are sought after by other organizations. We work with them to enhance economic development and profitability and sustainability of agricultural enterprises. We address the health and nutritional challenges of our communities and develop solutions to hunger and nutritional issues. The 1890 universities have produced more minority educators, agricultural professionals, health professionals, military leaders and scientists of color than any other universities in the nation. However, we continue to receive minimal Federal and state funding when compared to our sister 1862 land-grant institutions. This is exacerbated by changes in Federal financial aid policies that disproportionately impact students who attend 1890 universities. Ultimately, this threatens enrollment, retention, auxiliary services and the capacity of our universities to prepare more leaders, innovators and graduates of color in STEM and food and agricultural sciences and other high demand fields. Additionally, our challenges in reaching and preparing youth for leadership, science, technology and agriculturally-based professions, limit our selection pool for higher education and occupational advancement.

A Major Challenge in Funding and Disparities for 1890 Universities: Federal and state funding formulas for land-grant universities are provided through the Federal farm bill. The use of these funds is guided by Sections 1444 and 1445 of the National Agricultural Research, Extension, and Teaching Policy Act of 1977 (NARETPA) and Section 1449 of NAREPTA. Section 1449 outlines the expectation that each state adheres to a 100% Federal match requirement: National and worldwide economic challenges have impacted state and Federal funding levels. Federal funding levels are continuously eroding. Based upon the 100% state matching requirement, each dollar lost in Federal funding results in another dollar lost in state funding. This doubles the loss of every Federal dollar to an 1890 university. Our 1862 partners receive significantly more state and Federal funding, along with more local funding to conduct research and extension programming. As state budgets become more strained, it becomes increasingly difficult to advocate for state dollars to support valuable research and extension programs. The chart below shows the disparity in Federal funding for 1890 and 1862 universities.

FY 2014 Budget for 1890 Research, Teaching and Extension Federal Funding	FY 2014 Budget for 1862 Research and Extension Federal Funding
$35 Million (1890 Extension and Evans-Allen)	$515 Million (Smith-Lever and Hatch Funding)

Source. USDA/NIFA *http://www.csrees.usda.gov/newsroom/news/2014news/02261_1890_grants.html* (Feb. 26. 2014).

Editor's note: The hyperlink for the press release referred to is *http://nifa.usda.gov/press-release/usda-awards-grants-support-research-teaching-and-extension-programs-1890-historically*.

Additional Challenge—The Matching Requirement for Competitive Grants: For 1890 universities, the Federal matching requirement of many larger grants limits our ability to apply for competitive funding. We are typically limited to the grants earmarked for the 1890 universities such as 1890 Capacity Building Grants, 1890 Facilities Grants and others. While these funding streams have kept us alive for years, it has meant that we are limited in our capacity to apply for and garner more funding. We have the interest and capabilities to apply for many of the grants available to 1862 institutions; however, we are unable to meet the matching requirements unless we have an established Research Foundation, or a large state or private funding source. Thus, we often leave valuable dollars on the table. This also shows why formula funding keeps us alive and is critical to our existence. If left to rely solely on competitive grant dollars only, which appears to be the trend in the way Federal funds are dispersed, many of our 1890 universities would struggle to exist.

Our Precious Small and Limited Resource Farmers, Being Squeezed Out: The average age of a farmer in the Commonwealth of Virginia is 68 years. Without a farm management plan, a land/farm transition plan, and the willingness of a new generation of family members to continue farming the family land, we stand to lose valuable agriculture producers, valuable land and valuable food sources. African-American farmers are a more vulnerable group. Each year more farm bill funding supports the nation's supplemental nutrition programs, and less funding is earmarked for producer programs—particularly small farmers and rural communities. In the past, a significant amount of funding had been provided in the farm bill to work with Small Farmers through the "[Section] 2501 Outreach to Socially Disadvantaged Farmers and Ranchers." In the most recent farm bill, funding for this program was literally wiped out, thereby challenging 1890 universities to make critical decisions of how to source the program. Many decided they could no longer source the program and simply had to end it. These programs were critical in providing valuable resources and technical assistance to keep farmers and their rural communities economically sustained and flourishing.

VSU Can Augment Positive Impact with Increased Funding of 1890's Extension; Evans-Allen Research; and 1890 Capacity Building and 1890 Facilities Funds in the farm bill. VSU is positioned to: Develop Small Farm Marketing Incubators—Enhancing Local Food Distribution in Regionally Based Food Value Chains; Hire Extension Agents to increase the profitability and sustainability of Small and Limited Resource Farmers through Small Farm Outreach; Develop Value-Added Farm Product Infrastructure and Marketing for Small Poultry, Ruminants, and Specialty Crops; Conduct Multi-State research on Nutrient Dense Food Production, Marketing and Consumer Education; Help Eradicate Food Deserts and Food Insecurity, through the continued development of Urban Agriculture Centers, Address Obesity and Health Disparities in Urban and Rural Communities; Develop new 4–H Youth Programs focused on STEM and Agricultural Fields of Study, Increase Research on New Pest Resistant and Drought Resistant Crop Varieties; Develop Online Courses, Videos, and Interactive Publications addressing client need and increase our Outreach Capacity; Establish a Small Farm Entrepreneurship and Family Resource and Financial Management Center; Employ Extension Specialists in the areas of Healthcare and Child and Human Development, Gerontology, Nutrition and Animal and Poultry Science.

With increased 1890 Facilities Funding—VSU would build/expand facilities to: Increase laboratory and classroom space at Randolph Farm; Establish a new degree program in Veterinary Technology; Develop a fully equipped small ruminant parasitology laboratory, addressing emerging Animal and Plant Science Issues; Increase focus on Food Safety and Food and Nutrition Science; Establish food processing facilities to increase value-added plant and animal products; Increase capacity to conduct research and Extension education in Urban Food Production; Develop VSU's Small Ruminant Extension and Research Center for the sustainable/low-input production of meat goats and hair sheep; Design and implement a USDA-inspected mobile processing slaughter unit, providing outreach programs on humane and safe small ruminant slaughter, meat processing, and waste composting.

With Current Federal and State Funding Support, VSU has accomplished: Including, but not limited to—Renovation and increased laboratory facilities in areas of Agricultural Engineering, Hospitality Management Program, Small Ruminant Research, Aquaculture, Horticulture and Extension Facilities; Increased aquaculture research and extension capacity constructing a Fish Processing Plant and Hatchery; construction of new greenhouses increased research capacity and environmental impact for Extension Research and Teaching; infrastructure improvements at Randolph Farm increased capacity supporting experiential learning for small farmers and students; Constructed a wetlands area for research and extension determining the impact that wetlands have on absorbing herbicides and pesticides, including herbicide and pesticide storage areas meeting EPA standards; installation of infrastructure improving communication by offering distance learning opportunities to clientele.

1890 Capacity Building Funds: Implemented summer youth programs engaging students in agriculture, human sciences and STEM fields of study; Lead Water Quality Research and preventing wastewater from entering Virginia's Chesapeake Bay.

Evans-Allen and State Research Funds: Generated an average of $4,000,000 annually in competitive external grant funds to conduct basic and applied research projects; Lead a statewide study to eradicate food deserts and food insecurity in Virginia; implemented a pilot-scale research module for improving the health of Virginia's Chesapeake Bay through removing harmful nutrients from wastewater entering Virginia's Chesapeake Bay; Lead new research in the production of hops to help small farmers meet the needs of a growing craft brewery industry; Conduct research and lead extension efforts to build urban sustainable food systems providing access to fresh healthy affordable food and nutrition education to challenged communities; Partner with a new Virginia-based industries to develop optimal crop varieties for product lines and conduct food science research; Utilize food science research to develop practical post-harvest handling and storage methods lengthening the shelf-life of niche crops.

1890 Extension Funds: In excess of 50,000 individuals directly participate in VSU Extension programs annually; Help improve Virginia's economic development by assisting small farmers in generating more than $1.9 million in the past 2 years; Our Marketing and Agribusiness Program helped small and limited resource farmers generate $750,424 in local sales; VSU partnered with private-sector interests in local foods sales leading to the innovation of local food start-up businesses grossing $640,000 from 1,600 customers in the Richmond area, participating small farmers earned $400,000, in a single year; VSU's Small Farm Outreach provided technical assistance to 396 limited-resource farmers to improve farm production, marketing, prepare business and marketing plans, and apply for USDA farm programs; 182 Virginia farm businesses saved $139,150 and 175 earned a combined $151,400; Alternative Agriculture programs trained 520 landowners (representing 330 Virginia farms), helped 80 farmers transition to alternative enterprises and assisted 60 farmers increase farm incomes an average of $6,000 per farm, VSU, in partnership with The Virginia Berry Growers Association, assisted farmers in growing and marketing fresh berries to local industries (35 farmers have reached sales levels of $250,000); Our Aquaculture Program partnered with local farmers to expand local aquaculture enterprises and generate $445,750 in income, In Winter 2014, VSU and Virginia Cooperative Extension initiated a new partnership with Hampton Roads area farmers and the successful Richmond area food hub enterprise called "The Farm Table." Resulting in 12 farmers signed up to sell directly to the new food hub for 300 weekly Hampton Roads customers with subscription boxes valued at $25 for 40 weeks, over the 2014 growing season, participating area farmers earned a total of $100,000.00 ($8,333.00 per farm, on average).

Preparing our youth: VSU hosts a student run farmer's market, the "Farm Stars Program," generating approximately $11,000.00 in annual sales; Through 4–H youth development and Summer Enrichment Programs, more than 500 youth are educated annually through a series of residential and day camps (4–H Intermediate Congress, The Future of You, Kids-Tech University, Summer Agriculture Program, and Meaningful Watershed Educational Experiences [MWEE]), "Ag Discovery" summer enrichment program to provide experiential learning in Animal Science, Biology and Veterinary Medicine to youth from states across the U.S.; Hosting Randolph Farm Tours providing experiential learning, for over 1,400 youth annually, in ages ranging from 8–18 years old.

Concluding Statement: As Interim President of Virginia State University, I am honored to have this historic opportunity to testify before you on behalf of the administrators, faculty, staff and students of our prestigious College of Agriculture's research, academics and extension programs. Thank you for your valued consider-

ation, partnership, and continued support. We look forward to the next 125 years of land-grant university successes impacting agriculture and the lives of Virginians.

Sincerely,

PAMELA V. HAMMOND,
Interim President.

PREPARED STATEMENT OF ANDREW HUGINE, JR., PH.D., PRESIDENT, ALABAMA AGRICULTURAL AND MECHANICAL UNIVERSITY, HUNTSVILLE, AL

The 1890s—Building on Yesterday, Finding Answers Today, and Preparing for Tomorrow—Celebrating 125 Years of Providing Access and Enhancing Opportunities

Chairman Conaway, Ranking Member Peterson, and to each of you, distinguished Members of the United States House of Representatives, I bring you greetings as the President of Alabama Agricultural and Mechanical University, Normal, Alabama in the City of Huntsville, Alabama.

As you may have been or are now aware, the year 2015 marks the 125th anniversary of the Morrill Act of 1890 that established black land-grant colleges and universities. These 1890 land-grant institutions of higher learning continue to be major educational resources for the nation, as well as key sources of African-American leaders, who render valuable service to their communities, the nation, and the world. Currently, there are 19 black land-grant colleges and universities throughout the United States.

Our existence is credited to Senator Justin Smith Morrill, an abolitionist who had a vision that education would be for all social classes, and offered a shift from predominantly classical studies to applied studies. This shift, through the First (1862) and Second (1890) Morrill Acts, prepared students for the real world and advanced the nation, by providing an opportunity to educate all classes of citizenry.

Alabama Agricultural and Mechanical University (AAMU), a beneficiary of the 1890 Act, is a traditional, yet progressive 1890 land-grant institution with a tri-fold focus of teaching, research, and outreach, where academic excellence is a strong commitment.

Our founder, William Hooper Council, an ex-slave, opened the doors of this University on May 1, 1875 to 61 students with a state appropriation of $1,000 per year. His vision was consistent with the vision Senator Morrill had in the land-grant Acts, "to provide for the education of my people." Thus, our presence and successes were further cultivated through the Morrill Act of 1890 and our becoming a land-grant institution; providing additional monies for practical and mechanical subjects, such as engineering, **agriculture,** and architecture. After several name modifications, the Alabama Board of Education adopted a resolution on June 26, 1969, which presented the current and final name of *Alabama Agricultural and Mechanical University.*

For the past 140 years, AAMU has thrived and can boast of more than 37,000 alumni and counting. Among that number are several renowned public and community figures.

Today, as a part of the 1890 land-grant university system, AAMU has a School of Graduate Studies and four Colleges—*Business & Public Affairs; Education, Humanities, & Behavioral Sciences; Engineering, Technology & Physical Sciences,* and *Agricultural, Life & Natural Sciences* (CALNS).

The research and instruction of the CALNS encompasses the biological and environmental sciences, community and regional planning, family and consumer sciences, and food and animal sciences with a focus of changing lives through the use of science and technology in agriculture.

The varied research efforts that allow us to maintain a relevant impact include identification of foods, and food ingredients and spices in the mitigation of various forms of cancer. We have also made significant inroads in research involving biofuels, geospatial information studies (GIS); forestry and wildlife management, and silvopasture management, just to name a few. Through our efforts in grantsmanship, CALNS has established a combination of meteorological and soil profile stations (Alabama MesoNet System) across Alabama and three counties in southern Tennessee. In addition, there are three Eddy Covariance Systems sited in

three of our dominant ecosystems. They monitor soil carbon sequestration dynamics and energy of forested biomes.

Against this background, and with our course offerings, manpower and laboratory equipment, a center of excellence in GIS (under the sponsorship of the National-Intelligence Agency and the United States Geological Survey) was recently established. Furthermore, AAMU is an integral player in working with the Forest Service, the U.S. Fish and Wildlife Service, Alabama Department of Conservation, Southeastern Cooperative Wildlife Disease Study and others to reduce the spread of the fungal White-Nose Syndrome (WNS) in bats, which has caused the death of at least six million bats. Arresting this disease is critical, as bats are an important part of forest ecosystems, helping to control forest and agricultural insect pests. Insectivorous bats likely save the U.S. agricultural industry at least $3 billion each year, approximately $74 per acre for the average farmer. The presence of this disease was discovered in Alabama by an AAMU wildlife scientist.

Our Small Farms Research Center is influential in the education of new and beginning farmers and ranchers, particularly those with limited resources throughout all 67 counties via shared information, conferences and hands-on workshops.

The university is committed to attracting and educating the next generation of agriculturalists. As such CALNS is responsible for on-line delivery of courses in the Alabama Black-Belt Region, one of the poorest regions in Alabama. Through these courses, high school students are given assistance in their preparation for college/university studies.

Our international engagements are also noteworthy. Collaborative research, teaching and student and faculty exchange programs have been established in China, Costa Rica, Brazil, Ghana, Uganda, and Nigeria; other like collaborations are in their early developmental stages. Of particular note, is the Confucius Institute. AAMU is one of only 107 universities nationwide to host such a prestigious entity. The Confucius Institute, through its furtherance of Chinese language and culture, will facilitate economic partnerships, particularly those related to agriculture, between our nations.

The outreach arm of the CALNS is the Alabama Cooperative Extension System, which collaborates with Auburn University to achieve a statewide extension service. The AAMU location focuses on the life-changing Urban Affairs and New Nontraditional Programs for individuals, families, children and youth, entrepreneurs, 4–H, animal producers, and more. Its ultimate goal is to improve and sustain lives, homes, communities, businesses, and the environment. Additionally, for the past thirteen years, the Alabama Cooperative Extension System has conducted a successful aging initiative, due to the keen awareness of the demands of our aging population for transportation, housing, healthcare, finances and food security. Statistically, there are over 35 million people in America that are 65 years old or older and that number will double to 70 million in 20 years; accounting for more people over 65 than under 18.

The physical campus of AAMU is situated on more than 2,300 scenic acres, a 5 minute commute from downtown Huntsville, which was in fact, its original site. The campus has the unique distinction of being laid out in 1928, by Frederick Law Olmsted, Sr., designer of New York's Central Park.

In addition to the campus proper, there are two off-site facilities that serve the university and community, as well. The first is where a vast amount of our agricultural research is done, on over 980 acres of land at the Winfred Thomas Agricultural Research Station in Hazel Green, AL; approximately 10 miles from the campus. Second, the Agribition Center is a facility that is located in an industrial area, and hosts community events ranging from horse and cattle expositions to organizational meetings.

With over 5,300 students, including graduate and undergraduate combined, there are at least 44 states and 11 countries represented at our University, with over 40% of all students being first generation college attendees. Our student-faculty ratio is 20:1, thereby ensuring that our students receive the specialized attention and support that they need to be successful.

The accomplishments of the University are vast. We have compiled ***140 Points of Pride*** that pinpoint many of our University's faculty, alumni and student successes. The complete listing can be found at *http://www.aamu.edu/news/2011/Pages/Points-of-Pride---140.aspx;* however, I have selected a few to be specifically mentioned:

- AAMU would be ranked in the Top 10 nationally, according to news reports, if the effectiveness of higher education institutions were ranked by criteria set by U.S. President Barack Obama

- AAMU is accredited by the Southern Association of Colleges and Schools Commission on Colleges.
- AAMU is the only 1890 land-grant university with three Ph.D. programs in science, technology, engineering and mathematics (STEM) areas. The fourth Ph.D. program (and state's only one) focuses on Reading/Literacy.
- The Department of Food and Animal Sciences offers the only Institute of Food Technologists (IFT) certified food science program at a historically black college or university (HBCU) in the U.S. The Food and Animal Sciences Department is one of two and the oldest Ph.D. food science program among HBCUs in the U.S.
- AAMU ranks second in the nation in awarding undergraduate degrees in natural resources and conservation to African-Americans (DIVERSE, 2014).
- AAMU is the eighth largest producer of undergraduate degrees to African-American minorities in agriculture and related sciences (DIVERSE, 2014).
- AAMU ranks eighth in the nation in awarding master's degrees to African-Americans in the fields of both biological/biomedical sciences and physical sciences (DIVERSE, 2014).
- AAMU contributes directly to the defense of the country and has commissioned nearly 900 officers through its ROTC since the program's inception.
- AAMU's forestry program is accredited by the Society of American Foresters and is the only such program at an HBCU.
- AAMU is second in the nation in the awarding of undergraduate degrees in mathematics and statistics to African-Americans (DIVERSE, 2014).
- AAMU ranks fifth in the awarding of degrees to African-Americans in the field of engineering (DIVERSE, 2014).

In closing, I would like to sincerely express my gratitude for the opportunity to present Alabama Agricultural and Mechanical University to such an august assembly of officials. With continued funding and support, we expect to remain among the Top 20 largest employers in the region, as well as make our economic impact felt throughout the region (*according to the Center for Business and Economic Research at the University of Alabama's Culverhouse College of Commerce—$350M*).

PREPARED STATEMENT OF ALFRED RANKINS, JR., PH.D., PRESIDENT, ALCORN STATE UNIVERSITY, LORMAN, MS

Good morning. Chairman Conaway, Ranking Member Peterson, and distinguished Members of the House Committee on Agriculture. Thank you for allowing me to enter this written statement for the record.

On behalf of our more than 3,639 students, 677 faculty and staff, and 25,000 alumni thank you, Mr. Chairman, for this opportunity.

Our History

Founded in 1871, 6 years after the Civil War ended, Alcorn State University traces its heritage to the Morrill Acts. Alcorn State is unique among the 1890s institutions because it, also, received funding from the first Morrill Act, making it America's oldest public historically black land-grant institution. Alcorn is, also, Mississippi's second oldest state-supported university. We now attract a racially and ethnically diverse student body from 40 states and more than 20 countries. We educate those of limited means, as well as the affluent. Alcorn's programs engage students in applied and basic research while stimulating intellectual development of life-long learning. We remain a leader in Agricultural education, annually conferring degrees in Agribusiness Management, Agricultural Economics and Agricultural Science.

Agriculture, as you are aware, is critical to Mississippi's and America's economy. Mississippi agriculture, representing $7.4 billion is the top industry in the state, directly and indirectly employing approximately 39% of the state's workforce. The state's agriculture enterprises include more than 11 million acres of farmland, 19.7 million acres of forestland, 14,000 miles of streams and 640,000 acres of pond and lakes. The leading agricultural products in the state include:

• Poultry—MS broilers	$2.5 billion, eggs $215 million
• Forestry	$1.17 billion
• Soybean	85.14 million bushels at $993 million
• Cotton	$331 million

• Cattle & Calves	$289 million
• Catfish	$178 million
• Rice	$141 million

The strength of the Mississippi agriculture is due, in large part, to the strength of the two state's land-grant universities—of which Alcorn is the oldest. With the research and outreach of these two institutions—Alcorn State University and Mississippi State University—we have been able to improve agriculture in our state through research and extension services. Our extension employees continue to work with our growers to move them to new levels in both rural and urban communities.

Research Initiatives

Patents

In 2006, a patent was received by scientists at Alcorn State that could help to reduce the risk of heart disease without the use of prescription medicines. Supplements of this vegetable crop fed to human subjects with high blood cholesterol showed significant reduction in 'bad' cholesterol and increase in 'good' cholesterol. The patent for waterleaf was the first ever received by Alcorn State. Further research is continuing to develop the patent.

Dr. Yufeng Zheng, associate professor in the Department of Advanced Technologies, is the principal inventor for the utility patent (8,917,914), "*Face recognition system and method using face pattern words and face pattern bytes,*" that was recently issued to Alcorn State. The present invention provides a novel system and method for face recognition utilizing facial features. The system and method of the invention comprise creating face patterns called "face pattern words" and "face pattern bytes" for face identification.

Swine Development Center

Scientists in the Department of Agriculture are making their mark in the heart disease prevention arena with their published findings that vegetable purslane leaves lower the risk of cardiovascular disease in humans. Heart disease continues to be a leading cause of mortality and morbidity in the United States. As a result of these concerns for potential side effects and consequent increase in health care costs, there is a growing demand for non-traditional and/or diet related approaches to lower blood lipids and cholesterol, and prevent cardiovascular disease and stroke. In a feeding trial conducted at Alcorn State, Scientists explored the efficacy of purslane leaves in lowering cardiovascular diseases risk in patients with high blood cholesterol and other blood lipids.

The study demonstrated that using a novel food product rich in omega-3 fatty acids, pectin, and other essential nutrients, produced a marked improvement in the lipid profile of the patients, LDL-cholesterol (bad cholesterol) was reduced by 27%, suggesting a remarkable improvement in heart disease risk, a primary culprit in the development of cardiovascular disease and stroke.

Experiment Station

Scientists at the Alcorn State Experiment Station are currently evaluating the effects of progesterone supplementation on the survival of transferred embryos; this process is needed in order to release mechanisms used by progesterone to alter the survival of the embryos in cattle. The strategy evaluated and recommended by our scientists to supplement progesterone is now being used by many farmers practicing embryo transfer as a means to improving the fertility and genetics of herds.

Dr. Victor Njiti is looking at ways to reduce the high cost of sweet potato production by limiting the number of harvesting operations through reduced vine growth. Further, we have expanded the market for sweet potato through increased industrial utilization and human consumption. Technology has been developed to process sweet potato into high quality chips, and is now being prepared for patent and transferred to industry.

Delta Obesity

The Department of Human Sciences secured a grant through Delta Obesity Prevention Research Unit (OPRU), Adaptation and Adoption of the Dietary Guidelines by African-American Children in Southwest Mississippi. The ongoing project promotes investigation of the impact of nutrition education (alone or combined with physical fitness) on the adoption of the Dietary Guidelines for Americans (DG) among rural, limited-resource African-American middle school children. The project will add to the body of knowledge regarding low income, rural African-American adolescents' understanding of the Dietary Guidelines as it applies to their individual lives. The project will also help to determine if increased knowledge of the Dietary

Guidelines recommendations alone or paired with physical activity within its population can impact adoption of the Dietary Guidelines.

A feasibility study on obesity is currently underway in Fayette, Mississippi with middle school-aged children.

- Focus group discussions were conducted with adult women (28 women from Warren, Claiborne, and Jefferson Counties), and children in Jefferson County (63 males and 99 females).
- The feasibility study exposed 287 middle school-aged children to nutrition education focused on following the Dietary Guidelines for Americans.
- One conclusion drawn from the focus groups is that there is a significant need for marketing to encourage these cultural groups to utilize the website, *Mypyramid.gov*.

Extension Program

The Alcorn State University Cooperative Extension Program provides educational programs to help Mississippians improve the quality of their lives. In 2014, the Alcorn State University Cooperative Extension Program completed the second year of its long range plan which represents many of the accomplishments of Extension's educational programs. These efforts were supported through the cooperation of county, state and Federal Government, and a diverse group of organizations and individuals. One of our major programs (Expanded Food and Nutrition Education Program (EFNEP)) promotes optimum nutrition and healthy lifestyle management. Nutritional needs change throughout life and have a direct impact on health, quality of life and ability to achieve physical and mental potential. Diet related risks involved in chronic diseases can be lowered through changed behaviors and positive pregnancy outcomes can result from better prenatal nutrition.

Program Impacts:

- Over 5,000 participants increased awareness of need to have good nutrition habits; 8,480 participants increased knowledge that promotes health; and 15,849 participants increased attitudes and aspirations that are indicative of a need for good health.
- Nearly 723 person showed a decrease in high blood cholesterol; 663 showed a decrease in high blood pressure; 292 showed a decrease in high blood sugar; and 1,000 showed a decrease in excess weight.
- Approximately 2,538 parents adopted food behaviors consistent with the Dietary Guidelines and Food Guide Pyramid.

The Family Nutrition Program supported by the USDA Food Nutrition Service was conducted in 40 counties with a focus on food stamp eligible families with 3 to 5 year old children. One agent's comment after finishing the four sessions was of the participants does not want the sessions to end. Family Nutrition participants have been hired as EFNEP program assistants while others come back as volunteers. In a letter with $1,436 of support from the United Way in Warren County, the grantor stated, "You are really making a difference in the lives of many women and children in our community." Various counties reporting evaluation results for the low income audience, in general, indicated an improvement in food resource management practices for 75% to 97% of participants; and improvement in nutrition practices for 88% to 97% of participants; and improved food safety practices of 50% to 81% of participants.

Mississippi Small Farm and Agribusiness Center

The Alcorn State University Mississippi Small Farm and Agribusiness Center (MSFAC), the only one of its kind at an 1890 institution, was established in 1988 by an Act of the Mississippi State Legislature to promote, enhance and facilitate the development and growth of small farms and alternative agricultural enterprises, including international marketing, thereby improving the economic condition of small farmers throughout Mississippi. The state has approximately 37,500 small farms that have an annual gross farm revenue of $50,000 or less. MSFAC provides services directly to approximately 600 farmers and indirectly to several thousands, with its website linking the center to farmers all over the state and beyond its borders. Located on the campus of Alcorn State, the center provides services in the following areas:

- Database and Information.
- Energy Database.
- Marketing & International.
- Agricultural Education.

- Small Farm Loan Program.
- Vegetable Industry Development.
- Natural Products Industry.
- Livestock Industry.

Student Successes

Department of Agriculture

We are proud of our graduates who have decided to pursue advanced degrees in agriculture. Crystal Vance is pursuing a Ph.D. in soil science, with an assistantship, Louisiana State University School of Agriculture Plant, Environmental and Soil Sciences. During the spring semester, Vance presented her thesis at the Alcorn State School of Agriculture, Research, Extension and Applied Sciences Seminar Series. Her presentation was entitled, "Plant Density Effects of Switchgrass (*Panicum virgatum L.*) On Biomass, Nutrients and Carbon Buildup on Heavy Soils." This research was funded by the United States Army. Vance graduated with a 4.0 GPA from the Department of Agriculture in Plant and Soil Science.

Department of Human Sciences

Several undergraduate students in nutrition and dietetics are going on to pursue advanced degrees. Aquierra Anderson, Victoria King, and Kanesha Sumling. Anderson will enter the Food and Nutritional Services Master's Program at Tuskegee University, and King and Sumling have been accepted in the Belhaven University Health Administration Master's Program where they are hoping to acquire knowledge and skills to become hospital administrators.

Over the years our graduates have gone on to be highly successful in their fields. You will find them in agricultural leadership roles all over our state, nation and the world. Indeed, we can boast of Alcornites who are making outstanding contributions within USDA as employees. Among these individuals are:

USDA/Natural Resources Conservation Service (NRCS)

1. Jacqueline Davis-Slay, Director Public and Private Partnership.

USDA/Agriculture Marketing Service (AMS)

1. Darmechie Hulbert, Agricultural Commodity Grader.
2. Yolonda M. Moore, Agricultural Commodity Grader.

USDA/Food Safety and Inspection Service (FSIS)

1. Perry Earl Davis, Deputy District Manager.
2. Christina Travis, Resource Manager.
3. Natoya Cameron, Resource Management Assistant.

Foreign Agricultural Service

1. Patrick Packnett.

Challenges and Opportunities

According to the 2012 United States Census of Agriculture, there were 30,227 black farmers in the 18 states served by 1890 universities. Of that number 5,129 or 17% of those farmers reside in Mississippi. The 2012 Agricultural Census, also, shows there has been a 30% increase in black farmers' ownership of farmland. Much of that increase in USDA program participation is credited to educating the farmers on USDA programs offered by 1890 universities.

Our work with small- and limited-resource farmers is important, because they represent 50% of the farmland and have the potential to increase jobs and economic development. If funds are enhanced, we could do so much more in a positive way to reach and assist limited-resource farmers and the communities in which they live and operate.

SUBMITTED QUESTION

Response from Harold L. Martin, Sr., Ph.D., Chancellor, North Carolina Agricultural and Technical State University

Question Submitted by Hon. David Rouzer, a Representative in Congress from North Carolina

Question. Dr. Martin, I am honored to be one of two members from North Carolina who get to welcome you to the House Committee on Agriculture and thank you for your service and leadership to our state and to North Carolina Agricultural and

Technical State University. NC A&T boasts a proud tradition among the 1890 land-grant universities as evidenced by the College of Engineering ranking number one for the number of degrees awarded to African-Americans, and the School of Agriculture and Environmental Sciences recently becoming the largest school of its kind among the nation's historically black colleges and universities.

Please explain A&T's commitment to the people of North Carolina as an institution of higher learning and its commitment to small minority farmers. Also, please discuss the ways in which both North Carolina land grant universities—NC A&T and North Carolina State University—work together to help the agricultural industry in our state.

Answer. Thank you so much for the question Congressman Rouzer and thank you for all that you that you do for the people of North Carolina.

A&T's commitment as institution of higher learning

N.C. A&T is a learner-centered community that develops and preserves intellectual capital through interdisciplinary learning, discovery and engagement, and is committed to fulfilling its fundamental purposes through exemplary instruction, scholarly and creative research, and effective public service and engagement. A&T is dedicated to providing "ladders of opportunity" to high-achieving students seeking a superior education and is committed to creating a campus climate that fosters student satisfaction and a sense of community. The university's academic and outreach efforts illustrate how campus and community collaborations enhance the quality of life for the citizens of North Carolina, the nation, and the world.

A&T is ranked by the Carnegie Classification System as a "doctoral/research university" and, for the past nine years, has ranked third among The University of North Carolina system's member institutions for sponsored research funding. With an enrollment of nearly 11,000 students, A&T is recognized as the largest among the nation's historically black colleges and universities, and the School of Agriculture and Environmental Sciences at A&T is the largest school of its kind among the nation's HBCUs. A&T ranks No. 1 in the nation for the number of baccalaureate degrees in engineering awarded to black or African-Americans (American Society for Engineering Education) and is the top producer of African-Americans with undergraduate degrees in STEM disciplines, arts and humanities, and education.

A&T's commitment to small minority farmers

In an era where family farms and farmland are rapidly disappearing from the American landscape, North Carolina farm census data shows that African-American owned farms in North Carolina are on the rise, having increased in number from 1,491 in 2007, to 1,637 in 2012. Overall acreage under cultivation in these enterprises has increased by nearly 20,000 acres. Despite these successes, challenges loom for North Carolina's small farming community, and particularly, for new farmers. According to North Carolina farm census data, 86 percent of African-American farms had gross sales of less than $50,000 and 51 percent of those farmers' sole source of income is farming. Small farmers of all races are also aging and nearing retirement and unfortunately, only 3 percent are under 34 years old. A&T is committed to providing the education and training needed to attract and retain the next generation of farmers and has done so through effective community outreach and innovative undergraduate and graduate programs.

A&T is striving to make small farming in North Carolina more profitable and more attractive, while continuing its unique mission to serve minorities in rural communities. Through new ideas like our Small Farms Collaborative and Local Foods and Health Initiative (funded through the 1890 Facilities Program), A&T plans to use its 492 acre farm as a strong community education resource for local food production. Elements of the farm plan mentioned include a food processing facility to teach entrepreneurs how to add value to North Carolina agricultural products, a pasture-based dairy and creamery producing A&T-branded yogurt, ice cream and artisanal cheeses for revenue production, an organic vegetable production research and demonstration site, a student-run farm, and land for community gardens that will be available to residents of the surrounding communities.

A&T's commitment to collaboration

At A&T we use long-range planning and evaluation to adapt our programs to the emerging needs and issues in the state of North Carolina. A&T's cooperative extension program is a responsive, high-touch organization and one that works in direct partnership with N.C. State University. Together, our cooperative extension services help families and communities throughout North Carolina with nutritional programming aimed at: reducing obesity, diabetes and other chronic diseases; parenting classes for troubled families; financial literacy training; and youth development through 4–H programs. Examples of continued collaborations are below:

- In addition to the nearly 500 acre University Farm—A&T's largest classroom—cooperative extension also has an agricultural presence in Goldsboro through the **Center for Environmental Farming Systems.** CEFS is a consortium comprised of the N.C. Department of Agriculture and Consumer Services, A&T and N.C. State. The center is a premier locale for extension, research, and educational programs in sustainable agriculture and local food systems, with units of: small farm vegetable production, dairy, beef, outdoor swine, goats, and organics.
- A&T and N.C. State also collaborated to design, implement, and evaluate the **Farm School educational program**—a 6 month intensive program that recruits new, beginning, and young producers into farming. Participants are trained on business and marketing planning, farm financing options, and alternative agricultural enterprises. Participants also tour farms to gain a better understanding of the farming enterprise.
- A&T and N.C. State embraced **local foods as a joint signature program** of both universities a few years ago, resulting in a coordinated expanded focus on local-and-regional foods at the county levels. County Extension agents have also become better trained to help growers and consumers produce and buy more affordable, fresh and local foods.
- Extension agents from both universities have also partnered with the N.C. Department of Agriculture Piedmont Research Station in Salisbury to conduct winter squash and broccoli variety trials, to determine which varieties are best grown in North Carolina.
- The cooperative extension program at A&T has created two unique curricula in the areas of Family and Consumer Sciences, *Table for Two* and *Speedway to Healthy*. These programs are being endorsed and shared by both A&T and N.C. State extension agents to help promote nutrition and health to audiences in the interest of developing healthier children and families in our state, and also to lower health care costs and expenses—including those born by taxpayers through public and governmental assistance programs.
  - **Table for Two,** a curriculum focused on improving the nutrition and health of pregnant teens and their pre- and-post natal babies.
  - **Speedway to Healthy,** a 1,200 foot^2, custom-made exhibit of the human body's interior provides an interactive teaching tool where children learn about their bodies' relationship to food. Since its launch this spring, the exhibit has been hosted in five counties, seen by more than 2,000 elementary aged children, including more than 800 alone during a 3 day stop in Alexander County. As school resumes, two more counties have booked the Speedway in late September.

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