

# Alabama (Alabama A&M University, Auburn University, Tuskegee University)

## Plan of Work for 2023-2027

Status: Final (Approved 9/14/2022)

### Executive Summary Overview

Alabama is unique as being the only state with three land-grant institutions with United States Department of Agriculture (USDA) Research and Cooperative Extension responsibilities. Alabama Agricultural and Mechanical University (AAMU), Auburn University (AU), and Tuskegee University (TU) provide Research projects and Cooperative Extension programs that meet the needs of the citizens of Alabama and the nation.

AAMU is an 1890 land-grant institution with a comprehensive university Carnegie classification, functioning in the areas of teaching, research, and extension. Through dynamic and contemporary research projects and extension programs, the institution maintains a strong commitment to academic excellence and community engagement to meet the needs of its students, communities statewide, and nation at-large.

AU is an 1862 land-grant institution with high research activity; comprehensive doctoral university Carnegie Research 1 classification. AU's mission is defined by its land-grant mission. AU serves the citizens of Alabama through its instructional, research and extension programs and prepares Alabamians to respond successfully to the challenges of a global economy. The Alabama Agricultural Experiment Station (AAES) was established in 1883 through an act of the Alabama Legislature to conduct scientific research that would advance Alabama's agricultural and forestry industries.

The TU mission, historically and today, together with specific acts of the United States Congress and the state of Alabama defines Tuskegee as an 1890 land-grant university with a Master's College and Universities Carnegie classification. The University also confers Doctoral degrees in integrative areas of Materials Science/Engineering, Biosciences, Pathobiology and Public Policy and Development. Through integrative teaching/learning, research/discovery, and Extension/engagement programs TU addresses contemporary societal problems as opportunities to advance individuals, families, and communities.

Research at each Alabama land-grant institution (LGI) has distinct programs based on clientele needs. Each component of the Alabama Agricultural Research Program works closely and cooperatively to enhance partnerships among the universities in all areas of Research and Extension; with other universities in the region, nationally, and internationally; and with state and federal laboratories and agencies. Alabama's three land-grant universities have played key roles in the development of agricultural enterprises in Alabama. The agricultural research programs of these universities have formed a partnership, the Alabama Agricultural Land-Grant Alliance (AALGA), to better address critical issues in food, agriculture, biosecurity, data science, rural sustainability, environment, bioenergy, and natural resources in the state, region, and nation through multidisciplinary, multi-institutional, science-

based teams that focus on the opportunities and the challenges facing farmers, consumers, and agribusinesses. AALGA also seeks to provide quality education that prepares professionals for career opportunities in food, agriculture, environment, and natural resources. Research programs at each of our institutions are closely linked to Extension programs, which seek the largest possible positive social, economic, and environmental impact.

AAMU and AU provide Extension educational outreach as a unified Alabama Cooperative Extension System (ACES). ACES focuses its resources on relevant issues that affect the interdependence of urban, suburban, exurban and rural clientele. ACES employs a highly collaborative program development and delivery process that allows for the integrative and collaborative application to serve and meet the needs of Alabamians in all 67 counties within the state. Agents from the two institutions are jointly located in county Extension offices and function as county Extension teams.

Tuskegee University Cooperative Extension Program (TUCEP), in partnership with the Evans Allen Research Program, Carver Integrative Sustainability Center (USDA 1890 Center of Excellence) and other research, teaching and outreach units, carries out a comprehensive Extension Plan of Work (POW). TUCEP continues to focus its major efforts in Alabama Black Belt and adjacent counties, but also has programs in other counties whose residents may request our expertise and/or experience. Many TUCEP agents share the same facility as ACES agents assigned to that county and cooperate on Extension programs of mutual interest.

The world and our state are facing major challenges with population shifts, food, water, energy, agricultural and environmental sustainability, rural prosperity and resilience, biosecurity, natural resources, climate change, and economic development in all sectors, as well as human health and well-being and related issues. To address issues related to these major local, national and international challenges, integrative and collaborative Research projects and Extension programs have been designed to address most of these challenges. The Alabama Land-Grant Institutions are cognizant of the necessity to continue to address the National Institute of Food and Agriculture (NIFA) priorities. Indeed, those programs are priorities for Alabama residents as well.

Alabama, through numerous avenues, conducts extensive needs assessments through a grass-tops and grassroots process. Statewide stakeholders and leaders are engaged by all institutions across the disciplines, along with county and community public policy makers, to identify contemporary and emerging Research/Extension issues. This process is complemented with grassroots stakeholder meetings held annually in each county and at each Research-Extension Center to determine local and regional issues and opportunities.

The three land-grant institutions fully integrate these statewide issues into the coordinated initiatives outlined in this plan of work. Statewide initiatives are interwoven with national USDA priorities in the document. Almost all Research and Extension programming in Alabama involves more than one land-grant institution. Extension programming is an integral component of Alabama's Research planning in that most of the research conducted has a predetermined use and planned Extension delivery phase.

Additionally, the land-grant universities of Alabama engage partner organizations and 1862/1890 universities in neighboring states to capitalize upon combined strengths and optimize impacts. Examples of multi-state cooperation are evident in most of the listed priorities and program initiatives in the 2023-2027 Plan of Work.

Alabama's Extension and Research seek to address selected questions that lead to identification of critical issues of strategic importance. These issues include, but are not limited to: (1) enhancing the sustainability, competitiveness, biosecurity, and profitability of U.S. food and agricultural systems; (2) playing a global leadership role to ensure a safe, secure, nutritious, and abundant food supply for the U.S. and the world; (3) heightening environmental stewardship through the development of sustainable management practices (food/water); and adapting to and mitigating the impacts of climate change on food, feed, fiber, and fuel systems in the U.S.; (4) improving human health, nutrition, and wellbeing of the US population; (5) promoting community development, rural health, prosperity and resilience; (6) building capacity of individuals and families in the context of learning, culture, and community; and (7) supporting energy security and the development of the bio-economy from renewable natural resources in the U.S.

Our programs are planned to be aligned with NIFA's Research and Extension priority areas and with Alabama's agricultural needs as identified by stakeholders. As a result of the alignment, the focus will be on the following critical issues: (1) Global Food Security and Hunger; (2) Natural Resources Conservation and Management, Environmental Sustainability and Climate Change; (3) Food System and Food Safety; (4) Human Nutrition, Well-being, Health and Obesity; (5) Sustainable Energy; (6) Community Development; and (7) Family, Home and 4-H and Youth Development.

All planned projects and programs contained in the Alabama integrated Extension and Research FY2023-2027 Plan of Work are developed within the context of research and community engagement of relevance to all residents of Alabama who may benefit from the local knowledge base or service. This commitment is without regard to any personal characteristics, to include age, ethnic origin, gender, religion, sexual orientation, or geographic location. Alabama populations are included, as appropriate, in the project and program development process. As a part of the development process, each project or program that was identified and developed for grassroots program delivery, details the intended audience(s) to be served. As a part of the review process, the respective Assistant/Associate Directors and Administrators are charged with ensuring that the intended audience(s) for each project or program includes the spectrum of potential recipients of the Alabama population. For example, in recognition of the rapidly increasing Hispanic populations in Alabama, many of the System publications are now available in Spanish while other programs specifically target the Spanish speaking residents. Additionally, the ACES website provides educational content in 65 languages spoken throughout Alabama. To meet the accessibility needs of our audience, the website complies with Web Content Accessibility Guidelines 2.0 Levels A and AA and is mobile-friendly for use on smartphones. All video used on the website is captioned, and online courses are also fully accessible. Other System programs target 'at-risk' youth, low-income urban residents, small and minority farm producers, and the elderly.

All such projects and programs are Logic Model based and include clearly defined expectations regarding program outcomes and impacts. The necessity for--and inclusion of--outcome and impact statements for every funded Research project and Extension program offering is paramount in the planning and development process. As such, all projects and programs are inherently capable of producing quantifiable measures of research, education, and extension productivity.

All levels of Research and Extension administration continually issue the challenge to ensure that expected outcomes and impacts are clear in program design, and that continuous improvement is woven into plans-of-work.

## Merit and Scientific Peer Review Processes

The Plan of Work Merit Review is an inclusive multi-phase process with Extension and Research at all three land-grant universities in Alabama.

Phase I includes Extension and Research teams identifying program and project needs shared by county stakeholders and advisory groups. Annual discussions, surveys and focus groups are held to solicit and gather critical program and project needs from adults and youth in communities. This information sets the stage for Extension and Research priorities. It is a requirement for all extension programs and research projects to have clear measurable outcomes and the support of federal, state, county, and extramural funds.

Phase II includes members from each university forming teams representing critical issues in the plan. Each plan includes specific objectives that are examined for relevance, usefulness, and potential program impact. This feedback is used to refine program and project plans. Subject matter teams also review the plan for full integration and representation of Extension and Research. A scientific review is conducted to ensure all objectives are measurable and include sound outcome indicators. Scientific review of research projects are based on established protocols by the National Standards for Peer Review.

Phase III involves statewide stakeholder groups, including advisory groups, commodity organizations, volunteers, research partners, and state and local funding agencies. These groups are asked to provide feedback regarding objectives, potential impacts, and ways in which plans will meet their specific needs.

Phase IV is both within and outside the university community. Copies of the plan are submitted to university administrators and related agency personnel who function as both present and future partners. These individuals are invited to comment on the objectives identified, areas of collaboration, and potential impacts. University administrators will also provide comment on ways to work across colleges and schools to increase Extension and Research impacts.

This multiphase peer review process allows input on several levels to strengthen state plans and encourage collaboration across the state. Feedback is reviewed at all phases of the process. Plans are adjusted as needed based on feedback provided.

## Stakeholder input: Action Taken to Seek Stakeholder Input

### EXTENSION:

The Alabama Cooperative Extension System and the Tuskegee University Cooperative Extension Program (ACES/TUCEP) utilize a comprehensive grass-tops and grassroots needs assessment process. State-level constituent or consensus building groups, non-governmental agencies, community-based organizations, and governmental agencies are encouraged to participate in grass-tops needs assessment activities by inviting both traditional and non-traditional stakeholder groups. Individuals representing diverse socio-economic and racial groups, new client groups, networks, youth groups, and potential community partners are encouraged to participate in grassroots needs assessment activities by inviting both traditional and nontraditional stakeholders. Media is used to announce and encourage individuals to participate in various activities.

### RESEARCH:

College level research advisory committees and advisory boards have been established for all three universities within The Alabama Agricultural Land Grant Alliance (AALGA) to actively seek stakeholders' input and provide advice to Deans and Research Directors of the three colleges of agriculture. Through our Research and Extension faculty, we continue to carry out routine work with various commodity groups and clientele. Semi-annual meetings are organized by the Alabama Farmers Federation (ALFA) where faculty and administrators participate regularly. In addition, there are committees for each of the 17 commodity groups with regular meetings and forums for the relevant groups, and faculty members and administrators regularly participate to learn about the issues, comments, and concerns. In addition to the ALFA groups, the college and experiment station leadership, the department heads, and faculty are working closely with several major commodity organizations outside of ALFA: Alabama Cattlemen Association, Alabama Poultry and Egg Association, Alabama Green Industry leadership, and the Black Belt Small Farmers Cooperative.

AALGA and its partners continue to host "listening sessions" at key locations across the state. These sessions are advertised in varying ways to reach as broad an audience as possible and are open to the general public. Participants identified several strategic areas which can benefit from additional resources and effort (i.e., Research and Extension). These areas are noted in this plan of work. Regular input is also received from stakeholders through commodity group leaders, from advisory boards, formal and informal surveys, focus groups, field days, conferences and through discussions and feedback from state leaders on agricultural boards. Most Extension faculty have Research appointments, and they work closely with the commodity groups and the public in general to bring back their concerns and feedback.

## Stakeholder input: Methods to Identify Individuals and Groups

### EXTENSION:

ACES/TUCEP program leaders lead respective program teams, consisting of Extension Specialists, Agents, Resource Specialists, and Farm Management Specialists to identify state-level constituent or consensus building groups, non- governmental agencies, community-based organizations, and governmental agencies. Methods for identifying these groups included existing advisory committees and interagency directories.

Grassroots stakeholders are identified by Extension coordinators, agents, and resource specialists who lead community conversations in the state's 67 counties. Methods included existing advisory committees, 4-H youth councils, contacts with other agency partners, and staff knowledge of individuals representing diverse socioeconomic and racial groups, new client groups, networks, youth groups, and potential community partners. A grassroots web-based survey is marketed in all 67 counties through the media and directly via ACES/TUCEP Web pages. Citizens are offered the opportunity to participate in the survey via public access computers at County Extension Offices. For the hard-to-reach communities in the Black Belt and with new immigrant populations, special county and state advisory councils have been established for engagement to secure a diversity of stakeholder input. County 4-H Youth Councils are asked for direct input and feedback and to solicit input and feedback from other peer youth groups.

### RESEARCH:

Several groups, such as advisory committees, that encompass growers and consumer groups have been established. Surveys are conducted through various Agricultural Experiment Station (AES) newsletters. Other means of seeking input from the general public are employed. Commodity groups are well organized through participation in the Alabama Farmers Federation and other such groups. Needs assessments are conducted through strategic planning, Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, based on input from the agricultural industries and assessments from the faculty, their department heads, and college and experiment station leaderships.

## Stakeholder input: Methods for Collecting Stakeholder Input

### EXTENSION:

A comprehensive approach to needs identification is utilized given the complexity and scope of issues facing the citizens of Alabama. For ACES/TUCEP, the comprehensive needs assessment begins with the engagement of key external grass-tops stakeholders to determine priority needs affecting Alabamians.

Program leaders and their respective program teams conduct the grass-tops needs assessment by engaging groups through direct telephone contacts, focus groups, advisory committees, networking, or short surveys. Each stakeholder group is asked 1) what priority initiatives are included in their strategic plan or plan-of-work, 2) what issues do they envision affecting the economic and physical wellbeing of Alabamians across the state, 3) what priority needs of their clientele connect with ACES/TUCEP's educational programming expertise, and 4) what linkages do they envision that would strengthen the working relationship with ACES/TUCEP's educational programming. Results gleaned from the grass-tops needs assessment activities are summarized to determine what major themes emerge.

The second major component of the comprehensive needs assessment involves engagement of grassroots stakeholders. Extension coordinators, agents, and resource specialists organize grassroots community conversations to confirm, prioritize, or regionalize the grass-tops needs assessment results. Objectives are to engage a cross section of citizens, including youth, to 1) discuss and understand the facts regarding significant issues facing the state and the opportunities for positive change and 2) dialogue about significant issues and the potential for local programs that acknowledge and address the current changes in the way citizens think, live, and function in their daily lives, families, communities and businesses. A companion grassroots survey is administered via the ACES/TUCEP homepage.

For limited-resource and low-asset communities, their representation on the special county and state advisory councils in the Black Belt and adjacent service areas are invited and given the opportunity to use regularly scheduled conferences to collect input and feedback. The conferences include: The Annual Farmers Conference, the Booker T. Washington Economic Summit, and the Professional Agricultural Workers Conference.

### RESEARCH:

A number of stakeholder groups have previously been identified, and input is collected through regular meetings with discussions and feedback. For example, at AU, several commodity groups have committees to evaluate ongoing research and new research proposals. Direct feedback to researchers and administration is through the projects that get funding and through discussion about new and emerging issues. At TU, input is also sought from workshops and special sessions during the Professional Agricultural Workers Conference and Farmers Conference that are organized annually. At AAMU, input

is sought through workshops, 1890 Association of Research Directors, various departments, conferences, and new research proposals. Influential industry leaders are consulted for their input and feedback.

## Stakeholder input: A Statement of How the Input Will Be Considered

### EXTENSION:

Strategic program initiatives are identified from the comprehensive grass-tops and grassroots needs assessment activities. Program leaders collaborate on the development of a logic model for each strategic program initiative focusing on specific objectives, outputs, and outcomes that allow for application across various program areas. Each logic model includes an evaluation plan.

Program leaders assist their respective program teams, consisting of Extension specialists, agents, resource specialists, and farm management specialists, prepare a plan-of-work. Steps include: 1) to determine which strategic program initiatives fit with the team's capabilities and resources and to develop a programmatic response consistent with the objectives, outputs, and outcomes of the respective strategic program initiative logic model, and 2) to complete the program team plan-of-work to include ongoing programs or special funded projects. A quarterly staff conference is used to process stakeholder input from the special and state advisory councils as a special effort on behalf of limited-resource and low-asset communities in the Black Belt.

Team plans of work are shared with Extension coordinators, agents, and resource specialists to align program alternatives and to make mutual decisions regarding programs, staff involved, dates, and locations for implementation purposes.

### RESEARCH:

Input from stakeholders is used to set program priorities and for identifying emerging issues relevant to agricultural activities. Their inputs are considered in the long-term plan for hiring faculty members and staff members. Input concerning urgent and serious issues will be used to redirect research funds and used in the budget processes as well. Research priorities identified from stakeholders' input are used as guides for solicitation of research grant applications. Annual Hatch and Evans-Allen-funded internal grants are selected competitively (awards are made based on merit and relevance to the priority areas). Because of the small size of the funding, such research funding must be considered as seed grants. Leveraging of additional funding is essential to carry the research priorities forward.

## Critical Issues

### **Community Development**

Initiated on: Nov 26, 2019

State: Alabama

Term Length: Long-term (>5 years)

Community Development initiatives will begin focusing on emergency and crisis preparedness. Efforts will continue to assist in preparing an Alabama workforce comprised of motivated individuals who can successfully navigate employment transitions throughout their lifespan. The contributions to workforce preparation are to connect local, state, and federal agencies, schools, community groups, labor,

employers, and others, to further the workforce development of youth and adults. This critical issue strives to improve workforce awareness, knowledge, and skills throughout Alabama, with particular emphasis on entrepreneurship, economic resource development, broadband adoption, science, technology, engineering, and mathematics (STEM), career education and planning, and technology applications that support workforce development.

Science Emphasis Area

Environmental Systems, Family & Consumer Sciences, Youth Development

## **Family, Home, and 4-H and Youth Development**

Initiated on: Nov 26, 2019

State: Alabama

Term Length: Long-term (>5 years)

This critical issue focuses on strengthening families by teaching members, how to improve the quality of their lives through (a) improving family relationships, (b) financial resource management, (c) identity theft and fraud prevention, (d) citizen and leadership development, (e) Science, Technology, Reading, Engineering, Agriculture, and Math (STREAM) Education, (f) youth gardens, (g) natural resources and environmental education, (h) animals and plants, (i) nutrition and health, (j) career development and college readiness (k) life skills development, (l) conflict resolution, (m) school readiness (n) child development and (o) parenting education.

Science Emphasis Area

Education and Multicultural Alliances, Family & Consumer Sciences, Human Nutrition, Youth Development

## **Food Systems and Food Safety**

Initiated on: Nov 26, 2019

State: Alabama

Term Length: Long-term (>5 years)

Research and extension integrated activities enhance food systems, food safety and agricultural biosecurity. The goal of this critical issue is to develop technology and methods to protect the safety of agriculture and food, to enhance food safety, reduce epidemics of food-borne illness, and to develop the knowledge and a methodologies base for rapid detection of threat agents, including existing and emerging diseases of plants and animals, risk assessment, and facility and personnel security. This critical issue will focus on approaches that educate industry, government, and consumers on how to avoid food-borne diseases; safe home food preservation; and educating food handlers and processors on how to ensure safe food products all along the food chain.

Science Emphasis Area

Family & Consumer Sciences, Food Safety, Human Nutrition, Sustainable Agricultural Production Systems



## **Global Food Security and Hunger**

Initiated on: Nov 26, 2019

State: Alabama

Term Length: Long-term (>5 years)

The goal is to enhance competitiveness and sustainability of food and agricultural industries in Alabama through development and implementation of best practices or technologies. This critical issue addresses two broadly defined priority areas: i) plant health and production and plant products, including improved cropping systems, plant breeding/genomics, integrated pest management, precision agriculture, alternative specialty crops; and ii) animal health and production and animal products, including improved food-animal systems and stocks, and alternatives to antibiotic use. Other areas of research include organic agriculture and local foods, agricultural economics, and needs of limited resource producers. Of particular interest are programs and projects that include artificial intelligence and emerging technologies and that present innovative synergies of disciplines and perspectives.

Science Emphasis Area

Agroclimate Science, Environmental Systems, Sustainable Agricultural Production Systems

## **Human Nutrition, Well-being, Health and Obesity**

Initiated on: Nov 26, 2019

State: Alabama

Term Length: Long-term (>5 years)

Diseases such as obesity, diabetes, high blood pressure, and vascular issues are mostly caused by the lack of nutrients, the lack of exercise, poor lifestyle choices, and stress of the involved individuals. As a result of the growing health concerns for Alabama citizens, there has been a combined effort to educate and motivate citizens throughout the state to make better health decisions. Health disparities/inequities are influenced by the level of knowledge, access to healthcare, and the ability to self-manage. The objectives are to improve the health of Alabamians, targeting limited-resource families, through chronic disease awareness, physical activity, nutrition education, health literacy and access to and consumption of fresh fruits and vegetables.

Science Emphasis Area

Education and Multicultural Alliances, Family & Consumer Sciences, Human Nutrition, Youth Development

## **Natural Resource and Environmental Sustainability**

Initiated on: Nov 26, 2019

State: Alabama

Term Length: Long-term (>5 years)

This program plan will generate knowledge to manage agricultural and natural systems in the face of climate change and facilitate sustainable natural resources. Specific areas include: climate-smart sustainable agricultural systems, energy conservation and utilization of renewable energy resources; understanding the land-water interface; consequences and solutions of global climate change; water

quality and quantity, carbon sequestration, forest land and wildlife management; natural systems restoration, surface and ground water conservation; management of agricultural waste residue; chemical and electronic waste in urban and rural settings; sustainable soil health enhancement; sustainable eco- and agri-tourism; rural-urban interface environmental issues; remote sensing and precision agriculture.

Science Emphasis Area

Agroclimate Science, Environmental Systems, Sustainable Agricultural Production Systems

## **Sustainable Energy and Bio-based Products**

Initiated on: Nov 26, 2019

State: Alabama

Term Length: Long-term (>5 years)

Agricultural research in Alabama will contribute to the national goal of energy independence by supporting science to develop biomass used for biofuels, design optimum forest products and crops for bioenergy production, and produce value-added bio-based industrial products. Specific areas of research include, but are not limited to, the following: alternative crops for efficient production of bioenergy feedstock; biotechnology of bioenergy crops to enhance production or to enhance its utilization as an energy source; and technology development for bioenergy conversion. This critical issue is aligned with the USDA priority area of Sustainable Energy and with the huge domestic energy demands.

Science Emphasis Area

Bioeconomy, Bioenergy, and Bioproducts, Environmental Systems, Sustainable Agricultural Production Systems