

2017 Fort Valley State University and University of Georgia Combined Research and Extension Plan of Work

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I. Plan Overview

1. Brief Summary about Plan Of Work

The Georgia Plan of Work (POW) encompasses a five-year period beginning Oct. 1, 2016. The plan addresses major agricultural issues as well as many other problems facing rural and urban areas, the environment, families and youth. The plan represents a coordinated effort between the state's 1890 and 1862 land-grant institutions, Fort Valley State University (FVSU) and the University of Georgia (UGA), and includes joint planning between Experiment Stations and Cooperative Extension units at both universities.

Georgia, one of the original 13 colonies, has a land area of 57,919 square miles, which makes it the largest state east of the Mississippi River (24th overall). Georgia falls within five major physiographic regions: the Blue Ridge Mountains in the northeast; the Ridge and Valley Province and the Cumberland Plateau in the northwest; the Piedmont across central Georgia; and the Coastal Plain in the south. Elevations range from sea level to 4,784 feet at Brasstown Bald in the Blue Ridge Mountains.

Georgia's 2014 estimated population was 10,097,343. As of 2014, the U.S. Census Bureau reported 24.7 percent of Georgians are under age 18 and 12.4 percent of the state's population is 65 or older. According to the census, 62.1 percent of Georgians identify themselves as white, 31.5 percent identify as African-American and 9.3 percent identify as Hispanic or Latino.

Georgia's Cooperative Extension program has 167 offices in 157 of Georgia's 159 counties. FVSU and UGA personnel are housed jointly in county offices. Extension delivers programming in Agriculture and Natural Resources, Family and Consumer Sciences, and 4-H Youth Development as both individual county efforts and as multicounty programs. State faculty members deliver training to county agents and programming directly to clientele, when appropriate.

FVSU and UGA research programs are conducted through the Agricultural Experiment Station system. Georgia has several campuses throughout the state; its four largest are located in Athens, Fort Valley, Tifton and Griffin. Georgia has several research and education centers strategically located throughout the state.

This joint Plan of Work was developed around core programs and targeted issues. Using a structured program development system, Georgia develops core program directions and identifies targeted issues. The Georgia program development model is a multistep process that is operational every year. The model includes a method for assessing needs and identifying problems. It also includes program evaluation to determine impact. The Georgia program development model works in unison with multiple advisory systems at both county and state levels.

Input solicited directly from academic departments at FVSU's College of Agriculture, Family Sciences and Technology as well as UGA's College of Agricultural and Environmental Sciences (CAES) and College of Family and Consumer Sciences as part of the annual needs assessment is an integral part of developing this Plan of Work. Faculty members associated with this plan are working on cutting-edge programs. They provide information and input from both the academic literature and personal knowledge.

This input is equally important to program development as is a strong advisory system.

The Georgia Federal Plan of Work does not attempt to capture all of the work of the colleges' faculty members. It is intended to document the plans and actions of the faculty members receiving specific formula funds. The majority of these funds are used to support state-level core programs. These core programs cover a wide range of topics, including traditional animal and plant production, positive youth and family development, urban agriculture, personal health and well-being, and emerging issues, such as biofuels.

The goals of these programs are to demonstrate short- and long-term impact. However, the greatest impacts of these core programs are the foundations created to support and leverage additional resources beyond state-matching funds. The additional state funding, county funding, grants and gifts leveraged as a direct result of the work in this plan may create the greatest final impact.

Most of Georgia's planned programs include outcome measures that track the output levels of leveraged programming. The outputs of these leveraged programs are considered a direct, short-term outcome of the core planned programs within the Georgia Federal Plan of Work.

The Georgia Federal Plan of Work is centered on eight planned programs. Individual faculty members participate in the development of personal plans of work. There are over 113 very specific plans of work that have been submitted by individual faculty members or faculty teams. These individual plans are combined into state-level planned programs.

The eight planned programs work in conjunction with each other to address important issues on county, state, regional, national and global levels.

Animal Production and **Plant Production** programs work on a variety of projects to address global food security and hunger. These programs, along with **Urban Agriculture** work to respond to the growing issues of climate change and conservation of natural resources.

Faculty working in the **Health & Nutrition** and **Youth & Family Development** programs provide much-needed research and education to encourage healthy eating habits and physical activity in children to reverse the national trend of childhood obesity.

The **Sustainability, Conservation & the Environment** program encompasses a variety of interdisciplinary research projects in the development of new knowledge and new technologies to address the effects of climate variability and change. Research projects also focus on development and enhancement of sustainable biofuels in order to provide domestic sources of sustainable energy.

Faculty in the **Food Safety** program work to increase and improve the number of viable technologies and educational opportunities for the detection, characterization and prevention of foodborne threats.

The **Home & Life Skill** programs include work on increasing home health and home ownership. Also covered in this area are financial planning, consumer awareness, and general well-being.

The Georgia Federal Plan of Work is designed to meet the emerging issues of our communities, support the sustainability and profitability of the agriculture industry and provide educational programs for families and youth. Major components in the planned program specifically target youth and families at risk. Other components target small producers, limited resources farmers and rural communities.

Estimated Number of Professional FTEs/SYs total in the State.

Year	Extension		Research	
	1862	1890	1862	1890
2017	583.3	13.2	499.8	41.3
2018	583.3	13.2	499.8	41.3
2019	583.3	13.2	499.8	41.3
2020	583.3	13.2	499.8	41.3
2021	583.3	13.2	499.8	41.3

II. Merit Review Process

1. The Merit Review Process that will be Employed during the 5-Year POW Cycle

- Internal University Panel
- External University Panel
- Combined External and Internal University External Non-University Panel
- Expert Peer Review

2. Brief Explanation

UGA CAES and FVSU independently and collaboratively conduct periodic, extensive and comprehensive program reviews of their research and Extension programs. These reviews collect both internal and external input, including input from faculty and staff, clientele, alumni and stakeholder groups. The results of these reviews have been used to formulate this Plan of Work. Additionally, UGA has sought guidance from the UGA CAES Advisory System through their critical review of programs and suggestions for improvements.

This Plan of Work is under continuous review by the Program Development Team, which is comprised of program development specialists and coordinators from Agriculture and Natural Resources, Family and Consumer Sciences and 4-H Youth Development, as well as faculty from both FVSU and UGA. This review is an ongoing process, and future annual reviews and changes to the Plan of Work will be the responsibility of this team.

The research portion of the Plan of Work undergoes scientific peer review prior to each project being submitted. All scientists are required to have active projects for expenditures to be made. Each project is peer-reviewed by both internal and external reviewers and must be approved by the appropriate dean and director prior to submission to the National Institute of Food and Agriculture.

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III. Evaluation of Multis & Joint Activities

1. How will the planned programs address the critical issues of strategic importance, including those identified by the stakeholders?

Membership of individual faculty on integrated multistate projects is determined by their complementary with the research and extension program of the faculty member and the priority of the issue with our producers, processors and consumers. The Georgia Department of Agriculture coordinates the Georgia Commodities commissions. These commissions result from the vote of approval of the producers of the commodity. Most commissions have also voted to approve check offs that provide a fixed amount of funds for each unit of a product sold by the producer to the Commission. That pool of funds is used to support applied research and extension as well as marketing programs to assist the sustainability of their industry. Calls for proposals are made annually and directly identify the issues of strategic importance to these stakeholders. Faculty revise their hatch projects, their participation in existing multistate projects and their efforts to form new multistate projects on the needs of our state clientele as well as the national priorities identified by NIFA.

Integrated Extension /Research activities are easily developed. The majority of faculty members receiving federal formula funding have both a research and extension appointment. This joint appointment within a department is fertile ground to encourage the development of joint extension / research projects.

Many purely extension Multi-state programs are identified and supported using the Georgia Program Development Model just like state specific programs. As issues emerge through our advisory system and through faculty knowledge, information is shared through regional and national meetings. Professional association conferences and administrative conferences such as the Southern Region Program Leadership Conference are all important venues to share information and to develop collaborations around similar issues or concerns. From these collaborations, informal working relationships develop. As programming intensifies around an area of interest, the collaborative efforts of individual faculty easily transforms into formal multi-state programming partnerships.

2. How will the planned programs address the needs of under-served and under-represented populations of the State(s)?

When appropriate, under-served and under-represented populations are specifically targeted within a planned program. In these cases, the level of contact with the targeted audience is part of the program development process. Goals are set and accomplishments toward those goals are recorded.

3. How will the planned programs describe the expected outcomes and impacts?

Outcomes and impacts will be measured and described according to the accomplishments in Georgia. Formal and informal evaluations will be conducted with clientele, local and state government, as well as faculty. While planning and program resources are shared among several states, reporting of impact will be done by each state individually.

4. How will the planned programs result in improved program effectiveness and/or

All state planned programs are summaries of individual plans of work. These individual plans contain specific individual goals that link to the overall program goals. Individuals are evaluated on their personal goals. This evaluation will improve performance and effectiveness at the program management level. As individual faculty improvements are made, overall program effectiveness and efficiency will improve.

IV. Stakeholder Input

1. Actions taken to seek stakeholder input that encourages their participation

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals
- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Survey specifically with non-traditional groups

Brief explanation.

Surveys are used at the planned program level. Information is collected and shared as part of the program development process. The advisory system requires that faculty seek participation by nontraditional stakeholder individuals. Georgia's advisory system also recommends that advisory committee membership reflect the demographic composition of the community.

2(A). A brief statement of the process that will be used by the recipient institution to identify individuals and groups stakeholders and to collect input from them

1. Method to identify individuals and groups

- Use Advisory Committees
- Open Listening Sessions
- Needs Assessments
- Use Surveys

Brief explanation.

Faculty and administration identify organizations made up of direct stakeholders or potential collaborators in addressing community issues. Input is sought from stakeholders who have demonstrated their dedication to the activities of the college. County programs

identify individuals with the ability to represent diverse current or potential stakeholder groups in the community. Race, ethnicity, income or communities of interest may be used to identify these groups.

2(B). A brief statement of the process that will be used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them

1. Methods for collecting Stakeholder Input

- Meeting with traditional Stakeholder groups
- Survey of traditional Stakeholder groups
- Meeting with traditional Stakeholder individuals
- Survey of traditional Stakeholder individuals
- Meeting with the general public (open meeting advertised to all)
- Meeting specifically with non-traditional groups
- Survey specifically with non-traditional groups
- Meeting with invited selected individuals from the general public

Brief explanation.

At the local level, advisory committees meet by program area to cumulatively identify issues; plan, execute and evaluate programs; and communicate results to the community.

When making hiring decisions, comments and recommendations of active stakeholders are solicited via email survey.

3. A statement of how the input will be considered

- In the Budget Process
- To Identify Emerging Issues
- Redirect Extension Programs
- Redirect Research Programs
- In the Staff Hiring Process
- In the Action Plans
- To Set Priorities

Brief explanation.

Stakeholder input is an important part of Georgia's program development model. Stakeholder input is currently used for program planning and development purposes, and to identify and evaluate resource levels directed toward specific planned programs. Stakeholders are encouraged to participate in program implementation as a tool to understand the value and scope of the program. Stakeholders are also part of fund development at both the state and local levels.

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Animal Production
2	Food Safety
3	Health & Nutrition
4	Home & Life Skills
5	Plant Production
6	Sustainability, Conservation & the Environment
7	Urban Agriculture
8	Youth & Family Development

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Animal Production

2. Brief summary about Planned Program

This planned program will provide education/instruction and research on: a) the animal production industry and proper management, nutrition and health; b) agriculture and food defense; c) aquaculture; d) meat and dairy goat production.

ANIMAL PRODUCTION

Cattle, sheep and goat producers will learn ways to improve genetics, profitability and value. Research will focus on reproductive efficiency and genetics. New forages, grains and nutrition management systems will improve cattle performance and efficiency. On Georgia dairy farms, improved reproductive management and milk production, mastitis prevention and financial management is one focus. Extension education on livestock pest control will be offered. Research on swine feeding will center on nutrient use and animal intake signals.

AQUACULTURE

Faculty will provide aid for business plans for a catfish processing plant and a catfish/freshwater prawn farm in rural Georgia. The program includes plant personnel and producer training, marketing and collaboration by UGA and FVSU with Auburn and Kentucky State universities. The Georgia Center for Aquaculture Development will provide aquatic animal disease diagnostics and evaluate recirculating aquaculture systems. Fish, prawns, shrimp and aquatic organisms will be grown to determine feed, stocking, water management and waste nutrient reuse. Workshops, newsletters and publications will cover animal health, management and water quality.

GOAT MEAT AND DAIRY PRODUCTION

A large-scale sample survey will be used to study goat meat marketing, industry growth problems, production, supply, demand and rural development impacts. Development of year-round quality dairy goat products will strengthen farmers' local economies and lead to much-needed scientific research. Experiments will be conducted over five years to evaluate the occurrence of estrus, ovulatory rate, conception rate and the reproductive efficiency of prepubertal does. Experiments will be conducted to compare the performance of dairy and meat goats and lambs that consume roughage (Bermudagrass or eastern gammagrass) diets supplemented with corn, oil, distiller's dried grains with solubles (DDGS) or DDGS with oil. Producers, Extension agents and the general public (during field days) will visit experiment sites.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
112	Watershed Protection and Management	0%	0%	5%	0%
131	Alternative Uses of Land	0%	0%	5%	0%
133	Pollution Prevention and Mitigation	0%	0%	10%	0%
216	Integrated Pest Management Systems	20%	0%	10%	0%
301	Reproductive Performance of Animals	20%	35%	25%	20%
303	Genetic Improvement of Animals	0%	0%	15%	20%
304	Animal Genome	0%	0%	5%	0%
307	Animal Management Systems	20%	0%	10%	20%
311	Animal Diseases	20%	35%	10%	20%
601	Economics of Agricultural Production and Farm Management	20%	30%	5%	20%
	Total	100%	100%	100%	100%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

To be competitive, producers must understand existing management practices, as well as become informed of newly emerging technologies. Producers need a reliable, scientific basis for selecting genetically superior animals. Producers need programs they can participate in to evaluate their animals to identify superior genetics. In addition, carcass data is becoming increasingly important in establishing the value of animal at slaughter. Producers need production protocols that can be used successfully in their operations to properly manage their animals to maximize profitability.

Feed continues to account for the majority of the cost of production in meat animals. A greater understanding of intake, its regulation and efficiency of nutrient utilization not only impacts cost of production, but can also affect the impact of animal agriculture on the environment.

Mastitis in dairy cattle is a leading cause in the reduction in milk yield and milk quality worldwide. In the U.S. alone, losses to dairymen approach \$2 billion annually. Pests produce significant losses in animal agriculture, affecting productivity and requiring outlays for control.

Reproductive efficiency is 15 times more economically important to an individual animal producer than carcass quality, and 10 times more economically important than weaning weights. This means that 70 cents of every dollar that producers make is directly attributable to the reproductive efficiency of their herd or flock. Failure of animals to initiate estrous cycles and become pregnant during the breeding season is one of the primary causes of economic loss to animal producers today.

Current heat-detection levels in Georgia dairy animals are very low. Eliminating some of the need for heat detection could be extremely beneficial to producers and improve overall reproductive efficiency.

Much more research is needed to evaluate a productive and cost-effective synchronization program.

Because of genetic selection for increased growth rate, broiler breeders have acquired reduced reproductive traits, including decreased egg production, decreased sperm volume/motility/mobility and reduced hatchability.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Livestock producers need and want improved management practices. They want to increase profitability through the use of best practices and improved inputs.

Producers will learn to identify livestock that excel in performance. Producers will learn production practices required to properly raise performance and will learn through educational opportunities provided.

Improving reproductive efficiency will lower costly days open by lowering calving intervals and increasing annual milk production. Producers must see more heats, increase conception rates and lower postpartum breeding policy.

Successful control of mastitis by eliminating ongoing infections and preventing new cases by appropriate antimicrobial therapy will reduce incidence of this disease, improve milk quality, enhance animal health and well-being and improve milk safety for the consumer.

Livestock depend on green forages for economical calf production and quality hay to reduce winter feeding expenses. Improved hay quality, improved forage varieties, increased use of byproduct feeds and poultry litter as feeds may reduce costs. Improved management programs may increase productivity of cattle production.

Since growth rate continues to be the primary selection factor used in broiler breeder selection, reproductive performance will continue to decline. Preventing, minimizing or eliminating the decline would all be considered successes.

2. Ultimate goal(s) of this Program

A goal of this program is establishing multidepartmental, multicollege programming that offers in-depth, advanced educational programming, which allows producers to understand existing technologies and become familiar with developing technologies.

The program will educate the animal production industry on correct production practices required to improve economic returns. The program will identify animals with superior genetics. The program will

improve reproductive efficiency in livestock. Development of a forage or forage system that will supply year-round, high-quality forage is the goal.

In the dairy industry, this program will improve breeding efficiency and effectiveness. Successful control of mastitis will increase economic returns to the producer and provide a wholesome and safe product to the consumer. Financial management research and educational programs will improve the business functions of the dairy industry. A database will be used to establish benchmarks and to provide reports to cooperating dairies, with suggestions for financial improvement.

Faculty will keep all livestock producers apprised of changes in available products, efficacy, pest resistances and recommendations for pest management. Nutrition research aspects of the program will further investigate how animals are able to monitor changes in physiological demand for nutrients and nutrient supply from the diet. This nutrition research will allow for the investigation of differences in the efficiency of nitrogen and phosphorus utilization and to determine if it is feasible to select for improved utilization of these nutrients.

Overall, this program will increase animal agriculture value through reduced losses and enhanced health/productivity.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	15.4	2.0	11.5	6.8
2018	15.4	2.0	11.5	6.8
2019	15.4	2.0	11.5	6.8
2020	15.4	2.0	11.5	6.8
2021	15.4	2.0	11.5	6.8

V(F). Planned Program (Activity)

1. Activity for the Program

A bull testing program and heifer evaluation program will be conducted at two locations per year in Georgia. The Georgia Beef Challenge will evaluate calves for feedlot performance and carcass evaluation in commercial feedlots located in Iowa.

The University of Georgia's Beef Team will offer the Master Cattlemen's Program. This program involves detailed, in-depth educational seminars related to beef cattle. A maximum of two programs will be offered annually throughout the state.

Faculty will maintain a website for the International Dairy Heat Stress Consortium. Regional workshops will be held for producers and will be conducted as requested by Extension personnel across Georgia. Faculty will assist with the Commercial & Purebred Dairy Projects as well as other 4-H and FFA activities, including dairy evaluation and dairy quiz bowl. Dairy farms in Georgia will participate in a financial research study. The financial performance results of this program will be published and shared in

an effort to increase farm profitability.

Studies will be conducted to examine swine intake regulations. These will add to our understanding of the key regulatory points that can be applied in the industry to improve efficiency and reduce cost of production. Studies examining the efficiency of nitrogen and phosphorous utilization that have the potential to reduce the environmental impact of animal agriculture will be conducted concurrently.

Annually, this program will update Extension agents and clientele in pest control through one-on-one discussions, meetings or publications. It will provide pest overviews for organizations such as the Georgia Cattlemen's Association. Every year faculty will update 11 sections of the Georgia Pest Management Handbook and provide a biennial estimation of pest losses in livestock and dairy production.

Research that compares different bahiagrass and bermudagrass will be ongoing. Evaluation of new forages, including Coastcross II for grazing and hay quality and pigeon peas for grazing and for grain production for cattle feeding, will continue. Byproduct feeds will be evaluated for nutritional and economic value in beef production systems.

New scientific information will be made available to scientific peers through the publication of original research articles in scientific journals. More applied knowledge will be disseminated to the audience at large (producers, practicing veterinarians, Extension personnel) by publishing results in journal articles or departmental research reports and by coordinating presentations with Extension personnel.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Newsletters ● Web sites other than eXtension ● Other 1 (Popular Press Articles)

3. Description of targeted audience

The target audience includes sheep, goat, beef and pork producers, dairymen, aquaculture producers, county agents, veterinarians and industry professionals.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of significant publications including articles, bulletins and extension publications. (excluding peer reviewed articles)
- Number of invited presentations by faculty directly resulting from the success of this planned program.

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of Master Cattlemen certifications granted through this planned program.
2	Increase in the farm gate value of livestock production in Georgia. Reported in millions of dollars.
3	Farm gate value of poultry production in Georgia. Value reported annually in millions of dollars.

Outcome # 1

1. Outcome Target

Number of Master Cattlemen certifications granted through this planned program.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 311 - Animal Diseases
- 601 - Economics of Agricultural Production and Farm Management
- 307 - Animal Management Systems
- 303 - Genetic Improvement of Animals
- 301 - Reproductive Performance of Animals

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Increase in the farm gate value of livestock production in Georgia. Reported in millions of dollars.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 311 - Animal Diseases
- 301 - Reproductive Performance of Animals
- 303 - Genetic Improvement of Animals
- 601 - Economics of Agricultural Production and Farm Management
- 307 - Animal Management Systems
- 304 - Animal Genome

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research
- 1890 Extension
- 1890 Research

Outcome # 3

1. Outcome Target

Farm gate value of poultry production in Georgia. Value reported annually in millions of dollars.

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 311 - Animal Diseases
- 301 - Reproductive Performance of Animals
- 307 - Animal Management Systems
- 303 - Genetic Improvement of Animals
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Description

Weather disasters are a major factor affecting animal production. Drought conditions can cause reductions in the number of cattle due to feeding pressures. Forage production for hay and grazing depends on weather conditions - drought could diminish expected productivity of new and experimental forages, affect stands and ultimately affect livestock production and profitability. Heat stress is responsible for large declines in pregnancy rates of dairy cattle during hot months throughout much of the U.S.

A decrease in cattle prices or the overall economy would have great impact on this program. If the price drops substantially, producers may be less willing to focus on beef production and would instead allocate their priorities and time toward other commodities.

Changing laws and EPA regulatory intervention affect how pests are managed, what products are available and limitations on options available to producers.

Reduced public funding for fundamental forage and livestock production research could depress the initiative to conduct needed, high-quality research. Competing programs may force the abandonment of ongoing research programs.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Evaluation studies include:

- Formal programs and workshops will be selected across this program area for in-depth participant evaluation. Participants will be evaluated for knowledge they've gained. A follow-up survey will be conducted to assess change in behavior or practice.

- Evaluation will consist of changes in production practices or production successes after completing the programs. The listed methods will be used to collect data on adoption and implementation of programs. Standard scientific practices associated with the various protocols used will be employed.

- Master Cattlemen: An evaluation of the Master Cattlemen program will be done after the completion of each final session. One year after the program, a post-meeting survey assesses any changes made and overall impacts as a result of the program.
 - Research on mastitis in dairy cattle will involve verifying success of experimental research conditions and results, and then disseminating results to end users. Comparisons between program participants will involve performing a field trial involving dairymen using new technology versus those who do not. Evaluation methods include:
 - Sampling: Milk samples will be taken from cases of mastitis before and after treatment with experimental product.
 - Case study: Effectiveness of the product will be determined using individual cases of mastitis in cooperator herds.
 - Observation: Individual cows that receive the new product will be observed for any effects on animal health.
 - Tests: Laboratory tests will be performed to determine the bacterial species of infecting bacteria and to determine somatic cells counts as a measure of inflammation.

- Input will be sought from the American Seed Research Foundation and the American Seed Trade Association Vegetable Technical Subcommittee. These stakeholders will provide direct feedback on the usefulness of the data generated. Seed testing laboratories will participate in comparative evaluations of the new seed health assays and, subsequently, they will be surveyed to determine their level of success.

- Data analysis will allow comparison of results of the experiments to determine which of the feeding systems improved animal performance. Production data will be used for cost-benefit analysis to select profitable production systems.

- Replicated experimental plots will also be established to evaluate soil organic amendments, crops and forages. Data collection methods will consist of soil sampling for nutrients, and vegetable, agronomic and forage crop harvests for yield.
- The success of aquaculture production systems will be evaluated by final aquatic animal health and survival, net production, production efficiency, feed conversion ratios, water quality measurements and economics of the system. Surveys will determine if workshop attendees have incorporated training into starting or continuing aquaculture enterprises.
- Methods will be evaluated and validated in the field. Adoption of methods by poultry producers will be considered proof that program has succeeded.
- The impact of research on conserving natural resources will be analyzed by conducting surveys of those impacted by population pressures on natural resources and surveys to measure the impact of changes in economic activities.
- Researchers will compare disease intensity, control costs and economic returns before and after the program using standard, statistically based data collection protocols. Economic data will be obtained from producers and Extension personnel.
- Animals in the evaluation programs will be subjected to the following measurements: weight gain, reproductive tract traits, pregnancy status, frame size and carcass traits utilizing both ultrasound and postharvest carcass measurements. Animals will be evaluated for disposition, coat color and structural abnormalities.
- Studies will be evaluated by observing the amount of bacterial suppression offered by the programs implemented. Disease data will be recorded as a severity scale of 1-10. Yield and quality of vegetables will also be measured. Return on investment will also be measured and based on the price of the product sold as it relates to the cost of bacterial spot control.

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Food Safety

2. Brief summary about Planned Program

This plan will address food safety by providing research and education/instruction related to: a) food processing, protection and safety; b) plant production; and c) animal production and protection.

FOOD PROCESSING, PROTECTION & SAFETY

The CDC reports more than 38 million cases of illness annually caused by known pathogens, of which 14 million are considered to be foodborne. The U.S. Department of Agriculture (USDA) estimates the annual cost of human illness for six foodborne pathogens has reached between \$2.9 and \$6.7 billion. Of these costs, meat and poultry account for 80 percent.

ANIMAL PRODUCTION & PROTECTION

The planned program will examine several major meat products and the related supply system. Portions of the program will partially fulfill the institution's responsibilities to underserved communities and function as an important complement to current food safety research. The findings will have important implications for U.S. agricultural products' competitiveness in domestic and international markets.

Faculty will offer food safety training as well as best practices programs for all levels of the meat, poultry, seafood, juices, fresh produce and fresh-cut produce industries. Projects will contribute to an improved information base to ensure a safe, nutritious, dependable and affordable food supply for U.S. consumers. Faculty will assess the benefits and costs of public policies and government regulations affecting health, nutrition and food safety.

The dairy goat industry is one focus of the planned program. Developing a viable industry is challenging for dairy goat farmers due to goat milk's seasonal production, limited capital and resources, difficulties in uniform product quality and quantity, along with lack of positive consumer perception. The program intends to enhance profitability and sustainability by developing year-round, quality products through technological approaches to using peak-season surplus goat milk.

POULTRY PRODUCTION & PROTECTION

Poultry growers will be trained to prevent avian influenza entry into commercial flocks and will be provided with information to protect their flocks, themselves and the public.

Methods of reducing food pathogens in poultry products will be produced and assistance provided for adoption of these methods.

PLANT PRODUCTION

Research activities are geared toward identifying medicinal plants via phytochemical screening, biotechnology application to enhance value-added traits and biomedical research. The introduction of nutraceutical plants for health benefits, developing them as premium crop and emphasizing sustainability will be a major focus.

This research focuses on the 'Bioville,' a sustainable, self-supporting concept for limited-resource farms, and aims to improve quality of life by giving Americans a model of a biological community that produces a majority of items required for basic healthy living in their surroundings. This will especially help limited-resource farmers.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
311	Animal Diseases	0%	0%	5%	0%
401	Structures, Facilities, and General Purpose Farm Supplies	0%	0%	5%	0%
501	New and Improved Food Processing Technologies	0%	20%	10%	0%
502	New and Improved Food Products	0%	0%	5%	50%
503	Quality Maintenance in Storing and Marketing Food Products	35%	25%	50%	0%
701	Nutrient Composition of Food	0%	35%	0%	0%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	30%	20%	15%	50%
723	Hazards to Human Health and Safety	35%	0%	10%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Consumer demand has changed to reflect accelerated lifestyles, nutrition and health awareness, needs for greater convenience and a more diverse population. These changes underscore the need for an improved information base to ensure a safe, nutritious, dependable and affordable food supply for U.S. consumers. Research has also shown that the incidence of foodborne illness has declined dramatically, especially in the meat and poultry industry. This has largely been due to ongoing training and research applications.

The U.S. government has put great emphasis on food safety, particularly on the hazards and foods that present the greatest risks to public health and impose the greatest economic burden on the nation. The Food and Drug Administration (FDA), the CDC, the Food Safety and Inspection Service (FSIS) and the Agricultural Research Service (ARS) have worked aggressively to reduce bacteria contamination of

meat and foodborne diseases. They emphasize preventive controls of the risks and embark upon exploring ways to strengthen surveillance, inspections and risk assessment to improve the safety of the nation's food supply. The Hazard Analysis and Critical Control Point (HACCP) system represents a successful program in controlling zoonotic pathogens. Despite these efforts, the understanding of pathogens and their transmission along the food supply chain is still limited.

The development of the dairy goat industry has lagged behind its dairy cow counterpart. It is a priority of the state to enhance economic viability and sustainability of the limited-resource dairy goat farmers who have long struggled for their survival and business profitability by developing year-round marketable dairy goat products.

The Georgia poultry industry is threatened by avian influenza (AI). If this deadly virus gains a foothold in the poultry industry, massive economic losses to the state will be unavoidable. The Georgia poultry industry contributes over \$13 billion in economic activity, production, plant shutdowns prevention. However, there will continue to be poultry health concerns for years to come.

The Georgia poultry industry needs an integrated research/Extension effort to develop and disseminate science-based, pathogen-reducing strategies.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

The plans for this program assume that faculty will be funded at current levels. It also assumes that current food industry regulations will continue without major restructuring. HACCP was federally mandated for the seafood, meat and poultry industries in 1998. Since that time, other industries have been required to develop mandatory HACCP programs, including the juice industry in 2001. The FDA is in the process of developing a food safety guidance document for the fresh-cut produce industry, which may lead to mandatory compliance in the near future.

Assumptions also expect that: food safety and corresponding social costs will remain a public concern in coming years; there will be more in-depth studies on pathogen transition along the meat supply chain; food safety will come to be a major factor affecting the competitiveness of foods domestically and abroad; and, finally, uncertainty and risks of pathogen contamination will continue to characterize the process of the food production and supply system.

The negative occurrence of avian influenza in Georgia poultry flocks, or the quick and complete elimination of avian influenza from individual infected flocks without the disease spreading, must be considered as successes. In addition, the protection of farmers, poultry workers and their families from being infected with avian influenza will be considered a success.

2. Ultimate goal(s) of this Program

The goals of this program are to:

- Assess consumer preferences and demands, and their implications for production and marketing practices in the food system
 - Find ways to monitor, control and reduce hazard and risk in the farm-to-table food supply chain
- Decrease the incidence of foodborne illness through ongoing training and research application programs
- Enhance the sustainability and profitability of the dairy goat industry and limited-resources farmers, who have been economically underserved and struggled in the state and across the nation for a long period of time

An important goal of this program is to provide 100 percent of poultry farmers in the state with relevant information on the critical role they play in avian influenza prevention in commercial poultry flocks. In

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	3.2	0.3	2.0	9.8
2018	3.2	0.3	2.0	9.8
2019	3.2	0.3	2.0	9.8
2020	3.2	0.3	2.0	9.8
2021	3.2	0.3	2.0	9.8

V(F). Planned Program (Activity)

1. Activity for the Program

The activities of this planned program include:

- Projects to analyze consumer demand for food
- Workshops and short courses for food industry and food service professionals, and Extension agents
- Research studies of the food processing industry
- Development of models
- Publishing of journal papers and other publications

Research will be carried out on practical methods to reduce pathogens in live production, processing and further processing. Educational meetings will be conducted with poultry processing professionals. Individual problem-solving activities will be conducted with processing plants experiencing excessive contamination levels.

We will continue to offer our usual 10 HACCP and other food safety training workshops. New training opportunities will be developed as requested by clients.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● One-on-One Intervention 	<ul style="list-style-type: none"> ● Newsletters ● Web sites other than eXtension

3. Description of targeted audience

The audience includes food industry managers, food service professionals, quality assurance professionals, HACCP coordinators, microbiologists, third-party auditors, government inspectors and county Extension agents.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of significant publications including articles, bulletins and extension publications.
 - Number of persons taking and passing the HACCP certification exam.
 - Number of invited presentations by faculty directly resulting from the success of this planned program.
 - Number of food handlers receiving ServSafe certification from Extension Agent programs.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Average percentage of increase food safety test scores as a result of programs conducted statewide.
2	Multiple or repeat attendance by food processing company personnel (ie, company sends more than one person to our course(s) from one year to the next)
3	Number of agents increasing knowledge as a result of food safety training by specialist.

Outcome # 1

1. Outcome Target

Average percentage of increase food safety test scores as a result of programs conducted statewide.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 503 - Quality Maintenance in Storing and Marketing Food Products

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Multiple or repeat attendance by food processing company personnel (ie, company sends more than one person to our course(s) from one year to the next)

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 501 - New and Improved Food Processing Technologies
- 723 - Hazards to Human Health and Safety
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Number of agents increasing knowledge as a result of food safety training by specialist.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 723 - Hazards to Human Health and Safety

- 503 - Quality Maintenance in Storing and Marketing Food Products
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

Description

Changes in government mandates for food safety will dramatically increase the need for this planning program. A poor economy will decrease the number of people participating in the planned program.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

- Planned evaluation studies will be carried out annually during the research program period, with the final evaluation studies to be conducted after the project termination. Data collection methods will vary depending on individual research objectives and will utilize sampling as well as whole population of research materials.
- Evaluation will be based on negative results; that is, the absence of avian influenza in Georgia poultry flocks. Data will be collected from participants in trainings and state and federal agencies responsible for poultry health.
- The program will be evaluated by industry feedback, measured reductions in pathogens and continued competitiveness of Georgia processors. USDA and CDC statistics will be used.
- Preslaughter management methods that showed the best results from our studies will be recommended to commercial farmers. The feedback obtained from producers and processors will be factored into the assessment of the program. Statistically valid scientific experiments will be designed and conducted at research facilities.
- Agents' knowledge will be assessed by written tests specific to the content provided. If new programs are developed for direct use with clientele, evaluation tools will be developed specific to the content provided. Agent tests will be administered at the education classes. A survey of website users

will be done via email and website solicitation.

- Program evaluation by breakout group coordinators based on reports will be given at each stage of HACCP plan development training. Post-program evaluations will be filled out by participants and tallied, with copies sent to all presenters/trainers for their input. A retrospective examination of last year's evaluations will take place during the planning of the next year's agenda to incorporate suggestions and concerns as applicable.

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Health & Nutrition

2. Brief summary about Planned Program

This planned program has a major research and Extension component: to address human nutrition and health. Extension specialists train agents to provide training to adults and youth on nutrition and lifestyle choices. Specialists also develop curricula, print media and online consumer resources, and program evaluations.

4-H and Family and Consumer Sciences faculty develop in-school curricula on nutrition and physical activity education to stimulate behavior changes among youth. The Food Product Development Learning Experience will focus on the benefits of healthy and safe food choices. A statewide, high school conference and 4-H summer camp Healthy Lifestyle classes will be conducted using Healthy Lifestyle curriculum.

From a research perspective, plant extracts and other natural substances will continue to be investigated for their ability to induce apoptosis, primarily in cancer cells. Some of these are especially interesting because they have also been shown to have antidiabetic effects and/or have direct effects on adipose tissue. In particular, green tea extracts, garlic compounds and conjugated linoleic acid (CLA) have been shown to cause weight loss and reduce body fat in experimental animals and humans. CLA, a group of positional and geometric isomers of linoleic acid, has received considerable attention because of its many purported health benefits. In addition to anticarcinogenic, antiatherogenic and antidiabetic effects, dietary CLA can induce body fat loss in several species.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
305	Animal Physiological Processes	0%	10%	30%	20%
502	New and Improved Food Products	0%	0%	60%	80%
724	Healthy Lifestyle	60%	30%	10%	0%
802	Human Development and Family Well-Being	25%	30%	0%	0%
806	Youth Development	15%	30%	0%	0%
	Total	100%	100%	100%	100%

V(C). Planned Program (Situation and Scope)**1. Situation and priorities**

In Georgia, nearly 42 percent of fourth-graders are either overweight or at risk of becoming overweight, according to a study conducted by Dr. Richard Lewis in the UGA College of Family and Consumer Sciences. The study also showed that 38 percent of eighth-graders were also overweight or at risk of becoming overweight. For 11th-graders, the percentage was nearly 36 percent. Obesity prevention and education should begin as early as possible by emphasizing healthful diets, good nutrition and physical activity in early childhood. Two-thirds of adults are overweight or obese. Obesity contributes to the development of many chronic diseases, including diabetes, hypertension, cardiovascular disease and cancer. Three-quarters of Georgians are inactive, which also contributes to these chronic diseases.

In the U.S., 20.8 million people have diabetes and 41 million have prediabetes. In Georgia, nearly 7 percent of the population has diabetes and it is currently the sixth leading cause of death. Both diabetes and prediabetes increase the risk for cardiovascular disease. People of African, Asian and Latino/Hispanic heritage are two to four times more likely to develop diabetes. The economic impact of diabetes may be close to \$4 billion per year. The developments of an estimated 20-40 percent of cancers are affected by dietary choices. Eating more fruits and vegetables, drinking more fluids, eating more whole grains, consuming more nonfat and low-fat dairy foods and being more physically active may help reduce risk for numerous cancers.

Despite the rising worldwide epidemic of obesity and the \$100 billion per year spent on weight loss and weight control products, there are only a few prescription anti-obesity drugs available today. Strategies for developing medications for weight loss have traditionally focused on agents that act in the brain to reduce hunger, agents that act in the gastrointestinal tract to inhibit digestion and absorption of fats or carbohydrates, and agents that increase the metabolic rate. None of the currently available weight loss medications are highly effective, and all have reports of serious side effects.

Because of the rise in the disease rate, more money is coming out of the daily income of families for medical needs (insurance, prescriptions and copays). For low- and moderate-income families, this rise can become detrimental to the welfare and stability of the family.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Extension
- Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Making better dietary choices, being physically active daily and controlling body weight may reduce the risk of or help control most chronic diseases. Making positive lifestyle changes can prolong life and improve quality of life.

Researchers in this program assume the induction of adipose tissue apoptosis could be a nonsurgical approach for reducing total adipose tissue mass and longer-term maintenance of weight loss. The expectation of longer-term maintenance of weight loss associated with adipose tissue apoptosis in obese people is supported by the high percentage of people who retained a large proportion of the initial weight loss one year after liposuction.

2. Ultimate goal(s) of this Program

The goal is to reduce the rising rates of chronic disease and to improve the quality of life of those who already suffer from these diseases. Georgia's citizens will be healthier, resulting in lower health care costs and an improved quality of life because of this program.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	3.8	0.2	3.5	0.8
2018	3.8	0.2	3.5	0.8
2019	3.8	0.2	3.5	0.8
2020	3.8	0.2	3.5	0.8
2021	3.8	0.2	3.5	0.8

V(F). Planned Program (Activity)

1. Activity for the Program

Fact sheets on weight control, physical activity, diabetes management and prevention, cardiovascular disease prevention and cancer prevention will be disseminated. Training about chronic disease prevention and control will be provided to agents and selected clientele. Information will be provided to be disseminated by agents to media outlets.

In-school classes will be conducted in a majority of Georgia's counties. A Food Product Development contest and local practice sessions will be conducted as part of the 4-H program. Statewide youth meetings focused on healthy lifestyles will also be conducted. As part of a new program, Healthy Lifestyles Ambassadors will be trained on research and relevant information. 4-H summer camp Healthy Lifestyle classes will be conducted.

Faculty will conduct weight loss research.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● eXtension web sites ● Web sites other than eXtension

3. Description of targeted audience

Specialists will direct efforts primarily to educating and preparing county agents. As a result, agents will reach parents, guardians, grandparents, child care providers and other caregivers to children and youth.

The planned program will also directly target limited-resource individuals and families.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of significant publications including articles, bulletins and extension publications. (excluding peer reviewed articles)
- Number of invited presentations by faculty directly resulting from the success of this planned program.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Percentage of participants that are likely to read/use nutrition labels when making food choices.
2	Percentage of participants that lose weight or increase physical activity/exercise or likelihood of engaging in physical activity/exercise.

Outcome # 1

1. Outcome Target

Percentage of participants that are likely to read/use nutrition labels when making food choices.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Percentage of participants that lose weight or increase physical activity/exercise or likelihood of engaging in physical activity/exercise.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Economy
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Populations changes (immigration, new cultural groupings, etc.)

Description

Funding sources have been decreasing at the federal, state and private levels. This could impact the amount of new materials, trainings and programs that specialists and agents can provide. Also, Medicare, Medicaid and private health insurance benefits have been fluctuating, so access to care may prevent some individuals from implementing self-care and lifestyle recommendations. Also more funds and efforts may need to be directed toward the Hispanic/Latino population.

Changes in the regulation of natural products could impact research programs within this plan, as well as the use of these products by consumers.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

For the youth component, all participants will be given pretesting and post-testing in order to evaluate how much new knowledge and life skills participants acquired. At the beginning and at the end of each entire leadership, entrepreneurship and science component of programming sessions, a test will be administered to gauge knowledge prior to completing the entire session. The same test will be given at the conclusion of the entire session to see if the participants' test scores increase.

Evaluation materials are provided for our diabetes, weight control and cancer programs.

Pre- and post-program knowledge and behavior evaluations are used. Participants complete pretests and post-tests after lessons and fill out behavior-change grids to show stages of change. All are self-reporting evaluations.

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Home & Life Skills

2. Brief summary about Planned Program

Within this program, faculty members develop and disseminate research-based information on the many facets of Georgia citizens' lives. Focuses encompass **housing**, including the fundamentals of managing money, credit and shopping for a mortgage; **indoor environment**, and the substantial scientific evidence that links health concerns, such as asthma, lead poisoning and injuries, to housing quality; and **financial management**, including credit, debt, bankruptcy, risk management, insurance, estate planning, investing, goal setting and expense management.

FINANCIAL MANAGEMENT

Extension specialists will train Extension agents to provide financial literacy programs for youth, individuals in bankruptcy and other adults, based on identified needs. Specialists will also develop curricula, print media and online consumer resources, and program evaluations.

Faculty members will promote and provide access to financial and consumer education tools and activities that will assist all Georgians in making wiser decisions and choices in all areas of personal finance management, with special emphasis on early intervention, basic financial literacy, saving/asset building, credit management and rehabilitation, workforce preparedness and bankruptcy.

HOUSING

This program will include education on maintaining a safe, clean and healthy home environment. Faculty will provide training on indoor air quality. They will teach consumers how to reduce exposure to indoor air quality contaminants in the home. Faculty members will provide classes and educational information on water and energy conservation, recycling and waste reduction, particularly hazardous waste disposal.

Through the homebuyer education program, faculty members will help consumers gain the knowledge they will need to become successful homeowners. This includes ensuring that participants have an understanding of the buying process, mortgages, financial management and foreclosure and default prevention.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
607	Consumer Economics	40%	40%	0%	0%
801	Individual and Family Resource Management	30%	30%	0%	0%
802	Human Development and Family Well-Being	30%	30%	0%	0%
	Total	100%	100%	0%	0%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

FINANCIAL LITERACY

Competency in managing money appears to be a skill that does not come naturally to everyone. Unless a person is exposed to the practice of money management, he/she is less likely to understand how it works and its long-term benefits. It is easy to develop poor spending and financial habits that result in significant, negative consequences.

The increasingly sophisticated financial marketplace, a dramatic shift from defined benefit to defined contribution retirement plans and longer life spans are making it vitally important for Georgia families to understand and implement sound financial management skills and practices. Georgia maintains one of the highest levels of personal bankruptcy in the nation - fourth in 2005. Georgia ranks 14th in the percentage of adults over 25 without a high school diploma; 18th in the number of persons below poverty level (2003); 34th in personal per capita income (2004); and 36th for unemployment (2004).

Financial literacy can also break the cycle of poverty, which is often associated with those individuals who do not have the necessary tools and skills needed to "handle their money." Providing financial literacy is not a one-size-fits-all effort. Financial literacy is most clearly divided into four categories: early intervention, basic literacy, credit rehabilitation and long-term planning, or asset building.

HOUSING

In Georgia, many of the existing sanitary landfills are nearing capacity, causing concern for the disposal of household waste. In rural communities, many homes depend on underground water supplies that may be contaminated. Demand for energy continues to increase in spite of rising costs.

Indoor air quality problems are caused by indoor contaminants including, but not limited to, radon, environmental tobacco smoke, biological contaminants, combustion byproducts, household products, volatile organic compounds, pesticides, asbestos and lead. Health effects of these contaminants range from allergic reactions in sensitive populations to death. Additionally, health effects of some contaminants are unknown at this time.

The goal of homeownership for many consumers is unattainable. Housing is an essential need for all persons. Not only is it a place for shelter, but it also has deep psychological and emotional influences on

people, providing them with a feeling of safety and security. Many consumers are overwhelmed by the homebuying process. A severe shortage of affordable housing for Georgia's workforce exists. One in four households earning less than 80 percent of the area median income spends 50 percent or more on housing. Once in a home, families often encounter an overwhelming number of home repairs and maintenance demands. When affordable housing is unavailable to low-income households, family resources needed for food, medical care and other necessities are diverted to housing costs.

Residential instability results as families are forced to move frequently, live with other families in overcrowded conditions or experience periods of homelessness. Residential instability is associated with children's poor attendance and performance in school, lack of a primary source of medical care or preventive health services, various acute and chronic medical conditions, sexual assault and violence. Additionally, access to homebuyer education in rural counties is often unavailable and, if provided, may require travel to a location outside of the county. UGA's "Workforce Housing in Georgia" report states, "Georgia must increase the consumer literacy of its workforce (by educating) the workforce and community leadership regarding existing housing programs," and resources should be available in the state.

2. Scope of the Program

- In-State Extension
- Multistate Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

FINANCIAL LITERACY

All Georgians, especially limited-resource and low-income families, face not only the problem of economic survival, but also the social and psychological consequences of underemployment, unemployment and degradation. The best consumer practices cannot solve the problems of poverty that many families endure. However, effective consumer practices, provision of consumer education and access to financial literacy are important in alleviating many obstructive aspects of poverty. Extreme inequality of income and wealth has weakened the sense of community and common purpose that is essential to the quality of life in many Georgia communities. Over 100,000 Georgia residents need to know and understand financial literacy.

HOUSING

By controlling sources of indoor air quality contamination and ensuring adequate ventilation, consumers can successfully reduce their risk of health complications. Providing education and information to consumers on water and energy conservation can positively impact their behaviors.

Development of a no-cost program that covers various topics surrounding the issues of homeownership will draw people and make program more successful. Additionally, we make the assumption that this program will help to raise educational awareness of the programs available in the state to assist with homeownership. As long as the Georgia Department of Community Affairs continues to provide financial support for the Georgia Dream Homeownership Program and the economy stays consistent, people will still enroll in our homebuyer education classes and the program will be successful.

2. Ultimate goal(s) of this Program

FINANCIAL LITERACY

The goal is to improve personal financial management skills, practices and knowledge to enhance the economic well-being of Georgia families. The delivery of research-based information and best practices is done directly by specialists and through trained county agents.

HOUSING

The goal of this planned program is to improve home environmental quality through improved air quality and better environmental resource management.

Further goals of this program are to increase homeownership rates among limited-resource clientele living in rural Georgia and to provide educational programs that enable families and individuals of all ages to attain a sustainable living environment through affordable, safe and decent housing.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	6.0	1.8	0.0	0.0
2018	6.0	1.8	0.0	0.0
2019	6.0	1.8	0.0	0.0
2020	6.0	1.8	0.0	0.0
2021	6.0	1.8	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

FINANCIAL LITERACY

In this program, UGA specialists will disseminate personal financial literacy fact sheets, provide personal financial management education classes to agents and select clientele and provide information to be disseminated by agents to media outlets.

In collaboration with our Extension partners and stakeholders, FVSU faculty members will develop a long-range plan for early intervention, providing financial literacy and consumer education to targeted areas throughout the state of Georgia.

Monthly training of instructors in financial literacy and consumer education will be conducted. Resources and materials from like-minded consumer advocacy organizations will be disseminated as appropriate. The program will target consumer advocacy organizations and will partnerships will be formed with approximately 50 additional collaborators for program goal enhancement, program funding and coalition creation.

HOUSING

The goal of this planned program is to improve the quality of the home environment through better air quality and environmental resource management.

The goals of this program are to increase homeownership rates among limited-resource clientele living in rural Georgia, and to provide educational programs that enable families and individuals of all ages to attain a sustainable living environment through affordable, safe and decent housing.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● eXtension web sites ● Web sites other than eXtension

3. Description of targeted audience

Specialists will direct efforts primarily to county agents. As a result, agents will reach youths, parents, senior citizens and others.

The targeted audiences of the FVSU faculty will be all Georgians and residents in surrounding areas, with emphasis placed on all limited-resource and low-income families and individuals.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of significant publications including articles, bulletins and extension publications. (excluding peer reviewed articles)
- Number of invited presentations by faculty directly resulting from the success of this planned program.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Total number of consumers transitioning from rental to homeownership after participating in this program.
2	The number of participants who tested their homes for indoor air quality contaminants as a result of the educational programs conducted by county agents.
3	The percentage of participants who increased their knowledge of Indoor Air Quality issues as a result of the educational programs conducted by county agents.

Outcome # 1

1. Outcome Target

Total number of consumers transitioning from rental to homeownership after participating in this program.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 607 - Consumer Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 2

1. Outcome Target

The number of participants who tested their homes for indoor air quality contaminants as a result of the educational programs conducted by county agents.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 607 - Consumer Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 3

1. Outcome Target

The percentage of participants who increased their knowledge of Indoor Air Quality issues as a result of the educational programs conducted by county agents.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 607 - Consumer Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Description

FINANCIAL LITERACY

Family finances may be affected by natural disasters, either directly (i.e., loss of property) or indirectly (i.e., the impact of weather on the cost of home energy). Changes in the economy, such as rising interest rates or inflation, may also impact family financial security. Public policy changes in the areas of taxes, health care, financial services and in other areas can also impact family economic well-being.

HOUSING

Natural disasters can impact the community's immediate need for information and resources. Home energy costs are greatly impacted by rising fuel costs, which has resulted in a tax credit for homeowners who improve the energy efficiency of their homes. Increases in the population and density influence water quality, energy use and waste management.

Indoor air quality (IAQ) programs may be impacted by a natural disaster, and a natural disaster may increase a particular IAQ issue. Changes in economic conditions and policies may impact available funding for programs and staff.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

FINANCIAL LITERACY

Agent knowledge will be assessed by evaluation tools specific to the content provided. The evaluation database will be used to assess changes in knowledge and intent to change behavior by those reached through county agents.

The FVSU Extension Resource Management Program will make use of the most appropriate

evaluation and appraisal methodologies to assess, monitor, compare and follow up in regards to program improvements, successes and readjustments. Initially, strengths and needs assessments will be conducted with internal and external stakeholders, targeted clientele, clientele receiving direct training and populations indirectly affected by our financial literacy and consumer education programming. All evaluations will involve the following process: pre-project evaluation; formative/ongoing/concurrent evaluation; summative/terminal evaluation and impact evaluation. Evaluation of all FVSU-CEP Resource Management programming will be continuous, participatory and constructive.

For each financial literacy series, a test will be administered beforehand to gauge participants' knowledge prior to completing the class. The same test will be given at the conclusion of the series to measure participants' increase in knowledge.

HOUSING

For each homebuyer education series, a test will be administered beforehand to gauge participants' knowledge prior to completing the class. The same test will be given at the conclusion of the series to measure participants' increase in knowledge.

Evaluation tools specific to the training content will assess the level of knowledge of the agents. An evaluation database provides tools to assess changes in knowledge and the intent to change behavior. Most data collection will be obtained at the time of the educational intervention via questionnaire. In some instances a mail survey will be sent out as follow-up measure. Additionally, yearly IAQ reports detailing program outputs will be compiled.

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Plant Production

2. Brief summary about Planned Program

Projects under this planned program focus on plant production and protection. Projects provide innovative research and Extension programming to improve plant growth and crop production, as well as helping growers in Georgia and across the nation. Specialties may include management of plant diseases, weeds and pests; development of new breeding tools; soil quality; irrigation; plant pathology; genetics; entomology; harvest and post-harvest handling; conservation; and cultural trends.

Technology that provides the greatest returns and that lessens environmental impact is developed for Georgia's agricultural industries of greatest value. Faculty members give producers the latest production information through educational programs and statewide research.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	10%	0%	5%	5%
123	Management and Sustainability of Forest Resources	0%	0%	0%	5%
201	Plant Genome, Genetics, and Genetic Mechanisms	0%	0%	10%	40%
204	Plant Product Quality and Utility (Preharvest)	20%	0%	10%	5%
205	Plant Management Systems	10%	0%	10%	5%
206	Basic Plant Biology	20%	0%	20%	20%
211	Insects, Mites, and Other Arthropods Affecting Plants	5%	0%	10%	5%
212	Diseases and Nematodes Affecting Plants	5%	0%	10%	5%
213	Weeds Affecting Plants	10%	0%	10%	5%
216	Integrated Pest Management Systems	20%	0%	15%	5%
	Total	100%	0%	100%	100%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

To be sustainable, agriculture must contribute to the well-being of the surrounding communities, while minimizing its environmental footprint. The development of new cultivars is the most cost-effective and environmentally feasible method to achieve this end. While new and improved agronomic practices are essential if sustainable agriculture is to be achieved, so are improved cultivars that require fewer inputs (e.g., synthetic pesticides or irrigation water) and produce more per unit of input (e.g., fertilizer, land). Accordingly, the priority is to breed cultivars that maximize yield and product quality with a minimum of inputs and to generate the basic knowledge of genetics necessary to breed such cultivars.

To be competitive, producers must understand existing management practices as well as become informed of new technologies as they are developed. Producers need a reliable, scientific basis for selecting genetically superior plants.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension
- Integrated Research and Extension
- Multistate Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Severe drought or excessive rainfall may prevent successful evaluations in particular locations. These conditions will also affect disease severity each year.

Changes in federal farm policy could drastically change our basic economic assumptions. Government regulations could greatly impact this program.

Changes in population growth will impact plant production and demand for products.

2. Ultimate goal(s) of this Program

The ultimate goal of this program is to reduce disease incidence and severity and to develop management programs for diseases and pests that impact production. To educate producers on new and emerging issues and technology, faculty must help to solve problems so that growers remain competitive and profitable. It is the goal of faculty to produce the highest quality product that is profitable and sustainable with the least environmental impact, and to provide timely and useful educational programs on management and best practices in support of county faculty and producers in Georgia.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	28.5	0.0	22.0	2.0
2018	28.5	0.0	22.0	2.0
2019	28.5	0.0	22.0	2.0
2020	28.5	0.0	22.0	2.0
2021	28.5	0.0	22.0	2.0

V(F). Planned Program (Activity)

1. Activity for the Program

Annually, this program will update Extension agents and clientele in pest control through methods such as one-on-one discussions, meetings and publications. It will provide pest overviews for organizations such as the Georgia Cattlemen's Association. Every year faculty will update 11 sections of the Georgia Pest Management Handbook and provide biennial estimations of pest losses in livestock and dairy production.

Research comparing different bahiagrass and bermudagrass will continue. Evaluation of new forages, including Coastcross II for grazing and hay quality, along with pigeon peas for grazing and for grain production for cattle feeding, will also continue. Byproduct feeds will be evaluated for nutritional and economic value in beef production systems.

New information will be made available to peers through the publication of original research articles in scientific journals. More applied knowledge will be disseminated to the audience at large (producers, Extension personnel, etc.) by publishing results in journal articles or departmental research reports and by coordinating presentations with Extension personnel.

Although many of the individual subprocess technologies have been previously in development (e.g., pyrolysis process, biodiesel and Fischer-Tropsch process) and some are in commercial operation, they have not been integrated in a manner that provides maximum biorefining. In addition, opportunities exist that will allow the development of new products and the improvement of existing processes, making them commercially viable. Some of the information gaps identified and overall directions of research and outreach are listed below.

Research projects will be developed and conducted to improve on existing technologies and to identify new and emerging technologies. Examples of research projects under development or implementation are discussed below. Many projects are currently underway or are in the planning stages.

A project evaluating the production of hydrogen from peanut hull and pine chip biomass is underway. Peanuts and pine chips are plentiful in Georgia. Additional tests are beginning on the use of char in agriculture. Two chars (peanut hulls and pine chips) produced from the process will be evaluated for nutrient benefits, water holding and irrigation benefits, and carbon sequestrations benefits.

Bio-oil has been developed by pyrolyzing pine pellets in a pilot scale system. Blends of bio-oil with other solvents/fuels have been prepared and are being characterized. Bio-oil blend analysis and testing is ongoing. Planning for engine performance testing will begin soon.

The transesterification of oils and fats to produce biodiesel is being studied. This work evaluates new sources of oils and fats that could be substrates for producing biodiesel. Once developed, the biodiesel will be tested for properties and behavior in engine testing. Georgia grasses are being hydrolyzed through a hot water extraction process to generate fermentable sugars. These will be further broken down before fermentation. The final sugar solution will be fermented for ethanol production.

Faculty will develop and provide workshops and/or field days; newsletters and/or fact sheets; site visits; and educational exhibits related to forestry.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● Demonstrations 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● TV Media Programs ● eXtension web sites ● Web sites other than eXtension

3. Description of targeted audience

The primary target audiences are county Extension agents, growers, industry representatives, consultants, contractors, media, regulatory and policy representatives and community leaders.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of invited presentations by faculty directly resulting from the success of this planned program.
- Number of significant publications including articles, bulletins and extension publications.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of disease samples processed by diagnostic laboratory.

Outcome # 1

1. Outcome Target

Number of disease samples processed by diagnostic laboratory.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 213 - Weeds Affecting Plants
- 204 - Plant Product Quality and Utility (Preharvest)
- 102 - Soil, Plant, Water, Nutrient Relationships

4. Associated Institute Type(s)

- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Public Policy changes
- Government Regulations
- Populations changes (immigration, new cultural groupings, etc.)

Description

Severe drought or excessive rainfall may prevent successful evaluations in particular locations. These conditions will also affect disease severity each year.

Changes in the federal farm policy could drastically change our basic economic assumptions. Government regulations can greatly impact this program.

Changes in population growth will impact plant production and demand for products.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Replicated experimental plots will be established to evaluate soil organic amendments, crops and forages. Data collection methods will consist of soil sampling for nutrients, and vegetable, agronomic and forage crops harvested for yield.

Researchers will compare disease intensity, control costs and economic returns from producers and Extension personnel before and after the program.

Studies will be evaluated by observing the amount of bacterial suppression offered by the programs

2017 Fort Valley State University and University of Georgia Combined Research and Extension Plan of Work
implemented. The yield and quality will be measured.

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Sustainability, Conservation & the Environment

2. Brief summary about Planned Program

This planned program has a major research and extension component to address sustainability, conservation and environmental sciences through a variety of interdisciplinary research projects.

The environmental sciences program is designed to provide leadership in research, teaching and extension activities related to the inventory, management, protection and enhancement of natural resources that the human civilization relies on for food, clean water and clean air.

Other efforts in this planned program will focus on sustainable agribusinesses in Georgia. Research and outreach projects will include improving profitability and operating efficiency, risk management, marketing and market analysis, environmental and resource economics, agricultural policy, international trade, lending and land-use planning.

Biofuel research may lower dependence on foreign oil. Plants are a rich source of inedible oil (for biodiesel) and starch (for ethanol). Research is required to screen plants for rapi

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
133	Pollution Prevention and Mitigation	40%	40%	40%	40%
403	Waste Disposal, Recycling, and Reuse	30%	30%	30%	30%
605	Natural Resource and Environmental Economics	30%	30%	30%	30%
	Total	100%	100%	100%	100%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

Of Georgia's 24.7 million acres in forestland, 17.96 million acres are owned by private, nonindustrial landowners. Research studies have documented that small, minority and limited-resource landowners and farmers are often not aware of and/or have been denied access to opportunities that will aid in sustaining

and/or increasing their land productivity in the area of forest management.

Biomass resources are not efficiently utilized in the region. Energy costs are increasing, national security is threatened, rural economies are in decline and climate change is affecting quality of life.

Although many of the individual subprocess technologies have been in development previously (e.g., pyrolysis process, biodiesel and Fischer-Tropsch process) and some are in commercial operation, they have not been integrated in a manner to provide maximum biorefining. In addition, opportunities exist that will allow for the development of new products and the improvement of existing processes, making them commercially viable. Some of the information gaps identified and overall directions of research and outreach are listed below.

Biomass Pretreatment: Biomass (e.g., wood wastes, forest residues, agricultural residues) is found in different locations and in different forms. The ability to use these in a general-purpose integrated biorefinery is dependent on appropriate pretreatment options that convert them to a flexible feedstock.

Process Development: Although a part of process development is complete, there are areas for improvement that will benefit efforts before scaleup. Maximizing efficiency of the process will be achieved by completing some technical tasks.

Product Diversity: A significant thrust to develop new products and markets for these products will improve the economics of conversion technologies.

Demonstrations and Technology Transfer: Scaled-up demonstration is the most important step toward rapid commercialization. These tasks will ensure technology development is complete, provide data for further improvements in process scaleup and provide a source for private industry (entrepreneurs) to draw encouragement and technical help in order to pursue the development of this industry in Georgia.

2. Scope of the Program

- In-State Extension
- In-State Research
- Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Technology solutions exist to mitigate problems identified in this planned program. Biomass resources are abundant in Georgia and the region. The use of biomass resources can provide economic growth.

The program assumes that the need for alternative fuels will increase. It assumes government regulations and funding will support future research and development.

There are needs to increase the number of forest management plans that include wildlife for small, minority and limited-resource landowners; to increase the number of small, minority and limited-resource forest landowners participating in federal and state cost-share programs; to increase the number of minority and limited-resource forest landowners participating in workshops and other meetings; and to

increase the number of publications distributed among minority communities.

2. Ultimate goal(s) of this Program

The goal is development of an integrated biorefinery industry in Georgia that will stimulate our rural economies, sustain our core forest and agricultural industries, increase our tax revenues, improve our environment and contribute to addressing the critical problem of global warming.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	21.1	1.2	7.5	4.0
2018	21.1	1.2	7.5	4.0
2019	21.1	1.2	7.5	4.0
2020	21.1	1.2	7.5	4.0
2021	21.1	1.2	7.5	4.0

V(F). Planned Program (Activity)

1. Activity for the Program

Research projects will be developed and conducted to improve on existing technologies and to identify new and emerging technologies. Examples of research projects under development or implementation are discussed below. Many projects are currently underway or are in the planning stages.

A project evaluating the production of hydrogen from peanut hull and pine chip biomass is underway. Peanuts and pine chips are plentiful in Georgia. Additional tests are beginning on the use of char in agriculture. Two chars (peanut hulls and pine chips) produced from the process will be evaluated for nutrient benefits, water holding and irrigation benefits, and carbon sequestration benefits.

Bio-oil has been developed by pyrolyzing pine pellets in a pilot scale system. Blends of bio-oil with other solvents/fuels have been prepared and are being characterized. Bio-oil blend analysis and testing is ongoing. Plans for engine performance testing will begin soon.

The transesterification of oils and fats to produce biodiesel is being studied. This work evaluates new sources of oils and fats that could be substrates for producing biodiesel. Once developed, the biodiesel will be tested for properties and behavior in engine testing. Georgia grasses are being hydrolyzed through a hot water extraction process to generate fermentable sugars. These will be further broken down before fermentation. The final sugar solution will be fermented for ethanol production.

Faculty will provide workshops and/or field days; newsletters and/or fact sheets; site visits; and educational exhibits related to forestry.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Public Service Announcement ● TV Media Programs ● Web sites other than eXtension

3. Description of targeted audience

The target audience will include farmers, agribusinesses, community leaders and entrepreneurs as well as small, minority and limited-resource landowners and farmers.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of significant publications including articles, bulletins and extension publications. (excluding peer reviewed articles)
 - Number of invited presentations by faculty directly resulting from the success of this planned program.
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Total number of site visits made to small, minority, and limited resource landowners and farmers

Outcome # 1

1. Outcome Target

Total number of site visits made to small, minority, and limited resource landowners and farmers

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 605 - Natural Resource and Environmental Economics
- 403 - Waste Disposal, Recycling, and Reuse
- 133 - Pollution Prevention and Mitigation

4. Associated Institute Type(s)

- 1890 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Populations changes (immigration, new cultural groupings, etc.)

Description

Government regulation and policies will directly impact the success of this program. The price and availability of traditional energy sources can affect the amount of resources directed to this program.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Participants in educational programs will be evaluated for knowledge gained through program surveys.

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Urban Agriculture

2. Brief summary about Planned Program

This planned program will provide research and education in areas that directly benefit urban agriculture. The work is concentrated in four areas. The program will strive to produce better plant materials, improve turf and greenhouse management, develop and disseminate new management tools for the landscape professional and target consumers of urban agriculture in order to improve practices and protect the environment.

The program will identify plants that are better adapted to urban environments, with traits such as pest resistance, heat and drought tolerances and compact form, all of which are greatly desired by nurseries, landscape contractors and homeowners. There are approximately 1.8 million acres of turf in Georgia. Disease losses and control costs account for over \$250 million annually. Turfgrass fungicides are cost-prohibitive, their overuse can be detrimental to the environment and fungicide resistance is becoming an important issue in Georgia. This program will develop integrated strategies for disease management as well as educate turfgrass producers, turfgrass professionals, landscape company personnel, county faculty and the general public on disease etiology, epidemiology, and sound and effective disease management strategies for turfgrass.

The program will allow for development of tools for the landscape professional. It will help develop landscape survey and inventory software that is compatible with commercially available, hand-held PDAs and GPS/PDA units, used for site inventory and mapping. Cost estimating and job bidding are among the most perplexing and time-consuming tasks for professional landscapers, yet they are critical to business success.

This planned program will continue to work with both adult and youth audiences statewide to train volunteers and county Extension agents in serving the environmental horticulture needs of the public. The Georgia Master Gardener Extension Volunteer Program is an integral part of this planned program. Faculty members will develop resources and training programs as well as use the mass media to distribute information.

Finally, the Center for Urban Agriculture will be utilized to provide an organizational structure designed to facilitate scientific cross-fertilization among investigators, agents, the industry and homeowners. It will facilitate issue identification and will offer continuing education programs that are relevant to the urban environment.

3. Program existence : Intermediate (One to five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	10%	40%	10%	0%
111	Conservation and Efficient Use of Water	10%	20%	10%	0%
124	Urban Forestry	10%	0%	10%	0%
206	Basic Plant Biology	10%	0%	10%	0%
211	Insects, Mites, and Other Arthropods Affecting Plants	5%	0%	5%	0%
213	Weeds Affecting Plants	10%	30%	10%	0%
216	Integrated Pest Management Systems	10%	0%	10%	0%
404	Instrumentation and Control Systems	5%	0%	5%	0%
405	Drainage and Irrigation Systems and Facilities	5%	10%	5%	0%
602	Business Management, Finance, and Taxation	10%	0%	10%	0%
605	Natural Resource and Environmental Economics	5%	0%	5%	0%
806	Youth Development	10%	0%	10%	0%
	Total	100%	100%	100%	0%

V(C). Planned Program (Situation and Scope)**1. Situation and priorities**

In order to remain vital and relevant to the state, CAES must focus resources and talents on the issues involved in urbanization and the needs of Georgia's increasing urban and suburban populations. The goal of the Center for Urban Agriculture is to assist in this process.

Due to the increase in population, use and popularity of turf species, as well as their high aesthetic value, disease losses and control costs are enormous. Additionally, golf course superintendents, sod producers and commercial landscape managers use fungicides as the main disease control strategy. Furthermore, a considerable number of homeowners rely on pesticides to control turfgrass diseases. Turfgrass fungicides are cost-prohibitive and their overuse can be detrimental to the environment.

Many commercial landscape firms fail within the first five years because they don't recoup all their costs while gaining a reasonable profit. There is a great need for education on best management practices and additional management tools to support this industry.

The latest surveys of the environmental horticulture segments report annual revenue of \$8.1 million in 2004 from approximately 7,000 firms with almost 80,000 employees. Many of these industries are relatively volatile, with short life spans. Employees may be transitory, increasing the need for continuing education. Hispanic workers form the backbone of urban agriculture industries, supplying 75 percent of the

workforce.

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Extension
- Integrated Research and Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Urbanization obviously impacts traditional agricultural industries. In addition to the loss of traditional farmland, urbanization can result in conflicts between traditional agricultural producers and their relatively new, nonrural neighbors. Homeowners may object to pesticide application, smells and dust associated with agriculture while enjoying the rural atmosphere created by farming. Farmers may object to suggestions on land use, and both appreciate and resent the increasing land prices associated with urbanization. Urbanization impacts the physical environment in unique and complex ways.

This program will be achievable because there is an infrastructure and human resources to support the proposed objectives. Disease losses are a major economic burden, and industry professionals are motivated to implement new and improved measures of control. Internal and external funds and agents serve as catalysts to achieve the proposed plan.

Changes in the production systems of plant and animal species will present a challenge for outreach. Workshops conducted by FVSU along with the help of the federal government agencies, such as the Natural Resources Conversation Service (NRCS), Farm Service Agency (FSA) and Rural Development Agency (RD) along with experienced growers as mentors will give inexperienced and experienced growers a better insight on how to produce quality species of plants and animals with less input and maintenance cost. Educating and training of growers will be needed to generate a sustainable plant and animal production system.

2. Ultimate goal(s) of this Program

The goal of this planned program is to produce better plant materials, improve turf and greenhouse management and develop and disseminate new management tools for the landscape professional.

Specifically, this program will develop enhanced, turfgrass disease-management strategies that prevent economic losses, increase efficiency in production and management, and promote a more judicious and timely application of fungicides. The program will lead to development of improved plants that will be well-adapted to growth in the landscapes of the urban environment.

The program will educate the consumer on best management practices and thus improve the satisfaction and success of the consumer. Consumer-level education can greatly impact the urban agriculture industry, the environment and the quality of life in urban areas.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	2.5	0.8	4.0	0.0
2018	2.5	0.8	4.0	0.0
2019	2.5	0.8	4.0	0.0
2020	2.5	0.8	4.0	0.0
2021	2.5	0.8	4.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Faculty will conduct statewide and local trainings and programs on turf disease identification and management. Electronic and printed materials on turf disease identification and management will be published. Research trials to measure efficacy and the proper timing of fungicides to control different diseases will be conducted.

Development of partnerships and research collaborations with commercial companies and educational institutions will be established to support the work of this program. Faculty members will develop new cost-estimating and job-bidding software for landscape installations. New software to use with GPS devices will be developed to support inventory systems.

Faculty will support the Master Gardener program by training county Extension agents to conduct local programs. Faculty members will work with county Extension agents to support consumer education efforts related to urban agriculture.

Growers who are interested in growing edible tree fruits, berries and vegetables can do so by using low inputs of commercial and organically approved fertilizers and pesticides. Reduced input of these chemicals into the soil and on the surface of the the growing plants will be done. Also, as much as possible, resistant insect and disease plant varieties and cultivars will be carefully selected in in an effort to minimize the use of toxic chemicals and commercial fertilizers. Producers who are interested in growing their own animals (cows, sheep, and goats) as a source of food and for sale will learned how to produce range-fed animals using organic and low levels of commercial fertilizers.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● Demonstrations 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● TV Media Programs ● Web sites other than eXtension

3. Description of targeted audience

The target audience for this planned program includes urban agriculture industry professionals, public policymakers and regulators, county Extension faculty, homeowners and growers - who are interested in producing edible tree fruits, berries, vegetables and animals.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of significant publications including articles, bulletins and extension publications. (excluding peer reviewed articles)
- Number of invited presentations by faculty directly resulting from the success of this planned program.

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of website hits, page views, or downloads from the Center for Urban Ag site.

Outcome # 1

1. Outcome Target

Number of website hits, page views, or downloads from the Center for Urban Ag site.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 213 - Weeds Affecting Plants
- 102 - Soil, Plant, Water, Nutrient Relationships
- 405 - Drainage and Irrigation Systems and Facilities
- 111 - Conservation and Efficient Use of Water
- 216 - Integrated Pest Management Systems
- 206 - Basic Plant Biology
- 124 - Urban Forestry
- 404 - Instrumentation and Control Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Description

Government regulations for certain fungicides can hamper the applicability of those in disease control. Government regulations and public policy may speed up the adoption of conservation measures by ordinance or state law. This may increase or may decrease the actual number of programs/activities per year depending on actions taken by policy groups.

Population increases will greatly affect urban programming. An economic change can affect consumers' value of ornamental horticulture and therefore impact this program.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Evaluation of this program will be more informal than formal. There will be preprogram and post-program surveys to ascertain the number of participants who own computers, how they use their computers, whether they are connected to the Internet and what they do online. Several projects will be completed during the trainings, and participants will be evaluated on the extent to which they are able to complete each project. At the close of each training, participants will be asked to provide written feedback relative to the training, and there will be follow-up emails and/or telephone surveys to measure the extent to which they are using the skills developed in the trainings. Surveys will be administered on-site to all program participants to ascertain use of information technologies by participants and their friends. After each training, telephone and/or email surveys will be conducted with participants and others they identify who can verify that they are applying what was learned.

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Youth & Family Development

2. Brief summary about Planned Program

Child & Family Development

This planned program will offer educational opportunities for parents/caregivers, children and professionals by providing them with the most up-to-date and research-based concepts involving family coping strategies, positive development and basic life-skill information. The family life-coping strategies will provide ideas and concepts on decisive decision-making. For positive development the program helps participants find ways to improve critical thinking, creative abilities and communication skills. The life skill information will provide participants with ideas for lifelong, productive participation in society. These character-building initiatives will provide children with the self-confidence to become caring and responsible adults for a thriving community.

4-H Youth Development

The mission of Georgia 4-H is to assist youth in acquiring knowledge, developing life skills and forming attitudes that will enable them to become self-directing, productive and contributing members of society. The 4-H program uses many activities as a platform to develop the life skills necessary for success in life.

This plan specifically targets learning objectives for life skill development across all 4-H program plans. Through club programs and educational activities, this planned program will establish learning objectives and educational curricula to support the development of life skills. More importantly, this program will seek out opportunities for young people to practice new life skills in a positive environment. A major area of concentration will include the development of leadership skills.

The 4-H and youth programs at FVSU are specifically designed to meet the needs and challenge the strengths of youths living in Georgia. These program components focus on initiating success by empowering the minds of our youth to a higher level of thinking through leadership, entrepreneurship and science-based educational projects, activities and programming. This program will help all participants make the best decisions for themselves at all times and in all situations that they may encounter.

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Expending formula funds or state-matching funds : Yes

6. Expending other than formula funds or state-matching funds : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
134	Outdoor Recreation	5%	0%	0%	0%
135	Aquatic and Terrestrial Wildlife	5%	0%	0%	0%
136	Conservation of Biological Diversity	5%	0%	0%	0%
206	Basic Plant Biology	5%	0%	0%	0%
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	5%	0%	0%	0%
307	Animal Management Systems	5%	0%	0%	0%
315	Animal Welfare/Well-Being and Protection	5%	0%	0%	0%
608	Community Resource Planning and Development	5%	0%	0%	0%
802	Human Development and Family Well-Being	10%	20%	0%	0%
806	Youth Development	50%	80%	0%	0%
	Total	100%	100%	0%	0%

V(C). Planned Program (Situation and Scope)

1. Situation and priorities

The number of our nation's youth who exhibit at-risk behaviors points to a lack of skills necessary for adulthood, skills that involve working with others, understanding self, communicating, making decisions and leadership. These skills are required by adults for everyday living and are often called "leadership life skills." The development of life skills allows youth to cope with their environment by making responsible decisions, having a better understanding of their values and being better able to communicate and get along with others.

The lack of youth development programs and persistent poverty can become the pipeline to prison. While opportunities for getting into trouble abound for all children, growing up in poverty contributes to a greater likelihood of involvement in crime and violence. Studies show that children living in extreme, persistent poverty are more likely to engage in delinquency, especially serious delinquency (Children's Defense Fund, January 2006). Several studies have shown that poor choices made by youths and adults lead to inappropriate actions, which result in negative consequences. Unemployment, poverty, child abuse, drug abuse, unsuccessful parenting and lack of positive leadership in the home are some of the factors that prohibit youth from developing good decision-making skills. These alarming statistics indicate the need and importance of creating family-focused programs to address the problems of at-risk youth living in Georgia and throughout America.

Throughout our communities there are countless examples of decision-making bodies that do not engage the input from their stakeholders. Youth audiences are often left victim to underrepresentation. As we look around our communities, adults are at the forefront of discussions focusing on issues that affect young people. Decisions are often made without consulting youths in regards to what opinions and

thoughts they may have on a particular issue. Too often youths are given a seat on decision-making bodies without having a value to the group and, therefore, skills are not developed. Youths and adults both need opportunities for training, and youths need practice serving as leaders for civic changes.

2. Scope of the Program

- In-State Extension
- Multistate Extension

V(D). Planned Program (Assumptions and Goals)

1. Assumptions made for the Program

Youth development is a process of mental, physical, social and emotional growth during which young people prepare to live a productive and satisfying life within the customs and regulations of their society. People who develop programs and curricula for youth are in the business of providing educational opportunities through which youth can learn information and develop skills they need.

Youth development experiences of high quality don't just happen. The best ones are carefully planned (a) to encourage life skill development while delivering subject matter content and (b) to achieve specific results. It has become increasingly important to be accountable for resources expended by documenting program impact. By clearly stating desired changes as program objectives, youth development experiences can be evaluated more effectively to determine whether the program succeeded in making the intended difference in the lives of youths.

Youths serving as positive contributors and within meaningful roles are among the least common experiences for young people. Adults perceive youths as in need of assistance rather than being community assets. The stereotyping of youths and adults by each other can limit potential.

2. Ultimate goal(s) of this Program

The goal of this program is to provide developmentally appropriate opportunities for young people to experience development of life skills, to practice those life skills until they are learned and to be able to use those life skills as necessary throughout a lifetime. Youths working with adults as partners and serving as leaders will enact positive changes while developing important skills.

V(E). Planned Program (Inputs)

1. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2017	8.1	3.0	0.0	0.0
2018	8.1	3.0	0.0	0.0
2019	8.1	3.0	0.0	0.0
2020	8.1	3.0	0.0	0.0
2021	8.1	3.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

4-H faculty members will develop curriculum and will train and support county Extension agents to conduct monthly educational programs during in-school club meetings around the state.

4-H faculty members will develop and support educational opportunities, including individual learning projects, animal projects, entrepreneurship clubs, science clubs, environmental clubs and product evaluation/judging activities.

Under the 4-H youth program, curriculum will be developed and staff trained to conduct a summer camping program that allows young people to learn and practice life skills. Five residential camps are supported through the work of this program.

The 4-H youth program will conduct a Georgia Youth Summit with teams of youths and adults preparing information on local issues, receiving training on enacting change and working together and returning to home communities to enact the change. State- and federally funded faculty will provide in-service training and Web-based information for county faculty, staff and volunteers who will work with youths on civic engagement. They will train 4-H issue ambassadors to work on community change during ambassador training and prepare complimentary information for ambassadors to use as reference. State faculty will train youths and adults to work with communities on meeting the needs of military youths and families under the direction of the Operation Military Kids team. Faculty members will produce and provide Web-based training and information for directing and assisting youths in individualized community engagement, with recognition within the Leadership in Action program.

A large part of this program will fund specialists and their direct efforts primarily to county agents. These agents will then disseminate this information to youths in their county.

2. Type(s) of methods to be used to reach direct and indirect contacts

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention 	<ul style="list-style-type: none"> ● Web sites other than eXtension ● Other 1 (Exhibits)

3. Description of targeted audience

The target audience for this planned program includes two groups. County agents and volunteers will be targeted to multiply the efforts of faculty associated with this program. In many cases, faculty will have direct contact with the youths.

All Georgia youths from kindergarten through college are targeted for life skill development programs. The in-school club program will target fifth through eighth grades. Different activities within the program will target different ages.

Many programs identify more specific audiences. An example of these would be programs that target youth of military families or programs that target audiences at risk. Some programs target low-income and

limited-resource families.

V(G). Planned Program (Outputs)

NIFA no longer requires you to report target numbers for standard output measures in the Plan of Work. However, all institutions will report actual numbers for standard output measures in the Annual Report of Accomplishments and Results. The standard outputs for which you must continue to collect data are:

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
- Number of patents submitted
- Number of peer reviewed publications

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

- Number of significant publications including articles, bulletins and extension publications. (excluding peer reviewed articles)
- Number of invited presentations by faculty directly resulting from the success of this planned program.
- Number of Leadership, Entrepreneurship, and Science Meeting sessions coordinated

Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Total number of youth participants that will enhance decision making skills and develop positive leadership skills, increase their knowledge of entrepreneurship education, and increase their knowledge of science education.
2	4-H total enrollment

Outcome # 1

1. Outcome Target

Total number of youth participants that will enhance decision making skills and develop positive leadership skills, increase their knowledge of entrepreneurship education, and increase their knowledge of science education.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 2

1. Outcome Target

4-H total enrollment

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 135 - Aquatic and Terrestrial Wildlife
- 136 - Conservation of Biological Diversity
- 802 - Human Development and Family Well-Being
- 315 - Animal Welfare/Well-Being and Protection
- 608 - Community Resource Planning and Development
- 214 - Vertebrates, Mollusks, and Other Pests Affecting Plants
- 206 - Basic Plant Biology
- 307 - Animal Management Systems
- 806 - Youth Development
- 134 - Outdoor Recreation

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Description

Economic challenges may prevent schools accessibility and families' opportunities to participate in some activities.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

A record number of youths involved in projects will be maintained. The total number of youth livestock projects begun and completed will be collected. On-site evaluations of some educational programs will be completed by participants.

Participants in the programs will respond, post-program, about knowledge gained. This will vary with each of the programs/activities offered. All programs will not use time-series evaluation. Methods checked will not be used for all programs/activities. County faculty and volunteers working with the youths involved in programs, as well as the youths, will be involved in preparing observations about the programs. A sampling of participants will also evaluate knowledge gained and its impact on self. The Leadership in Action participants will include an evaluation component in their submission summary considering the effects of the activity on their leadership growth. Additionally, a selection of high school-aged youth in the Leadership in Action program will be interviewed.