

2016 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 encompasses a five-year period beginning October 1, 2015. 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 institutions, Fort Valley State University (FVSU) and the University of Georgia (UGA), and includes joint planning between Experiment Stations and Extension units at both universities.

Georgia, one of the original thirteen colonies, has a land area of 57,919 square miles, which makes it the largest state east of the Mississippi River (24th overall). The total area of the state's three largest counties - Ware, Burke and Clinch (2,565 square miles) - is greater than the area of the entire state of Delaware (2,489 square miles). 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. The US Census reported 24.9% of Georgians were under age 18 and 12% of the state's population was 65 or older. According to the census, Georgians identified themselves as 54.8% white, 31.4% African American, 9.2% Hispanic or Latino, and 3.7% Asian.

Georgia Cooperative Extension has 167 offices in 157 of Georgia's 159 counties. FVSU and UGA county personnel are housed jointly in county offices. Extension programming in the areas of Agricultural and Natural Resources, Family and Consumer Sciences and 4-H is delivered as both individual county effort and as multi-county programming. State faculty members deliver training to county agents and programming directly to clientele, when appropriate.

The research programs of FVSU and UGA are conducted through the Agricultural Experiment Stations system. In addition to four main campuses located in Athens, Fort Valley, Tifton and Griffin, Georgia utilizes several research and education centers located strategically throughout the state. This joint Plan of Work was developed around core programs and targeted issues. The programming directions of core programs and the identification of targeted issues are decided under a structured program development system. The Georgia program development model is a multiple step process that is operational every year. The model includes a process 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.

Also part of annual needs assessment and an integral part of developing this plan of work, input is 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 and College of Family and Consumer Sciences. Faculty members associated with this plan are working on cutting edge programs. The faculty 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 dollars are used to fund core programs at the state level. These core programs cover a wide range of topics, including traditional animal and plant production, positive youth and family development, ornamental plants, personal health and well-being, as well as 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. It is the additional state funding, county funding, grants and gifts leveraged as a direct result of the work in this plan that 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 129 very specific plans of work which have been submitted by individual faculty members or faculty teams. These individual plans are combined into state level planned programs.

Planned programs were revised in 2013 to most logically capture focus areas of Georgia's research and Extension efforts. The eight planned programs work in conjunction with each other to address important issues on a county, state, regional, national, and global level.

Animal Production and **Plant Production** 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.

Sustainability, Conservation & the Environment 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 the development and enhancement of sustainable biofuels to provide domestic sources of sustainable energy.

Faculty in **Food Safety** 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 community, support the sustainability and profitability of the agriculture industry and provide educational programming 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
2016	280.0	13.2	202.0	41.3
2017	280.0	13.2	202.0	41.3
2018	280.0	13.2	202.0	41.3
2019	280.0	13.2	202.0	41.3
2020	280.0	13.2	202.0	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's College of Agricultural and Environmental Sciences (CAES) and Fort Valley State University (FVSU) independently and collaboratively conduct periodic, extensive, and comprehensive program reviews of the research and extension programs. These reviews collect both internal and external input including faculty and staff, clientele, alumni and stakeholder groups. The results of these reviews have been used in the formulation of 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 and Youth, as well as faculty from both FVSU and UGA. This review is an on-going process and future annual reviews and changes in 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.

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?

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.

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.

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 the participation in non-traditional stakeholder individuals. Georgia's advisory system states that advisory committee membership should 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.

Organizations that are direct stakeholders or potential collaborators (for addressing community issues) are identified by the faculty and administration. 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. These groups may be identified by race, ethnicity, income or communities of interest.

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 active stakeholders are surveyed via email soliciting their comments and recommendations.

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. It is used in identifying issues and evaluating level of resources 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 to areas of a) 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 producer record value. Research will focus on reproductive efficiency and genetics. New forages, grains and management/nutrition 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. Swine feeding research will center on nutrient use and animal intake signals.

AQUACULTURE

Faculty will aid with 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 UGA/FVSU collaboration with Auburn and Kentucky State University. The Georgia Center for Aquaculture Development will provide aquatic animal disease diagnostics and evaluate re-circulating aquaculture systems. Fish, prawns, shrimp and aquatic organisms will be grown to determine feed, stocking, water management and waste nutrient reuse. Workshops and newsletters/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.

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
102	Soil, Plant, Water, Nutrient Relationships	12%	11%	12%	6%
111	Conservation and Efficient Use of Water	2%	3%	2%	1%
112	Watershed Protection and Management	4%	5%	4%	3%
121	Management of Range Resources	1%	0%	1%	0%
125	Agroforestry	0%	0%	1%	0%
131	Alternative Uses of Land	0%	8%	0%	4%
133	Pollution Prevention and Mitigation	5%	6%	4%	3%
201	Plant Genome, Genetics, and Genetic Mechanisms	27%	0%	26%	0%
204	Plant Product Quality and Utility (Preharvest)	11%	0%	13%	0%
205	Plant Management Systems	18%	0%	18%	0%
216	Integrated Pest Management Systems	6%	0%	4%	0%
301	Reproductive Performance of Animals	1%	0%	1%	0%
303	Genetic Improvement of Animals	1%	0%	1%	23%
304	Animal Genome	0%	0%	0%	7%
307	Animal Management Systems	5%	22%	6%	22%
311	Animal Diseases	0%	13%	0%	0%
403	Waste Disposal, Recycling, and Reuse	0%	2%	0%	1%
503	Quality Maintenance in Storing and Marketing Food Products	4%	0%	4%	0%
601	Economics of Agricultural Production and Farm Management	3%	30%	2%	16%
701	Nutrient Composition of Food	0%	0%	1%	14%
	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 new technologies as they are developed. 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 on 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 US 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% of every dollar a producer makes is directly attributable to the reproductive efficiency of his or her 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, and 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 post partum 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 by-product 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 utilized 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 multi-departmental, multi-college programming that offers in-depth, advanced educational programming which allows producers to understand existing technologies and become familiar with developing technologies.

The programs will educate the animal production industry on correct production practices required to improve economic returns. The programs 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 & 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 the cooperating dairy 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. It will be to investigate differences in the efficiency of nitrogen and phosphorous 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
2016	12.1	2.0	9.5	6.8
2017	12.1	2.0	9.5	6.8
2018	12.1	2.0	9.5	6.8
2019	12.1	2.0	9.5	6.8

2020	12.1	2.0	9.5	6.8
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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 web site for the International Dairy Heat Stress Consortium. Regional workshops will be held for producers and are conducted as requested by extension personnel across Georgia. Faculty will assist with the Commercial & Purebred Dairy Projects as well as other 4-H & FFA activities, including dairy evaluation & 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 regulation. 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 eleven sections of the Georgia Pest Management Handbook and provide 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. By-product 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
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<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)
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3. Description of targeted audience

The target audience is sheep, goat, beef & 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)

- 121 - Management of Range Resources
- 301 - Reproductive Performance of Animals
- 303 - Genetic Improvement of Animals
- 307 - Animal Management Systems
- 311 - Animal Diseases
- 601 - Economics of Agricultural Production and Farm Management
- 701 - Nutrient Composition of Food

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)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 121 - Management of Range Resources
- 301 - Reproductive Performance of Animals
- 303 - Genetic Improvement of Animals
- 304 - Animal Genome
- 307 - Animal Management Systems
- 311 - Animal Diseases
- 503 - Quality Maintenance in Storing and Marketing Food Products
- 601 - Economics of Agricultural Production and Farm Management
- 701 - Nutrient Composition of Food

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)

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

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, 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 United States.

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 allocate their priorities and time towards 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 initiative to conduct needed high-quality research. Competing programs may force abandonment of on-going 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 gained. A follow-up survey will be conducted to access change in behavior or practice.
- Evaluation will consist of changes in production practices or production success after being exposed to 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 Cattleman: An evaluation of the Master Cattleman 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 the 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 using dairymen using new technology verses those who do not. Evaluation methods include - Sampling: Milk samples from cases of mastitis before and after treatment with experimental product. Case Study: Determine effectiveness of product using individual cases of mastitis in cooperator herds. Observation: Of individual cows which receive the new product for any effects on animal health. Tests: Performed in laboratory to determine bacterial species of infecting bacteria and for determination of 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 and 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; vegetable, agronomic and forage crops harvest 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.
- Impact of research on conserving natural resources will be analyzed by conducting survey those impacted by population pressures on natural resources; and surveys to measure 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 post-harvest 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, and 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 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 AND 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 under-served 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 AND PROTECTION

Poultry growers will be trained to prevent avian influenza entry into commercial flocks and 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.

Biofuel research may lower dependence on foreign oil. Plants are a rich source of non-edible oil (for biodiesel) and starch (for ethanol). Research is required to screen plants for rapid biomass production, oil yield and ways to convert sugars trapped in cellulose form into ethanol.

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
202	Plant Genetic Resources	0%	0%	1%	0%
204	Plant Product Quality and Utility (Preharvest)	0%	0%	8%	0%
301	Reproductive Performance of Animals	0%	0%	1%	0%
302	Nutrient Utilization in Animals	0%	0%	3%	0%
307	Animal Management Systems	0%	0%	1%	0%
311	Animal Diseases	13%	0%	11%	0%
315	Animal Welfare/Well-Being and Protection	0%	0%	1%	0%
401	Structures, Facilities, and General Purpose Farm Supplies	0%	0%	1%	0%
501	New and Improved Food Processing Technologies	15%	0%	14%	35%
502	New and Improved Food Products	13%	0%	11%	0%
503	Quality Maintenance in Storing and Marketing Food Products	12%	0%	13%	25%
511	New and Improved Non-Food Products and Processes	0%	0%	2%	0%
606	International Trade and Development Economics	0%	0%	4%	0%
701	Nutrient Composition of Food	6%	0%	3%	20%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	31%	0%	22%	20%
723	Hazards to Human Health and Safety	10%	0%	4%	0%
	Total	100%	0%	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 Centers for Disease Control and Prevention (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 cow dairy 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, and 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 reduction 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. 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 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.

- To 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% of the poultry farmers in the state with relevant information on the critical role they play in avian influenza prevention in commercial poultry flocks. In addition, they will be provided accurate information on human health concerns in regard to avian influenza.

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
2016	2.5	0.3	2.0	9.8
2017	2.5	0.3	2.0	9.8
2018	2.5	0.3	2.0	9.8
2019	2.5	0.3	2.0	9.8
2020	2.5	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, food service professionals and Extension agents
- Research studies of food processing industry
- Development of models
- Publishing of journal papers and other media.

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.

NEW:

For the 2012 calendar year, the EFS team has scheduled two new meat processing and safety workshops developed by Dr. Anand Mohan, our new meats scientist and Extension specialist. 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

Food industry managers, food service professionals, quality assurance professionals, HACCP coordinators, microbiologists, third-party auditors, government inspectors, 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.
 - Food Preservation website number of files viewed
- 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)

- 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

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

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)

- 503 - Quality Maintenance in Storing and Marketing Food Products

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

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. 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 used.
- Evaluation will be based on negative results; that is the absence of AI in Georgia poultry flocks. Data will be collected from participants in trainings and state and federal agencies responsible for poultry health.
- Program will be evaluated by industry feedback, measured reductions in pathogens, and continued competitiveness of Georgia processors. USDA and CDC statistics will be used.
- Pre-slaughter 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.
- Agent 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. Survey of website users will be done via e-mail and website solicitation.

- During program evaluation by break-out group coordinators based on reports given at each stage of HACCP plan development training. Post program evaluation filled out by participants and tallied, with copies sent to all presenters/ trainers for their input. 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 on-line consumer resources, and program evaluations.

4- H & FACS 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 prospective, plant extracts and other natural substances will continue to be investigated for their ability to induce apoptosis, primary in cancer cells. Some of these are especially interesting because they also have 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 : 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
305	Animal Physiological Processes	0%	0%	0%	100%
724	Healthy Lifestyle	34%	40%	0%	0%
802	Human Development and Family Well-Being	33%	20%	0%	0%
806	Youth Development	33%	40%	0%	0%
	Total	100%	100%	0%	100%

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

1. Situation and priorities

In Georgia, nearly 42% of 4th graders are either overweight or at risk of becoming overweight according to a study conducted by Dr. Richard Lewis, UGA College of Family and Consumer Sciences. The study also showed that 38% of eighth graders were also overweight or at risk of being overweight. For eleventh graders, the percentage was nearly 36%. 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. Direct and indirect costs of these weight-related problems were \$117 billion in the year 2000.

In the U.S., 20.8 million people have diabetes and 41 million have pre-diabetes. In Georgia, nearly 7 percent of the population has diabetes and it is currently the 6th leading cause of death. Both diabetes and pre-diabetes increase risk for cardiovascular disease. People of African, Asian and Latino/Hispanic heritage are 2-4 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% of cancers are affected by dietary choices. Eating more fruits and vegetables, drinking more fluids, eating more whole grains, consuming more non-fat 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 a 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 fat or carbohydrate, and agents that increase 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, 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 on a daily basis and controlling body weight may reduce risk 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 non-surgical 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
2016	3.0	0.0	1.0	0.0
2017	3.0	0.0	1.0	0.0
2018	3.0	0.0	1.0	0.0
2019	3.0	0.0	1.0	0.0
2020	3.0	0.0	1.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Disseminate fact sheets on weight control, physical activity, diabetes management and prevention, cardiovascular disease prevention and cancer prevention. Provide training about chronic disease prevention and control to agents and selected clientele. Provide information to be disseminated by agents to media outlets.

Conduct in school classes in a majority of Georgia's Counties. Conduct Food Product Development contest and local practice sessions as part of the 4-H program. Conduct Statewide youth meetings focused on Healthy Lifestyles. 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 of children and youth.

The planned program will also target directly limited resources 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.
- Website hits for diabetes, weight control, and cardiovascular disease.
- 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	Percent of people at risk for cancer who chose a lower fat or lower sodium food item.
2	Percentage of participants that lose weight or improve fitness.

Outcome # 1

1. Outcome Target

Percent of people at risk for cancer who chose a lower fat or lower sodium food item.

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 improve fitness.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

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

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 both the federal, state and private levels. This could impact how many new materials, trainings and programs specialists and agents can provide. Also Medicare, Medicaid and private healthy 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 youth component, all participants will be given pre-post testing in order to evaluate how much new knowledge and life skills all 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 at the beginning to gauge their 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 knowledge and behavior evaluations are used. Participants complete pre-and post tests after lessons and fill out behavior change grids to show stages of change. All are self-report evaluations.

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Home & Life Skills

2. Brief summary about Planned Program

In this program, faculty develop and disseminate research-based information for the many facets of life for all Georgia citizens. Focuses include **Housing** - fundamentals of managing money, credit and shopping for a mortgage; **Indoor Environment** - substantial scientific evidence linking health concerns, such as asthma, lead poisoning, and injuries to housing quality; **Financial Management** - credit, debit, bankruptcy, risk management, insurance, estate planning, investing, setting goals, and managing expenses.

FINANCIAL MANAGEMENT

Extension specialists will train 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 evaluation.

Faculty 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 in 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 will provide classes and educational information in water and energy conservation, waste reduction and recycling, particularly hazardous waste disposal.

Through the homebuyer education program, faculty 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 how to prevent foreclosure and default.

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
607	Consumer Economics	25%	30%	0%	0%
723	Hazards to Human Health and Safety	25%	0%	0%	0%
801	Individual and Family Resource Management	25%	40%	0%	0%
802	Human Development and Family Well-Being	25%	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 resulting in significant negative consequences.

As an increasingly sophisticated financial marketplace, a dramatic shift from defined benefit to defined contribution retirement plans, plus longer life spans make 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, 4th 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 which 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 by-products, household products, volatile organic compounds, pesticides, asbestos, and lead. Health effects of these contaminants range from allergic reaction 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 home buying 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 spend 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, no primary source of medical care, lack of preventive health services, various acute and chronic medical conditions, sexual assault and violence. Additionally, the access to homebuyer education in rural counties is often unavailable and, if provided, may require travel to a location outside of the county. The University of Georgia's (UGA) Workforce Housing in Georgia report states, "Georgia must increase the consumer literacy of its workforce by educating them 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 decimation. The best consumer practices cannot solve the problems of poverty which 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 essential to the quality of life in many Georgia communities. Over a hundred thousand residents of Georgia have a need to know and understand financial literacy.

HOUSING

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

By developing a no cost program that covers various topics surrounding the issues of homeownership, people will attend and the program will be more successful. Additionally, we make the assumption that this program will help raise educational awareness on 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 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 economic well-being for Georgia families. This is done directly by specialists and through training of agents to deliver research-based best information.

HOUSING

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

The goals of this program are to increase the homeownership rates among limited resource clientele living in rural Georgia, 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
2016	4.8	1.8	0.0	0.0
2017	4.8	1.8	0.0	0.0
2018	4.8	1.8	0.0	0.0
2019	4.8	1.8	0.0	0.0
2020	4.8	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 will develop a long range plan for early intervention in financial, literacy and consumer education in 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 form partnerships with approximately fifty (50) additional collaborators for program goal enhancement, program funding and coalition.

HOUSING

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

The goals of this program are to increase the homeownership rates among limited resource clientele living in rural Georgia, 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 youth, parents, senior citizens and others.

The targeted audiences of the FVSU faculty will be all Georgians and residents in surrounding areas with emphasis 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 percentage of participants who indicated a change in behavior, such as conserving water, purchasing Energy Star products or testing their well.
3	The number of participants who tested their homes for indoor air quality contaminants as a result of the educational programs conducted by county agents.
4	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 percentage of participants who indicated a change in behavior, such as conserving water, purchasing Energy Star products or testing their well.

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 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 # 4

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., impact of weather on 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, healthcare, financial services, and other areas can also impact family economic well-being.

HOUSING

Natural disasters can impact the immediate need for information and resources to reach the community. 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 home. Increases in the population and density influence water quality, energy use and waste management.

Indoor Air Quality programs may be impacted by a natural disaster, which may increase in 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-CEP Resource management program will make use of the most appropriate evaluation and appraisal methodologies to assess, monitor, compare and follow-up the program's 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/on-going/concurrent evaluation; summative/terminal evaluation and impact/ex-post 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 increase of knowledge.

HOUSING

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

The level of knowledge of the agents will be assessed by evaluation tools specific to the training content. 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. 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 managing plant diseases, weeds and pests; developing new breeding tools; soil quality; irrigation; plant pathology; genetics; entomology; harvest and post-harvest handling; conservation; cultural trends.

Technology providing the greatest returns and lessening environmental impact are developed for Georgia's greatest-valued agricultural industries. Faculty give producers the latest production information through educational programs and statewide research.

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
102	Soil, Plant, Water, Nutrient Relationships	20%	0%	20%	0%
204	Plant Product Quality and Utility (Preharvest)	35%	0%	35%	50%
205	Plant Management Systems	15%	0%	15%	50%
213	Weeds Affecting Plants	15%	0%	15%	0%
216	Integrated Pest Management Systems	15%	0%	15%	0%
	Total	100%	0%	100%	100%

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

1. Situation and priorities

There is now recognition that 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 less 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

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 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.

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 solve problems so 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. The goal is to provide timely and useful educational program 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
2016	22.5	0.0	26.5	2.0

2017	22.5	0.0	26.5	2.0
2018	22.5	0.0	26.5	2.0
2019	22.5	0.0	26.5	2.0
2020	22.5	0.0	26.5	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 such methods as 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 eleven sections of the Georgia Pest Management Handbook and provide biennial estimation of pest losses in livestock and dairy production.

Research will continue that compares different bahiagrass and bermudagrass. 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. By-product 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, 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 sub-process technologies have been previously in development (e.g. Pyrolysis Process, Biodiesel and Fisher-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 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 identify new and emerging technologies. Examples of research projects under development or implementation are discussed below. Many projects are currently underway or in the planning stages.

A project evaluating the production of hydrogen from peanut hull and pine chips 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.

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

The transesterfication of oils and fats to produce biodiesel is being studied. This work evaluates new sources of oils and fast 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 producing ethanol.

Faculty will provide workshops and/or field days; newsletters and/or fact sheets development and distribution; site visits; 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, 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)

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

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 also be established to evaluate soil organic amendments, crops and forages. Data collection methods will consist of soil sampling for nutrients; vegetable, agronomic and forage crops harvest for yield.
- Researcher will compare disease intensity, control costs, and economic returns before and after program from producers and extension personnel.

- Studies will be evaluated by observing the amount of bacterial suppression offered by the programs implemented. 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, in 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 on which the human civilization relies 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.

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	33%	0%	33%	0%
403	Waste Disposal, Recycling, and Reuse	33%	0%	33%	0%
605	Natural Resource and Environmental Economics	34%	0%	34%	0%
	Total	100%	0%	100%	0%

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 non-industrial landowners. Research studies have documented that small, minority and limited resource landowners and farmers are often not aware of and/or been denied access to opportunities that will aide 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, climate change is affecting quality of life.

Although many of the individual sub-process technologies have been previously in development (e.g. Pyrolysis Process, Biodiesel and Fisher-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 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 Pre-treatment: 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 improvements that will benefit efforts before scale up. 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 economics of conversion technologies.

Demonstrations and Technology Transfer: Scaled-up demonstration is the most important step towards rapid commercialization. These tasks will ensure technology development is complete, provide data for further improvements in process scale up, and provide a source from which private industry (entrepreneurs) will draw encouragement and technical help 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. And the use of biomass resources can provide economic growth.

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

There is a need to increase the number of forest management plans that include wildlife for small, minority, and limited resource landowners; Increase the number of small, minority and limited resource forest landowners participating in federal and state cost-share programs; Increase the number of minority and limited resource forest landowners participating in workshops and other meetings; Increase the number publications distributed among minority communities.

2. Ultimate goal(s) of this Program

The development of an integrated biorefinery industry in Georgia that will stimulate our rural economies, sustain our core forest and agriculture 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
2016	16.7	0.2	7.5	4.0
2017	16.7	0.2	7.5	4.0
2018	16.7	0.2	7.5	4.0
2019	16.7	0.2	7.5	4.0
2020	16.7	0.2	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 identify new and emerging technologies. Examples of research projects under development or implementation are discussed below. Many projects are currently underway or in the planning stages.

A project evaluating the production of hydrogen from peanut hull and pine chips 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.

BioOil has been developed by pyrolyzing pine pellets in a pilot scale system. Blends of BioOil with other solvents/fuels have been prepared and are being characterized. BioOil 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 fast 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 producing ethanol.

Faculty will provide workshops and/or field days; newsletters and/or fact sheets development and distribution; site visits; 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

Farmers, agribusiness, community leaders, entrepreneurs

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

- 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)

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

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 of 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 in this area 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 to improve practices and protect the environment.

The program will identify plants 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-prohibiting, their over-use 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 companies' personnel, county faculty, and the general public on disease etiology, epidemiology, and sound and effective disease management strategies on turfgrass.

The program will develop tools for the landscape professional. It will develop landscape survey and inventory software compatible with commercially available hand-held PDA's and GPS/PDA units to use for site inventory and mapping. Cost estimating and job bidding are among the most perplexing and time-consuming tasks of 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 agents in serving the environmental horticulture needs of the public. The Master Gardener program is an integral part of this planned program. Faculty members will develop resources and training programs as well as the use of mass media to distribute information.

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

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
102	Soil, Plant, Water, Nutrient Relationships	3%	0%	10%	0%
111	Conservation and Efficient Use of Water	17%	0%	15%	0%
124	Urban Forestry	2%	0%	10%	0%
202	Plant Genetic Resources	17%	0%	2%	0%
206	Basic Plant Biology	2%	0%	2%	0%
211	Insects, Mites, and Other Arthropods Affecting Plants	0%	0%	10%	0%
212	Diseases and Nematodes Affecting Plants	8%	0%	10%	0%
213	Weeds Affecting Plants	3%	0%	10%	0%
216	Integrated Pest Management Systems	8%	0%	2%	0%
404	Instrumentation and Control Systems	3%	0%	2%	0%
405	Drainage and Irrigation Systems and Facilities	3%	0%	2%	0%
601	Economics of Agricultural Production and Farm Management	5%	0%	10%	0%
602	Business Management, Finance, and Taxation	10%	0%	5%	0%
605	Natural Resource and Environmental Economics	13%	0%	2%	0%
609	Economic Theory and Methods	3%	0%	2%	0%
806	Youth Development	3%	0%	6%	0%
	Total	100%	0%	100%	0%

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

In order to remain vital and relevant to the state, the College of Agricultural and Environmental Sciences (CAES) must focus resources and talents on the issues involved in urbanization and 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 of 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-prohibiting and their over-use can be detrimental to the environment.

Many commercial landscape firms fail within the first five years because they fail to re-coup 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 also be transitory, increasing the need for continuing education. Hispanic workers form the backbone of Urban Ag industries supplying 75% 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 agriculture industries. In addition to the loss of traditional farm land, urbanization can result in conflicts between traditional Ag producers and their relatively new, non-rural 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 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 that will support the proposed objectives. Disease losses are a major economical 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.

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 promotes a more judicious and timely application of fungicides. It will develop improved plants that will be well-adapted to growth in urban environment landscapes.

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.

The College of Agricultural and Environmental Sciences must focus resources and talents on the issues involved in urbanization and needs of Georgia's increasing urban and suburban populations. The goal of the Center for Urban Agriculture is to assist in this process.

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
2016	2.0	0.0	4.0	0.0
2017	2.0	0.0	4.0	0.0
2018	2.0	0.0	4.0	0.0
2019	2.0	0.0	4.0	0.0
2020	2.0	0.0	4.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Faculty will conduct statewide and local trainings, programs on turf diseases identification and management. Publication of electronic and printed materials on turf diseases identification and management will be published. Implementation of research trials to measure efficacy and proper timing of fungicides to control in 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 will develop new cost estimating and job bidding software for landscape installation. 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 local county extension agents to support consumer educational efforts related to urban agriculture.

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 industries professionals, public policy makers and regulators, county Extension faculty, homeowners.

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 research trials conducted
 - Number of disease management recommendations based on disease samples processed
- 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	Pre and post tests, email follow-up evaluation

Outcome # 1

1. Outcome Target

Pre and post tests, email follow-up evaluation

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 124 - Urban Forestry
- 206 - Basic Plant Biology
- 213 - Weeds Affecting Plants
- 605 - Natural Resource and Environmental Economics
- 806 - Youth Development

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 on 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 the actions taken by the policy groups.

Population increases will greatly affect urban programming. An economic change can affect the consumer 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 pre- and post- surveys to ascertain how many participants own computers, how they use their computers, if 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 their and their friends' use of information technologies. 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 provide educational opportunities for parents/caregivers, children and professionals with the most up-to-date and researched-based concepts of 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 better communication skills. The life skill information will provide participants with ideas for lifelong, productive participation in society. These character building initiatives will provide children the self-confidence to become caring and responsible adults for a thriving community.

4-H

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 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 for youth. This program will help all participants make the best decisions at all times for themselves 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	2%	0%	0%	0%
136	Conservation of Biological Diversity	2%	0%	0%	0%
206	Basic Plant Biology	2%	0%	0%	0%
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	2%	0%	0%	0%
307	Animal Management Systems	2%	0%	0%	0%
315	Animal Welfare/Well-Being and Protection	5%	0%	0%	0%
608	Community Resource Planning and Development	5%	20%	0%	0%
802	Human Development and Family Well-Being	35%	20%	0%	0%
806	Youth Development	40%	60%	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 exhibiting at-risk behavior points to a lack of skills necessary for adulthood—skills in 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 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 the under-representation. As we look around our communities, adults are at the forefront of discussions focusing on issues in which

young people are affected. Decisions are often made without consulting youth in regards to what opinions and thoughts they may have on a particular issue. Too often youth are given a seat on decision making bodies without having a value to the group and therefore skills are not developed. Youth and adults both need opportunities for training and practice in youth serving leadership roles 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 if the program succeeded in making the intended difference in the lives of youth.

Youth serving as positive contributors and within meaningful roles are among the least common experiences for young people. Adults perceive youth as in need of assistance rather than being community assets. The stereotyping of youth 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 life skills, to practice them until they are learned, and be able to use them as necessary throughout a lifetime. Youth 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
2016	6.4	3.0	0.0	0.0
2017	6.4	3.0	0.0	0.0
2018	6.4	3.0	0.0	0.0
2019	6.4	3.0	0.0	0.0
2020	6.4	3.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

4-H faculty members will develop curriculum, train and support county extension agents to conduct monthly educational programs for 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.

The 4-H Youth program will develop curriculum and train staff 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 youth and adult teams preparing information on local issues, receiving training on enacting change and working together and returning to home communities to enact the change. State federally funded faculty will provide in-service training and web based information for county faculty, staff, and volunteers for working with youth in 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 youth and adults to work with communities on meeting the needs of military youth 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 youth 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 youth 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 youth.

All Georgia youth from Kindergarten through college are targeted for life skill development programs. The in-school club program will target 5th through 8th 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)

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

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 of numbers of youth involved in projects will be maintained. Total numbers 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 to knowledge gained and a sampling of the program participants will respond following the program. 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 youth involved in program, as well as the youth, will be involved in preparing observations from the programs. A sampling of participants will also evaluate knowledge gained and 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 age youth in the Leadership in Action program will be interviewed as a portion of the program.