2015 University of Florida and Florida A&M University Combined Research and Extension Plan of Work

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I. Plan Overview

1. Brief Summary about Plan Of Work

SUMMARY OF 2015-2019 PLAN OF WORK

This summary provides the long range plans for the University of Florida 1862 Research and Extension programs, and the Florida A& M University 1890 Extension program (in that order) through 2018. However, it should be noted that the Florida Cooperative Extension service (FAMU/CAFS and UF/IFAS) and the UF 1862 research have been undergoing a long-range planning process (2011-2012) which will still be undergoing changes into early 2013.

Through its long range planning process, the Florida land-grant universities identified the needs of their constituents through grass roots approaches that include direct interaction with stakeholders within their communities, the use of advisory committees and through many focus teams with varying interests. Representatives of many underrepresented and under-served target audiences were contacted and questioned through surveys, direct contact and in groups. This ability to interact at the grassroots level is a unique part of the land-grant mission and both FAMU/CAFS and UF/IFAS used this process consistently to identify the most critical needs. The process used by Extension can be found at http://pdec.ifas.ufl.edu/lrp/along with the final Florida Extension Roadmap Florida will follow from 2013 to 2023. The Research Roadmap is located at http://researchtools.ifas.ufl.edu/research-roadmap/.

These primary needs through 2023 are listed below:

1862 Research

UF/IFAS Research Roadmap

The vision for Florida's 1862 Research is integrated into a three-part multidisciplinary approach that encompasses production agriculture, natural resources and a human dimension. These three areas include much of what Florida sees as critical areas that require cutting edge research to find the best solutions for Florida and the people of Florida.

Production Agriculture

Research has identified five multi-disciplinary program groups within production agriculture that are of vital importance in Florida:

1. Enhance sustainability
2. Respond to and integrate with changes in climate and agro-ecosystems
3. Ensure food safety and security
4. Enhance, collect and preserve germplasm
5. Develop renewable resources.

Natural Resources

The overarching goal for Natural Resources is to enhance the economic, environmental and social sustainability of natural resources. IFAS scientists from individual disciplines are well-positioned to come together to answer complex questions through an integrated approach using whole systems analysis. Most challenges demand a multi-disciplinary approach and a new science of synthesis and integration. Five critical areas to focus on in this framework are:

1. Ecosystem health and services
2. Climate change
3. Renewable energy
4. Water resources
5. Resource production.

Human Dimensions

Human dimensions are woven throughout the fabric of IFAS research programs, sometimes as stand-alone research projects, and sometimes as an integral part of multi-disciplinary research projects and programs. As problems facing agriculture and natural resources become more complex, multi-disciplinary approaches are a necessity and are more and more being demanded by funding agencies.

Five areas for establishing multi-disciplinary research efforts within IFAS were identified

1. Land, air, water use
2. Food systems
3. Climate change
4. Energy
5. Humans

There are commonalities among the three multidisciplinary areas identified by research. These commonalities also include the five NIFA project priorities.

Commonalities:

• Ecosystem health and services
• Resource production
• Water
• Sustainability
• Food Systems

Commonalities specific to NIFA priorities:

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

1862/1890 Cooperative Extension

Extension: Florida Extension Roadmap 2013-2023

Long-range planning is a process by which we envision our future and the challenges and changes facing us over the next four years. It also is a time for us to reflect upon our purpose, vision, and strategies for carrying out our mission. In examining our past while envisioning our future, we can better determine how well-prepared we are to help the people of Florida cope with challenge and change. Because we live in a changing world, our preparation also must include the challenges and changes of the global economy.

As the extension educational arm of the University of Florida's land grant mission, we have a rich history of

• grassroots involvement in the determination of educational priorities;
• the use of volunteers in educational programs, initiatives, and projects;
• collaborative relationships within and between state partners;
• application of knowledge for problem solving.

Because of our commitment to grassroots involvement, the Extension long-range planning process has reached out to the community/individual level. The valued perspectives that result when stakeholders, county extension advisory committees, traditional and potential audiences and Extension faculty come together help us translate Extension's purpose, vision, and strategies for carrying out our mission into tangible future programs that address economic, environmental and life quality issues facing individuals, families and communities.

Since no organization can be all things to all people, particular focus is directed toward issues,

problems, and/or concerns that affect people involved in agriculture; aquatic, coastal and aquaculture programs, natural resources and the environment, youth development, family and consumer sciences, energy and housing, and community. Extension has developed seven high-priority initiative areas in which to focus:

1. Increasing the sustainability, profitability, and competitiveness of agricultural and horticultural enterprises
2. Enhancing and protecting water quality, quantity, and supply
3. Enhancing and conserving Florida's natural resources and environmental quality
4. Producing and conserving traditional and alternative forms of energy
5. Empowering individuals and families to build healthy lives and achieve social and economic success
6. Strengthening urban and rural community resources and economic development
7. Preparing youth to be responsible citizens and productive members of the workforce.

NIFA Initiatives

Along with these initiatives above specific to Florida, UF/IFAS and FAMU/CAFS are committed to the following national NIFA initiatives:

- Food safety (Human and animal)
- Global food security and hunger
- Climate change
- Sustainable energy
- Childhood obesity

As a unit of the Florida Cooperative Extension Service, the program is also responsible for coordinating educational programming and outreach activities of mutual benefit with the University of Florida/Institute of Food and Agriculture Sciences (IFAS).

Florida citizens in the following counties are served by extension faculty and staff in the FAMU Cooperative Extension Program: Gadsden, Gulf, Franklin, Hamilton, Jackson, Jefferson, Leon, Madison, Suwannee, Wakulla, Hillsborough and Escambia.

In these counties, FAMU/CAFS is particularly interested in issues related to the following Cooperative Extension programs which they reach through the statewide, regional and county initiatives:

FAMU/CAFS--1890 Extension

Extension: Solutions for Florida Citizens

Although Extension in Florida is made up of a close collaboration between the 1862 UF/IFAS Extension and the 1890 FAMU/CAFS Extension (and together they are the Florida Cooperative Extension Service) they will be reported separately as much as possible to provide a clearer picture of the strong programs and impact IFAS/CAFS have individually on Florida and its citizens. The Cooperative Extension Program is the extension educational arm of Florida A&M University's (FAMU) land grant mission. The FAMU Cooperative Extension Program, housed in the College of Agriculture and Food Sciences (CAFS), provides research-based educational information and direct technical assistance to improve the quality of life for limited resource citizens. As a result, countless residents in Florida have been enriched through the positive impact of significant information shared by specialists and agents through the Cooperative Extension Program. Reaching out to serve farmers, rural and urban families, elderly, youth, entrepreneurs, small business owners, and underserved communities continues to be a rich tradition of the FAMU Cooperative Extension Program. In 2012, The FAMU Cooperative Extension

Program followed strategic goals that improve the quality of life for Florida's underserved and limited resource citizens. In particular their goals:

- Create innovative research-based program technologies which enhance the profitability and sustainability of small farms and urban and rural communities
- Promote the socio-economic well-being of limited resource individuals and families
- Develop specialized educational and enrich programs designed to attract and retain youth involvement in agriculture and related sciences.

As a unit of the Florida Cooperative Extension Service, the program is also responsible for coordinating educational programming and outreach activities of mutual benefit with the University of Florida/Institute of Food and Agriculture Sciences (IFAS). Florida citizens in the following counties are served by extension faculty and staff in the FAMU Cooperative Extension Program: Gadsden, Gulf, Franklin, Hamilton, Jackson, Jefferson, Leon, Madison, Suwannee, Wakulla, Hillsborough and Escambia. In these counties, FAMU/CAFS is particularly interested in issues related to the following Cooperative Extension programs which they reach through the statewide, regional and county initiatives:

- Agriculture and Natural Resources, including:
- Farm to School
- Animal Health & Small Ruminants
- New & Beginning Farmers
- Agribusiness Management and Alternative Market Development
- Small-Scale Crop and Livestock Enterprises
- Community and Urban Agriculture
- Food Safety
- Integrated Pest Management
- Sustainable Agricultural Systems
- Community Resource Development
- Family and Consumer Science, including
- Expanded Food and Nutrition Education Program
- Family Resource Management
- 4-H and Youth Development

Specific Highlighted programs from FAMU Cooperative Extension Programs:
Small Farms

A key issue within global agricultural research and development is the need to positively focus on the sustainable development of small farmers, resource poor farmers and their families. Though these farmers make up to 90% of the world's farmers, often they have not had equal access and participation in programs and training designed to assist large producers and agribusinesses. Generally, agricultural research and extension have sought out medium and large farmers thought more successful, innovative, and readily able to adopt technology and contribute to growth and development. A recent USDA Census indicated that about 91% of all farms in the United States are small farms. Small farms represent over 90% of all farms in Florida.

It is important to ensure local food security with agricultural management strategies that enhance sustainable, agroecological production, encourage and climate proof local food systems, and embrace the benefits of local and global small farm populations.

Since 1995,FAMU has implemented the **Small Farm to School Program.** Southeastern school districts in Florida, Alabama, Mississippi and Tennessee continue to improve nutritional value of school meals for children due to incorporation of local and regional fresh products. Schools purchased fresh products, including leafy greens and sweet potatoes, for school feeding programs from local farmers 1-2 times per month 8 months during the 2013-14 school years. School districts participating included Leon,

Gadsden, Jackson and Miami-Dade counties in Florida, Alabama and Mississippi Fresh Fruit & Vegetable Program (statewide) and Memphis City Schools in Tennessee.

FAMU's Animal Health and Small Ruminant Program have provided educational opportunities and direct technical assistance for small-scale livestock producers in Florida. The **Master Goat and Sheep Certification Program** expose producers to nutrition and pasture management, marketing, herd health, reproduction/breeding, mortality composting and other courses to help improve the quality of animals they raised to increase their income potential.

FAMU continued the **Sustainable Agricultural Systems Program**, (formerly the Statewide Small Farm Program) an active participatory capacity building program designed to assist and equip underserved farming populations and their families toward a thriving sustainable development. The Program uses a participatory, multidisciplinary integrated systems approach to enhance the viability, well-being and quality of life of small farm populations and their communities by providing access to knowledge and decision making tools; enabling capacity building through education and hands-on training; developing whole-farm alternative agriculture and natural resource management systems, including agroecological organic farming strategies, food system development and sustainable living alternative energy production/management. Agroecological and organic methods diversified farming systems have excellent potential for improving soil fertility, organic matter, and building sustainable food systems. Organic methods farming practices are foundational to climate resistant local to global food systems support.

Through the **New & Beginning Farmer** and **Socially Disadvantage Farmer and Rancher Programs,** FAMU provide educational opportunities and direct technical assistance for new, beginning, and socially disadvantaged farmers with information that will assist in establishing new and enhancing existing farming operations. Each program is designed to improve the productivity and profitability of small-scale farm operations, increase the number of new agricultural ventures, and improve USDA outreach service to socially disadvantaged/minority farmers. These programs are aimed to address global food security and hunger priority through identifying and supporting farmers (and potential farmers) to increase farming, subsequently increase quality and quantity of food.

Youth

FAMU Extension's **Garden-Based Education Program,** targeting youth in 4th and 5th grades, aims to increase positive behaviors among children by providing a unique environment through they can develop positive attitudes and thoughts about themselves, the environment and healthy behaviors. By choosing a natural setting (i.e. school &community after-school programs), the children are able to develop this in a comfortable environment and can spread these positive ideas throughout their community. Successes were realized in many forms and on multiple levels and demonstrate the capacity of children to engage in research, inform the community in which they live, change their eating habits and develop marketable products. Other successes include:

- Awareness about different opportunities for local food production and sales spread throughout communities due to the visibility of gardens.
- Children's interest and excitement to eat green vegetables increased after they grew them on their own.

- Children demonstrated capacity to engage in applied research by developing recipes and conduct value-added processing by using vegetables they grew, in their own gardens.

Other FAMU Extension educational programs have addressed, but are not limited to:

- Food system development such as farmer's markets, community gardening, food hubs and direct-to-consumer markets increasing access to safe and affordable food.

- Alternative market development and business planning and best management practices
- Practical, hands-on nutrition education assisting urban and rural youth and adults to acquire the knowledge, skills, attitudes and behavior changes for personal development.
- Pesticide-use and safety education, IPM techniques for vegetables, hydroponics, protected agriculture and plant biology for beginning farmers.
- Plant canopy management that enhances grower understanding of plant growth requirements and mechanical pruning practices in order to maintain the growth and development of the grape fresh fruit and the wine industry in Florida.
- Nursery production, landscape tree management, insect pest and disease management, landscape fertilizer application certification, and pesticide-use and safety education to better manage business operations while safe guarding the environment.
- Experiential learning activities to promote lifestyle changes for elementary and middle school students.
- Training in job development, health and wellness, and citizen programs
- The resourcefulness or sustainability of north Florida's rural and urban fringe communities addressing economic, social and environmental vulnerabilities to develop strategies that are long term and integrated to ensure sustainable change.

These programs also addressed these broad NIFA issues: (1) enhanced capacity of a sustainable global food system including new varieties, animals and technologies; (2) more sustainable, diverse and resilient food systems across scales; (3) improved national and global capacity to meet growing food.

1890 Research

Florida is one of the fastest growing states, currently ranking fourth in population growth after California, New York and Texas. Most of this growth has been taking place in major urban areas, but agriculture continues to play a significant role in Florida's economy. Florida's agriculture is both diverse and unique in terms of: farm size, crops grown or livestock maintained, and economic investments. The changing demographics of the state and the consequent needs of our stakeholders dictate that we develop appropriate research programs which would address the key challenges to sustainable development. FAMU's research programs have a particular focus to the needs of small to medium scale, part-time, or limited resource farmers. Sixty percent of Florida's farms fit the definition of a "small farm," which makes FAMU's mission particularly crucial in enhancing the overall economy of the state.

The Plan of Work was prepared after receiving inputs from various sources through surveys, interviews, and direct contacts with stakeholders. The major areas of need are captured in the following seven planned programs: 1) Viticulture and Small Fruits Research, 2) Preserving Water Quality of North Florida Watersheds Research, 3) Strategic Research for the Management of Invasive Pest Species and 4) Small Farm Production, Marketing, and Rural Economic Development Research.

Viticulture and Small Fruits Research: The viticulture and small fruit program continues to provide leadership in the development of the grape and wine industry in Florida through quality research and state-wide extension and outreach activities that address the needs and concerns of stakeholders. The Center recently released a fresh fruit muscadine cultivar and is working to release several wine grape cultivars in the near future that will greatly impact the marketability of Florida wines. In the area of plant biotechnology program researchers are working to identify molecular markers that will facilitate the breeding program, and best management practices to enhance productivity and reduce cost. In the food biotechnology researchers are working to develop high efficiency technology in the production of phytochemicals and nutraceuticals from grapes to address childhood obesity, food safety and food security issues. As a member of the USDA National Clean Plant Network, the Center will continue to improve on phytosanitary techniques in pathogen testing and disease elimination therapy and the production of clean vines. The

Center will evaluate IPM techniques for vegetables and non-traditional small fruits, including blackberries for North Florida farmers to assist them in identifying alternative enterprises. The viticulture program attracts and supports many students who have chosen to do their research in grapes and small fruits. The faculty shares their expertise, knowledge and experience with the rest of the college by teaching graduate courses and participating in scholarly and professional activities.

Preserving Water Quality of North Florida Watersheds Research: The planned program in water quality is administered through the Center for Water and Air Quality within the newly reorganized College of Agriculture and Food Sciences at Florida A&M University. The Center continues to work with undergraduate and graduate students, conduct need-based research and work with Cooperative Extension Program, as well as a number of diverse stakeholders. Its programs are focused on water quality and quantity issues in Florida Panhandle. Through the planned programs, the Center will continue to provide experiential learning opportunities for students in soils, water and natural resources areas.

Strategic Research for the Management of Invasive Pest Species: The planned program 'Strategic Research for the Management of Invasive Pest Species' is implemented by the Center for Biological Control. The problems posed by Invasive Alien Species (IAS) are broad, with impacts at the local, state, national and global levels. IAS are major threats to agriculture and the environment. In order to mitigate the threats, concerted action along with the continuum from prevention of imminent threats to management of established species is required. This program takes a multipronged approach with activities across the spectrum from prevention to management and restoration. The specific areas of focus will include: offshore pest mitigation, onshore development of ecologically based management of invasive insect pests and weeds, development of electronic diagnostic tools and resources for insect identification, assessment of the economic impact of IAS and improving the safety of biological control. The work of the Center integrates projects funded through other agencies which are all broadly focused on development of biologically based techniques for the management of pests. The program of work involves strong collaboration with USDA APHIS and USDA ARS, several state agencies and international cooperators, especially in the context of offshore work on IAS. An integral component of the research program is the training of undergraduate and graduate students and this emphasis will be continued.

Small Farm Production, Marketing and Rural Economic Development - Research: The Small Farm Production, Marketing and Rural Economic Development Research projects will be conducted by FAMU Extension and research personnel in the college. The program provides science based research information as well as economic and marketing information to limited resource farmers, rural citizens and urban communities to promote their economic and physical wellbeing. The program works collaboratively with horticulturists, social scientists, agricultural economists, rural development specialists and extension to generate relevant socioeconomic data and to provide relevant outreach support to targeted clientele. The program also works closely with community based as well as faith based organizations. The research findings will be used by extension personnel to provide community relevant programs and services. The program priorities are community development, asset building, hunger, homelessness and small farm production and marketing.

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

Year	Extension		Research	
	1862	1890	1862	1890
2015	418.0	20.0	111.0	24.0
2016	418.0	20.0	111.0	24.0

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	418.0	20.0	111.0	24.0
2018	418.0	20.0	111.0	24.0
2019	418.0	27.5	111.0	24.0

II. Merit Review Process

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

- Internal University Panel
- Combined External and Internal University Panel
- Combined External and Internal University External Non-University Panel
- Expert Peer Review
- Other (Review by stakeholder)

2. Brief Explanation

Extension and Research Merit and Peer Review Process

EXTENSION 1862/1890 MERIT REVIEW PROCESS

Intention: This document sets out performance standards and operational guidelines for the Florida Land Grant Universities (UF and FAMU Extension). The intention of the document is to facilitate both Universities and all integrated, multi-institutional, and multi-state activities in complying with the provisions of the federal Agricultural Research, Extension, and Education Reform Act of 1998. Adoption of these standards and guidelines will be primarily accomplished by adoption-by-reference in the Florida Plan of Work.

Definitions: Merit review process of an Extension focus team area is defined as the evaluation of the quality and relevance to program goals and the focus team's level of success in meeting the intended objectives and the anticipated outcomes. Merit Reviewers will also be qualified by their status in the same discipline, or closely related field to judge the worthiness of the program.

The topics covered by this document pertain to extension programs (state iniatives and priority workgroups) that are to be sanctioned and funded as part of the federal-state partnership. These standards and guidelines do not apply to proposed extension programs that are subject to peer review by competitive grant agencies, or peer review of extension publications. Thus, all extension programs sponsored by Florida Land Grant Colleges will have been formally merit reviewed, before the expenditure of any federal funds.

Process: The designated review coordinator will call for a merit review of the proposed Extension priority workgroup within each of seven iniatives. A minimum of three peer scientists

will be selected to read and provide written comments to the appropriate administrator on the proposed program. Members of an appropriate iniative/priority group team will read and provide written comments to the appropriate administrator on proposed programs (priority areas) on an annual basis.

Terms of Reference: The reviewers will focus their attention on questions of the quality of the proposed science, technical feasibility of the extension program, the validity of the approach, and the likelihood for completing the stated objectives. Other equally important comments will include relevance to the state's priorities, the degree of integration between extension and research (as appropriate), responsiveness to stakeholders identified critical need areas, and the accuracy of any claims for multi-disciplinary, multi-institutional and multi-state collaboration.

Responsibility: All Merit Review activities for proposed Extension programs will be the responsibility of the Dean of Extension or his/her designee .

Appointment of Reviewers: Merit reviewers may be selected from the same campus or from another institution or organization at the discretion of the Extension dean(s), or by his/her delegated authority. Consideration will be given to the expenses associated with the reviewing individual proposal in the selection of reviewers. Additional consideration will be given to appointing reviewers who are without any apparent conflicts of interest and who are without personal or professional bias. Consideration may also be given in selecting reviewers that can protect confidential business information. The anonymity of the reviewers will not be preserved except in very special circumstances.

Documentation: Reviewers will be asked to present their findings in either paper or electronic format, and records of the reviewers comments will be preserved for the life of the project, or for a period of three years in the event that a project is not initiated. Document storage of all materials related to the Peer and Merit Review will be paper and/or electronic and will be stored in the PDEC office or a designated online site.

Extension programs not covered: Programs funded by competitively awarded grants, federal contract research projects, and federal cooperative agreements are not subject to these provisions, as they would be peered reviewed under other authorities.

. Adjustments to this merit review process will be made as needed.

Florida 1862 Research Peer Review Process

Prior to the initiation of any research project that will be wholly, or in part, funded by federal formula funding, the designated review coordinator (or, in the case of some multi-institutional, regional or multi-state projects or programs, the administrative advisor) will call for a peer review of the proposed research project. If significant changes are made to the structure of the state-level program during the off year, the designated administrative advisor (generally a department chair) may call for a peer review of the project. A minimum of three peer scientists (i.e., individuals qualified by their status in the same discipline, or a closely related field of science) will be selected to read and provide written comments to the appropriate administrator on the proposed project.

The terms of reference for the reviewers will focus their attention on questions of the quality of the proposed science, technical feasibility of the research project, the validity of the approach, and the likelihood for completing the stated objectives. Other equally important comments will include relevance to the state's priorities, the degree of integration between extension and research (as appropriate), responsiveness to stakeholders identified critical need areas, and the accuracy of any claims for multi-disciplinary, multi-institutional and multi-state collaboration.

Peer and Merit reviewers may be selected from the same campus or from another institution or organization at the discretion of the research and/or Extension dean(s), or by their delegated authority. FAMU Extension faculty are members of the Extension goal and focus teams and their involvement in merit review may be considered external to the process although within the state they are considered to be equal members on the goal and focus teams.

Consideration will be given to the expenses associated with the reviewing individual proposal in the selection of reviewers. Additional consideration will be given to appointing reviewers who are without any apparent conflicts of interest and who are without personal or professional bias. Consideration may also be given in selecting reviewers that can protect confidential business information. The anonymity of the reviewers will not be preserved except in very special circumstances.

Reviewers will be asked to present their findings in either paper or electronic format, and records of the peer reviewers comments will be preserved for the life of the project, or for a period of three years in the event that a project is not initiated. Results of peer reviews will be stored within each individual department either in paper form or electronically.

Adjustments to peer reviews may be made by the Dean of Research as required.

FAMU 1890 Research Peer Review Process

In order to ensure maintenance of a high quality and accountability of its research program, FAMU has implemented a revised process for the review and monitoring of research projects funded under the Evans-Allen program. Project ideas are developed from the bottom up, with ideas being generated by individual or groups of faculty in response to stakeholder needs. Center Advisory Councils play an important role in identifying priorities. Project ideas will fall within the priority areas identified in the university's strategic plans. Additionally, the project ideas will also link to priority areas for USDA and/or the state of Florida. Full proposals are developed by faculty/unit leader teams and once completed these are subjected to a peer review process. The main objective of the process is to assure quality, scientific merit, feasibility and impact of the proposed research. The review process proceeds through a series of steps. First, a preliminary review of the proposed research is made by the Research Director and discussions are held with the Principal Investigators regarding the relevance and the impact of the research on stakeholders. This is followed by a comprehensive review by three or more subject matter specialists including at least one external reviewer. The internal reviewers will be drawn fr

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?

Planned programs address the critical issues of strategic importance in several ways including integration between research and Extension and through collaboration and cooperation between states and regions.

Following each five year long range planning cycle which involves input by stakeholders from the grassroots to the state and national level, critical needs are identified, prioritized and separated into seven manageable goal areas. Critical issues requiring research are provided to research for further discussion and action.

In Extension goal teams are developed around these critical need areas. Critical issues are further divided into three to five focus teams related to each goal area. Presently Extension has a total of seven goal areas and 28 focus teams. These focus teams lead the statewide effort to find and implement solutions to the critical issues. These teams include faculty with research, teaching and Extension appointments. Both UF/IFAS and FAMU/CESTA faculty are included on these teams as well as some ag commodity and industry representatives. As specialists in these focus areas their responsibility is to identify both problems and solutions. They will design a logic model of this information that can be used as a road map by any faculty in the state working in these critical areas.

Besides obtaining critical need issues from Extension research also works closely with stakeholders, regulatory agencies and international agencies to monitor other issues and

critical needs that have been revealed as problems or potential. Projects are then developed that may be state, regional, national or international in composition.

Extension uses the scientific based results of research as they plan programs. Extension also works with other states in developing multi-state programs. One highlight are the yearly multi-state meetings held in the panhandle area of Florida between Florida, Alabama and Georgia. Several other states have expressed a desire to be involved. As can be seen, all of Florida's Extension programs and many research projects related directly to critical issues identified by stakeholders.

1890 Research

Florida basically has three distinct agro-climatic regions. The Southern part of Florida produces ornamentals, nursery crops, vegetables, tropical fruits and aquaculture commodities; the Central part has extensive citrus crops, animals, row crops and small enterprises; the Northwest Panhandle area, where Florida A&M University is located, has farmers involved in a mix of enterprises including: cattle, goats, tomatoes, peppers, grapes, sugarcane, peanuts and other specialty crops. Therefore, the needs of stakeholders are different for these three regions. Since most of the farmers in the Panhandle area are small producers, FAMU concentrates on their needs and through the proposed plan will try to address their concerns. The main issue is to enhance the economic returns for producers in this area. Research on this aspect will include: Grape production, meat goats, tomato and peppers, bioenergy crops and other alternate crops. The quality of life for rural residents, water quality and other environmental issues such as invasive and biting insects are major concerns. Hence, planned research programs address these issues.

Viticulture and Small Fruits Research, addresses the critical issues identified by the stakeholders by conducting appropriate basic and applied research in grape breeding genetics, grape biotechnology, value-added product biotechnology, vineyard management and cultural practices, and non-traditional small fruit evaluation, as well as provide technical services to grape growers, processors, small farmers and investors. Diseased and contaminated planting materials is a major constraint and the production of disease free grape vines will have a significant impact on the growth and development of Florida's grape and wine industry. Research based extension information are shared with grape growers, small farmers, processors and the public through workshops, farm visits, seminars, field days, annual meetings, and the grape harvest festival. This program of work addresses critical issues in global food security.

Preserving Water Quality of North Florida Watersheds Research through the Center for Water and Air Quality's program addresses a high priority area at the state as well as the national levels. The study of soil erosion, nutrient movement and the determination of water quality indicators in the Apalachicola River watershed in North Florida will preserve the quality of surface water and will help in sustaining the ground water resources.

Strategic Research for the Management of Invasive Pest Species through the Center for Biological Control's program focuses on an issue of state and national importance. Invasive alien species are recognized nationally as a serious threat to both natural and managed systems.

The Small Farm Production, Marketing and Rural Economic Development Research addresses issues that have been identified as critical to the sustainable development of small farmers and resource limited communities in North Florida and adjacent areas.

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

As part of the 2011-12 strategic plan, Research at the 1862 and Extension at both the Florida 1862 and 1890 land-grant colleges identify under-served and under-represented clientele. Issues are identified both by these populations and by organizations and services that work with and for them through grassroots listening sessions which occurred in 2012. Through this process Florida is aware of whether these issues are county specific or state-wide. Extension priority work teams in each state-wide iniative area are provided with all of this information before they begin to design state-wide programs around the issues. Target audiences are identified as part of this process and special emphasis is placed on including under-served and under-represented populations in finding the best research-based solutions to critical issues.

1890 Research

Florida A&M University, an 1890 Land-Grant university, has traditionally worked with the under-served and under-represented groups involved in agriculture and rural development. FAMU's Research Programs are developed in close association with its extension component. The planned programs are geared toward meeting the identified needs of small/limited resource farmers. Research is proposed for developing information on niche crops, alternate enterprises and value-added products, which would enhance the economic returns for small producers. This is apparent in the individual planned programs.

Thus, the Viticulture and Small Fruits Research Program addresses the needs of underserved and under-represented populations in the state by providing technical advice and hands-on experiential learning in vineyard and orchard management. The viticulture faculty works with the stakeholders/growers from site identification to production. The information generated through the proposed research program on 'Preserving Water Quality of North Florida Watersheds' will be helpful in developing sustainable soil and water management initiatives. The Best Management Practices developed through the planned programs will help the under-served and under-represented populations in North Florida in mitigation of non-point source pollution. The problems of invasive species cut across all sectors and including underserved and underrepresented populations. The planned program seeks to prevent introduction of IAS on the one hand and management of established species through development of ecologically based management strategies which will be equitably available to all sectors including underserved and underrepresented communities. The Small Farm Production, Marketing and Rural Economic Development Research on rural issues will help in identifying the needs of underserved, elderly and other rural residents and the ways in which local and state agencies are meeting such needs.

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

In Extension, as part of the program planning process state outcomes and impacts are developed by Extension focus teams to be used by all Extension faculty across the state. This allows for the collection of data that can be state aggregated. Outcomes and impacts may be

measured and described in a multitude of ways. Some outcomes are obtained through qualitative or quantitative measures. Case studies identify others. Some outcomes are provided through observation.

Research and both UF and FAMU Extension identify objectives and potential outcomes at the time the research project or goal and focus plan of action is developed and approved. For both Extension and research the expected outcomes and impacts described are based on the critical issues and situation surrounding the critical issues that have been identified.

1890 Research

A wide range of expected outcomes and impacts are envisaged and while some of these are/ can be generalized, others will be specific to individual planned programs. The outcomes and impacts will also be measurable either in qualitative or quantitative terms. Expected outcomes of the planned programs include: production and evaluation of new grape hybrids annually, identification and release of new grape cultivars, production and distribution of clean vines, greater profitability and productivity for North Florida agricultural producers, better crop production and management information, enhanced information on changing land-use patterns, soil erosion and management practices and their possible effects on water quality, better animal production and management information, reduced costs, enhanced environmental stewardship, reduced use of chemicals (fertilizers and pesticides), more effective safeguarding against invasive alien species and further integration of research, teaching and extension programs.

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

The planned programs as they relate to integrated and multi-state activities result in improved program
effectiveness and efficiency through:
•The development of better solutions through the integration of research and extension
•A broader knowledge base
•A wider network of human resources
•A wider more diverse audience reached
•Less time spend by individual faculty in developing and implementing programs

1890 Research

The planned program will be reviewed annually to redirect and realign the efforts to ensure that it remains effective and efficient. Available resources (federal, state, private), will be allocated based on the identified needs and priorities. By incorporating the stakeholder issues and implementing the recommendations made by the program advisory council, it is evident that the resources will be used where they are needed. Also, the three research centers bring a number of scientists together to address critical issues through greater synergy. This tends to be more effective in solving problems.

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
- Targeted invitation to selected individuals from general public

- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Survey of the general public
- Survey of selected individuals from the general public
- Other (Contact traditional under-served clientele)

Brief explanation.

The strategic planning committee and the 1862 and 1890 Extension and Research advisory committees help to identify ways to encourage participation in long range planning. The strategic planning committee was composed of county and state faculty with research, extension and teaching appointments. There was also professional staff included who have experience in strategic planning. This committee laid out a list of stakeholders and stakeholder groups who needed to participate. The research advisory committee also includes agriculture commodity and industry leaders who were able to provide additional input.

District directors, county extension directors and educational research and extension center directors from around the state were also asked to provide names of stakeholders or organizations that needed to be included in identifying critical issues. The entire process used by Florida for the Extension Strategic Plan can be found at http://pdec.ifas.ufl.edu.

1890 Research

Input from stakeholders will be sought from multiple sources and at different levels. Various stakeholder groups such as: Florida Grape Growers Association, Florida Meat Producers, Florida Farm Bureau, Florida Fruit and Vegetable Association, Florida Nursery Growers Association, CARET representatives, Florida Water Management District representatives, Florida Mosquito Control Association are represented in the different research program/center Advisory Councils. Through participation in these Councils as well as in other forums, follow-up discussions will be held concerning the existing research program priorities and how Florida A&M University's research programs are and will be addressing stakeholder's needs. A show-and-tell event (Research Forum) will be held periodically on the campus to encourage stakeholder participation and facilitate interaction with researchers. The College will also hold several other public events during the year to gather information from stakeholders. Whenever it is feasible, efforts will be made to coordinate relevant activities with extension to avoid duplication.

Viticulture and Small Fruits Research: Stakeholders have the opportunity to provide input into all viticulture programs especially at annual conferences and meetings where special sessions are provided to discuss issues and problems. This is the primary source of input from the stakeholders and valuable information and suggestions have been obtained at these meetings. A grower survey will be conducted to collect specific information, if considered necessary. The Florida Viticulture Advisory Council meets quarterly and provides a continuous flow of information and critique to the viticulture program. The Center also works closely with the Florida Department of Agriculture to identify and address any special industry needs. Preserving Water Quality of North Florida Watersheds: The Center for Water and Air Quality will encourage participation of both traditional and nontraditional stakeholders in the development of the program plan through the Center Newsletter, biennial meetings of the stakeholder group, information disseminated at the field days and direct contact either through the mail, email or telephone. Strategic Research for the Management of Invasive Pest Species: The Center for Biological Control will continue to expand its Advisory Council to include both traditional and non-traditional stakeholders. This is the primary avenue through which stakeholder inputs are solicited. Additionally, ad hoc surveys to address specific issues may be carried out as necessary. Center faculty also participate in activities organized by stakeholders, and solicit feedback on the research program.

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
- Use Internal Focus Groups
- Use External Focus Groups
- Open Listening Sessions
- Needs Assessments
- Use Surveys

Brief explanation.

Involving People in Long-range Planning

Florida Extension uses a long-range planning process that includes a series of listening sessions conducted with a variety of individuals and groups. Participants of these listening sessions are asked to help translate Extension's purpose, vision and strategy into identified critical issues for which tangible future results can be developed and implemented. In support of that task, listening sessions are conducted with the following groups:

1. Target audiences of Extension programs (both current and potential).This group of ultimate users must find relevance in our products and services or they will not use them. One way to insure relevance of purpose and direction of our educational programs is to ask those for whom such programs are targeted.

2. Extension advisory committees. Individual committee members who understand both the Extension program development process and the needs and concerns of their community can be a most valuable asset. In addition, their involvement in planning can foster greater commitment to programs they help develop.

3. Research, Teaching and Extension faculty. One of the long-standing missions of the Florida land-grant universities is to enhance economic well-being and quality of life of those the University of Florida and Florida A& M University are charged to serve. Keeping people abreast of current and emerging research and the educational experiences resulting from adaptations of that research is crucial to this mission.

4. Stakeholders of local, state and national priorities. Stakeholders (external and internal) play a key role in providing financial and other support for Extension programs. Listening sessions provide an opportunity to both obtain their input and make them aware of effective programs and changes/challenges that may impact Extension.

County Listening Sessions

The input from targeted audiences, stakeholders and County Extension Advisory Committees will be collected through listening sessions conducted within each county and sponsored by the County Extension Advisory Committee. Local citizens who are knowledgeable of the community--its important features, changes impacting it and what the community values--will be invited to participate in their county's listening session. The purpose of each listening session is to develop a community vision that begins with answers to the following questions:

1. What do we value about our community?
2. What trends and issues are impacting what we value?
3. If current directions persist, is this where we want to go? If not, are there local resources that can best address each trend or issue?
4. Of those issues and/or concerns that can best be addressed through the

expertise of Extension educators, what priority should be placed on each issue or concern?

1890 Research

Attempts will be made to include as many diverse groups as possible. This activity will be coordinated with the extension program in order to avoid duplication of effort. Special attention will be paid to the under-served clientele such as low income farmers, minority groups and small-scale producers. Field days will be very useful in identifying the stakeholder groups. Input will also be sought from the extension workers in identifying the stakeholders. Listening sessions at commodity group meetings will be helpful in formulating needs assessments.

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
- Survey of selected individuals from the general public
- Other (Through county extension agents)

Brief explanation.

Florida is in the final stages of a long Range Planning Process and restructuring. Iver tge oast 15 months Florida's strategic plan has included listening sessions in all 67 counties along with holding focus teams within industry and businesses and organizations across the state. Each County office also has an advisory committees made up of individuals who are aware of the needs of their communities and who have been intamely involved both in the strategic planning process and as participants. These needs are filtered through Extension Focus teams. For the past 10 years each focus area team has been composed of state and county faculty from the Florida 1862 and 1890 Extension institutions. Many focus teams also have industry leaders in their membership. Goal and Focus teams meet annually to review results from the merit review, statewide results and information gleaned from industry, government, advisory committees, and representatives of the underserved and under-represented. This information is then used to update each focus team plan of action to reflect stakeholder input. The goal and focus teams are being updated and in the future will be refereed to priority initiatives and priority workgroups. These changes are based on stakeholder input.

1890 Research

Stakeholder input will be collected throughout the year in informal and formal meetings. The research center advisory councils are critical since they include representatives from different stakeholder groups. Regular meetings of these Councils will be held on the campus

where research results will be presented and stakeholders' input will be requested. Input will also be collected from other stakeholders identified through churches, schools, recreation centers, food-banks, and healthcare providers. Additionally and as appropriate, researchers from the university will make presentations at meetings/conferences organized by different stakeholder groups. As appropriate, specific efforts will be made to coordinate these activities with the extension program in order to avoid duplication of effort and redundancy.

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
- Other (College-wide strategic plan)

Brief explanation.

Both 1862 and 1890 Extension and Research will use the information obtained through stakeholder input to identify critical need priorities. In the most recent long range planning Extension identified over 800 need specific needs. Some of these were county specific and some require state-wide attention. Emerging issues also become obvious and are discussed by teams in each state-wide focus area as well as at the county level. Once priorities are identified administration and faculty are able to identify needs as short term, intermediate and long term.

Once needs are identified both research and Extension are able to prioritize and redirect programs as needed. The process can be found at http://pdec.ifas.ufl.edu/team_review/. For example over the past few years it became obvious that a department dealing with poultry was no longer needed while at the same time almost every county has emerging issues related to community development and sustainability.

Priorities also identify the need for additional faculty and staff in specific areas where research or educational programs are required. These needs affect the budget and are taken into consideration as increase revenue is requested. Input collected will be used to:

- Identifying emerging issues
- Redirect Extension programs as critical issues change
- Identify cutting edge research projects as critical areas evolve and change
- Set new priorities based on findings

1890 Reseach

Input received from stakeholder groups will be incorporated into individual planned programs as well as the overall Plan of Work. Research priorities and specific recommendations/action items will be developed from the proceedings of the college advisory council. Planned programs will be designed to address the identified needs and the budgets will be prepared accordingly. Seed money will be provided for the identified emerging issues as appropriate, following development of proposals.

V. Planned Program Table of Content

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Increasing the sustainability, profitability, and competitiveness of ag and hort enterprises

2. Brief summary about Planned Program

Agriculture, horticulture, natural resources and related industries are vital components of Florida's economy. Florida's 47,500 farms produce nearly 300 different commodities on more than 9.2 million acres. Total economic contributions for agriculture, natural resources and related food industries broadly defined to include allied inputs and services, manufacturing and distribution, and nature-based recreation, were 2.01 million jobs, representing 14% of the state workforce, and $109 B in value added, representing 10.3% of state Gross Domestic Product. These industries are extremely diverse. More than 90% of Florida's producers are small farmers, including limited-resource farmers. It is imperative that our agricultural and horticultural producers continue to be economically and environmentally sustainable, as these enterprises provide the products that increase our quality of life and provide access to safe and nutritious food.

Florida's agriculture and horticulture producers face increasing challenges, including rapidly changing technologies, local-to-global markets, climate extremes, varying consumer demands, and increasing regulations. Hence, Florida Extension's educational programs must provide farmers, ranchers, and producers with the research-based knowledge they need to improve sustainability and profitability. Adoption of new technologies, new production practices, alternative crops, new marketing options, and a trained labor force will result in viable agricultural and horticultural production that continues to be sustainable and profitable and contributes to the state's economy.

Extension educational programs throughout the state have addressed but are not limited to:

- Food safety education including Good Agricultural Practices (GAPs), HAACP, cottage industry and safety plans for small farms which will increase local buying and access to safe and nutritious food.
- Food system development such as farmer's markets, community gardening, food hubs, processors, and wholesale/direct markets increasing access to safe and affordable food.
- Beginning farmer and rancher classes, food manager certification, marketing and business planning and consumer education to enhance understanding of food systems in local communities that ensure access to safe and affordable food.
- New technologies that will result in increased yields, reduced inputs, increased efficiency, increased economic return and conservation of resources.
- Best management practices resulting in increased adoption of irrigation and nutrient practices reducing impacts to natural resources and maintaining economic viability.
- Development and use of decision tools that decreased the risk of farm operations due to climate variability and change.
- Pest management information to increased detection and integrated management of pests that will ensure economic crop production and less crop losses due to pest.
- Basic information to decision makers on Florida's agriculture industries that inform and shape decision making processes that will ensure food access and distribution.

These programs addressed these broad NIFA issues: (1) enhanced capacity of a sustainable global food system including new varieties, animals and technologies; (2) more sustainable, diverse and resilient food systems across scales; (3) improved national and global capacity to meet growing food demands;

and, (4) increased access to safe and affordable food.

3. Program existence : Mature (More then 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
132	Weather and Climate	5%	5%	0%	0%
204	Plant Product Quality and Utility (Preharvest)	5%	5%	0%	0%
205	Plant Management Systems	5%	5%	0%	0%
211	Insects, Mites, and Other Arthropods Affecting Plants	5%	5%	0%	0%
212	Pathogens and Nematodes Affecting Plants	5%	5%	0%	0%
213	Weeds Affecting Plants	5%	5%	0%	0%
215	Biological Control of Pests Affecting Plants	5%	5%	0%	0%
216	Integrated Pest Management Systems	5%	5%	0%	0%
301	Reproductive Performance of Animals	5%	5%	0%	0%
302	Nutrient Utilization in Animals	5%	5%	0%	0%
306	Environmental Stress in Animals	5%	5%	0%	0%
307	Animal Management Systems	5%	5%	0%	0%
308	Improved Animal Products (Before Harvest)	5%	5%	0%	0%
311	Animal Diseases	5%	5%	0%	0%
312	External Parasites and Pests of Animals	5%	5%	0%	0%
313	Internal Parasites in Animals	5%	5%	0%	0%
315	Animal Welfare/Well-Being and Protection	5%	5%	0%	0%
405	Drainage and Irrigation Systems and Facilities	5%	5%	0%	0%
503	Quality Maintenance in Storing and Marketing Food Products	5%	5%	0%	0%
603	Market Economics	5%	5%	0%	0%
	Total	100%	100%	0%	0%

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

1. Situation and priorities

Situation Statement

The scope of challenges facing agriculture and natural resource industries of Florida fall into four primary areas:

1) economic well-being,
2) environmental issues,
3) quality, safety and security issues, and
4) civic engagement.

Economic Well-Being includes:

- Declining profitability due to stable or falling commodity prices and increasing cost of production and Liberalized trade agreements that reduce tariffs and subsidies can benefit both foreign and domestic producers by having greater access to markets.
- Resource limitations resulting from land loss due to urban sprawl, increased water consumption due to population growth, restricted use of farm inputs due to environmental concerns, and reduced availability of labor due to a growing reliance on migrant labor.
- New and innovative products and processing technologies must be developed for the industry to remain competitive and to adequately meet the rising expectations of consumers.

Environmental issues focus on:

- Public concern over environmental issues that have translated into increasingly stringent and costly environmental regulations on certain agricultural practices which can adversely affect economic viability in the short run and sustainability in the longer run.
- Water quality, as impacted by agricultural production practices, such as fertilizer and pesticide residue leaching and runoff, and management of waste from livestock and aquaculture production,
- Water availability as impacted by production-related surface and groundwater withdrawals, Conservation of the state's natural resource base, including land for production, wildlife habitat, green space, and fresh and saltwater recreation.

Quality, Safety and Security Issues in Florida Extension include:

- A heightened awareness by agricultural producers and processors concerning safe production practices such as chemical residues, biological safety concerns, and personal hygiene practices.
- Continued development of modern processing, distribution and storage, technologies and the use of improved handling practices that prevent unnecessary food losses while simultaneously ensuring high quality and safety standards;
- Availability of a wide range of wholesome foods that meet the needs of an increasingly unhealthy population;
- At the retail sector, adequate packaging and labeling so that consumers have reliable information to optimize their food choices;
- Development and implementation of food safety and security programs that protect the nation's food supply, and;
- Providing adequate information to the state and country's farm laborers who support agriculture to help them avoid dangers from equipment and exposure to farm chemicals that pose a number of potential risks to their health and safety.

Civic Engagement incorporates:

An awareness of agriculture and natural resources and their contribution to the state's economic, environmental, and social well-being. Agricultural awareness efforts can create an informed voting public so that wise choices can be made that benefit Florida's citizens and visitors. The scope of these issues

includes:

- Educating the public regarding the role and importance of agriculture in Florida's economy, the stewardship of natural resources, and the relationship between agricultural production and food availability.

2. Scope of the Program

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

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

1. Assumptions made for the Program

- People will be motivated by workshops and other educational activities to learn/change
- Information on best practices shows that these approaches work well for these target audiences
- Changes suggested in activities related to this program will improve quality of life for participants

- The Florida Extension network on climate change is well positioned to provide the information and tools Floridians need to prepare for and respond to the challenges of climate change and variability. It is expected that clientele with both gain knowledge and make behavioral changes necessary to reduce the human footprint that is leading to climate interruption.

2. Ultimate goal(s) of this Program

- Identify educational programs that increase food security.
- Identify educational programs that decrease global hunger.
- Small farm operators will understand how to reduce food safety risks in their operations
- Workers/produce handlers will gain knowledge on produce safety
- Consumers will gain knowledge about safe produce handling methods
- Help Extension faculty and clientele understand inter-relationships between climate, agriculture, natural resources and society (climate, energy, fresh water and food. Introduce faculty and clientele to scenarios for sea level rise and potential implications for Florida's coastal areas and marine/ estuarine/ barrier island ecosystems
- Introduce faculty and clientele to climate scenarios (temperature and rainfall) based on outputs of global climate models downscaled to the regional level
- Disseminate science-based information to a diverse audience on regional climate change and associated societal response options
- Design extension programs which teach clientele how to achieve in Florida's managed ecosystems adaptive capacity and resilience in to long-term climate change and seasonal climate variability
- Promote and facilitate linkages between University faculty and stakeholders who need scientific information on climate risks and who would benefit from development of new technologies and decision support systems

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
2015	80.0	11.0	0.0	0.0
2016	126.0	11.0	0.0	0.0
2017	126.0	11.0	0.0	0.0
2018	126.0	11.0	0.0	0.0
2019	126.0	11.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

1. In service training workshops will be developed using research-based information

2. A centralized website will be implemented (as a component of the Florida Climate Institute's website) containing:

• Resource library of internally vetted articles, government documents, lectures, NGO reports and links to websites

• List and links to existing UF/FSU and FAMU research programs related to climate variability and change

• In-service training presentations

• Extension curriculum materials (PowerPoint presentations, EDIS publications, other resources)

• Funding opportunities, especially via RFPs which require an Extension component

3. EDIS publications targeting specific sectors, needs assessment reports, and risk assessments for specific industries and geographies

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

Extension

Direct Methods	Indirect Methods

● Education Class	● Public Service Announcement
● Workshop	● Newsletters
● Group Discussion	● TV Media Programs
● One-on-One Intervention	● Web sites other than eXtension
● Demonstrations	● Other 1 (radio)
● Other 1 (telephone calls)	

3. Description of targeted audience

- Producers
- Commodity Associations
- Owners/Operators
- Managers/Supervisors
- Workers/Laborers
- Allied Industry Representatives
- Small Farmers
- Government/Regulatory
- County government
- State government
- Federal government
- Tribal government
- International governing bodies
- Harvesting/Packing/Processing/Distribution
- Harvesters/Packers
- Processors
- Distributors/Transporters
- Retailers
- Importers/Exporters
- Youth and 4H(K-12)
- Youth Educators
- Extension Faculty

- Food handlers
- Extension professional
- Florida climate institute
- Southeast Climate Consortium,
- Florida's water managment districts
- Fl fish and wildlife conservation commission
- NOAA-Seagrant

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

☐ 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	Change in Knowledge Agricultural and Natural Resource Industry Profitability and the Sustainable Use of Environmental Resources
2	Change in Behavior Agricultural and Natural Resource Industry Profitability and the Sustainable Use of Environmental Resources
3	Change in Condition Agricultural and Natural Resource Industry Profitability and the Sustainable Use of Environmental Resources
4	Change in Knowledge Awareness of Agriculture's and Natural Resource's Importance to an Economy That Ranges From Local to Global
5	Change in Behavior Awareness of Agriculture's and Natural Resource's Importance to an Economy That Ranges From Local to Global
6	Change in Condition Awareness of Agriculture's and Natural Resource's Importance to an Economy That Ranges From Local to Global
7	Change in Knowledge Protecting Florida from Existing and Emerging Pests and Diseases
8	Change in Behavior Protecting Florida from Existing and Emerging Pests and Diseases
9	Change in Condition Protecting Florida from Existing and Emerging Pests and Diseases
10	Change in knowledge related to processing, distribution, safety and security of food systems
11	Change in behavior related to processing, distribution, safety and security of food systems
12	Change in condition related to processing, distribution, sagety and security of food systems
13	Change in knowledge related to climate variability and climate change

Outcome # 1

1. Outcome Target

Change in Knowledge Agricultural and Natural Resource Industry Profitability and the Sustainable Use of Environmental Resources

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems
- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 306 - Environmental Stress in Animals
- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases
- 312 - External Parasites and Pests of Animals
- 313 - Internal Parasites in Animals
- 315 - Animal Welfare/Well-Being and Protection
- 405 - Drainage and Irrigation Systems and Facilities
- 503 - Quality Maintenance in Storing and Marketing Food Products
- 603 - Market Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 2

1. Outcome Target

Change in Behavior Agricultural and Natural Resource Industry Profitability and the Sustainable Use of Environmental Resources

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems
- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 306 - Environmental Stress in Animals
- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases
- 312 - External Parasites and Pests of Animals
- 313 - Internal Parasites in Animals
- 315 - Animal Welfare/Well-Being and Protection
- 405 - Drainage and Irrigation Systems and Facilities
- 503 - Quality Maintenance in Storing and Marketing Food Products
- 603 - Market Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 3

1. Outcome Target

Change in Condition Agricultural and Natural Resource Industry Profitability and the Sustainable Use of Environmental Resources

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants

- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems
- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 306 - Environmental Stress in Animals
- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases
- 312 - External Parasites and Pests of Animals
- 313 - Internal Parasites in Animals
- 315 - Animal Welfare/Well-Being and Protection
- 405 - Drainage and Irrigation Systems and Facilities
- 503 - Quality Maintenance in Storing and Marketing Food Products
- 603 - Market Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 4

1. Outcome Target

Change in Knowledge Awareness of Agriculture's and Natural Resource's Importance to an Economy That Ranges From Local to Global

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems
- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 306 - Environmental Stress in Animals
- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)

- 311 - Animal Diseases
- 312 - External Parasites and Pests of Animals
- 313 - Internal Parasites in Animals
- 315 - Animal Welfare/Well-Being and Protection
- 405 - Drainage and Irrigation Systems and Facilities
- 503 - Quality Maintenance in Storing and Marketing Food Products
- 603 - Market Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 5

1. Outcome Target

Change in Behavior Awareness of Agriculture's and Natural Resource's Importance to an Economy That Ranges From Local to Global

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems
- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 306 - Environmental Stress in Animals
- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases
- 312 - External Parasites and Pests of Animals
- 313 - Internal Parasites in Animals
- 315 - Animal Welfare/Well-Being and Protection
- 405 - Drainage and Irrigation Systems and Facilities
- 503 - Quality Maintenance in Storing and Marketing Food Products
- 603 - Market Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 6

1. Outcome Target

Change in Condition Awareness of Agriculture's and Natural Resource's Importance to an Economy That Ranges From Local to Global

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems
- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 306 - Environmental Stress in Animals
- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases
- 312 - External Parasites and Pests of Animals
- 313 - Internal Parasites in Animals
- 315 - Animal Welfare/Well-Being and Protection
- 405 - Drainage and Irrigation Systems and Facilities
- 503 - Quality Maintenance in Storing and Marketing Food Products
- 603 - Market Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 7

1. Outcome Target

Change in Knowledge Protecting Florida from Existing and Emerging Pests and Diseases

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 213 - Weeds Affecting Plants
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 8

1. Outcome Target

Change in Behavior Protecting Florida from Existing and Emerging Pests and Diseases

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 213 - Weeds Affecting Plants
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 9

1. Outcome Target

Change in Condition Protecting Florida from Existing and Emerging Pests and Diseases

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 213 - Weeds Affecting Plants
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 10

1. Outcome Target

Change in knowledge related to processing, distribution, safety and security of food systems

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 204 - Plant Product Quality and Utility (Preharvest)
- 308 - Improved Animal Products (Before Harvest)
- 503 - Quality Maintenance in Storing and Marketing Food Products

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 11

1. Outcome Target

Change in behavior related to processing, distribution, safety and security of food systems

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 204 - Plant Product Quality and Utility (Preharvest)
- 503 - Quality Maintenance in Storing and Marketing Food Products

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 12

1. Outcome Target

Change in condition related to processing, distribution, sagety and security of food systems

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems
- 503 - Quality Maintenance in Storing and Marketing Food Products

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 13

1. Outcome Target

Change in knowledge related to climate variability and climate change

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 132 - Weather and Climate

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

Description

Florida is a state located in the tropics. Natural disasters such as tropical storms and hurricanes are common annual occurrences in this state. Severe weather conditions such as droughts frequently led to large-scale fires. We also have other weather extremes such as floods leading to large scale damage especially along the coastal regions.

Florida also has three international shipping ports: Miami, Jacksonville and Tampa. Florida also has five international airports and a sixth one opening in May 2010 in West Florida. Florida also has well over 53 million tourists visiting annually from around the world. It has been estimated that this international influx into Florida has made us the entry point of one new invasive pest, plant or disease each week. Any of this could be an external factor affecting land-grant outcomes.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

The Florida land-grant colleges (both UF and FAMU) understand the value of evaluation in our annual program plan. Methods of evaluation are included as part of the annual faculty activity plan of work and report of accomplishment process (Workload).This information is collected as part of the logic model used in our Florida system and will be available for the NIFA reports of accomplishment on a yearly basis.

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Enhancing and protecting water quality, quantity, and supply

2. Brief summary about Planned Program

For Florida as with all states water plays a crucial role. This planned program will relate to water conservation, water quality (both urban and agricultural, and making the public aware of water issues that are both national and international and specific to Florida.

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

4. Program duration : Medium Term (One to 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	34%	34%	0%	0%
111	Conservation and Efficient Use of Water	33%	33%	0%	0%
112	Watershed Protection and Management	33%	33%	0%	0%
	Total	100%	100%	0%	0%

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

1. Situation and priorities

Water plays a critical role in sustaining Florida's environment and economic vitality, which are keys to a high quality of life. Florida must enhance and protect its domestic water supply while also meeting the water requirements of agriculture, horticulture, tourism, and industry, as well as the state's 19 million inhabitants and its natural systems, all without placing undue pressure on a finite resource. Waterquality problems have been associated with highly urbanized areas and with intense agricultural, horticultural, and industrial land uses. Florida's approach to water resource protection is centered on voluntary Best Management Practice (BMP) programs developed to meet waterquality standards. Florida Extension educates producers, urban landscape managers, homeowners, county and city government officials, and others about the science that supports BMPs, how they enhance and protect water quality, and how to implement and maintain them. To enhance and protect water quality, Florida Extension programming will continue to focus on creating behavior changes, such as installing improved management systems, using new procedures, and implementing innovative techniques that reduce pollution and ultimately result in more water bodies meeting their designated uses.

Water shortages are not uncommon in Florida. Compounding this problem is the state's projected population growth, which will demand an extra 150 gal of water per day for each additional resident. In the long term, Florida will rely greatly on water use efficiency, conservation, desalination, and reclaimed water to assure a sufficient future water supply. Through current Florida Extension efforts, major water users, including agricultural and horticultural irrigators, urban landscape managers, and homeowners learn how to use water efficiently through improved understanding of irrigation scheduling, lowvolume irrigation systems, FloridaFriendly Landscaping™ (FFL) principles, and domestic watersaving techniques. To achieve the outcome of maintaining plentiful water for all, Florida Extension programming must continue to provide educational programs that result in behavior change, including improved management and use of the latest technology to increase water conservation and decrease pressure on our resources.

2. Scope of the Program

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

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

1. Assumptions made for the Program

People will learn ways to conserve water by teaching rural, suburban and urban audiences how to use less water.

Trainings will increase water quality by teaching target audiences how to implement agricultural BMPs, Florida-friendly landscaping practices and low impact development standards.

We willimprove Floridian's knowledge about water allocation, use, quality and conservation through public education.

2. Ultimate goal(s) of this Program

Green Industry professionals, residents, residential communities, and urban property owners, managers and developers will demonstrate increased awareness, knowledge gain, and intent to adopt or change practices defined by Florida Friendly Landscaping Programs: the Green Industries Best Management Practices Training and Program, the Florida Yards and Neighborhoods Homeowner Program, and the Florida Yards and Neighborhoods Builder and Developer Program, that will reduce nonpoint source pollution and water quality impacts from urban land uses.

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

Year	Extension		Research	
	1862	1890	1862	1890
2015	5.0	1.0	0.0	0.0
2016	5.0	1.0	0.0	0.0
2017	5.0	1.0	0.0	0.0
2018	5.0	1.0	0.0	0.0
2019	5.0	1.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Workshops
presentations/webinars
displays at educational events
classes/courses
youth programs
development of durricula and other educational materials
demonstrations
Individual and small group consultations

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

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations	● Public Service Announcement ● Newsletters ● TV Media Programs

3. Description of targeted audience

all populations living in and visiting Florida including youth and elderly
government officials
elected officials

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

☐ 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	Improving knowledge related to water conservation
2	Imrpoving water quality
3	Increasing public awareness of water issues

Outcome # 1

1. Outcome Target

Improving knowledge related to water conservation

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 2

1. Outcome Target

Imrpoving water quality

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 3

1. Outcome Target

Increasing public awareness of water issues

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management

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

Description

Florida is a state located in the tropics. Natural disasters such as tropical storms and hurricanes are common annual occurrences in this state. Severe weather conditions such as droughts frequently lead to large-scale fires. Florida also has other weather extremes such as floods leading to large scale damage especially along coastal regions and rivers that can impact Natural resource and environmental research studies.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

The Florida land-grant colleges (both UF and FAMU) understand the value of evaluation in our annual program plan. Methods of evaluation are included as part of the annual faculty activity plan of work and report of accomplishment process (Workload).This information is collected as part of the logic model used in our Florida system and will be available for the NIFA reports of accomplishment on a yearly basis.

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Enhancing and conserving Florida's natural resources and environmental quality

2. Brief summary about Planned Program

Florida's natural resources and environment are vital to a strong economy and sustainable communities. The natural environment is directly connected to tourism, sustainable community development, human health, and jobs. Natural resources must be conserved and enhanced to develop and support a strong local economy. For communities to flourish, Florida must actively manage finite natural resources and develop strategies to minimize environmental impacts. Florida Extension will help enhance and conserve Florida's natural resources through the development of programs that inform community decision makers of information they need to make the best decisions, develop necessary natural resource operations, and increase environmental literacy and stweardship.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
111	Conservation and Efficient Use of Water	10%	10%	0%	0%
112	Watershed Protection and Management	20%	20%	0%	0%
135	Aquatic and Terrestrial Wildlife	20%	20%	0%	0%
136	Conservation of Biological Diversity	20%	20%	0%	0%
141	Air Resource Protection and Management	20%	20%	0%	0%
605	Natural Resource and Environmental Economics	10%	10%	0%	0%
	Total	100%	100%	0%	0%

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

1. Situation and priorities

Pressure on our natural resources varies widely across Florida. Pressures include the loss of natural areas, an increase in urban development, the use of energy and water resources, and growing impacts on marine ecosystems. Florida Extension helps communities respond to all of these challenges. Educational

programs teach Floridians about natural resource conservation, public issues, and community resource efficiency. Programs in this area provide in-depth training for volunteers to assist in our educational efforts. Florida Extension must focus on resource conservation and efficiency, community engagement and development, and BMP implementation. By doing so, Floridians will acquire a better understanding of their individual and collective role in the state's effort to enhance and protect natural resources.

UF/IFAS has many excellent educational programs that promote environmental stewardship, and these include both statewide programs (e.g., Florida Master Naturalist Program, Program for Resource Efficient Communities, Sustainable Floridians, Florida Forest Stewardship Program) and many local and regional programs that address specific issues and community needs. The primary need for statewide programming is the development and implementation of a more efficient and consistent approach to measuring the collective statewide impacts of the entire suite of UF/IFAS extension programs that promote environmental stewardship.

Local governments must provide leadership on the issues that balance the needs of the people and the economy with environmental safeguards. Florida Extension provides sciencebased information for environmental quality issues involving water, soil, urban and agricultural lands, and aquatic systems. Florida Extension programs must educate Florida's diverse audiences about ways to address environmental impacts and assist local communities in improving environmental quality.

2. Scope of the Program

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

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

1. Assumptions made for the Program

Government officials and others will be able to make better decisions related to natural resources and the Florida environment

Better natural resource operations including BMPs will be developed

Environmental literacy and stewardship of the environment will be improved

Allof these will lead to the sustainability to the Florida environment and the Natural resources so important to those who live here and/or visit Florida each year.

2. Ultimate goal(s) of this Program

Prevent economic loss from nuisance and invasive nonnative species
Change land use practices that degrade natural resource values and promote incomegenerating activities that do not degrade natural resource values
Improve community decisionmaking relative to natural and coastal resources and policies by providing scientific and economic information on the
consequences of various options and by fostering effective community decisionmaking that results in sustainable, resilient communities regarding issues such as water, energy, biodiversity, quality of life,

ecosystem services, and hazard resilience.
Continue to provide high quality educational programs that promote environmental stewardship among diverse audiences and to capture the collective impacts of these programs through consistent, meaningful, and effective evaluation metrics that can be efficiently implemented.

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
2015	50.0	2.0	0.0	0.0
2016	50.0	2.0	0.0	0.0
2017	50.0	2.0	0.0	0.0
2018	50.0	2.0	0.0	0.0
2019	50.0	2.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Workshops
presentations/webinars
displays at educational events
classes/courses
youth programs
development of durricula and other educational materials
demonstrations
Individual and small group consultations

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

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations	● Public Service Announcement ● Billboards ● Newsletters ● TV Media Programs ● eXtension web sites ● Web sites other than eXtension

3. Description of targeted audience

Target Audiences:

Regulators Elected officials, policy makers, agencies
RegulatedDevelopers, consultants, large landowners, commercial agriculture, large business, NGOs (non government organizations)
Publiccitizens,
small businesses,
HOA (home owners associations)
Youth
Educators
tour providers
land managers
biologists
developers
county planners
elected officials
commercial and recreational fishers

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

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V(H). State Defined Outputs

1. Output Measure

☐ 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	Provide needed information for successful community decision making in the area of natural resources and environmental quality
2	Develop effective natural resource operations
3	Increase environmental literacy and stewardship training

Outcome # 1

1. Outcome Target

Provide needed information for successful community decision making in the area of natural resources and environmental quality

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 135 - Aquatic and Terrestrial Wildlife
- 136 - Conservation of Biological Diversity
- 141 - Air Resource Protection and Management
- 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 2

1. Outcome Target

Develop effective natural resource operations

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 135 - Aquatic and Terrestrial Wildlife
- 136 - Conservation of Biological Diversity
- 141 - Air Resource Protection and Management
- 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 3

1. Outcome Target

Increase environmental literacy and stewardship training

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water
- 112 - Watershed Protection and Management
- 135 - Aquatic and Terrestrial Wildlife
- 136 - Conservation of Biological Diversity
- 141 - Air Resource Protection and Management
- 605 - Natural Resource and Environmental 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
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Description

Florida is a state located in the tropics. Natural disasters such as tropical storms and hurricanes are common annual occurrences in this state. Severe weather conditions such as droughts frequently led to large-scale fires. We also have other weather extremes such as floods leading to large scale damage especially along the coastal regions.

Florida also has three international shipping ports: Miami, Jacksonville and Tampa. Florida also has five international airports and a sixth one opening in May 2010 in West Florida. Florida also has well over 53 million tourists visiting annually from around the world. It has been estimated that this international influx into Florida has made us the entry point of one new invasive pest, plant or disease each week. Any of this could be an external factor affecting land-grant outcomes.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

The Florida land-grant colleges (both UF and FAMU) understand the value of evaluation in our annual program plan. Methods of evaluation are included as part of the annual faculty activity plan of work and report of accomplishment process (Workload).This information is collected as part of the logic model used in our Florida system and will be available for the NIFA reports of accomplishment on a yearly basis.

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Producing and conserving traditional and alternative forms of energy

2. Brief summary about Planned Program

With approximately 18 million people, Florida is the 4th most populated state in the nation. It ranks third in the nation in total fuel and electrical energy consumed per year. Florida produces less that 1% of the total energy it consumes. Almost 90% of the energy produced in Florida uses fossil fuels. Florida's per capita residential electricity demand is among the highest in the country, due in part to high air-conditioning use during the hot summer months and the widespread use of electricity for home heating during the winter months. These numbers are expected to rise by 30% over the next 10 years. Florida needs to enter the bio-energy and bio-products arena with a special emphasis on improving self-sufficiency, addressing climate change and stimulating economic development by transforming agricultural products into energy. Florida also needs to provide research based educational programs that address conservation of our energy resources in our homes, workplaces, and communities.
Although energy conservation and production was clearly identified during the development of the Roadmap for Extension, this initiative is not fully developed because of the lack of human resources within IFAS Extension.

3. Program existence : New (One year or less)

4. Program duration : Short-Term (One year or less)

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

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
123	Management and Sustainability of Forest Resources	10%	10%	0%	
131	Alternative Uses of Land	10%	10%	0%	
201	Plant Genome, Genetics, and Genetic Mechanisms	10%	10%	0%	
202	Plant Genetic Resources	10%	10%	0%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	10%	10%	0%	
204	Plant Product Quality and Utility (Preharvest)	10%	10%	0%	
205	Plant Management Systems	10%	10%	0%	
206	Basic Plant Biology	10%	10%	0%	
403	Waste Disposal, Recycling, and Reuse	10%	10%	0%	
404	Instrumentation and Control Systems	10%	10%	0%	
	Total	100%	100%	0%	

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

1. Situation and priorities

As our nation looks to plants to satisfy its growing energy demands, University of Florida faculty are searching for answers to both long-term and near-term questions associated with bioenergy production and passing those options on to stakeholders. The key is to provide a scientific and practical foundation to support an economic and sustainable bioenergy future in Florida. Florida has 15 million acres of forested land, 10 million acres of farm land and 3 million acres of pasture. Landscape waste and other waste of Florida's population of 18.4 million people are significant. UF has the expertise to develop research and extension programs to demonstrate potential of energy crops, refine and develop new process technologies, conduct environmental assessments, define the economics of energy production and teach programs on energy conservation. The benefits to Florida will be economic development, environmental sustainability and energy independence.

The main focus of IFAS' bioenergy programs is on the potential production of biomass, bioconversion processes and generation and conservation of energy. The production of biomass includes species identification such as silage, sugarcane, urban tree waste, vegetable wastes, algae, and trees to name a few, low input growing systems for these potential crops, genetic evaluation of improved crops and efficient harvesting and transportation. In addition to these programs is the extraction of oil feedstocks and anaerobic digestion of waste products.

2. Scope of the Program

- In-State Extension
- Multistate Extension

- Integrated Research and Extension
- Multistate Integrated Research and Extension

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

1. Assumptions made for the Program

Extension educational programs in the area of sustainable energy will increase markets. This in turn will improve the economics related to the production of biofuel feedstocks, and the dollars that improve the community and energy and environmental conservation.

2. Ultimate goal(s) 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
2015	4.0	1.0	0.0	0.0
2016	2.3	1.0	0.0	0.0
2017	2.0	1.0	0.0	0.0
2018	2.0	1.0	0.0	0.0
2019	2.0	1.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Educational Methods
Energy Supply:

• Develop and deliver educational programs that work with citizens, businesses and government to support development of a sustainable and renewable energy supply in Florida.
• Develop and deliver programs that transfer new, research based technologies for renewable energy and alternative energy sources to Florida citizens and communities.
• Develop and implement extension educational programs to train producers, and processors about production, best management practices, marketing, processing technologies and distribution of bio-based feedstock.
• Develop and deliver programs for policy makers and consumers to increase biofuels literacy.
• Consult with landowners, developers and government to promotedesign, construction, and management practices that **measurably**reduce energy consumption in new developments (i.e., Plum

Creek)

Energy Conservation:

- Develop/deliver educational programs addressing energy issues (i.e., Sustainable Floridians)
- Create websites to increase knowledge of personal energy use (i.e., www.MyFloridaHomeEnergy)
- Support energy efficient retrofit programs (i.e., PACE, Florida Energy Efficient Loans)
- Work utilities, financial institutions and government to evaluate energy efficiency programs

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

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations	● Public Service Announcement ● Newsletters ● TV Media Programs ● Web sites other than eXtension

3. Description of targeted audience

General public
Agricultural producers/growers
Business
Community government

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

☐ 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	Greater number of bio-based alternative energy production industries
2	Increased agricultural industries that have the ability to produce sustainable feedstocks for the commercialization of advanced biofuels and renewable chemicals.
3	Developed high yielding biomass feedstocks year round that do not compete with food crops and can promote economic stability and security for the long term.
4	Adoption of best management practices for the production and transportation of bio-fuel feedstocks.
5	Greater numbers of well-informed citizens locally engaged in activities that will promote sustainability.
6	Improved web access to reliable residential energy efficiency information and recommendations.
7	Increased availability of financing for measurably effective energy efficiency residential retrofits.
8	Improved cost effectiveness of utility demand side management programs (DSM).
9	Adoption of more resource efficient designs and management structures.

Outcome # 1

1. Outcome Target

Greater number of bio-based alternative energy production industries

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 123 - Management and Sustainability of Forest Resources

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Increased agricultural industries that have the ability to produce sustainable feedstocks for the commercialization of advanced biofuels and renewable chemicals.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Developed high yielding biomass feedstocks year round that do not compete with food crops and can promote economic stability and security for the long term.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

Adoption of best management practices for the production and transportation of bio-fuel feedstocks.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

Greater numbers of well-informed citizens locally engaged in activities that will promote sustainability.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 404 - Instrumentation and Control Systems

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 6

1. Outcome Target

Improved web access to reliable residential energy efficiency information and recommendations.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 404 - Instrumentation and Control Systems

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 7

1. Outcome Target

Increased availability of financing for measurably effective energy efficiency residential retrofits.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 404 - Instrumentation and Control Systems

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 8

1. Outcome Target

Improved cost effectiveness of utility demand side management programs (DSM).

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 404 - Instrumentation and Control Systems

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 9

1. Outcome Target

Adoption of more resource efficient designs and management structures.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 404 - Instrumentation and Control Systems

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

Florida is a state located in the tropics. Natural disasters such as tropical storms and hurricanes are common annual occurrences in this state. Severe weather conditions such as droughts frequently led to large-scale fires. We also have other weather extremes such as floods leading to large scale damage especially along the coastal regions.

Florida also has three international shipping ports: Miami, Jacksonville and Tampa. Florida also has five international airports and a sixth one opening in May 2010 in West Florida. Florida also has well over 53 million tourists visiting annually from around the world. It has been estimated that this international influx into Florida has made us the entry point of one new invasive pest, plant or disease each week. Any of this could be an external factor affecting land-grant outcomes.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

The Florida land-grant college (both UF and FAMU) understands the value of evaluation in our annual program plan. Methods of evaluation are included as part of the annual faculty activity plan of work and report of accomplishment process (Workload).This information is collected as part of the logic model used in our Florida system and will be available for the NIFA reports of accomplishment on a yearly basis.

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Empowering individuals and families to build healthy lives and achieve social and economic success

2. Brief summary about Planned Program

Brief Summary

Challenges facing Florida's residents whether young middle aged or elders are formidable. Many issues relate to food safety and nutrition, housing, family financial management, aging and human development and family relationships.

Programming that addresses nutrition is needed for a variety of reasons in Florida. Almost 14% of the population lives below the poverty level and as poverty levels rise, the nutritional and health risks to people of all ages increase. Hungry children often have learning and behavioral problems and expectant mothers with inadequate nutrition are more likely to have low birth weight babies. Furthermore, Florida adults with the lowest incomes and the least education have the highest prevalence of obesity. This disparity, along with the persistent increase in obesity rates over the last two decades, is cause for concern as obesity is linked to increased risk for a number of chronic diseases, including heart disease, hypertension, diabetes, and some cancers.

A majority of foodborne illnesses in the US are due to microbial causes. In Florida, the majority of foodborne illnesses are attributed to commercial food service and foods prepared in private homes. Fresh produce is crucial to a healthy diet, but in the last three decades, the numbers of foodborne illness outbreaks associated with fresh produce has increased. Because of the recent economic downturn, and because of the recent approval of the Florida Cottage Food Rules, home food preservation is returning as a popular activity across Florida. It is possible for Floridians to sell certain homemade products under the Florida Cottage Food Rules at farmer markets. Many home food processors are using practices that put them at high risk for foodborne illness and economic losses due to food spoilage. Priorities will be given to three primary target audiences who will make a difference to improve food safety behavior and outcomes in Florida.

The Florida Cooperative Extension Service desires to increase the involvement of Florida residents toward improving the overall performance of their family living situation within the home and community. Both UF and FAMU are well suited to impact this situation because it combines the depth and breadth to conduct research with the reach to provide the most current evidence-based information to Florida citizens. Our PWG comprises individuals who each have a unique strength and approach toward positively impacting this situation.

Also closely related is the need to help Floridian's improve their ability to manage money. Four years after the recession hit, Floridian households are still struggling to get themselves back on stable financial footing. Despite observing a slow improvement in some of the areas of financial management, Floridians have several financial challenges to yet overcome. The main economic indicators relevant to the context of the state of Florida are bankruptcy, poverty, foreclosure and credit card and student loan debt level; thus, these areas are explored further.

In order to support Florida's families, efforts must be made to prevent and buffer the effects of contemporary stressors. Not only can this lead to improved societal and workforce functioning, it can also lead to cost-savings to the state. Florida's families are experiencing unprecedented levels of stress. Difficult economic times have led to substantial job loss and financial strain for families; approximately

21% of children in Florida are living in poverty, but a significantly higher percentage (42%) of children live in low-income households. This has been compounded by the increasing percent of Florida's children being raised in single parent families (38%), which leads to fewer financial and emotional resources available for children, and possible increases in emotional strain to both parents and children. Increases in natural (e.g., hurricanes) and manmade (e.g., the Deepwater Horizon oil spill) disasters have led to further economic strain and trauma for Florida's families.

The 2010 Florida Department of Elder Affairs' Assessment of the Needs of Older Floridians, has identified a series of issues plaguing the elderly including inadequate nutrition (26%) and financial constraints that limited their ability to fill prescriptions (10%) and get dental (30%), eye (24%), or mental health (11%) care. Twenty-one percent surveyed reported problems with their home, including upkeep and minor or major repairs, and difficulty paying rent or the mortgage. Over half of older Floridians reported they needed assistance with daily activities such as housekeeping and shopping, while 17% needed help with personal care such as bathing and dressing. Usually, older adults are cared for by a family member, often someone who also is elderly. Older adults are increasingly serving as caregivers for their grandchildren; among those who are caring for grandchildren, 36% are over the age of 60 and 18% live in poverty. Additionally, the older adult population is becoming more racially and ethnically diverse. Since ethnic minorities are at high risk for the major chronic diseases, this demographic change will increase the burden of chronic diseases and conditions in the elder population. Where older adults live can affect their physical and mental health. Home design and neighborhood and community design can positively or negatively affect our aging population. A number of studies have shown that more open space, walkable neighborhoods, healing and community gardens, and opportunities to enjoy the outdoors lead to better mental and physical health in senior citizens.

UF and FAMU faculty will work to develop educational programs that provide essential knowledge to youth and their families that will lead improved behaviors that will reduce childhood obesity. These educational programs will provide training in nutrition education and changes in sedentary lifestyles that will decrease energy imbalance and prevent obesity.

Persons at risk for childhood obesity will do one or more of the following as needed:

- Demonstrate increased knowledge of chronic disease risk factors related to childhood obesity.

- Demonstrate increased knowledge of lifestyle practices that can reduce health risks.

- Indicate intent to improve one or more lifestyle practices.

- Improve one or more lifestyle practices.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
112	Watershed Protection and Management	5%	0%	0%	0%
136	Conservation of Biological Diversity	5%	0%	0%	0%
602	Business Management, Finance, and Taxation	5%	5%	0%	0%
603	Market Economics	5%	5%	0%	0%
604	Marketing and Distribution Practices	5%	5%	0%	0%
608	Community Resource Planning and Development	5%	5%	0%	0%
701	Nutrient Composition of Food	5%	5%	0%	0%
703	Nutrition Education and Behavior	5%	10%	0%	0%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	5%	5%	0%	0%
723	Hazards to Human Health and Safety	5%	5%	0%	0%
724	Healthy Lifestyle	5%	5%	0%	0%
801	Individual and Family Resource Management	5%	10%	0%	0%
802	Human Development and Family Well-Being	5%	5%	0%	0%
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	5%	5%	0%	0%
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	5%	5%	0%	0%
805	Community Institutions, Health, and Social Services	5%	5%	0%	0%
806	Youth Development	5%	5%	0%	0%
901	Program and Project Design, and Statistics	5%	5%	0%	0%
902	Administration of Projects and Programs	5%	5%	0%	0%
903	Communication, Education, and Information Delivery	5%	5%	0%	0%
	Total	100%	100%	0%	0%

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

1. Situation and priorities

Situations and Priorities

A recent grassroots series of listening sessions identified five major proiorties impacting individuals and families in Florida. These priority areas include:

- Food safety
- nutrition
- childhood obesity
- Housing
- Family financial management
- Aging
- Human development and family relationships

Improvements in these areas can lead to a healthier Florida population. It can also mean a better quality of life for each Floridian while reducing the negative impact on the Florida economy.

Food Safety

Foodborne illnesses continue to be a major health concern (CDC data), especially for persons with compromised immunity such as infants, young children, older adults and persons with certain medical conditions. A majority of foodborne illnesses in the US are due to microbial causes. In Florida the majority of foodborne illnesses are attributed to commercial food service and foods prepared in private homes. Fresh produce is crucial to a healthy diet, but in the last three decades, the number of foodborne illness outbreaks associated with fresh produce has increased. Home food preservation is returning as a popular activity across Florida. Many home food processors are using practices that put them at high risk for foodborne illness and economic losses due to food spoilage. This fact is confirmed in Florida by the incidence of botulism cases in recent years due to improper canning and preservation of garlic in oil.

Nutrition and Childhood Obesity

Over the past 30 years, the prevalence of obesity in children and adolescents has tripled. Currently, 17% of children 2 to 19 years are classified as obese. In addition, 23% of children in Florida live in poverty, with over 1.5 million eligible to receive free or reduced lunch. For many children, the National School Lunch and Breakfast Programs provide most of their food during the week. Offering healthy, local food can ensure that children are eating the nutrient-rich foods they need while simultaneously supporting Florida's agricultural economy. Recently, the Florida Department of Agriculture and Consumer Services (FDACS) has partnered with UF/IFAS to establish a Florida Farm to School Program. The goal of this program is "to engage farmers, state and federal agencies, land grant institutions, school food authorities, and families through facilitated discussion, training, and technical support in the development of a successful FDACS Florida Farm to School Program that improves the health and welfare of children and contributes positively to Florida's agricultural economy." With Extension's relationship with many school districts, Extension is perfect to partner with FDACS to roll out its Farm to School Program. One of the first in the country, FAMU Extension has operated a Farm to School Program for over 18 years in collaboration with the New North Florida Cooperative. This Farm to School Program targets small-scale, limited resource farmers and school districts with high participation in USDA Free and Reduced meal programs.

Programming that addresses nutrition is needed for a variety of reasons in Florida. Almost 14% of the population lives below the poverty level and as poverty levels rise, the nutritional and health risks to people of all ages increase. Hungry children often have learning and behavioral problems and expectant mothers with inadequate nutrition are more likely to have low birth weight babies. Furthermore, Florida adults with the lowest incomes and the least education have the highest prevalence of obesity. This disparity, along with the persistent increase in obesity rates over the last two decades, is cause for concern as obesity is linked to increased risk for a number of chronic diseases, including heart disease, hypertension, diabetes, and some cancers.

In Florida, participation in the Supplemental Nutrition Assistance Program (SNAP) has increased by 111% since 2007 for a total of 2,603,185 monthly recipients as of December 2010. Most of these recipients exhaust these benefits five to ten days before the end of the month. Extension receives federal dollars from USDA to provide nutrition education to SNAP participants and eligibles in Florida (SNAP-Ed Program) to help them understand how to eat a healthy diet on a limited food budget using SNAP benefits and to choose a physically active lifestyle. Additionally, twelve Florida counties receive funding to provide nutrition education to limited resource families through the Expanded Food and Nutrition Education Program (EFNEP). All educational materials are based on the Dietary Guidelines for Americans, 2010, and USDA's food guidance system - MyPlate.

Chronic diseases and conditions such as heart disease, cancer, stroke, diabetes, and obesity are leading causes of disability and death and contribute to the rising cost of health care. Risk for these conditions can be reduced through changes in lifestyle behaviors, including healthful eating behaviors, physical activity, and participation in health screenings. Extension lifestyle intervention programs provide people with the knowledge, motivation, and skills they need to adopt behavior changes that promote positive nutritional status and reduce health risks, which may result in lower health care costs. In addition to intensive programs, Extension offers research-based information designed to increase awareness about these diseases and conditions to a broad audience through written materials and other media. Increased awareness can motivate these individuals to participate in Extension lifestyle intervention programs.

Although the Dietary Guidelines for Americans 2010 includes food safety recommendations when preparing and eating foods to reduce the risk, foodborne illnesses continue to be a major health concern (CDC data), especially for persons with compromised immunity such as infants, young children, older adults, and persons with certain medical conditions. A majority of foodborne illnesses in the US are due to microbial causes. In Florida, the majority of foodborne illnesses are attributed to commercial food service and foods prepared in private homes. Fresh produce is crucial to a healthy diet, but in the last three decades, the numbers of foodborne illness outbreaks associated with fresh produce has increased. Because of the recent economic downturn, and because of the recent approval of the Florida Cottage Food Rules, home food preservation is returning as a popular activity across Florida. It is possible for Floridians to sell certain homemade products under the Florida Cottage Food Rules at farmer markets. Many home food processors are using practices that put them at high risk for foodborne illness and economic losses due to food spoilage. Priorities will be given to three primary target audiences who will make a difference to improve food safety behavior and outcomes in Florida.

The goal of programming in the Food Safety and Nutrition Priority Work Group is to provide consumers in Florida with the knowledge, skills, and self-efficacy necessary to make better nutrition and physical activity choices, as well as helping them reduce the risk of foodborne illness. Working towards this goal through Extension is ideal as the strong presence of Extension in every county allows for the nutrition and physical activity needs of many Floridians across the state to be addressed with the help of faculty with expertise in these areas. Extension faculty have the experience to forge relationships necessary to comprehensively assess the types of programs needed by each county. The relationship county faculty have with state faculty allows for the exchange of current research-based programs and cutting-edge information that can be shared with Florida consumers. Potential partners include local, state, and federal agencies; non-profit agencies; schools and universities; businesses; faith-based organizations; state and local health departments; hospitals; other community agencies and organizations; University of Florida researchers; Master Nutrition Education Volunteers; and health professionals.

Housing

Cantrell (2012) and Cantrell & Stafford (2012) compared US and Florida resid

2. Scope of the Program

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

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

1. Assumptions made for the Program

Through behavioral changes brought about by research-based educational programs in areas related to individual and family lifestyle changes there will be an improved quality of life, a healthier and more economically improved population.

This change in the population will reduce the amount of state funds used to improve health and increase the tax base allowing for more money to be spent to improve the qualtiy of life of Florida residents as well as their environment.

Improved awareness and changes in behavior related to food safety, financial managment and nutrition

Develop Educational programs that educate children, adolescents, young adults and their parents to make better dietary choices and increase physical activity will reverse the trends now leading to childhood obesity.

2. Ultimate goal(s) of this Program

Food Safety and Nutrition

• Participants will increase their food, nutrition, physical activity, food handling, and resource management knowledge.
• Participants will report intent to change behaviors related to nutrition, physical activity, food handling, and resource management.
• Participants will improve behaviors related to their nutrition, physical activity, food handling, and resource management.
• Participants will reduce incidence of food insecurity.
• Persons at risk for chronic disease will do one or more of the following as needed: - Demonstrate increased knowledge of chronic disease risk factors. - Demonstrate increased knowledge of lifestyle practices that can reduce health risks. - Indicate intent to improve one or more lifestyle practices. - Improve one or more lifestyle practices. - Improve one or more modifiable health risk factors (e.g., high blood pressure).
• Persons with type 2 diabetes (50 or younger) will do one or more of the following: - Demonstrate increased knowledge of ADA Standards of Medical Care in Diabetes. - Set goals for improving lifestyle practices. - Practice self-monitoring of blood glucose more regularly. - Plan meals using an accepted food system more often. - Improve blood glucose control.
• Schools will do one or more of the following:
• Become Healthier US School Challenge (HUSSC) certified at the Gold with Distinction, Gold, Silver, or Bronze level.
• Improve their wellness policy.
• Partner with Extension to provide nutrition education in the classroom and for the parents.
• Incorporate techniques from the Smarter Lunchrooms Initiative to increase the consumption of healthier foods.
• Food service professionals (managers and operators) will:
• Increase their food safety knowledge and competencies - Pass a national food safety certification

exam that will enable them to lawfully operate/manage a food service operation as required by state law.
- Professional food handlers will:
- Demonstrate food safety knowledge and understanding of food safety concepts.
- Adopt good personal hygiene practice.
- Improve safe handling of foods and thereby reducing foodborne illness risk.
- Consumers and volunteers (of all ages and 4-Hers) will:
- Increase their basic knowledge of safe food handling practices as prescribed by The Dietary Guidelines for Americans 2010, leading to behavioral changes to reduce foodborne illness risk.
- Increase their knowledge and practice of safe food preservation and home canning preparation.
- Increase their knowledge and practice of safe food preparation as prescribed by the American Dietary Guidelines for Americans 2010.

Financial Management

- People attending a financial management class will report increased knowledge of key financial topics such as: budgeting, tracking expenses, working with financial institutions, or planning for future goals. An end of class traditional paper or online follow-up evaluation will be used to measure this objective.
- People attending a financial management class will report being better able to evaluate credit offers. An end of class traditional paper or online follow-up evaluation will be used to measure this objective.
- People attending a financial management session, workshop, web conference, or class will report they are more confident in their ability to manage money. An end of session or online follow-up evaluation will be used to measure this objective.
- Floridians of all income levels will increase their access to key financial services.
- Young Floridians will increase there understanding of core financial management topics
- The number of trained volunteers, partners, and educators working with Extension in financial education will increase.
- Program participants will continue to use or increase their use of positive financial practices by adopting one or more of the following practices (Three-five month follow up evaluation sent electronically and /or by postal mail will be used to measure this objective):
- Tracking personal expenses,
- Using a spending plan
- Opening an account with a mainstream financial institution
- Engaging in protective behaviors to prevent against identity theft
- Depositing money into savings and investing vehicles
- Reducing debt

Housing and Community

- Facilitate occupants in developing a plan for increasing the overall performance of their dwellings and living situation via a detailed examination of:
- minor home-conservation measures, home maintenance and operations, personal routines and practices
- Facilitate citizens and public administrators in developing a plan for increasing the overall performance of their communities and living situation via a detailed examination of:
- neighborhoods, public schools, public services
- Facilitate the realty, rental, and homebuilder industries by:
- helping its members understand what "post-bubble" dwellers look for when shopping for a home/community
- assisting occupants to understand how they can maintain their dwellings at a "move-out-ready" level

- Program participants will continue to use or increase their use of positive financial practices by adopting one or more of the following practices (Three-five month follow up evaluation sent electronically

and /or by postal mail will be used to measure this objective):

- Tracking personal expenses,
- Using a spending plan
- Opening an account with a mainstream financial institution
- Engaging in protective behaviors to prevent against identity theft
- Depositing money into savings and investing vehicles
- Reducing debt

Human Development and Family Relationships

- Child/Youth Development: Improve parents' and caregivers' knowledge of child and youth development and effective parenting/ caregiving practices.
- Family Success: Strengthen couple, family, interpersonal and intergenerational relationships across the life cycle.
- Healthy Lifestyles: Improve personal, emotional, and social health and well-being across the lifespan.

Aging

- adopt healthy lifestyles that enable them to remain active and well into their later years;
- successfully meet emotional challenges and adjustments;
- maintain positive and caring relationships in later life;
- prepare for retirement, long-term care, and end-of-life decisions;
- make home and community adaptations that can accommodate Floridians of any age.

Childhood Obesity

- Demonstrate increased knowledge of lifestyle practices that can reduce childhood obesity
- Demonstrated intent to improve lifestyle practices that can reduce childhood obesity
- Improve one or more lifestyle practices that reduce childhood obesity
- Show a reduction in weight leading to a decrease in health risk factors related to childhood obesity

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
2015	40.0	3.0	0.0	0.0
2016	43.0	3.0	0.0	0.0
2017	43.0	3.0	0.0	0.0
2018	43.0	3.0	0.0	0.0
2019	40.0	3.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Conduct workshops and meetings
- Deliver services
- Develop products, curriculum, resources
- Provide training
- Provide counseling
- Make assessments
- Work with the media
- Develop partnerships

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

Extension

Direct Methods	Indirect Methods
● Education Class	● Public Service Announcement
● Workshop	● Newsletters
● Group Discussion	● TV Media Programs
● One-on-One Intervention	● Web sites other than eXtension
● Demonstrations	● Other 1 (radio)
● Other 1 (telephone calls)	

3. Description of targeted audience

Childcare, after-school, and elder care providers;
Individual and family service personnel;
Parents, couples, and individuals;
UF/IFAS and FAMU county and state faculty.
Children and adolescents, families with children, adults of all ages including those with special needs.
At-risk persons including older adults and persons who are obese, have a family or personal history, or are in a high-risk ethnic group.
Persons with type 2 diabetes
Food service operators: food handlers (adults; youth); consumers; volunteers, and county faculty
· Consumers

- Homeowners

- Prospective homeowners

- Renters

- Temporary/seasonal residents

- Households with child(ren) age 6 years and younger

- Seniors

- Persons with disabilities

· Housing professionals

- Developers

- Building/construction professionals

- Housing sales professionals

- Residential property management professionals

- Non-government organizations

- UF/IFAS faculty and staff

Extension county faculty

Community organizations

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

☐ 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	Change in Knowledge Personal and Family Well-Being
2	Change in Behavior Personal and Family Well-Being
3	Change in Condition Personal and Family Well-Being
4	Change in Knowledge Personal Financial Education
5	Change in Behavior Personal Financial Education
6	Change in Condition Personal Financial Education
7	Change in Knowledge Health and Nutrition
8	Change in Behavior Health and Nutrition
9	Change in Condition Health, and Nutrition
10	Change in Knowledge Sustainable Housing and Home Environment
11	Change in Behavior Sustainable Housing and Home Environment
12	Change in Condition Sustainable Housing and Home Environment
13	Change in Knowledge Sustainable Organizations and Communities
14	Change in Behavior Sustainable Organizations and Communities
15	Change in Condition Sustainable Organizations and Communities
16	Changes in knowledge related to issues of childhood obesity
17	Changes in behavior related to nutrition that will reduce childhood obesity
18	Changes in physical activity that will lead to reduced childhood obesity
19	Changes in Weight loss that leads to reduced health issues related to childhood obesity

Outcome # 1

1. Outcome Target

Change in Knowledge Personal and Family Well-Being

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 2

1. Outcome Target

Change in Behavior Personal and Family Well-Being

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 3

1. Outcome Target

Change in Condition Personal and Family Well-Being

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management
- 802 - Human Development and Family Well-Being
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 4

1. Outcome Target

Change in Knowledge Personal Financial Education

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 5

1. Outcome Target

Change in Behavior Personal Financial Education

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 6

1. Outcome Target

Change in Condition Personal Financial Education

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 7

1. Outcome Target

Change in Knowledge Health and Nutrition

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 701 - Nutrient Composition of Food
- 703 - Nutrition Education and Behavior
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 723 - Hazards to Human Health and Safety
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 8

1. Outcome Target

Change in Behavior Health and Nutrition

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 701 - Nutrient Composition of Food
- 703 - Nutrition Education and Behavior
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 723 - Hazards to Human Health and Safety
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 9

1. Outcome Target

Change in Condition Health, and Nutrition

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 701 - Nutrient Composition of Food
- 703 - Nutrition Education and Behavior
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 723 - Hazards to Human Health and Safety
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 10

1. Outcome Target

Change in Knowledge Sustainable Housing and Home Environment

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 11

1. Outcome Target

Change in Behavior Sustainable Housing and Home Environment

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 12

1. Outcome Target

Change in Condition Sustainable Housing and Home Environment

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 13

1. Outcome Target

Change in Knowledge Sustainable Organizations and Communities

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 805 - Community Institutions, Health, and Social Services

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 14

1. Outcome Target

Change in Behavior Sustainable Organizations and Communities

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 805 - Community Institutions, Health, and Social Services

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 15

1. Outcome Target

Change in Condition Sustainable Organizations and Communities

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 805 - Community Institutions, Health, and Social Services

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 16

1. Outcome Target

Changes in knowledge related to issues of childhood obesity

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 723 - Hazards to Human Health and Safety

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 17

1. Outcome Target

Changes in behavior related to nutrition that will reduce childhood obesity

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 723 - Hazards to Human Health and Safety
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 18

1. Outcome Target

Changes in physical activity that will lead to reduced childhood obesity

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 723 - Hazards to Human Health and Safety
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 19

1. Outcome Target

Changes in Weight loss that leads to reduced health issues related to childhood obesity

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 701 - Nutrient Composition of Food
- 703 - Nutrition Education and Behavior
- 723 - Hazards to Human Health and Safety
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- 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

Florida is still being heavily impacted by the economic situation. Public higher education in Florida has lost more than 50% of state funding and has been impacted by other losses caused indirectly by the economic down turn. Issues related to Medicaid are also expected to impact us heavily. Changes in state, county and federal appropriations can also affect the outcomes related to the Florida land-grant mission. Because of limited resources in Florida and continuing devolution Extension programs can always be affected by changing public and governmental priorities. These can include appropriations.

Natural and national disasters can also affect the number of volunteers available to work with youth. Florida is a state located in the tropics. Natural disasters such as tropical storms and hurricanes are common annual occurrences in this state. Severe weather conditions such as droughts frequently led to large-scale fires. We also have other weather extremes such as floods leading to large scale damage especially along the coastal regions. All of these can have a direct and indirect impact on Extension programs.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

The Florida land-grant colleges (both UF and FAMU) understand the value of evaluation in our annual program plan. Methods of evaluation are included as part of the annual faculty activity plan of work and report of accomplishment process (Workload) including the use of program reviews. This information is collected as part of the logic model used in our Florida system and will be available for the NIFA reports of accomplishment on a yearly basis.

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Strengthening urban and rural community resources and economic development

2. Brief summary about Planned Program

Healthy communities are developed by increasing knowledge and changing behaviors related to the following areas:

- Growth management and land use policy
- Citizen engagement to build active communities
- Economic development
- Leadership development
- Water and Energy resource efficiency

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
608	Community Resource Planning and Development	20%	20%	0%	0%
610	Domestic Policy Analysis	20%	5%	0%	0%
723	Hazards to Human Health and Safety	10%	10%	0%	0%
724	Healthy Lifestyle	5%	10%	0%	0%
802	Human Development and Family Well-Being	10%	10%	0%	0%
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	10%	10%	0%	0%
805	Community Institutions, Health, and Social Services	5%	5%	0%	0%
806	Youth Development	5%	10%	0%	0%
902	Administration of Projects and Programs	5%	5%	0%	0%
903	Communication, Education, and Information Delivery	10%	15%	0%	0%
	Total	100%	100%	0%	0%

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

1. Situation and priorities

Situation Statement

There are hundreds of municipalities in Florida, ranging from Islandia with 5 residents to the Greater Miami area with well over one million. Each Florida community has its own history and special flavor, as well as plans and hopes. The citizens of any community have the goal of working together to improve the quality of their lives and increase their opportunities.

For communities to grow, they must have the active interest and involvement of citizens in the form of a rich civic life. In this way, citizens come together to discuss and debate the needs and directions for their community. Then, once the decisions are made, citizens must come together to make and execute their plans. Another requirement for growth and opportunity is a robust economy. In Florida, a significant basis for such an economy is the natural environment, in terms of natural resources and natural beauty. Together, these account for much of Florida's overall economy in the forms of tourism, industry, recreation and agriculture. Most communities in Florida are looking to one or more of these areas as sources of economic growth.

As much as citizens and leaders might desire to have vibrant, cooperative communities, the skills needed to achieve this must be learned. Communities need guidance and expertise. They need support and

information.

Hanging over all plans and achievements, however, is the possibility of disaster. In the last ten years or so, Florida has sustained major natural disasters, including devastating hurricanes and drought. These disasters have challenged --- and in one case, leveled --- communities. A hurricane or tornado can cause irreparable damage to a community, and a severe drought can change the economic welfare of an entire region.

The past two years have made all Floridians aware of other threats to the stability of our communities. Every community must now have some response ready in case of an intentional attack. These attacks can take many forms, including bombings and the introduction of disease agents.

Central to the life of our communities are the lives of their citizens, and that means working for their safety in the everyday hazards they face in their homes and workplaces. Florida's natural environment and large agricultural sector expose Florida citizens to a wide range of personal hazards or the possibility of creating hazards for others. As concerned as we are about large-scale emergencies, Floridians are much more likely to face death or injury through equipment or situations they encounter everyday.

Whatever our communities are confronted with, Extension must be ready to play its role. Through its reputation for community involvement and quality information, Extension has special capabilities that can assist communities in valuable ways during good times and bad.

2. Scope of the Program

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

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

1. Assumptions made for the Program

People will be motivated by workshops and other educational activities to learn/change related to community issues.
Changes suggested in activities related to this program will improve quality of life for participants

2. Ultimate goal(s) of this Program

Improve delivery of Extension programs
Florida citizens participate more fully and effectively in the decision making that affect their communities
Improve procedures and techniques to resolve conflict
Improve competencies of Extension faculty from in-service training
Improved procedures and techniques to retain and expand businesses
Improved business environment

improved business management practices

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
2015	7.0	2.0	0.0	0.0
2016	7.4	2.0	0.0	0.0
2017	7.0	2.0	0.0	0.0
2018	7.0	2.0	0.0	0.0
2019	7.0	2.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

- •Conduct workshops and meetings
- •Deliver services
- •Develop products, curriculum, resources
- •Provide training
- •provide counseling
- •Make assessments
- •work with the media
- •develop partnerships

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

Extension

Direct Methods	Indirect Methods
● Education Class	● Public Service Announcement
● Workshop	● Newsletters
● Group Discussion	● TV Media Programs
● One-on-One Intervention	● Web sites other than eXtension
● Demonstrations	● Other 1 (radio)
● Other 1 (telephone calls)	

3. Description of targeted audience

Planners/Zoning officials
General public

Citizen committees

Elected officials

Regional Planning Councils

Local government

Technical users such as developers/builders/landowners/engineers

Florida Association of Counties

Extension faculty

League of Cities

State Legislators

Post-secondary Students

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

☐ 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	Change in Knowledge Growth Management and Land Use Policy
2	Change in Behavior Growth Management and Land Use Policy
3	Change in Condition Growth Management and Land Use Policy
4	Change in Knowledge Civic Engagement, Leadership, and Community Development
5	Change in Behavior Civic Engagement, Leadership, and Community Development
6	Change in Condition Civic Engagement, Leadership, and Community Development
7	Change in Knowledge Economic Development
8	Change in Behavior Economic Development
9	Change in Condition Economic Development

Outcome # 1

1. Outcome Target

Change in Knowledge Growth Management and Land Use Policy

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 2

1. Outcome Target

Change in Behavior Growth Management and Land Use Policy

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 3

1. Outcome Target

Change in Condition Growth Management and Land Use Policy

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 4

1. Outcome Target

Change in Knowledge Civic Engagement, Leadership, and Community Development

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development
- 805 - Community Institutions, Health, and Social Services

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 5

1. Outcome Target

Change in Behavior Civic Engagement, Leadership, and Community Development

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development
- 805 - Community Institutions, Health, and Social Services

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 6

1. Outcome Target

Change in Condition Civic Engagement, Leadership, and Community Development

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development
- 805 - Community Institutions, Health, and Social Services

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 7

1. Outcome Target

Change in Knowledge Economic Development

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 8

1. Outcome Target

Change in Behavior Economic Development

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 9

1. Outcome Target

Change in Condition Economic Development

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development

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

Description

Florida is a state located in the tropics.Natural disasters such as tropical storms and hurricanes are common annual occurrences in this state.Severe weather conditions such as droughts frequently led to large-scale fires.We also have other weather extremes such as floods leading to large scale damage especially along the coastal regions.All of these can have serious effects on Florida communities.

Changing government regulations and population changes can impact outcomes of Extension programs.For example the increased urban building in rural counties is impacting population changes that are causing new challenges that may require different programming priorities. Communities are

also
usceptible to changes in the economy which can change and increase competing public priorities. Changes in state, county and federal appropriations can also affect the outcomes of Extension programs in the area of healthy communities.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

The Florida land-grant colleges (both UF and FAMU) understand the value of evaluation in our annual program plan. Methods of evaluation are included as part of the annual faculty activity plan of work and report of accomplishment process (Workload).This information is collected as part of the logic model used in our Florida system and will be available for the NIFA reports of accomplishment on a yearly basis.

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Preparing youth to be responsible citizens and productive members of the workforce

2. Brief summary about Planned Program

Preparing youth to be responsible citizens and productive members of the workforce

Priority 1: Youth Development

Today's youth are tomorrow's citizens, consumers, parents, and leaders. Florida Extension's 4H Youth

Development Program offers ageappropriate, learnbydoing educational opportunities that complement K-12 education to develop knowledge, life skills, and leadership abilities in Florida's youth. These qualities empower youth to positively influence their communities and become contributing members of society.

Community members, leaders, and local officials are very concerned about opportunities for youth in their communities. Florida Extension 4H programs must continue to work to supplement formal education, enhance life skills development, and prepare youth for tomorrow's workforce. Participation in 4H clubs provides the positive, supportive environment youth need to succeed. School enrichment, day and residential camps, and other types of programs introduce youth to longerterm learning experiences. Through participation in 4H clubs and other educational activities, efforts will focus on meeting the highest priority educational needs: helping youth develop science, technology, engineering, and math (STEM) literacy; helping youth develop an interest in learning that will equip them to succeed in a rapidly changing society and global economy; teaching youth responsibility, developing their ability to become leaders, and engaging them in their communities; helping youth develop healthy lifestyles; and encouraging youth to get outdoors to appreciate nature, agriculture, and natural resources.

Priority 2: Developing organizational and volunteer systems to support youth development

Research shows that the continuous presence of caring adults is critical to achieving positive youth development. With limited faculty and staff, volunteers can assist in reaching more youth. Florida 4-H is committed to developing youth and adult volunteers, valuing inclusiveness, and increasing the diversity of program participants. Florida Extension will provide training needed for volunteers to serve youth and their communities. In addition, Florida Extension will work to provide the support needed for volunteerled organizations to be effective in helping the 4H Youth Development Program meet its mission and goals. As an integral part of the landgrant mission, the 4-H program is relevant to diverse youth, achieves positive youth development, and, in the process, also provides opportunities for adults to develop their own leadership and workforce skills. Because 4-H is the youth development program of the Florida Cooperative Extension Service, UF and FAMU Extension faculty and staff will contribute their expertise to 4H to achieve Extension's youth development goals.

3. Program existence : New (One year or less)

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 : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
806	Youth Development	100%	100%	0%	
	Total	100%	100%	0%	

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

1. Situation and priorities

Operations for youth that supplement formal education, enhance life skills development, and prepare youth for tomorrow's workforce have been assessed as priorities in Extension 4-H Youth Development Programming. Studies have found that youth who participate in 4-H are less likely to engage in at-risk behaviors (such as smoking, drinking, bullying, etc), contribute more to their family and community, and state they are more likely to attend college (Lerner et al, 2012). All these factors lead to productive, well-adjusted citizens prepared for the workforce. By introducing youth to school enrichment, day and residential camps, and other types of programs in 4-H, youth are more likely to become engaged and join 4-H clubs. Through participation in 4-H clubs and other educational activities, efforts focus on meeting the highest priority needs: helping youth develop science, technology, engineering and math (STEM) literacy: helping youth develop an interest in learning that will equip them to succeed in a rapidly changing society and global economy; teaching youth responsibility, developing their ability to become leaders, and engaging them in their communities; helping youth develop healthy lifestyles ; and encouraging youth to get outdoors to appreciate nature, agriculture, and natural resources.

The Florida Youth Development Program relies on trained faculty, staff and volunteers to provide positive youth development experiences. These experiences include direct mentoring and education of youth, as well as the coordination and management of events and activities. Research has shown that in addition to formal education, youth need multiple non-formal educational experiences to develop critical life skills such as decision-making, responsible, interpersonal skills, a service ethic, and social skills (Boyd, Herring and Briers, 1992; Cantrell-Jordan, Heinsohn, & Doebler, 1989; Seevers & Dormody, 1994). Youth who participated in the 4-H youth development program have greater levels of contributions to their communities; school engagement,; participation and interest in science, engineering, and technology; and healthier habits than youth involved in any other out-of school time activities or none at all (Lerner et al, 2012).

Nationwide, more than one-third of volunteers that provided service in one year did not donate any time to a charitable cause the following year. A national volunteer study concluded that fewer than half of nonprofits that rely on volunteers have adopted best practices for volunteer management. Eisner, Grimm, Maynard, and Washburn (2009) found that organizations that rely on volunteers to accomplish their mission have invested considerable financial resources to train, lead and support volunteers. Financial investments by organizations to support volunteers include facilities, technology, utilities, and other

infrastructures, faculty/staff salaries and benefits, insurance, and training supplies.

The 4-H Youth Development Program provides a significant opportunity for youth to excel socially and academically. With limited faculty and staff, volunteers can assist in reaching more youth. In Florida trained volunteers provide 4-H experiences for youth. Successful engaging and retaining volunteers requires a systemic approach. A systematic approach includes:

- Identifying opportunities for volunteer involvement in county 4-H programs
- Recruiting the right volunteer for the right role
- Orienting and training volunteers for success in 4-H
- Supporting volunteers in their respective roles
- Evaluating volunteers and the volunteer program (Boyce, 1971; Bussell & Forbes, 2003; Culp, Deppe, Castillo, & wells, 1998)

2. Scope of the Program

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

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

1. Assumptions made for the Program

Youth will be motivated by workshops, projects and other educational activities to learn/change
Volunteers will learn to provide effective and efficient guidance to youth
Changes suggested in activities related to this program will increase knowledge and experience for Florida youth involved in 4-H and other land-grant college activities.

2. Ultimate goal(s) of this Program

Short- term Goals

- **Gain knowledge and develop competencies in science, technology, engineering, and math (STEM), healthy lifestyles, citizenship and leadership**
- **Develop workforce readiness (life) skills that will prepare youth to make positive choices and communicate effectively; responsibility, critical thinking, teamwork, problem solving, goal setting and working cooperatively with diverse co-workers.**
- **Foster an interest in learning**
- **Youth and adult volunteers will increase their knowledge and skill on how to intentionally and appropriately apply the principles and best practices that result in positive development of youth**
- **As a result of their experiences with the 4-H youth Development Program 4-H volunteers will indicate a positive attitude about continuing to partner with youth for program delivery**
- **4-H volunteers will value diversity, be accepting of differences, and inclusive of underrepresented audiences**

Medium- term Goals

- **Youth will make positive choices by demonstrating responsibility, critical thinking skills, financial literacy, goal setting/achievement teamwork**
- **Youth will effectively communicate**
- **Youth will apply content knowledge (mastery) in science, technology, engineering, and math (STEM), healthy lifestyles, and citizenship/leadership**
- **4-H club volunteer leaders and 4-H chaperones will intentionally and appropriately apply the principles and best practices that result in positive development of youth by creating a sense of belonging in a safe and supportive environment as evidenced by annually surveying youth perceptions of 4-H club leaders and chaperones.**
- **4-H volunteers will follow appropriate policies, procedures and safety guidelines as demonstrated by utilization of proper risk management practices, successfully completing and submitting all county and state required documentation on time.**
- **4-H volunteers in leadership roles will work cooperatively and engage positively in the decision-making processes that affect the 4-H youth development program as measured by a survey of volunteers and youth in leadership roles, observations or surveys of effectiveness of meetings, achievement of program goals, etc.**
- **4-H volunteers will work cooperatively with Extension faculty/staff to achieve a diverse county 4-H Youth Development Program that is inclusive of underrepresented audiences.**

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
2015	60.0	3.0	0.0	0.0
2016	90.0	3.0	0.0	0.0
2017	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Life skills developed in youth through subject matter experience

1.Youth participate in at least 6 hours of learning 4-H subject matter during the year through 4-H club projects, classroom, afterschool or camping experiences.

2. 4-H Youth participate in beyond Club/ Classroom Experiences such as residential camp, leadership trainings, workshops and experiences, day camps, and structured educational events / activities.

Additional educational methods include: camp counselor training, judging/exhibit workshops, training clinics, youth leadership council, demonstration/project portfolio workshops, recognition programs,

community service projects, and county fair experiences.

Organizational strategies and learning environment for youth programs

4-H Clubs:

1. Training volunteers on elements that contribute to club charter, risk management, affirmative action compliance, quality programming, fiscal management, etc.

2. Quality management of chartering process

3. Training clubs to demonstrate excellent in recognition standards, marketing, and community service.

4-H In the Classroom

1. Classroom teachers and/or volunteers are trained and receive curriculum and training to teach students in subject matter area.

2. Students learn 4-H subject matter area during the school year.

3. 4-H marketing materials on subject matter areas & other delivery systems are created and distributed to teachers and students.

4-H Residential / Day Camping

1. Camp committees plan, implement, and evaluate quality camp experiences focused on subject matter and life skill development.

2. Teens will actively participate in and complete 24 hours of Camp Counselor training

3. Subject matter presentations will be delivered/experienced at residential and day camps.

Advisory Committees

1. Community networking for membership. Needs assessment. Handbook development, training in youth program organization.

2. Training of committee members throughout the year. Follow-up and support for members with focused responsibilities.

Expansion and Review Committee

1. Utilize personal and ethnic marketing strategies to reach underserved audiences.

2. Committee training for member which outlines the function of the committee.

3. Agent training to assist agents in developing this committee.

Volunteer Development

- Written position description will be completed.

-Workshops and activities will be completed related to child protection

-Orientation and training workshops and seminars will cover topics in youth development, organizational culture and strategies, recognition, youth project study areas, access & equity, youth program development, and partnerhsips

- Field and office consultations will be planned for volunteers with expanded roles.

-Project training workshops/seminars will be held.

-Volunteers will be sustained, supported, and recognized for their work.

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

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations ● Other 1 (telephone calls)	● Public Service Announcement ● Newsletters ● TV Media Programs ● Web sites other than eXtension ● Other 1 (radio)

3. Description of targeted audience

Youth ages 5-18 enrolled in Florida 4-H programs
Adult and youth volunteers in the 4-H program
Florida families with youth enrolled in the 4-H program between the ages of 5 and 18
-Parents and grandparents of youth ages 5-18 in the 4-H program

-Teens (14-18) in the 4-H program

-Adults interested in engaging in positive youth development

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

☐ 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	Change in Knowledge Life Skills Developed in Youth Through Subject Matter Experiences
2	Change in Behavior Life Skills Developed in Youth Through Subject Matter Experiences
3	Change in Condition Life Skills Developed in Youth Through Subject Matter Experiences
4	Change in Knowledge Organizational Strategies and Learning Environments for Youth Programs
5	Change in Behavior Organizational Strategies and Learning Environments for Youth Programs
6	Change in Condition Organizational Strategies and Learning Environments for Youth Programs
7	Change in Knowledge Volunteer Development and Systems to Support Youth
8	Change in Behavior Volunteer Development and Systems to Support Youth
9	Change in Condition Volunteer Development and Systems to Support Youth

Outcome # 1

1. Outcome Target

Change in Knowledge Life Skills Developed in Youth Through Subject Matter Experiences

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 2

1. Outcome Target

Change in Behavior Life Skills Developed in Youth Through Subject Matter Experiences

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 3

1. Outcome Target

Change in Condition Life Skills Developed in Youth Through Subject Matter Experiences

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 4

1. Outcome Target

Change in Knowledge Organizational Strategies and Learning Environments for Youth Programs

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 5

1. Outcome Target

Change in Behavior Organizational Strategies and Learning Environments for Youth Programs

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 6

1. Outcome Target

Change in Condition Organizational Strategies and Learning Environments for Youth Programs

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 7

1. Outcome Target

Change in Knowledge Volunteer Development and Systems to Support Youth

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 8

1. Outcome Target

Change in Behavior Volunteer Development and Systems to Support Youth

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 9

1. Outcome Target

Change in Condition Volunteer Development and Systems to Support Youth

2. Outcome Type : Change in Condition Outcome Measure

3. Associated Knowledge Area(s)

- 806 - Youth Development

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

Description

Florida is still being heavily impacted by the economic situation. Higher Education in Florida has lost more than 50% of state funding and has been impacted by other losses caused indirectly by the economic down turn. Issues related to Medicaid are also expected to impact us heavily. Changes in state, county and federal appropriations can also affect the outcomes related to youth. Because of limited resources in Florida and continuing devolution youth programs can always be affected by changing public and governmental priorities. These can include appropriations. Natural and national disasters can also affect the number of volunteers available to work with youth.

Florida is a state located in the tropics. Natural disasters such as tropical storms and hurricanes are common annual occurrences in this state. Severe weather conditions such as droughts frequently led to large-scale fires. We also have other weather extremes such as floods leading to large scale damage especially along the coastal regions. All of these can have a direct and indirect impact on youth programs.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

The Florida land-grant colleges (both UF and FAMU) understand the value of evaluation in our annual program plan. Methods of evaluation are included as part of the annual faculty activity plan of work and report of accomplishment process (Workload) including the used of formal program reviews.This information is collected as part of the logic model used in our Florida system and will be available for the NIFA reports of accomplishment on a yearly basis.

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Natural Resources and the Environment--1862 & 1890 research

2. Brief summary about Planned Program

This planned program includes research in the areas of the following:

- Soil including soil, plant and water nutritients, the management of saline, sodic soils and salinity and protecting soil from harmful effects of the elements
- Water inlcuding conservation, water usage and watershed protection
- Forest and Range Resources includes managemtn of ranges resources and the control of forest and range fires, urban forestry and agroforestry
- Natural resources includes alternative land uses, weather and climate, polution, outdoor recreation aquatic and terrestrial wildlife and conservationof biological diversity
- Air which includes air resource protection and management

1890 Research (Preserving Water Quality of North Florida Watersheds)

The Center for Water and Air Quality strives to promote stewardship information for managing, protecting and conserving water resources through education, research and outreach activities; to reduce air quality issues and to serve as a resource for providing solutions for emerging and current water and air quality problems in Florida and globally. Watersheds in the US are confronted with several problems addressing both quality and quantity of the nation's water supply. These include degradation from land use practices, nutrient loading of surface water bodies, impairment of ground and surface water due to leaching and runoff of fertilizers and other chemicals used in agriculture, landscaping and home gardening activities and impacts of climate change which may result in periods of drought or flood conditions.

Some of these problems are caused by human activities often through neglect or lack of knowledge. These problems are not only costly to solve but may have socioeconomic implications such as adverse effects on human and animal health and wellbeing, loss of agricultural productivity and reduction in ecological biodiversity and sustainability of the natural resource base. Examples of these problems include nonpoint source pollution of the State's groundwater system from agricultural activities carried out in Georgia. Another problem is impairment of the Apalachicola River Basin (in north Florida) due to diminishing in-stream flow, resulting from rapid urban growth in its headwaters area. Understanding the occurrence of these problems will enable us to develop and implement strategies for their prevention and or control. Activities to be carried out for the management and prevention include on - farm and on-station research, monitoring of water bodies, streams, rivers, characterization of riverine aquatic fauna, dynamics of aquatic ecosystems and impairment of soil and water quality by soil erosion and leaching due to land use and management practices. Results of the research will provide valuable information which farmers, students, extension agents, policy makers and other stakeholders may use to reduce problems of water quality and quantity in respective watersheds.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	0%	0%	5%	0%
102	Soil, Plant, Water, Nutrient Relationships	0%	0%	5%	20%
103	Management of Saline and Sodic Soils and Salinity	0%	0%	5%	0%
104	Protect Soil from Harmful Effects of Natural Elements	0%	0%	5%	0%
111	Conservation and Efficient Use of Water	0%	0%	5%	20%
112	Watershed Protection and Management	0%	0%	5%	15%
121	Management of Range Resources	0%	0%	5%	0%
122	Management and Control of Forest and Range Fires	0%	0%	5%	0%
123	Management and Sustainability of Forest Resources	0%	0%	5%	0%
124	Urban Forestry	0%	0%	5%	0%
125	Agroforestry	0%	0%	5%	0%
131	Alternative Uses of Land	0%	0%	5%	0%
132	Weather and Climate	0%	0%	15%	0%
133	Pollution Prevention and Mitigation	0%	0%	5%	20%
134	Outdoor Recreation	0%	0%	5%	0%
135	Aquatic and Terrestrial Wildlife	0%	0%	5%	10%
136	Conservation of Biological Diversity	0%	0%	5%	15%
141	Air Resource Protection and Management	0%	0%	5%	0%
	Total	0%	0%	100%	100%

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

1. Situation and priorities

Florida population growth and associated pressure on land, water, and natural resources of Florida in order to sustain the natural systems pose difficult choices. Research in the area of natural resources and environment addresses the use of soil, water, forest and range resources and air and helps to provide factual information and direction. These projects can range from aquatic life to the conservation and efficent use of water within the environment. Some research areas of interst include:

Natural Resources and the environment

Florida's population growth and associated pressures on land, water, and natural systems pose difficult policy choices for public officials. Environmental and resource problems and policies affect agricuture and Florida's rural communities. The need for research increase both at FAMU and UF as the competition between agricultural and non-agricultural users of land and water intensifies. These conflicting issues are clearly part of the management challenge in commercial agriculture.

Soil, Plant, water and nutrient relationships

Both Pb and arsenic contamination in soils and groundwater has been a concern for the public due to the extensive contamination and toxcity of humans. Some studies in this area were conducted to determine the feasiblity of using chemical (P-induced PB immobilization) and biolotgical (plant-based phytoextraction) methods in cleaning up metal contaminants in soils and ground water.

Forestry

Agrocosystems, especially small-scale production systems in the Southeastern United States, are challenged as never before with natural resource management problems. According to USDA Census of Agriculture (2002), 88 percent of farms in Florida are considered small farms (annual sales less than $250,000) and in 2013 it is noted these numbers continue to grow. Well over 80% are individually or family owned however they constitute less than 60% of total agriculture income in the state. Similarly, out of the 6.6 million hectares (16.3 million acres) of forestlands in Florida, 52% are non-industrial private lands. Clearly, small farms and timber operations are significant drivers of the state's economy. These small-scale operations are under increasing pressurs--if not threats--caused by various changes. The incrasing impact of rapidly urbanizing landscape on the wildland-urban interface creates significant changes in the ecosystem, characteristics such as increased fire danger, changes in water drainage patterns leading to soil erosion and flooding and fragmentation of the wildlife habitat. Agricultural non-point source of pollution is a significant cause of streams and lake contamination and prevents attainment of water quality goals in the Clean Water Act. The problem of phosphorus (P) loss from soil is a major concern in fertilied agricultural and forestry enterprises, particularly in coase textured, poorly drained soils of the southeast, where drainage water ultimatly mixes with surface water. The potential for P loss from fertilized pastures resulting in water quality degradation is a particulary serious issue which scientist and researchers have been working on. Based on this researchers are looking at best management practices that can lead to economical and ecological sustainability.

1890 Research (Preserving Water Quality of North Florida Watersheds)

Leaching and erosion sedimentation are the two major factors contributing to the impairment of water resources on a global scale. In addition to the above characteristics, many of the soils in Florida have a karst topography and low water holding capacity necessitating a high amount of irrigation for meaningful production agriculture. These characteristics contribute to the high vulnerability of the states aquifer systems which provide the drinking and domestic water supply for ninety percent of the population. The Apalachicola River Basin, a major watershed in northwest Florida (approximately 9,000 square miles) is a significant contributor to the states water resource. The region predominantly comprises of upland forests and farmland and several fresh water streams in the area; however most of the irrigation water is withdrawn from the low lying Florida Aquifer. The soils in the watershed are mostly sandy loam with little organic matter; coupled with agricultural practices allows for leaching of fertilizers and other chemicals into groundwater systems and erosion of soil sediments into streams, lakes, rivers and other surface water bodies. Changing climatic conditions, rapid urban growth and land-use patterns directly impact water quality in the basin. To sustain environmental resources and preserve water quality, it is imperative that the negative effects of the above problems must be significantly reduced or eliminated. Thus there is a need to generate quality field data, develop prediction models to enhance efficient soil, water and nutrient

management, and overall develop and implement techniques and strategies for such realization.

2. Scope of the Program

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

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

1. Assumptions made for the Program

- Improvements provided by these research projects will improve the quality of life for Florida residents
- Improvements provided by these research projects with improve and sustain the environment
- Information provided by these research projects will improve the economic well-being of Florida residents

1890 Research (Preserving Water Quality of North Florida Watersheds)

It is assumed that results from the studies to be carried out under this program will improve soil and water quality enhance conservation practices, reduce nutrient loss, preserve biodiversity and provide better management practices for agricultural landscapes.

2. Ultimate goal(s) of this Program

- Improved methods for appraisal of soil resources
- Improved soil, water and nutrient relationships
- Improved managment of saline and sodic soils and acceptable salinity levels in the soil
- Increased protection of soil from harmful effects of natural elements
- Improved conservation and efficient use of water
- Increased watershed protection and management
- Improved methods for managing range resources
- Improved management and control of forest and range fires
- Improved management and sustainability of forest resources
- Improve urban forestry
- Improved Florida agoforestry
- Identify alternative uses of land
- Increased knowledge related to weather and climate
- Improved pollution prevention techniques and mitigation
- Improved conservation of biological diversity
- Improved methods of protecting aquatic and terrestrial wildlife environment
- Increase air resourc protection and managment

1890 Research (Preserving Water Quality of North Florida Watersheds)

The ultimate goal of the program is to conduct a comprehensive watershed study of the Apalachicola River that would assist in developing better soil and water management practices for agricultural

landscapes within the basin.

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
2015	0.0	0.0	20.0	5.0
2016	0.0	0.0	25.0	5.0
2017	0.0	0.0	25.0	5.0
2018	0.0	0.0	25.0	5.0
2019	0.0	0.0	25.0	5.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Conduct research experiments
- Construct research facilities
- Develop products, curriculum and best management practices
- Partnering

1890 Research (Preserving Water Quality of North Florida Watersheds)

The activities in the planned program include: Selection of suitable study site/s representing typical soil type, cropping system and management; Collection of field data on soil erosion and nutrient loss; Collection of existing land-use data; in-stream monitoring and sampling, hydrological and nutrient modeling, and recording of aquatic biota information**.**

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

Extension

Direct Methods	Indirect Methods
● Workshop ● One-on-One Intervention	● Newsletters ● Web sites other than eXtension

3. Description of targeted audience

- Agricultural Producers/growers
- Florida residents/ Stakholders
- Ag industry
- Small farmers

1890 Research (Preserving Water Quality of North Florida Watersheds)

The target audience for the planned program include: extension personnel, environmental personnel and local, state and federal agencies, crop producers in the Apalachicola River Basin, and small and limited resource 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

☐ 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	Improve methods for appraisal of soil resources
2	Improve soil, water and nutrient relationships
3	Improve the management of saline and sodic soils and salinity
4	Increase protection of soil from harmful effect of natural elements
5	Improve conservation and efficient use of water
6	Increase watershed protection and management
7	Improve methods for managing range resources
8	Improve management and control of forest and range fires
9	Improve management and sustainability of forest resources
10	improve urban forestry
11	improve Florida agroforestry
12	Identify alternative uses of land
13	Increase knowlege related to weather and climate
14	Improve pollution prevention techniques and mitigation
15	Improve methods of protecting aquatic and terrestrial wildlife environment
16	Improve conservation of biological diversity
17	Increase air resource protection and management

Outcome # 1

1. Outcome Target

Improve methods for appraisal of soil resources

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 2

1. Outcome Target

Improve soil, water and nutrient relationships

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 3

1. Outcome Target

Improve the management of saline and sodic soils and salinity

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 4

1. Outcome Target

Increase protection of soil from harmful effect of natural elements

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 5

1. Outcome Target

Improve conservation and efficient use of water

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 6

1. Outcome Target

Increase watershed protection and management

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 7

1. Outcome Target

Improve methods for managing range resources

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 121 - Management of Range Resources

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 8

1. Outcome Target

Improve management and control of forest and range fires

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 122 - Management and Control of Forest and Range Fires

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 9

1. Outcome Target

Improve management and sustainability of forest resources

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 123 - Management and Sustainability of Forest Resources

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 10

1. Outcome Target

improve urban forestry

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 124 - Urban Forestry

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 11

1. Outcome Target

improve Florida agroforestry

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 125 - Agroforestry

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 12

1. Outcome Target

Identify alternative uses of land

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 131 - Alternative Uses of Land

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 13

1. Outcome Target

Increase knowlege related to weather and climate

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 132 - Weather and Climate

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 14

1. Outcome Target

Improve pollution prevention techniques and mitigation

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 133 - Pollution Prevention and Mitigation

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 15

1. Outcome Target

Improve methods of protecting aquatic and terrestrial wildlife environment

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 135 - Aquatic and Terrestrial Wildlife

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 16

1. Outcome Target

Improve conservation of biological diversity

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 136 - Conservation of Biological Diversity

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 17

1. Outcome Target

Increase air resource protection and management

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 141 - Air Resource Protection and Management

4. Associated Institute Type(s)

- 1862 Research
- 1890 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

Florida is a state located in the tropics. Natural disasters such as tropical storms and hurricanes are common annual occurrences in this state. Severe weather conditions such as droughts frequently lead to large-scale fires. Florida also has other weather extremes such as floods leading to large scale damage especially along coastal regions and rivers that can impact Natural resource and environmental research studies.

1890 Research (Preserving Water Quality of North Florida Watersheds)

The majority of the activities will be carried out in the field and as such will be subjected to possible weather extremes. External factors such as continued access to the study sites, management practices, changing may affect the outcomes.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Florida IFAS/FAMU research understands the importance of evaluating projects to provide scientifically accurate information and recommendations. Accepted research guidelines and procedures are followed.

The major trends in statistics are in Bayesian statistical methods, methods for large datasets and computationally intensive analyses, spatial-temporal modeling, statistical genetics and modeling of non-standard data.

Core Programs of the Future

- Computationally intensive methods
- Analysis or mining of massive datasets
- Statistical genetics
- Spatial-temporal modeling
- Multivariate analysis
- Bioinformatics
- Generalized linear mixed models
- Bayesian statistics
- Semi-parametric methods
- Model diagnostics
- Stochastic processes and models
- Nonlinear modeling

1890 Research (Preserving Water Quality of North Florida Watersheds)

The planned program will be evaluated on an annual basis during the project period and then at the end of the program. The evaluation milestones will include: completion of maps showing changes in land-use patterns in the Apalachicola River Basin; Collection of field data on soil erosion and nutrients; Collection and analysis of surface water (river) samples and collection and characterization of aquatic fauna and finally publication of research results.

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

Plants and their systems--1862 & 1890 research

2. Brief summary about Planned Program

•Biological Control of pests affecting plants
•Agronomy •Water management and plant nutrition
•Biotechnology, plant breeding and new crop development
•plant production management
•Horticulture
•Plant product quality

1890 Research (Small Farm Production, Marketing and Rural Economic Development)
FAMU will develop basic information on the growth and development of crops through appropriate research addressing issues of small-scale, limited resource farm operations. Specific areas of focus include:
Protective Structures - focus on evaluating small-scale farm productivity and profitability by creatng alternatve production management sytems for fruits and vegetables wih protected structures for season extension and year round production.
Plant Production Management - source of sound research-based information made available to the professional horticultural industry, the scientific community, consumers and students.
Horticulture - solving immediate technical problems facing fruit and vegetable industries including developing new information, materials and techniques to increase effciency in production, harvest and post-harvest handling.
(Viticulture and Small Fruit Research)

The Viticulture and Small Fruit Program was established by Florida State Legislature in 1978 under the Viticulture Policy Act (Section 599.001-599.0013, Florida Statute) in the College of Agriculture and Food Sciences at Florida A&M University. The primary mission of the Center was to conduct research and provide service that will enable the Florida grape and wine industry to become a viable industry. This mission was later expanded to include serving the needs of small and limited resource farmers in North Florida. The program was initially house on the campus of Florida A&M University but later moved to its present location on Mahan Drive in 2001. Currently, the program covers the following areas:

- Grape breeding and genetics
- Vineyard management and cultural practices
- Biotechnology
- Small fruit development and evaluation
- Extension and outreach, and public service
- Graduate student training

The Center will continue to focus on biotechnology and genetic enhancement of such traits that will lead to further development of Florida grapes (muscadine and Florida hybrid bunch grapes) with superior

characteristics for fresh fruit, wine and value-added products and phytochemicals from grapes. Biochemical and molecular markers/agents that will enhance disease resistance/tolerance for major diseases, vineyard management practices that will increase production efficiency and fruit quality for grapes and small fruits will be evaluated. Greater linkage and coordination with extension will be sought in order to enhance public outreach. The viticulture faculty will also continue to make graduate student training a major component of their research programs by providing financial and scholarly support to them.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	0%	0%	5%	0%
201	Plant Genome, Genetics, and Genetic Mechanisms	0%	0%	10%	20%
202	Plant Genetic Resources	0%	0%	5%	0%
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	0%	0%	5%	5%
204	Plant Product Quality and Utility (Preharvest)	0%	0%	10%	10%
205	Plant Management Systems	0%	0%	10%	10%
206	Basic Plant Biology	0%	0%	5%	5%
211	Insects, Mites, and Other Arthropods Affecting Plants	0%	0%	10%	5%
212	Pathogens and Nematodes Affecting Plants	0%	0%	10%	5%
213	Weeds Affecting Plants	0%	0%	10%	5%
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	0%	0%	5%	5%
215	Biological Control of Pests Affecting Plants	0%	0%	10%	5%
216	Integrated Pest Management Systems	0%	0%	5%	10%
701	Nutrient Composition of Food	0%	0%	0%	5%
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	0%	0%	0%	5%
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	0%	0%	0%	5%
	Total	0%	0%	100%	100%

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

1. Situation and priorities

Plants and their systems include research in the areas of plant production and plant protection.Without plant life there could
be no agriculture, and the systematic production and utilization of a major group of plants - a keystone of agriculture. Florida

IFAS and FAMU research is responsible for investigating and reporting finds necessary to ensure that this keystone remains strong,

dynamic, relevant and intact. The size and diversity of the domestic industry and the world-wide

importance of fruits and

vegetables in human nutrition and economic development related to plants in landscape emphasize the need for
consolidation of resources to accomplish this purpose.Some areas of research that are included and use Hatch funds are:

Biological Control of Pests Affecting Plants

The use of plant pathogens as bioherbicides has been a feasible method of weed control in several cases. Two registered
bioherbicides, Collego and DeVine, are sold in the United States. Development and use of bioherbicides can help to diversify
weed control options, supplement chemical herbicides, and provide an alternative to methyl bromide. Several projects study
the development of several bioherbicide agents shown to be effective in small-scale and noncommercial trials.

Agronomy

The main aim of Agronomy research in Florida is to discover, develop, evaluate and disseminate knowledge and
information necessary to support the agronomic-related industries of the State and nation, and to promote and enhance the
production and utilization of agronomic commodities and the management of pest plant species for the benefit of society.

Water Management and Plant Nutrition - Research in this area is identifying, developing and disseminating environmentally and economically sound technolo-gies that will increase production and utilization efficiencies
as well as protect or improve environmental quality. Research is providing significant results leading to water conservation
in nurseries, land-scapes and on golf courses. New research is addressing the water and fertilizer requirements of turf-grasses
and landscape plants.

Biotechnology, Plant Breeding and New Crop Develop-ment - Through research IFAS scientists are striving to develop
horticultural characteristics, disease and host/plant resistance through classical genetics and molecular techniques, allowing
the creation of marketable products for consumers. Today, the floral biotechnology program is among the leading programs
nationally and internationally.

Plant Production Management - Through the work of research plant production management is a source of sound
research-based information being made available to the professional horticultural industry, the scientific community and the
consumer/student. These projects are viewed as leading in crop production and physiology information and will set an
example for the industry in environmen-tally safe practices.

Horticulture

In the area of horticulture, research is solving immediate technical problems facing the fruit and vegetable industries. They
are developing new information, materials and techniques to increase the efficiency of production, harvest and post-harvest
handling. Their mission is to develop basic information on the genetics, growth, development and senescence of these crops
through a continuous reservoir of research in breeding and genetics, biotechnology and molecular biology,

biochemistry, and
physiology that is at the forefront of knowledge applicable immediately or in the future.

Plant Product Quality

In this area plants such as strawberry cultivars are being developed that improve quality characteristics. This is especially
important in Florida where strawberries are an important crop.

1890 Research (Small Farm Production, Marketing and Rural Economic Development)

Protective structures focus on evaluating small-scale productivity and profitabiity by creating alternative production management systems for fruits and vegetables with protected structures for season extension and year round production. These have the advantage of maximizing the use of available farmland for crop production. Market sales derived from season extension or year round production add to the farm operation's gross income.

Plant Production Management is a source of sound research-based information made available to the professional horticultural industry, scientific community, consumers and students.

Horticulture research is developing basic information on the growth and development of crops through appropriate research addressing the needs of small-scale, limited resource farm operations.

(Viticulture and Small Fruit Research)

Florida has the 2nd highest wine consuming population in the country and consumed about 57.5 million gallons but produced about 350,000 gallons of wine annually. This situation offers great economic
potential and opportunities for the state to develop a viticulture industry. Because of Pierce's disease caused by the bacterium Xylella fastidiosa, it is not economically feasible to grow the European grapes (Vitis vinifera) such as Merlot, Chardonnay, Syrah, and Cabernet Sauvignon that flourish in California and other major wine growing areas. Only those grape species such as muscadines (Vitis rotundifolia) and Florida hybrid bunch grapes (Subgenus Euvitis) that are tolerant to the disease are able
to thrive in the hot and humid conditions of Florida and the southeastern region. The Florida grapes (muscadines and Florida hybrids) and wines are unique with their own taste, flavor and aroma that are
different from the traditional European grapes. Over the years, breeding and research have resulted in
new cultivars with improved fruit and wine quality that has helped the industry grow. However, inspite of
these improvements, the industry still faces major challenges that need to be addressed to sustain growth
and development. Industry/stakeholder needs to be addressed are as follows:

- Development of muscadine cultivars with superior characteristics - size, improved taste, color and shelf-life for fresh fruit and wine.
- Development of Florida hybrid bunch cultivars for red wine with improved taste color, and shelf-life.
- Enhancement of nutraceutical properties and utilization of value-added products from muscadine grapes.
- Identification of suitable small fruits as alternative crops for small farmers in North Florida.
- Identification of best management practices for grapes and small fruits that will help to improve production efficiency and fruit quality.

2. Scope of the Program

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

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

1. Assumptions made for the Program

Improvements provided by these research projects will improve Plants and their systems
•Improvements provided by these research projects will improve the environment
•Information provided by these research projects will improve the economic well-being of Florida residents

2. Ultimate goal(s) of this Program

•Development and use of bioherbicides can help to diversify weed control options, supplement chemical herbicides, and
provide an alternative to methyl bromide
•Discover, develop, evaluate and disseminate knowledge and information necessary to support the agronomic-related
industries of the State and nation,
•Promote and enhance the production and utilization of agronomic commodities and the management of pest plant species
for the benefit of society.
•Developing and disseminating environmentally and economically sound technolo-gies related to water management and
plant nutrition that will increase production and utilization efficiencies
•Develop horticultural characteristics, disease and host/plant resistance through classical genetics and molecular techniques,
allowing the creation of marketable products for consumers
•Research and develop crop production and physiology information and will set an example for the industry in
environmentally safe practices.
•Research and solve immediate technical problems facing the fruit and vegetable industries including the development of
new information, materials and techniques to increase the efficiency of production, harvest and post-harvest handling
•Develop new food plant cultivars that have improved quality and production characteristics.
In addition to these 1890 Research (Viticulture and Small Fruit Research)

• Increased cultivation of small fruits and vegetables by small and limited resource farmers in North Florida.
• The Center for Viticulture and Small Fruit Research becomes a Center of Excellence for research, extension and student training in warm climate grapes and non-traditional small fruits.

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
2015	0.0	0.0	38.0	7.0
2016	0.0	0.0	38.0	7.0
2017	0.0	0.0	38.0	7.0
2018	0.0	0.0	38.0	7.0
2019	0.0	0.0	38.0	7.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Conduct research experiments
- Partnering

1890 Research

• Conventional breeding, evaluation and selection of hybrid vines for fresh fruit and wine.
• Embryo rescue, molecular, and mutagenic transformation to develop seedless muscadines.

• Identification, isolation, screening, characterization, and validation of genetic markers of viticulturally important genes.
• Identification, isolation, screening and validation of metabolities and proteins relating to growth function, fruit and wine quality, and disease tolerance.
• Stressed induced biochemical and molecular changes in grapes.
• Evaluation and understanding of antioxidant capacities of phytochemicals in grapes.
• Understanding the effects of grape phytochemicals in preventing diseases and obesity.
• Functional expression of flavonoid nutraceuticals in grapes.
• Identification of management practices for grapes and small fruits.
• Evaluation of non-traditional small fruits, including blackberries and raspberries.
• Evaluation, screening and production of 'clean vines' for industry.
Extension and outreach to be conducted:
• Vineyard visits and inspections.
• Workshops, field days, and seminars for grape growers, small farmers, processors and general public.
• Harvest festival for general public.
• Special presentations to high school and middle school students.
• Lab and field tours for farmers, students, public, and government officials.
• Promotional displays to promote program.

Student training and development:
• Graduate student training.
• Undergraduate experiential learning in viticulture and small fruit.
• Student recruitment.

Professional development:

- Faculty will be encouraged to be active in professional associations.
- Conduct quality and innovative research for new discoveries.
- Professional collaboration with research institutions/universities will be encouraged.

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

Extension

Direct Methods	Indirect Methods
● Education Class	● Public Service Announcement
● Workshop	● Newsletters
● Group Discussion	● TV Media Programs
● One-on-One Intervention	● eXtension web sites
● Demonstrations	● Other 1 (Newspapers)
● Other 1 (Field Days)	
● Other 2 (Harvest Festivals)	

3. Description of targeted audience

Farmers/producers
Florida citizens with an interest in plants and plant science
Memebers of the general public

1890 Research (Viticulture and Small Fruit Research)

The target audience will be all grape growers, processors (wineries), hobbyists and persons who are interested in grapes, wines, and non-traditional small fruits. Small farmers, particularly, minorities and limited resource farmers will also be targeted to promote grape growing as an alternative crop.

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

- Hybrid seedlings from breeding program
- Advanced hybrid selection
- Genetic markers identified and cloned
- Conventional crosses from breeding 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	Development and use of bioherbicides can help to diversify weed control options, supplement chemical herbicides, and provide an alternative to methyl bromide
2	Discover, develop, evaluate and disseminate knowledge and information necessary to support the agronomic-related industries of the State and nation.
3	Promote and enhance the production and utilization of agronomic commodities and the management of pest plant species for the benefit of society.
4	Developing and disseminating environmentally and economically sound technolo-gies related to water management and plant nutrition that will increase production and utilization efficiencies
5	Develop horticultural characteristics, disease and host/plant resistance through classical genetics and molecular techniques, allowing the creation of marketable products for consumers
6	Research and develop crop production and physiology information and will set an example for the industry in environmen-tally safe practices.
7	Research and solve immediate technical problems facing the fruit and vegetable industries including the development of new information, materials and techniques to increase the efficiency of production, harvest and post-harvest handling
8	Develop new food plant cultivars that have improved quality characteristics.

Outcome # 1

1. Outcome Target

Development and use of bioherbicides can help to diversify weed control options, supplement chemical herbicides, and provide an alternative to methyl bromide

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 2

1. Outcome Target

Discover, develop, evaluate and disseminate knowledge and information necessary to support the agronomic-related industries of the State and nation,

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 3

1. Outcome Target

Promote and enhance the production and utilization of agronomic commodities and the management of pest plant species for the benefit of society.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems

- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 4

1. Outcome Target

Developing and disseminating environmentally and economically sound technolo-gies related to water management and plant nutrition that will increase production and utilization efficiencies

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 205 - Plant Management Systems

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 5

1. Outcome Target

Develop horticultural characteristics, disease and host/plant resistance through classical genetics and molecular techniques, allowing the creation of marketable products for consumers

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 202 - Plant Genetic Resources
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 205 - Plant Management Systems

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 6

1. Outcome Target

Research and develop crop production and physiology information and will set an example for the industry
in environmen-tally safe practices.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 202 - Plant Genetic Resources
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 206 - Basic Plant Biology

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 7

1. Outcome Target

Research and solve immediate technical problems facing the fruit and vegetable industries including the
development of new information, materials and techniques to increase the efficiency of production, harvest
and post-harvest handling

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 204 - Plant Product Quality and Utility (Preharvest)
- 205 - Plant Management Systems

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 8

1. Outcome Target

Develop new food plant cultivars that have improved quality characteristics.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 202 - Plant Genetic Resources
- 206 - Basic Plant Biology

4. Associated Institute Type(s)

- 1862 Research
- 1890 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

Florida is a state located in the tropics. Natural disasters such as tropical storms and hurricanes are common annual occurrences in this state.Severe weather conditions such as droughts frequently led to large-scale fires. Florida also has other weather extremes such as floods leading to large scale damage especially along the coastal regions. Florida has three international shipping ports: Miami,

Jacksonville and Tampa.These cities all have international airports. Along with this we have over 53 million tourists visiting from around the world.It has been estimated that this international influx into Florida has made us the entry point of one new invasive pest, plant or disease each week. Any of this could be an external factor affecting land-grant research outcomes.
Changes may occur because of:
•The loss of test sites from storm damage
•An invasive species that requires priority
•Changes in public priorities
•Changes in state, county and federal appropriations
•Changes in governmental regulations
•Loss of public or private funding opportunities

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

● Case Study
● Time series (multiple points before and after program)
● Retrospective (post program)
● Comparison between locales where the program operates and sites without program intervention
● During (during program)
● Comparisons between program participants (individuals,group,organizations) and non-participants
● After Only (post program)
● Before-After (before and after program)
● Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.

1890 Research

The evaluation studies will be conducted during and after the implementation of planned program.

Progress made on each of the goals will be determined annually and appropriate modifications in the plan will be made to achieve proposed goals at the end of the plan.

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

Animals and their systems--1862 & 1890 research

2. Brief summary about Planned Program

•Reproduction performance
•Nutrient utilization in animals
•Animal physiological Process
1890 Research
The program will focus on research that helps improve small ruminant production and marketing systems for small-scale and limited resource operations. Specific areas of focus include studies in health, nutrition and reproduction technologies and practices.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals	0%	0%	10%	10%
302	Nutrient Utilization in Animals	0%	0%	10%	10%
303	Genetic Improvement of Animals	0%	0%	10%	10%
304	Animal Genome	0%	0%	5%	0%
305	Animal Physiological Processes	0%	0%	10%	10%
306	Environmental Stress in Animals	0%	0%	5%	5%
307	Animal Management Systems	0%	0%	10%	10%
308	Improved Animal Products (Before Harvest)	0%	0%	5%	10%
311	Animal Diseases	0%	0%	10%	10%
312	External Parasites and Pests of Animals	0%	0%	10%	5%
313	Internal Parasites in Animals	0%	0%	5%	10%
314	Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals	0%	0%	5%	5%
315	Animal Welfare/Well-Being and Protection	0%	0%	5%	5%
	Total	0%	0%	100%	100%

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

1. Situation and priorities

The primary mission of the IFAS statewide animal sciences program in the area of research is to provide critical information needed to assist the livestock industries of Florida to achieve efficient production by contributing to the solution of livestock production problems through research. This mission is accomplished through the integration of research both at the University of Florida and research facilities such as the Department of Animal Sciences, the Range Cattle Research and Education Center (Ona), the North Florida Research and Education Center (Marianna), the Subtropical agricultural Research Station, USDA-ARS (Brooksville) and the sixty-seven county extension facilities. Research in the area of animals includes issues related to animal production and protection.Included in this area but not inclusive are:

Reproduction Performance

The advancement in vitro embryo technologies are still quite inefficient due to associated problems with early embryonic loss, large offspring syndrome, and postnatal mortality. The purpose of one project in Florida is twofold: 1) to devise rapid methods for assessing viability in preimplantation bovine embryos for increased survival; and 2) determine how in vitro culture conditions effect the expression of Insulin-like

Growth Factor (IGF) family members.

Nutrient utilization in animals

Management practices, diets fed and shortened dry periods are being evaluated in several projects involving dairy cows. The purpose of one of the studies is to examine the effectiveness of available technology, feeding management, and short dry periods to improve the feed intake of dairy cows around calving. The purpose is to improve their intake of feed, reduce their health problems and allow high milk production after calving. The project also examines whether it is possible to speed-up the dry-off of mammary tissue by using estrogen at the time of dry-off and thereby reduce the standard 60-day dry period in half.

1890 Research

Small ruminant production has become one of the fastest growing livestock industries and has proven to be a profitable enterprise. Florida ranked 10th (36,000) in population of goats in the US. Persistence among ethnic consumers in maintaining religious or cultural practices has increased demand for goat meat. It is expected that demand for goat and other ruminant meat as a nutritious, gourmet food item will continue to rise as the ethnic population continues to flourish. FAMU has been the leading provider of research-based information for small ruminants in the state. The program focuses on research to help improve production and marketing systems for small-scale and limited resource operations.

2. Scope of the Program

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

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

1. Assumptions made for the Program

Research will uncover critical information needed to assist the livestock industries of Florida to achieve efficient production by contributing to the solutions of livestock production problems.

2. Ultimate goal(s) of this Program

Improve reproductive performance of animals
Improve nutrient utilization in animals
Improve genetics in animals
Increase knowledge in area of animal genome
Improve animal physiological processes
Reduce environmental stress in animals
Improve animal management systems
Improve animal products (before harvest)
Increase knowledge and decrease incidence of animal diseases
Reduce instances of external parasites and pests of animals
Reduce internal parasites in animals
Identify and reduce toxic chemicals, poisonous plants, naturally occurring toxins, and other hazards affecting animals
Increase animal welfare,/well-being and protection through improved BMPs

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
2015	0.0	0.0	2.0	1.0
2016	0.0	0.0	2.0	1.0
2017	0.0	0.0	2.0	1.0
2018	0.0	0.0	2.0	1.0
2019	0.0	0.0	2.0	1.0

V(F). Planned Program (Activity)

1. Activity for the Program

Conduct research experiments
Partnering

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

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Demonstrations	● Public Service Announcement ● eXtension web sites

3. Description of targeted audience

residents of Florida interested in animals and animal science.This includes
•Growers//Ranchers
•Producers/packaging
•General public •Government officials
•Scientists

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

- Improve reproductive performance of animals

☐ 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	Improve reproductive performance of animals
2	Improve nutrient utilization in animals
3	Improve genetics in animals
4	Increase knowledge in area of animal genome
5	Improve animal physiological processes
6	Reduce environmental stress in animals
7	Improve animal management systems
8	Improve animal products (before harvest)
9	Increase knowledge and decrease incidence of animal diseases
10	Reduce instances of external parasites and pests of animals
11	Reduce internal parasites in animals
12	Identify and reduce toxic chemicals, poisonous plants, naturally ocurring toxins, and other hazards affecting animals
13	Increase animal welfare/well-being and protection through improved BMPs

Outcome # 1

1. Outcome Target

Improve reproductive performance of animals

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 301 - Reproductive Performance of Animals

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 2

1. Outcome Target

Improve nutrient utilization in animals

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 302 - Nutrient Utilization in Animals

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 3

1. Outcome Target

Improve genetics in animals

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 303 - Genetic Improvement of Animals

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 4

1. Outcome Target

Increase knowledge in area of animal genome

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 304 - Animal Genome

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 5

1. Outcome Target

Improve animal physiological processes

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 305 - Animal Physiological Processes

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 6

1. Outcome Target

Reduce environmental stress in animals

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 306 - Environmental Stress in Animals

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 7

1. Outcome Target

Improve animal management systems

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 307 - Animal Management Systems

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 8

1. Outcome Target

Improve animal products (before harvest)

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 9

1. Outcome Target

Increase knowledge and decrease incidence of animal diseases

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 311 - Animal Diseases

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 10

1. Outcome Target

Reduce instances of external parasites and pests of animals

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 312 - External Parasites and Pests of Animals

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 11

1. Outcome Target

Reduce internal parasites in animals

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 313 - Internal Parasites in Animals

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 12

1. Outcome Target

Identify and reduce toxic chemicals, poisonous plants, naturally ocurring toxins, and other hazards affecting animals

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 314 - Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 13

1. Outcome Target

Increase animal welfare/well-being and protection through improved BMPs

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 305 - Animal Physiological Processes
- 307 - Animal Management Systems
- 315 - Animal Welfare/Well-Being and Protection

4. Associated Institute Type(s)

- 1862 Research
- 1890 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

Florida is a state located in the tropics.Natural disasters such as tropical storms and hurricanes are common annual
occurrences in this state.Severe weather conditions such as droughts frequently led to large-scale fires.Florida also has other
weather extremes such as floods leading to large scale damage especially along the coastal regions.
Florida has three international shipping ports: Miami, Jacksonville and Tampa.These cities all have international
airports.Along with this we have over 53 million tourists visiting from around the world.It has been estimated that this
international influx into Florida has made us the entry point of one new invasive pest, plant or disease each week.Any of this
could be an external factor affecting land-grant research outcomes.
Changes may occur because of:
•The loss of test sites from storm damage
•An invasive species that requires priority
•Changes in public priorities
•Changes in state, county and federal appropriations
•Changes in governmental regulations

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

- After Only (post program)
- During (during program)
- Case Study
- Comparison between locales where the program operates and sites without program intervention
- Before-After (before and after program)
- Time series (multiple points before and after program)
- Retrospective (post program)

V(A). Planned Program (Summary)

Program # 11

1. Name of the Planned Program

Agricultural, natural resources, and biological engineering--1862 & 1890 research

2. Brief summary about Planned Program

Work in this area will relate to the following:

- Structures, facitlities and general purpose farm supplies
- Engineering systems and equipment
- Waster disposal, recycling and reuse
- Instrumentation and control systems
- Drainage and irrigation systems and facilities

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
401	Structures, Facilities, and General Purpose Farm Supplies	0%	0%	10%	0%
402	Engineering Systems and Equipment	0%	0%	20%	0%
403	Waste Disposal, Recycling, and Reuse	0%	0%	20%	0%
404	Instrumentation and Control Systems	0%	0%	10%	0%
405	Drainage and Irrigation Systems and Facilities	0%	0%	40%	0%
	Total	0%	0%	100%	0%

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

1. Situation and priorities

Florida is a state where agriculture is number two in exonomic importance with tourism in the number one slot. Tourism means over 76.8 visitors each year with a revenue exceeding $57 billion dollars annuall. Water quality and quantity, preservation of natrual resources unique to Florida, improving and protecting soils and effective food production methods including harvesting, processing and stroage are all crucial to protecting the economic importance of both agriculture and tourism in the state.

2. Scope of the Program

- 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

• Tourists want to see the tropical environment when visiting Florida.
• Tourists want pristine beaches and water sources (lakes and rivers)
• Water quality and quantity can impact both agriculture and tourism.
• Proper Waste disposal, recycling and reuse can improve the effectiveness and efficiency of land designated for both agriculture and tourism.

2. Ultimate goal(s) of this Program

• To Improve design, construction and cost of facilities for animals, agricultural products, ag inputs, equipment and other materials.
• To increase the efficiency and decrease labor requirement in ag and forestry production
• To improve methods related to waste disposal, recycling and reuse
• To develop effective instrumentation and information that ate important aspects of pre- and post-production agriculture.
• To develop effective water management systems that include surface, subsurace drainage and all irrigation systems.

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
2015	0.0	0.0	1.0	0.0
2016	0.0	0.0	1.0	0.0
2017	0.0	0.0	1.0	0.0
2018	0.0	0.0	1.0	0.0
2019	0.0	0.0	1.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Research using multiple research methods

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

Extension

Direct Methods	Indirect Methods

3. Description of targeted audience

General public
Tourists
ag producers
Government officials
Industry

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

☐ 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	Develop strucutres, facilities and engineering systems that will improve Florida agriculture and natural resources.
2	To improve methods related to waste disposal, recycling and recuse
3	To increase the efficiency and decrease labor requirement in ag and forestry production
4	To develop effective instrumentation and information that are important aspects of pre- and post-production agriculture.
5	To develop effective water management systems that include surface, subsurface drainage and all irrigation systems

Outcome # 1

1. Outcome Target

Develop strucutres, facilities and engineering systems that will improve Florida agriculture and natural resources.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 401 - Structures, Facilities, and General Purpose Farm Supplies
- 402 - Engineering Systems and Equipment
- 403 - Waste Disposal, Recycling, and Reuse
- 404 - Instrumentation and Control Systems
- 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 2

1. Outcome Target

To improve methods related to waste disposal, recycling and recuse

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 401 - Structures, Facilities, and General Purpose Farm Supplies
- 402 - Engineering Systems and Equipment
- 403 - Waste Disposal, Recycling, and Reuse
- 404 - Instrumentation and Control Systems
- 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 3

1. Outcome Target

To increase the efficiency and decrease labor requirement in ag and forestry production

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 401 - Structures, Facilities, and General Purpose Farm Supplies
- 402 - Engineering Systems and Equipment
- 403 - Waste Disposal, Recycling, and Reuse
- 404 - Instrumentation and Control Systems
- 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 4

1. Outcome Target

To develop effective instrumentation and information that are important aspects of pre- and post-production agriculture.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 402 - Engineering Systems and Equipment
- 404 - Instrumentation and Control Systems
- 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 5

1. Outcome Target

To develop effective water management systems that include surface, subsurface drainage and all irrigation systems

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 402 - Engineering Systems and Equipment
- 404 - Instrumentation and Control Systems
- 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- 1862 Research
- 1890 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

Florida has hurricanes and other serious weather conditions annual. Right now the economic crisis would have the most
impact on reaching designated outcomes. There is constant tension between agriculture and urban residents and government
regulations, public priorites and appropriation changes related to this could have a profound effect on outcomes.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

- Comparison between locales where the program operates and sites without program intervention
- During (during program)
- Comparisons between program participants (individuals,group,organizations) and non-participants
- After Only (post program)
- Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.

- Time series (multiple points before and after program)
- Case Study
- Retrospective (post program)
- Before-After (before and after program)

Description

Evaluation in this area will be primarily related to irrigation. However instrument and control systems relate to this area as

does the development of engineering systems and equipment.

V(A). Planned Program (Summary)

Program # 12

1. Name of the Planned Program

Food and non-food prodcuts: Development, Processing, Quality, and Delivery--1862 & 1890 Research

2. Brief summary about Planned Program

At **UF** research will focus on the following:
•Post-harvest/post production
•Food and Agriculture
•New and Improved Food Processing Technologies
•New and Improved Non-Food Products and Processes
The **FAMU** research program will focus on three areas:

1) Gather and analyze data on small organic farmers to capture their fruit and vegetable growing practices and post-harvest handling.

2) Formulate food safety education modules that will be tailored towards reaching the organic small farm growers. These research based modules will be used by extension personnel.

3) Develop protective washes for fruits and vegetables specifically for use on tomatoes, cantaloupes and green leafy vegetables focusing on gram negative bacteria.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
501	New and Improved Food Processing Technologies	0%	0%	20%	0%
502	New and Improved Food Products	0%	0%	20%	0%
503	Quality Maintenance in Storing and Marketing Food Products	0%	0%	20%	0%
504	Home and Commercial Food Service	0%	0%	5%	0%
511	New and Improved Non-Food Products and Processes	0%	0%	15%	0%
512	Quality Maintenance in Storing and Marketing Non-Food Products	0%	0%	20%	0%
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	0%	0%	0%	50%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	0%	0%	0%	50%
	Total	0%	0%	100%	100%

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

1. Situation and priorities

This area addresses the needs in the development, processing, quality and delivery of food and non-food products. In this area Hatch research projects have been conducted in both areas.Some examples include:

Postharvest/Post Production

Research in this area address the needs of the foli-age and floriculture market chain. Currently the best interior evaluation facilities in the US are located within IFAS and IFAS has the only department with a program nationally addressing whole plant longevity on a broad scale. Major emphasis is placed on research to improve the performance of fresh cut flowers for the consumer.

Food and Agriculture

Florida ranks as a major agricultural state and often leads the nation in the production of a wide variety of agricultural commodities. Before reaching the consumer, each product moves through a unique marketing channel often involving grading, processing, packaging, transporting, international trade, wholesaling and retailing. The provision of inputs and services to the agricultural sector also involves significant economic activ-ity. Agricultural businesses must cope with increased regulatory pressure, shifting consumer preferences regarding food safety and environmental protection as well as dealing with emerging oppor-tunities through biotechnology. Agribusiness, farm management and production economics, marketing, international trade and competition, and consumer economics are among the subject matter that is the concern of Florida **IFAS** and **FAMU** research.

New and Improved Food Processing Technologies Value-added by-products research requires strong product utilization and processing industry support to maintain industry prominence in International markets. By-products research allows development of processing and utilization schemes to profitably deal

with waste utilization, rather than pay disposal costs.
New and Improved Non-Food Products and Processes
Genetic manipulations to improve ethanol production in Z. mobilis are complicated by enzymes that prevent introduction of foreign DNA into the bacteria. The purpose of some projects in this area is to determine the factors that limit the efficiency of transfer of foreign genes into Z. mobilis and to produce new strains which will be more amenable to genetic engineering which may be used to enhance their fuel ethanol production.

2. Scope of the Program

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

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

1. Assumptions made for the Program

- Improvements provided by these research projects will improve the quality of life for Florida residents
- Improvements provided by these research projects will improve the development, processing, quality and delivery of food and non-food products
- Information provided by these research projects will improve the economic well-being of Florida residents and agricultural industries
- Improvement of pre- and post-harvest practices would lead to increased food safety.

2. Ultimate goal(s) of this Program

- Develop new and improved food processing techniques
- Develop new and improved food products
- Improve quality maintance in storing and marketing food products
- Develop quality maintenance methods in storing and marketing non-food products
- Develop new and improved non-food products and processes
- Reduce incidence of food borne diseases through improved pre- and post-harvest handling practices and processes.
- Improve fresh produce safety/small farm food safety
- Identify BMPs that reduce food safety issues related to food handlers

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

Year	Extension		Research	
	1862	1890	1862	1890
2015	0.0	0.0	30.0	2.0
2016	0.0	0.0	30.0	2.0
2017	0.0	0.0	30.0	2.0
2018	0.0	0.0	30.0	2.0
2019	0.0	0.0	30.0	2.0

V(F). Planned Program (Activity)

1. Activity for the Program

Conduct research experiments

The **FAMU** food safety program will gather and analyze data on small organic farmers to capture their fruit and vegetable growing practices and post-harvest handling. It will also formulate food safety education modules that will be tailored towards reaching the small organic growers. These research based modules will be used by extension personnel. The program will also develop protective washes for fruits and vegetables specifically for use on tomatoes, cantaloupes and green leafy vegetables focusing on gram negative bacteria.

UF will conduct research experiments related to both food and non-food products that provide new knowledge in the areas of development, processing, quality and deliver of products.

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

Extension

Direct Methods	Indirect Methods

3. Description of targeted audience

State, national and international stakeholders will be affected by food and non-food developing, processing, quality and delivery conducted by **UF** research.These may include but are not limited to:

- •producers
- •regulatory bodies
- •consumer groups
- general public

For **FAMU** research target audiences will include small to medium sized limited resource producers, processors, retailers and consumers.

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

- FAMU Specific food chains assessed to identify sources of contamination

☑ 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	Develop new and improved food processing techniques
2	Develop new and improved food products
3	Improve quality maintance in storing and marketing food products
4	Develop new and improved non-food products and processes
5	Develop quality maintenance methods in storing and marketing non-food products
6	Reduction in the incidences of food borne illnesses
7	Identify BMPs that would decrease food borne illness in development, processing, food quality and delivery of food products.

Outcome # 1

1. Outcome Target

Develop new and improved food processing techniques

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 501 - New and Improved Food Processing Technologies

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 2

1. Outcome Target

Develop new and improved food products

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 502 - New and Improved Food Products

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 3

1. Outcome Target

Improve quality maintance in storing and marketing food products

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 503 - Quality Maintenance in Storing and Marketing Food Products

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 4

1. Outcome Target

Develop new and improved non-food products and processes

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 511 - New and Improved Non-Food Products and Processes

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 5

1. Outcome Target

Develop quality maintenance methods in storing and marketing non-food products

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 512 - Quality Maintenance in Storing and Marketing Non-Food Products

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 6

1. Outcome Target

Reduction in the incidences of food borne illnesses

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 501 - New and Improved Food Processing Technologies
- 503 - Quality Maintenance in Storing and Marketing Food Products

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 7

1. Outcome Target

Identify BMPs that would decrease food borne illness in development, processing, food quality and delivery of food products.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 501 - New and Improved Food Processing Technologies
- 503 - Quality Maintenance in Storing and Marketing Food Products
- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

4. Associated Institute Type(s)

- 1862 Research
- 1890 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

Florida is a state located in the tropics. Natural disasters such as tropical storms and hurricanes are common annual occurrences in this state.Severe weather conditions such as droughts frequently led to large-scale fires.Florida also has other weather extremes such as floods leading to large scale damage especially along the coastal regions. Florida has three international shipping ports: Miami, Jacksonville and Tampa.These cities all have international airports. Along with this we have over 53 million tourists visiting from around the world.It has been estimated that this international influx into Florida has made us the entry point of one new invasive pest, plant or disease each week that could impact food and non-food products .Any of this could be an external factor affecting land-grant research outcomes.
Changes may occur because of the following:
•The loss of test sites from storm damage
•An invasive species that requires priority
•Changes in public priorities
•Changes in state, county and federal appropriations
•Changes in governmental regulations
•Loss of public or private funding opportunities
Also for FAMU the most significant factor is funding especially given the current uncertainties in state/federal support for programs.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Research Opportunities

The major trends in statistics are in Bayesian statistical methods, methods for large datasets and computationally intensive analyses, spatial-temporal modeling, statistical genetics and modeling of non-standard data. Florida IFAS/research understands the importance of evaluating projects to provide scientifically accurate information and recommendations. Accepted research guidelines and procedures may include the following among others:

- Computationally intensive methods
- Analysis or mining of massive datasets
- Statistical genetics
- Spatial-temporal modeling
- Multivariate analysis
- Bioinformatics
- Generalized linear mixed models
- Bayesian statistics
- Semi-parametric methods
- Model diagnostics
- Stochastic processes and models
- Nonlinear modeling

For **FAMU** research a combination of routine program monitoring and documentation will be implemented. Research Opportunities

The major trends in statistics are in Bayesian statistical methods, methods for large datasets and computationally intensive analyses, spatial-temporal modeling, statistical genetics and modeling of non-standard data. Florida IFAS/research understands the importance of evaluating projects to provide scientifically accurate information and recommendations. Accepted research guidelines and procedures may include the following among others:

- Computationally intensive methods
- Analysis or mining of massive datasets
- Statistical genetics
- Spatial-temporal modeling
- Multivariate analysis
- Bioinformatics
- Generalized linear mixed models
- Bayesian statistics
- Semi-parametric methods
- Model diagnostics
- Stochastic processes and models
- Nonlinear modeling

V(A). Planned Program (Summary)

Program # 13

1. Name of the Planned Program

Economics, markets, and policy--1862 & 1890 research

2. Brief summary about Planned Program

•Economics of Agricultural production and farm management
•Marketing and distribution practices
•International trade and development

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
601	Economics of Agricultural Production and Farm Management	0%	0%	20%	0%
602	Business Management, Finance, and Taxation	0%	0%	5%	0%
603	Market Economics	0%	0%	20%	0%
604	Marketing and Distribution Practices	0%	0%	10%	0%
605	Natural Resource and Environmental Economics	0%	0%	10%	0%
606	International Trade and Development	0%	0%	5%	0%
607	Consumer Economics	0%	0%	5%	0%
608	Community Resource Planning and Development	0%	0%	5%	0%
609	Economic Theory and Methods	0%	0%	10%	0%
610	Domestic Policy Analysis	0%	0%	5%	0%
611	Foreign Policy and Programs	0%	0%	5%	0%
	Total	0%	0%	100%	0%

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

1. Situation and priorities

Economic development generally refers to targeted programs designed to enable people to raise overall per capita
incomes or to improve circumstances for specific disadvantaged populations. The emphasis of the area is the enhancement
of people's capacity to acquire and manage re-sources effectively, understand markets and policy related to these elements.
Presently, economic transitions underway in rural Florida result in pockets of economic disadvantage. Public and private
managers must cope with the costs of economic change and must be able to influence both the pattern and pace of growth.
Insights are sometimes obtained from problem-solving work in other locations that may be applicable in Florida. Rural
economic development, in-ternational development, economic impact analysis, domestic policy analysis and agricultural
labor subject matter are also of interest.Some specific areas where Hatch research is taking place in IFAS include:
Citrus remains the most important crop produced in Florida. Florida citrus producers face a number of challenges including
increased foreign competition, adoption of new technology including mechanical harvesting, and threats from invasive pests.
This intent of one project in this area is to provide economic analysis of the issues confronting Florida including assessment of
the competitive position of the citrus industry.

Marketing and Distribution Practices

Understanding more about the factors that influence consumers' subjective perceptions about food consumption will allow
agribusinesses, agricultural producers, and policy makers to respond more effectively to consumer concerns. One Hatch
project is designed to improve our understanding of the effects of consumer tastes and preferences, including food safety, on
Florida agriculture.

International Trade and Development

International trade and development of new markets is important to Florida's agricultural industries.This includes the
understanding and development of policy necessary for improved development of international trade. One project seeks to
evaluate how the relative economic size of Caribbean Basin countries will condition their ability to realize the full economic
benefits of trade liberalization and integration efforts in the Western Hemisphere.

2. Scope of the Program

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

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

1. Assumptions made for the Program

•Improvements provided by these research projects will improve the quality of life for Florida residents
•Improvements provided by these research projects will improve markets and policies for Florida stakeholders involved
ininternational sales of Florida agricultural products
•Information provided by these research projects will improve the economic well-being of Florida residents

2. Ultimate goal(s) of this Program

•Provide economic analysisof issues confronting Florida stakeholders including assessment of the competitive position of
Florida crops in the international market place.
•Research factors that influence consumers' subjective perceptions about food consumption that will allow agribusiness, ag
producers, and policy makers to respond more effectivley to consumer and producer concerns
•Understand and develop policy necessary for improved development of international trade

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
2015	0.0	0.0	1.0	0.0
2016	0.0	0.0	1.0	0.0
2017	0.0	0.0	1.0	0.0
2018	0.0	0.0	1.0	0.0
2019	0.0	0.0	1.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Conduct research experiments
- Partnering on a national and an international level

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

Extension

Direct Methods	Indirect Methods

3. Description of targeted audience

- International partners and stakeholders
- Agribusiness
- producers
- policy makers (county, state, regional, national, international

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

☐ 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	Provide economic analysis of issues confronting Florida stakeholders including assessment of the competitive position of Florida crops in the international marketplace
2	Research factors that influence consumers' subjective perceptions about food consumption that will allow agribusiness, ag producers, and policy makers to respond more effectively to sonsumer and producer concerns
3	Understand and develop policy necessary for improved development of international trade

Outcome # 1

1. Outcome Target

Provide economic analysis of issues confronting Florida stakeholders including assessment of the competitive position of Florida crops in the international marketplace

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 603 - Market Economics
- 604 - Marketing and Distribution Practices
- 605 - Natural Resource and Environmental Economics
- 606 - International Trade and Development
- 607 - Consumer Economics

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 2

1. Outcome Target

Research factors that influence consumers' subjective perceptions about food consumption that will allow agribusiness, ag producers, and policy makers to respond more effectively to sonsumer and producer concerns

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 603 - Market Economics
- 604 - Marketing and Distribution Practices
- 607 - Consumer Economics
- 609 - Economic Theory and Methods
- 610 - Domestic Policy Analysis

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 3

1. Outcome Target

Understand and develop policy necessary for improved development of international trade

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 606 - International Trade and Development
- 609 - Economic Theory and Methods
- 610 - Domestic Policy Analysis

4. Associated Institute Type(s)

- 1862 Research
- 1890 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

Florida is a state located in the tropics.Natural disasters such as tropical storms and hurricanes are common annual
occurrences in this state.Severe weather conditions such as droughts frequently led to large-scale fires.Florida also has other
weather extremes such as floods leading to large scale damage especially along the coastal regions. Florida has three international shipping ports: Miami, Jacksonville and Tampa.These cities all have international
airports.Along with this we have over 53 million tourists visiting from around the world.It has been estimated that this
international influx into Florida has made us the entry point of one new invasive pest, plant or disease each week.Any of this
could be an external factor affecting land-grant research outcomes.

Changes may occur because of:
•The loss of test sites from storm damage
•An invasive species that requires priority
•Changes in public priorities
•Changes in state, county and federal appropriations
•Changes in governmental regulations •Loss of public or private funding opportunities
•Changes in international policy or trade agreements

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

● Retrospective (post program)
● Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
● Case Study
● After Only (post program)
● Comparison between locales where the program operates and sites without program intervention
● Time series (multiple points before and after program)
● Before-After (before and after program)
● Comparisons between program participants (individuals,group,organizations) and non-participants
● During (during program)

Florida IFAS/FAMU CAFS understand the importance of evaluating projects to provide accurate scientific information and recommendations. Accepted research guidelines and procedures are followed.

V(A). Planned Program (Summary)

Program # 14

1. Name of the Planned Program

Human nutrition, food safety, and human health and well-being-- 1862 & 1890 research

2. Brief summary about Planned Program

- •Human health
- •Requirements and function of nutrients and other food components
- •Food safety Work in this area includes understanding and improving food safety and security. At **UF** Work in this area will reduce hazards to human health and safety and improve food security.
- Adult and child obesity-- **FAMU** Faculty research projects in the tri-county childhood obesity research program will identify and categorize the number and type of food providers in designated communities, distance between consumers and food centers; the variety of the food supply, presence of home gardens. They will also engage with food providers to understand their selection of food and evaluate the quality of products available to the consumers. The program will also seek to characterize the interactions between healthcare and physical activity centers and the community of children identified as overweight or obese.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
701	Nutrient Composition of Food	0%	0%	10%	20%
702	Requirements and Function of Nutrients and Other Food Components	0%	0%	10%	0%
703	Nutrition Education and Behavior	0%	0%	10%	20%
704	Nutrition and Hunger in the Population	0%	0%	10%	20%
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	0%	0%	10%	20%
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	0%	0%	10%	20%
721	Insects and Other Pests Affecting Humans	0%	0%	10%	0%
722	Zoonotic Diseases and Parasites Affecting Humans	0%	0%	10%	0%
723	Hazards to Human Health and Safety	0%	0%	10%	0%
724	Healthy Lifestyle	0%	0%	10%	0%
	Total	0%	0%	100%	100%

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

1. Situation and priorities

Research in this area can be divided into three broad categories: food science, human nutrition and human health.

Research in the area of human nutrition, food safety, and human health and well-being addresses problems and opportunities important to the food industry and quality of life in Florida and throughout the world. Research projects in the area of human nutrition involve many of the commodities important in Florida, including seafood and aquaculture products, citrus, fresh fruits and vegetables, and dairy products. Other research areas include food safety and microbiology issues, food processing and new method development, quality and sensory aspects of foods, and composition and chemistry of foods.

Research in the area of human nutrition addresses basic and applied aspects of human nutrition in efforts to improve the health and wellness of Floridians and the world population, and includes studies on gene regulation, immunity, and women's health. Research areas include the function and biochemistry of micronutrients, the role of water-soluble vitamins in the health of various populations, the effects of phytochemicals and nutrient supplements on health, and the development of education programs for improved nutrition and health. Research in the area of childhood obesity has focused on nutrition in food and changes in behavior that can lead to reduced body mass.

Poverty rates in Florida continue to raise, with children, single minority women with families (racial and ethnic minorities), and older adults accounting for a substantial proportion of the population. U.

S. Census estimates from 2008, indicate that 12.6% of individuals in the state, with 17.6% as children and 10% as adults over 65 years old. Family poverty estimates comprise over 9% of the state's population, with 34% of families headed by single females with no husband present. Florida's must vulnerable population faces increased risk of low food security and obesity, which is the precursor for many chronic diseases such as heart disease, hypertension, diabetes and some cancers. The vulnerability of this population is further confirmed by Gleason, Rangarajan, & Olson (2000), suggesting that many low-income adults lack the knowledge and skills to maintain food security and a healthy diet.

Food safety challenges faced by the United States continue to grow. For instance each year, 1 in 6 Americans gets sick from food borne diseases, and 3,000 die as a result. These challenges arise in unpredictable ways but several factors have contributed to the current trends. For instance, there have been significant changes in food production, supply and consumption. Thus recent years have seen a tremendous growth in consumption of raw or minimally processed food that are often associated with food borne illness. At the same time there has been an increase in new or emerging germs, toxins, and incidences of antibiotic resistance. On the other hand, imported food continues to make up a growing share of the food supply. USDA estimates for instance show that between 2003 and 2007, the dollar value of agricultural imports to the U.S. increased by about 53%, from $46-70 billion. Against this background it is critical to develop measures to mitigate problems along the continuum from the farm to the table.

The US organic food industry is rapidly growing, it was reported that 73% of conventional grocery stores and nearly 20,000 natural food stores carry organic products which accounts for approximately 2.5 of the total food sales. Florida ranks 31st among states in organic farm acreage and generates 0.2% total sales from organic production and growth is predicted. To ensure a safe growth, food safety practices such as Good Agricultural Practices (GAP) must be followed and these include safe irrigation methods, natural fertilizers, worker health and hygiene and proper post harvest handling and storage. This new program will focus on the safety of the organic produce from the small farmers.

The USDA study on food security conducted in 2008, suggests that the lowest levels of food security exist within households that fall below federal poverty guidelines for a family of four, typically headed by single women of African-American or Hispanic racial or ethnic backgrounds. The study also reported an overall increase in low and very low food security in Florida during 2004-2008, with 12.2%of Florida households reporting low food security in 2006-2008, reflecting an increase from 8.9% reported in 2004-2006. Florida's low food security rate mirrored that of the national rate while the low and very low food security rate slightly exceeded the national rate of 4.6%.

More recently research in the area of childhood obesity has focused on nutrition in food and changes in behavior that can lead to reduced body mass. Nearly 17% of children aged 2-19 years of age are obese. According to the 2007 National Survey of Children's Health, over 33% of Florida's children were overweight or obese. The economic consequences of this increasing problem are immense. According to Finkelstein (2009), the medical care costs of dealing with obesity in 2008 dollars was $147 billion. According to National Health and Nutrition Examination Survey (NHANES) data cited by Ogden and Caroll (2010) the prevalence of obesity has increased disproportionately among Hispanic and black children and adolescents. The current problem with childhood obesity is the result of many factors and requires an integrated multi-action approach.

2. Scope of the Program

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

- Multistate Integrated Research and Extension

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

1. Assumptions made for the Program

• •Improvements provided by these research projects will improve the quality of life for Florida residents through a better
• understanding of requirements and functions of nutrients and other food components
• •Improvements methods identified by research projects will reduce outbreaks of food pathogens and increase food safety.
• Finding new and better practictes related to food safety to reduce the number of cases of foodborne illnesses in Florida
• •Information provided by these research projects will improve the physical well-being of Florida residents

• Finding foods that are tasty and nutritional can reduce the body mass in youth and adolescents. This can improve health and reduce the number of illnesses that are food related.
• Finding strategies that will help youth improve eating and exercise that would lead to reduced weight and other issues related to childhood obesity.
• At FAMU Childhood obesity is best addressed through an integrated multipronged approach based on research audiences will be willing to adopt healthier food choices.

2. Ultimate goal(s) of this Program

At **FAMU** the childhood obesity program will have specific emphasis on low and moderate income communities. The ultimate goals of the program will be improve community food security and availability of healthy food choices and prevention of childhood obesity and reduction of long-term risks for chronic diseases.

UF Research in the area of human nutrition, food safety, and human health and well-being addresses problems and opportunities important to the food industry and quality of life in Florida and throughout the world:

• Increase knowledge of chronic disease risk factors related to childhood obesity.
• increased knowledge of lifestyle practices that can reduce health risks.
• identify strategies that improve one or more lifestyle practices that reduce weight gain in children.
• identify life style practices that would be most likely to reduce childhood obesity
• identify one or more methods of reducing modifiable health risk factors (e.g., high blood pressure) in youth

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
2015	0.0	0.0	3.0	2.0
2016	0.0	0.0	3.4	2.0
2017	0.0	0.0	3.0	2.0
2018	0.0	0.0	3.0	2.0
2019	0.0	0.0	3.0	2.0

V(F). Planned Program (Activity)

1. Activity for the Program

Conduct research
Partnering

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

Extension

Direct Methods	Indirect Methods

3. Description of targeted audience

UF Targets will include:

- Florida residents
- Families, parents and children
- Foodindustry
- General public
- Regulatory agencies

At **FAMU** target audience will include: low to moderate income families, school, nutrition and health professionals, community leaders and local and state level agencies.

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

☐ 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	Identified ways to increase acceptance of sustainable change in eating and exercise
2	Research in the area of human nutrition, food safety and human health and well-being addressing problems and opportunities to the food industry and quality of life in Florida and throughout the world
3	Development of methods of change that increase adoption of healthy eating habits by youth and adolescents

Outcome # 1

1. Outcome Target

Identified ways to increase acceptance of sustainable change in eating and exercise

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension
- 1890 Extension

Outcome # 2

1. Outcome Target

Research in the area of human nutrition, food safety and human health and well-being addressing problems and opportunities to the food industry and quality of life in Florida and throughout the world

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 701 - Nutrient Composition of Food
- 702 - Requirements and Function of Nutrients and Other Food Components
- 703 - Nutrition Education and Behavior
- 723 - Hazards to Human Health and Safety
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Research
- 1890 Research

Outcome # 3

1. Outcome Target

Development of methods of change that increase adoption of healthy eating habits by youth and adolescents

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior

4. Associated Institute Type(s)

- 1862 Research
- 1890 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

Besides the external factors related to climate and finance there is the issue of obtaining permission to work with youth as needed for these research projects. Identifying youth with obesity issues has negative connotations for children that must be carefully monitored and in many cases protective parents resistant to change themselves may increase the factors making these studies difficult to obtain necessary participants (both adults and children).

For FAMU the most significant factor is the economy which has the capacity to influence appropriation changes and public policies and regulations. If there are fewer dollars the competition from other priorities and programs will become stronger and can affect the outcome of the program.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Research Opportunities

The major trends in statistics are in Bayesian statistical methods, methods for large datasets and computationally intensive analyses, spatial-temporal modeling, statistical genetics and modeling of non-standard data. Florida IFAS/research understands the importance of evaluating projects to provide scientifically accurate information and recommendations. Accepted research guidelines and procedures may include the following among others:

- Computationally intensive methods
- Analysis or mining of massive datasets
- Statistical genetics

- Spatial-temporal modeling
- Multivariate analysis
- Bioinformatics
- Generalized linear mixed models
- Bayesian statistics
- Semi-parametric methods
- Model diagnostics
- Stochastic processes and models
- Nonlinear modeling

At **FAMU** the evaluation of this program will be done jointly with cooperative extension program. The evaluation studies will combine routine monitoring and documentation together with before and after evaluations between the various groups involved with the program.The evaluation studies will be combine routine monitoring and documentation together with before and after evaluations between the various groups involved with the program.

V(A). Planned Program (Summary)

Program # 15

1. Name of the Planned Program

Families, Youth. and Communities--1862 & 1890 research

2. Brief summary about Planned Program

Diverse family structures and underserved groups, such as teenage parents, single parents, dual earner families, stepfamilies, grandparents raising grandchildren, families of military service personnel, aging adults, and caregiving families are increasing in Florida, along with problems such as poverty, social isolation, parental substance abuse and addiction, stress, child abuse, obesity, and domestic violence. Devoting more resources to prevention education could minimize many of these challenges.

Where we can likely make a difference:
Providing research in the areas of personal and family well-being not only strengthens family functioning, but it improves outcomes for Florida citizens.
Extension can provide research in the areas of personal financial management and consumer protection and the needs of youth and community. We are in a position to find scientific based answers that can be used eventually to train people working as front liners such as social workers, clergy, and others in research related to current financial information, educational programs, and interventions to address critical issues. By integrating with Extension we can increase positive financial practices of Floridians, we will help to improve financial status and create more stable communities.

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

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

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

6. Expending other than formula funds or state-matching funds : No

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
801	Individual and Family Resource Management	0%	0%	10%	
802	Human Development and Family Well-Being	0%	0%	10%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	0%	0%	10%	
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	0%	0%	20%	
805	Community Institutions, Health, and Social Services	0%	0%	10%	
806	Youth Development	0%	0%	40%	
	Total	0%	0%	100%	

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

1. Situation and priorities

A major strength of the area of families, youth and communities is the diversity of disciplines that operate in collaborative and complementary ways to address issues of importance to individuals, families, and communities. This diversity allows human development to be considered from a broad perspective, giving consideration to the key contextual setting in which people are embedded. These contextual factors include fami-lies, neighborhoods, schools, communities, and extra-community linkages. These elements form the conceptual foundation for the research that takes place in this area.

Youth Development

Some IFAS faculty focus their Hatch research on youth development issues such as crime and violence prevention in public schools. This research has led to the development of a safe school survey and school climate survey model for Florida schools, an analysis of school crime and violence data quality systems, longitudinal stud-ies on trends of youth crime and violence, and research on youth risk prevention program effectiveness. Other youth development research has focused on investigating partnerships that adults and youth form, for the purpose of addressing the goals of a local organization, community, or government entity.

Florida youth and adults expand and learn leadership skills through partnerships that promote community volunteerism, more specifically, engagement in civic governance. The research examines the knowledge, attitudes and skills of youth and adults regarding willingness to be involved in partnerships and how they apply leadership skills in partnerships for community governance.

2. Scope of the Program

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

- Multistate Integrated Research and Extension

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

1. Assumptions made for the Program

Through research human development can be considered from a broad perspective, giving consideration to the complex systems in which humans are embedded.These complex systems include families, neighborhoods, schools, communities, the state, the nation and the world.

2. Ultimate goal(s) of this Program

- decrease crime and violence in youth populations
- improve quality of life
- decrease issues related to housing
- improve financial well-being
- improve community interaction and community health

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
2015	0.0	0.0	1.0	0.0
2016	0.0	0.0	2.1	0.0
2017	0.0	0.0	0.0	0.0
2018	0.0	0.0	0.0	0.0
2019	0.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Conduct Research Experiments

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

Extension

Direct Methods	Indirect Methods
● Demonstrations	● Web sites other than eXtension

3. Description of targeted audience

Families
Youth
Family support groups
Schools
community leaders
Businesses (public and private_

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

☐ 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	Decrease crime and violence in youth populations

Outcome # 1

1. Outcome Target

Decrease crime and violence in youth populations

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being
- 806 - Youth Development

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

Description

Florida is a state located in the tropics.Natural disasters such as tropical storms and hurricanes are common annual occurrences in this state.Severe weather conditions such as droughts frequently led to large-scale fires.Florida also has other weather extremes such as floods leading to large scale damage especially along the coastal regions.

Florida has three international shipping ports: Miami, Jacksonville and Tampa.These cities all have international airports.Along with this we have over 53 million tourists visiting from around the world.It has been estimated that this international influx into Florida has made us the entry point of one new invasive pest, plant or disease each week.Any of this could be an external factor affecting land-grant research outcomes. All of these can cause disruption in families that impact research on youth.

Changes may occur because of:
Displacement of subjects
Problem with changing populations because of economy impacts
Chaos and disorder caused by natural and national disasters
Loss of computer systems and data collections

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Research Opportunities

The major trends in statistics are in Bayesian statistical methods, methods for large datasets and computationally intensive analyses, spatial-temporal modeling, statistical genetics and modeling of non-standard data. Florida IFAS/research understands the importance of evaluating projects to provide scientifically accurate information and recommendations. Accepted research guidelines and procedures may include the following among others:

- Computationally intensive methods
- Analysis or mining of massive datasets
- Statistical genetics
- Spatial-temporal modeling
- Multivariate analysis
- Bioinformatics
- Generalized linear mixed models
- Bayesian statistics
- Semi-parametric methods
- Model diagnostics
- Stochastic processes and models
- Nonlinear modeling

V(A). Planned Program (Summary)

Program # 16

1. Name of the Planned Program

Program and Project Support, and Administration, Education, and Communication-- 1862 & 1890 research

2. Brief summary about Planned Program

Research Opportunities

In the areas of program and project support, and administration education, and communication Florida research will use the national research agenda to frame research programs so that we may access national data sets and collaborate with scientists in other disciplines in order to expand our research capacity. A new research focus will be to establish a state/national center for public issues education in agriculture and natural resources.

Core Programs of the Future

- Public policy development
- Leading and managing change
- Agricultural literacy
- Leadership in a global context
- International development through extension, communication and education

3. Program existence : New (One year or less)

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
901	Program and Project Design, and Statistics	0%	0%	60%	
902	Administration of Projects and Programs	0%	0%	10%	
903	Communication, Education, and Information Delivery	0%	0%	30%	
	Total	0%	0%	100%	

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

1. Situation and priorities

In order to carry out strong programs and projects research is useful in the areas that focus on program and project design and evaluation. Studies also related to the efficiency and effectiveness of

research, education and extension methods and proposals are important. This is a relatively new area for the Florida land-grant university to carry out projects but the information obtained is important to improving program support and communication and to improving leadership within the agricultural community as well as within the landgrant universities.

2. Scope of the Program

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

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

1. Assumptions made for the Program

Project and Program design is essential to successful research and Extension programming .

2. Ultimate goal(s) of this Program

Improve project and program design
Improve the evaluation, surveys, sampling methods and statistical analysis used in developing strong research projects and extension programs.
Improve the efficiency and effectiveness of research, education and extension methods and proposals.
Improve educational processes, needs and methods needed to achieve educational goals.

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
2015	0.0	0.0	0.3	0.0
2016	0.0	0.0	0.6	0.0
2017	0.0	0.0	0.6	0.0
2018	0.0	0.0	0.6	0.0
2019	0.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Projects will include the study of leadership and communication as well as ways to increase distance education, social marketing and multimedia technology.

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

Extension

Direct Methods	Indirect Methods

3. Description of targeted audience

County and state faculty
government
students

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

☐ 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	Improve project and program design
2	Improve the evaluation, surveys, sampling methods and statistical analysis used in developing strong research projects and extension programs.
3	Improve educational processes, needs and methods needed to achieve educational goals.

Outcome # 1

1. Outcome Target

Improve project and program design

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 901 - Program and Project Design, and Statistics

4. Associated Institute Type(s)

- 1862 Research

Outcome # 2

1. Outcome Target

Improve the evaluation, surveys, sampling methods and statistical analysis used in developing strong research projects and extension programs.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 901 - Program and Project Design, and Statistics
- 901 - Program and Project Design, and Statistics
- 901 - Program and Project Design, and Statistics
- 901 - Program and Project Design, and Statistics
- 902 - Administration of Projects and Programs
- 902 - Administration of Projects and Programs
- 902 - Administration of Projects and Programs
- 902 - Administration of Projects and Programs
- 903 - Communication, Education, and Information Delivery
- 903 - Communication, Education, and Information Delivery
- 903 - Communication, Education, and Information Delivery
- 903 - Communication, Education, and Information Delivery

4. Associated Institute Type(s)

- 1862 Research

Outcome # 3

1. Outcome Target

Improve educational processes, needs and methods needed to achieve educational goals.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 901 - Program and Project Design, and Statistics
- 902 - Administration of Projects and Programs
- 903 - Communication, Education, and Information Delivery

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

Description

The continuing budget crisis is most likely to have a negative impact on reaching these outcomes.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Research Opportunities

The major trends in statistics are in Bayesian statistical methods, methods for large datasets and computationally intensive analyses, spatial-temporal modeling, statistical genetics and modeling of non-standard data. Florida IFAS/research understands the importance of evaluating projects to provide scientifically accurate information and recommendations. Accepted research guidelines and procedures may include the following among others:

• Computationally intensive methods
• Analysis or mining of massive datasets

- Statistical genetics
- Spatial-temporal modeling
- Multivariate analysis
- Bioinformatics
- Generalized linear mixed models
- Bayesian statistics
- Semi-parametric methods
- Model diagnostics
- Stochastic processes and models
- Nonlinear modeling

V(A). Planned Program (Summary)

Program # 17

1. Name of the Planned Program

Strategic Research for the Management of Invasive Pest

2. Brief summary about Planned Program

1890 Research

Invasive Alien Species (IAS) are a major threat to agriculture and the environment, in Florida and across the nation. In order to mitigate the threats, concerted action along the continuum from prevention of imminent threats to management of established species is required. This project takes a multipronged approach focusing on the one hand on development of relevant tools and technologies, and the other generating data that will enhance our knowledge of biological control and invasions in general. Specific targets include both insect pests and weeds that affect both natural and managed ecosystems. Research on pest threats will be carried out offshore, mainly in the Caribbean which is a major pathway for the entry of IAS into Florida. Onshore research to mitigate the impacts of established IAS will focus mainly on invasive weeds.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
135	Aquatic and Terrestrial Wildlife	0%	0%	0%	40%
211	Insects, Mites, and Other Arthropods Affecting Plants	0%	0%	0%	20%
215	Biological Control of Pests Affecting Plants	0%	0%	0%	20%
216	Integrated Pest Management Systems	0%	0%	0%	20%
	Total	0%	0%	0%	100%

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

1. Situation and priorities

1890 Research

Invasive alien species (IAS) are a major threat to agriculture and the environment (GAO, 2006;

Pimentel et al. 2005). In recent years, at least 10 alien arthropod species have become established in Florida annually. In order to mitigate the threats, concerted action along the continuum from prevention of imminent threats to management of established species is required. This five-year research project takes a multipronged approach focusing on the one hand, development of relevant tools and technologies, and the other, generating data that will enhance our knowledge of biological control and the invasion process in general. This work will be implemented by the Center for Biological Control at Florida A&M University which was established in 1998 as a unique partnership between FAMU, USDA ARS and USDA APHIS. The main priorities for the proposed work include: development of expert information systems, offshore research on high risk IAS, research on invasion patterns, and assessment of the benefits and risks of biological control agents and development of ecologically based management of insect pests and weeds including hydrilla.

2. Scope of the Program

- In-State Research
- Multistate Research

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

1. Assumptions made for the Program

1890 Research

Invasive species will continue to pose a major threat to agriculture and the environment and tools developed through the project will be utilized by the relevant stakeholders. The Center for Biological Control will continue to receive support from ARS and APHIS, in addition to funding through the Evans-Allen Program. ARS has placed three entomologists on the campus to work closely with the University scientists.

2. Ultimate goal(s) of this Program

1890 Research

The goal of the project is to mitigate the impact of invasive species through the development of relevant tools and technologies, and generation of data that will enhance prevention or management efforts, especially biological control.

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
2015	0.0	0.0	0.0	5.0
2016	0.0	0.0	0.0	5.0
2017	0.0	0.0	0.0	5.0
2018	0.0	0.0	0.0	5.0

Year	Extension		Research	
	1862	1890	1862	1890
2019	0.0	0.0	0.0	5.0

V(F). Planned Program (Activity)

1. Activity for the Program

1890 Research

Expert information systems: Lucid software will be used to develop and deploy electronic identification tools and resources for selected taxa and commodities. Offshore research: We will conduct offshore research on selected high risk species to generate data on biology, ecology, and control. Invasive Patterns: Together with empirical data generated from the offshore research, we will utilize existing databases on interceptions and establishments to test various hypotheses about invasions. Benefits and risks of biological control agents: We will work with cooperators to assess the benefits and risks of fungal and arthropod biological control agents. A database containing data on host range of different natural enemy taxa will be developed. Onshore research: We will conduct research to develop ecologically based strategies for the management of invasive insect pests and weeds that have become established in Florida.

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

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations	● Public Service Announcement ● Newsletters ● Web sites other than eXtension

3. Description of targeted audience

1890 Research

The target audience include: federal and state biosecurity agencies, small-scale farmers, extension workers, and biological control scientists/entomologists.

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

- Electronic identification keys/tools/resources developed
- Knowledge generated on specific target pests and used for the development of contingency plans.
- Analyses conducted on key issues regarding safety and specific target biological control agents studied to determine safety.
- Target biological control agents introduced and established against specific insect pest or weed targets.
- Undergraduate and graduate students trained through mentorship and involvement in research programs.

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

V(I). State Defined Outcome

O. No	Outcome Name
1	Digital identification keys/tools/resources for the identification of invasive species utilized
2	Strategies for the identification, prevention or management of invasive species
3	Integrated pest management approaches adopted by farmers leading to greater profitability.
4	The introduction and spread IAS minimized.
5	More effective management of aquatic weeds in first order springs.
6	Trade between the US and partners through implementation of strategies to mitigate the introduction of invasive insects pests and weeds.
7	Well trained undergraduates and graduates contribute to the effective management of native and non-native pests.

Outcome # 1

1. Outcome Target

Digital identification keys/tools/resources for the identification of invasive species utilized

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1890 Research

Outcome # 2

1. Outcome Target

Strategies for the identification, prevention or management of invasive species

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1890 Research

Outcome # 3

1. Outcome Target

Integrated pest management approaches adopted by farmers leading to greater profitability.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants

- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1890 Research

Outcome # 4

1. Outcome Target

The introduction and spread IAS minimized.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 135 - Aquatic and Terrestrial Wildlife
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 215 - Biological Control of Pests Affecting Plants

4. Associated Institute Type(s)

- 1890 Research

Outcome # 5

1. Outcome Target

More effective management of aquatic weeds in first order springs.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 135 - Aquatic and Terrestrial Wildlife
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1890 Research

Outcome # 6

1. Outcome Target

Trade between the US and partners through implementation of strategies to mitigate the introduction of invasive insects pests and weeds.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1890 Research

Outcome # 7

1. Outcome Target

Well trained undergraduates and graduates contribute to the effective management of native and non-native pests.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 135 - Aquatic and Terrestrial Wildlife
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1890 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

Description

1890 Research

The major external factors which may affect the outcomes of the planned program include: unfavorable weather conditions, lack of cooperation from offshore country agencies, lack of effective biological control agents, sagging economy, reduction in funding of current and planned research studies.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

1890 Research

Feedback will be sought from stakeholders regarding use and effectiveness of knowledge generated by the center including impact of published material and electronic tools. A research timetable along with measureable outcomes will help guide field and lab studies. The Center Advisory Council will evaluate the outcomes of research on an annual basis.