

2017 Central State University Combined Research and Extension Plan of Work

Status: Accepted

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I. Plan Overview

1. Brief Summary about Plan Of Work

Plan of Work

Central State University (CSU), the only state-assisted Historically Black College and University (HBCU) in Ohio, is a residential, co-educational institution located in Wilberforce, 20 miles east of Dayton, Ohio. Central State was designated as an 1890 Land-Grant Institution on February 7, 2014. With this transformational designation, the University aligned its mission with the mission of the Land Grant legislation to provide educational opportunities to the general population, and to enhance its teaching, research and extension activities to solidify its land grant status. Dr. Cynthia Jackson-Hammond, CSU's President, is committed to the land grant mission and vision, and is guiding the Institutional efforts statewide and beyond. CSU has appointed Dr. Subramania I. Sritharan, the Dean of the College of Science and Engineering as the Interim Director for the CSU's 1890 Land Grant Program. An administrative structure has been planned and is being implemented.

Central State University's (CSU) 2017-2021 Plan of Work (POW) will initially focus on four integrated programs. The planned programs will be based on NIFA's priority areas - (1) global food security and hunger, (2) climate change, (3) sustainable energy, (4) childhood obesity, and (5) food safety. The cross cutting areas include dimensions such as: Individual and Family Resource Management; Human Development and Family WellBeing; Sociological and Technological Change Affecting Individuals, Families, and Communities; Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures; Community Institutions, Health, and Social Services ;Youth Development ; and Communication, Education, and Information Delivery.

The planned programs will consist of projects under taken under Evans-Allen Research Program and Extension Program. Planned programs will be under four (4) categories - 1) Improving Agriculture, Plant, Environment and Economics; 2) Creating Youth Pathways to Success; 3) Developing Better Social Economic Sustainable Communities; and 4) Building Families and Communities. The decision to focus on these planned programs was based on the following: a) CSU challenge in starting a new land-grant system; b) the uncertain level of funding and limited resources; c) stakeholders input gathered from listening sessions, individual surveys, and one-on-one interactions; d) acceptance from internal stakeholders; and e) CSU's ability to build a strong relationship with Ohio State University Extension and Ohio Agricultural Research and Development Center (OARDC).

The decision was also based on CSU's current extension and previous research development activities. Since CSU's 1890 designation, the University has implemented extension programs such as Seed-to-Bloom, Miami Valley Regional Science Fair, and Farmers Conference. CSU has also been engaged in developing a number of research and extension activities through applications to the 1890 Capacity Building Grants (CBGP) competitive program. These applications include additional extension and research activities such as Science, Technology, Engineering, Agriculture, and Math (STEAM) after school and summer camp programs, and community desert food program that incorporate economic development, aquaculture/aquaponics and a community garden water quality research program, and family and consumer science program.

Additionally, through the College of Science and Engineering (CSE), CSU has carried out significant

research on areas such as phytoremediation of poly-aromatic hydrocarbons from brownfields, applications of remote sensing for agricultural water management in the arid West, photovoltaic materials for solar and other renewable energy sources, genome bioinformatics, design of constructed wetlands, environmental impacts of agricultural applications of bio-solids, and predicting algal blooms in Lake Erie. Other topics of research for faculty include hydraulics/hydrology, soil and water conservation, irrigation and drainage, agricultural drainage, remote sensing and GIS, water quality and environmental engineering, geochemical modeling, geology-geomorphology, hydropower development in unpowered dams, water and environmental law, policy and socio-economic issues, and water resources and economics. The new agricultural research areas will branch out from the existing strengths in these areas with guidance from groups such as the APLU/ESCOP Science Roadmap for Food and Agriculture and National Initiative on the Improvement of U.S. Water Security, Agriculture Research Service, and the Ohio USDA State Technical Committee. Thus, the integration of CSU's previous research and existing extension capabilities will increase the land-grant program's success in achieving the objectives set out in the POW.

The Central State University's 2017 - 2021 Joint Plan of Work (POW) is based on availability of funding through the USDA Evans-Allen (1444) and the 1890 Cooperative Extension (1445) capacity funds. Although CSU plans to build its infrastructure systematically, availability of funding is critical to accomplishing CSU's planned program goals and establishing its land-grant program. At the time of this reporting only tentative amounts have been indicated by NIFA. The POW will be implemented under the CSU Land-grant Center (CSULGC). It will be the operating unit to execute Central State University's comprehensive land-grant program research, extension, and teaching mission. The CSULGC will be under the leadership of the Director and Administrator of the 1890 Land-Grant Program. The CSULGC will consist of the Agricultural, Food Sciences and Water Resources Field Research Center (AFWRC) and the Cooperative Extension Program (CEP). As a new Land-Grant institution, we will establish new physical facilities to implement our activities. The overall administration will be housed in the College of Science and Engineering (CSE). The extension activities will be housed in the Center of Community, Farm, and Family Outreach (CCFFO); and the research activities will be located in CSU Agricultural, Food Sciences and Water Resources Center (AFWRC) - a conglomeration of research facilities housed in Joshua I. Smith Center for Education and Natural Science (JISCENS), C.J. McLin International Center for Water Resources Management (ICWRM) and Jenkins Hall. Developing an integrated capability at the CSULGC will require building institutional capacity, human capital development, and partnership with external entities.

To carry out the POW, the Center will employ up to 54 staff and research faculty personnel for the CEP and AFWRC programs. The Cooperative Extension Program (CEP) will be implemented across the state of Ohio, but CSU's County Agents/Educators will be co-located with Ohio State University Extension offices in ten of the most diverse and populated cities (Cincinnati, Columbus, Chillicothe, Cleveland, Dayton, Findlay, Sandusky, Toledo, Youngstown, and Xenia). In addition, Field Specialists will be located on campus and available on a statewide basis. Whereas, the AFWRC will be the primary research program that will be located on Central State University Wilberforce campus. The CSU Farm site and the International Water Management Resource Center (ICWRM) will be part of the CSULGC Research program.

Furthermore, CSU has developed new baccalaureate programs in Sustainable Agriculture, Exercise Science, and a concentration in Agribusiness. CSU has been mandated by the State of Ohio to establish a School of Agricultural Education and Food Sciences in the College of Education. The CSULGC will collaborate with the College of Science and Engineering (CSE), College of Business (COB), College of Humanities, Arts and Social Sciences (CHASS), and College of Education (COE), and other national and international institutions to fulfill the associated academic and research plans.

In this 2017 - 2021 planning period, there are seven key areas that will continue to influence CSU's POW and guide the Land Grant initiative: (1) water resources and environment; (2) health and wellness; (3) manufacturing engineering; (4) natural sciences; (5) social sciences; (6) Science, Technology, Engineering, Agriculture and Mathematics (STEAM) education; and (7) sustainable agriculture. The CSULGC is developing an Extension and Research program that integrates teaching,

research and extension. One of CSU's major goals through the POW is to become an urban community service leader and provide new science-based knowledge to resolve many food and agricultural issues related to the physical, human nutrition, sustainable development, food and non-food products, food safety, human health and well-being, biological, social, and economic problems confronting communities and farmers. This goal also includes research activities aimed at Childhood Obesity Prevention, Climate Variability and Change, Food Safety, Food Security, Sustainable Bio-energy, and Water Resources which are part of the six priority areas for USDA National Institute of Food and Agriculture (NIFA).

The 2017 - 2021 Joint Plan of Work (POW) will help CSULGC provide research and extension services that are (1) adaptive, (2) specialized, (3) pertinent to the national and global goods and services economy, and (4) community-based. First, CSULGC research and extension services will be "adaptive" for different farmer and urban community stakeholder demands. Ohio has 88 counties, 5 major cities (Cleveland, Columbus, Cincinnati, Dayton, and Toledo) and over 11.5 million citizens (83.2% Caucasian, 12.5% African American, 1.9% Asian, 3.4% Hispanic or Latino, 2% two or more races, and less than 1% Native American). Out of this population, Ohio has over 1,796,942 people who live below the poverty level. According to the US 2012 Census of Agriculture report, Ohio has almost 14,000,000 acres of farm land which grows corn, bean, wheat, etc., and a livestock production of over 25,000 head of beef & dairy cows, cattle, hogs, sheep, and poultry livestock. Employing an adaptive system will help CSULGC deliver relevant science-based programs to address issues associated with agriculture and farm management.

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Secondly, CSULGC extension services will "specialize" in serving urban communities and focus on socially disadvantaged, limited-resourced, under-served and under-represented groups. Solutions for problems faced by these communities with regard to food safety and food security will be studied. CSULGC will engage in research and extension activities in the areas of water quality, urban agriculture, climate variability and change, sustainable bio-energy, and agricultural systems affecting Ohio and beyond. CSU is broadening its curricula to reflect a more comprehensive and global vision of food sciences and agricultural systems.

Thirdly, the CSULGC research and extension land-grant services represent an integral part of the U.S. economy. Farming has been one of Ohio's principal occupational drivers and industry. According to the USDA Economic Research Service (2012) report, agriculture and related industries added 4.8 % to the US Gross Domestic Product. The inclusion of technological advances, discoveries in the training for the next generation of the food and agricultural workforce is essential. Jeff Carpenter of Food Safety Net Service reported that the "value added through ag-bioscience workers in Columbus Region is out performing the national average by more than 9%, indicating a focus on high-value products, innovation and productivity." The CSULGC will form partnerships with institutions, commercial sectors, federal, state, and local government agencies, relevant in Ohio's economy and add to the U.S. economic performance. These efforts will increase production, economic growth, and job creation in the agricultural sector.

Finally, CSULGC's research and extension services are being developed as a community and stake holder driven comprehensive land-grant system. The University will extend its services to citizens

throughout Ohio. Diverse: Issues of Higher Education (2014), acknowledged that with the land grant status CSU is expected to "expand its research on health disparities among African-American communities in Ohio and increase its business incubator activities to promote entrepreneurship and workforce development." We are developing capacity to engage in new discoveries with our stakeholders which will result in creating sustainable communities with the corresponding advancement. The Cooperative Extension Program (CEP) and Agricultural, Food Sciences and Water Resources Field Research Center (AFWRC) will build partnerships with appropriate groups of farmers, local civic groups and city, county, state, and federal government organizations, and stakeholders in urban communities. CSULGC will provide a variety of family and consumer science, 4-H & Youth, and Economic Development education programs that will benefit the people and address community needs in Ohio. CSULGC is working collaboratively with OSU in developing programs and activities to serve all of Ohio citizens. The relationship will ensure that CSU learns the best practices and complements the services offered by OSU Extension and OARDC.

As CSU plans for the 2017-2021 period, the role of both the research and extension will play a significant part in the implementation of CSU's land-grant system. The AFWRC will provide the science for the integrated research, teaching, and extension, while CEP provides community leadership and training to improve lives and sustain communities. The Cooperative Extension Program (CEP) and Agricultural, Food Sciences and Water Resources Field Research Center (AFWRC) will continue to align the institution's strength, resources, and research programs with needs of stakeholders. Our CEP and AFWRC program goals will be accomplished by building the capacity to protect environments, grow economies, and provide leadership in dealing with the scientific, socioeconomic and environmental dimensions of water and water quality issues in Ohio.

Through the 2017 - 2021 Joint POW, CSULGC will build AFWRC capacity and strengthen its water quality program as CSU creates a new land grant research station. For instance, water quality is CSU's research niche. In 1987, the State of Ohio formally established the International Center for Water Resources Management (ICWRM) at Central State University through House Bill 171. One of the major concerns with water is its impact on human health and the diseases caused by contaminated water. For many years, researchers have collected water data to analyze and test for pollutants and contaminants. The U.S. Geological Survey, as well as state agencies and individual districts, and U.S. Environmental Protection Agency collect surface and water sample data. We know that water and environment are central to agriculture and conservation in addition to being essential for quality of life for all in Ohio. As a result, Central State University's ICWRM program was developed to "...improve the management of water resources of Ohio and emerging nations." (Ohio Revised Code: 1987 Legislation, Page 504). Since then, CSU has developed an innovative water resource program that services farmers regarding soil testing, assessment of water quality impacts, applications of Geographic Information Systems (GIS), and remote sensing. The AFWRC will take a number of steps during this planning period to build capacity. Highlights are as follows:

- By 2016/17, AFWRC anticipates building our research faculty ranks with much of the growth related to key land-grant initiatives and Planned Program ideas. By 2017, AFWRC will have created a Land-Grant facility use Master Plan and investment in leadership and programmatic staff working on research programs.
- By 2016/17 identify agricultural and related research projects for research faculty.
- By 2018/19, expected to attract collaboration with federal, state, and local entities to develop new research.
- By 2019, new and or upgrades to existing laboratory equipment for improving curricular support for land-grant mission involving teaching and research related to sustainable agriculture including environmental parameters, water resources for agriculture, and health and nutritional disparities.
- By 2020/21, AFWRC will have made a substantial investment in faculty and facility, and will be expecting returns and impacts through the program.

• By 2021, AFWRC would be well on the way to implementing our Land-Grant Facility Master Plan of building our Agricultural, Food Sciences and Water Resources Field Research Center (AFWRC), and developing our CSU Farm research. The AFWRC will have specialized facilities to conduct research and test ideas and hypotheses in the areas of ecology, plant sciences, natural resources conservation, water for agriculture and other related areas outlined subsequently. This is foundational for our research. During this planning period, AFWRC is committed to connecting internal and external linkages for innovation for significant research development. In addition to funding for AFWRC research faculty, staff, students, and program support, AFWRC will invest in related existing programs such as International Center for Water Resource Management, and in Sustainable Agriculture future programs such as Agricultural Education, Food Science and Exercise Science in College of Education (COE), and appropriate programs in College of Humanities, Arts and Social Sciences (CHASS), and College of Business (COB). These investments support an interdisciplinary collaboration within the university. An important component of the Research and Extension activities will be the focus on talent development in the STEAM areas by involving the undergraduate students in research with the faculty and other research scientists. A unit for engaging students in research will be established by assigning a staff to coordinate and manage the research activities of the students and in their leadership development. This coordinator will not only assist with student engagement within the land grant program at CSU but also external institutions and agencies.

Proposed Staffing Support

The estimates on number of personnel for research and extension are given below. The FTEs shown in this Plan of Work are based on programmatic assessments, and may not reflect actual FTEs expended.

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	null	21.0	null	11.0
2018	null	28.0	null	17.0
2019	null	32.0	null	21.0
2020	null	32.0	null	22.0
2021	0.0	32.0	0.0	32.0

II. Merit Review Process

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

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

2. Brief Explanation

A combined internal, external, and non-university merit review process will be used during this planning period. The Joint Cooperative Extension Program (CEP) and Agricultural, Food Sciences and Water Resources Field Research Center (AFWRC) for the CSULGC will utilize a combined internal and external university and external non-university panel. This is so that we are able to gather important feedback to better address stakeholder demand. Members will be selected every two years to provide a review process of the Joint Extension/Research Plan of Work (POW) to establish the merit of the planned programs.

CSULGC administrative unit members, specialists and researchers from both the internal and external land-grant universities will provide input into the plan of work. Additionally, non-university panel members will consist of various partnering agencies with similar types of research, and extension priorities in the state will be used to establish the merit of the plan or work. The merit review process will focus on the four planned programs. A comprehensive and detailed program review will be conducted by the panel of the planned programs in the plan of work (POW) at least every other year.

Both CSU's Cooperative Extension and AFWRC will utilize advisory committees at different levels to initiate program reviews of all planned programs the next five years. The reviews will be conducted by panels selected specifically for the purpose of the review. These reviews may consist of peer review of grant applications (small and large) by internal faculty panel, administrations, and stakeholders with expertise. Faculty from outside the CSUCC will be used when needed.

Local joint county program reviews conducted by advisory groups at the county level will be used to guide the program and research direction of the planned programs of the POW. Local program reviews will be conducted only where CSULGC office establishes advisory councils and program committees for merit review and comments on the effectiveness of program impact.

Also, peer review processes will consist of state program reviews by internal and external extension and research professionals from both land-grant universities of the state. The research program will be reviewed annually by scientific peers. Stakeholder groups will evaluate the relevance of research priorities, the thoroughness of research procedures in individual projects, project outcomes, publications and direct and indirect impact of the project on the stakeholders. Internal evaluators will consist of administrators and CSULGC scientists not directly associated with the planned programs. Expert reviewers and peer review participants will be selected from governmental agencies (state and federal), other universities, and local officials directly related to the commodities or other outputs of the research. Publications by CSU's Cooperative Extension and AFWRC are peer reviewed before publications in print or electronic media. AFWRC encourages higher tier peer reviewed journals and tracking citations.

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?

The proposed planned programs will address the six strategic priorities: 1) Childhood Obesity Prevention, 2) Climate Variability and Change, 3) Food Safety, 4) Food Security, 5) Sustainable Bioenergy, and 6) Water, as identified by NIFA, as well as, the stakeholders' concerns through an integrated teaching, research, and extension land-grant model that is (1) adaptive, (2) specialized, (3) pertinent to the national and global goods and services economy, and (4) has a community-based systems approach that will address critical issues of strategic importance.

Though the planned programs are stakeholder driven, they will address NIFA's priority concerns. By maintaining sub-advisory groups, committees, and staying connected with local city and statewide groups and organizations in need, CSU's Cooperative Extension and AFWRC will continue to obtain valuable information to help identify critical issues. As a part of the co-location partnership with OSU Extension and expansion of a joint advisory council, the group and subgroup are charged with identifying more stakeholders and others with vested interest. This encourages stakeholders' input and addressing stakeholder issues. CSU's Cooperative Extension and AFWRC will rely heavily on applying the planned programs to issues identified by stakeholders. Extension and expansion of a joint advisory council, the group and subgroup are charged with identifying more stakeholders and others with vested interest. This encourages stakeholders input and addressing stakeholder issues. CSU's Cooperative Extension and AFWRC will rely heavily on applying the planned programs to issues identified by stakeholders.

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

The four planned programs of the CSU's Plan of Work (POW) will address the needs of the under-served and socially disadvantage citizens through the implementation of its educational program. The four planned programs are in response to identified needs and issues including but not limited to youth-at-risk, urban sprawl, single parent families, socio economic conditions, and economically depressed communities among citizens of Cincinnati, Cleveland, Columbus, Dayton, Toledo, and Xenia. The programs will constantly be adaptive and adjust to various cultural and socio-economic realities in Ohio. CSU Cooperative Extension Program has identified cities, based on socio-economic need, that represent a concentration of under-represented populations of the State.

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

The planned program outcomes will be assessed in terms of short, mid-term and long-term impacts. These variables will depend on the systems approach involving CSULGC's input of extension programs and services and output of the new discoveries and knowledge through Research. Each assessment establishes a framework of short-term outcomes that are described based on expected knowledge to be gained or awareness increased through information relative to specific issues arising in the planned programs. The mid-term and long-term outcome evaluations will depend on development, adoptions, and changes.

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

The planned programs are designed to respond to the needs of under-represented, under-served, limited-resource, and socially disadvantaged citizens of Ohio. Simply executing the planned program effectively helps fulfill the vision and mission the Extension and Research of CSULGC. Efficiency of the planned program will be realized through strategic placement and designing of programs' delivery and assessing impact and performance from an open theory

philosophy to determine results through human capital, product quality, and fit.

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 specifically with non-traditional groups
- Survey specifically with non-traditional individuals
- Survey of selected individuals from the general public
- Other (focus groups, public information booths at local gatherings)

Brief explanation.

Stakeholder input is essential in developing programs that are relevant to stakeholders needs. To encourage stakeholder input, the CSU Land Grant Center's Research and Extension efforts will use local, regional, and statewide media outlets to solicit involvement and participation. The Extension offices, which are co-located with OSU Extension, will have advisory committees to provide input for program planning, implementation, and evaluation.

Local planning committees will be formed in each county office. CSULGC is encouraged to recruit plan and implement public interaction,(e.g., town hall meetings, and focus groups sessions). One-on-one target outreach method will be conducted to gather information and include stakeholders' input. Town Hall meetings and focus group sessions will be held to increase awareness of the mission of CSU Land-Grant Center.

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
- Other (one on one with existing and stakeholder)

Brief explanation.

Multiple approaches will be used for the 2017-2021 planning period to seek stakeholder input. The approaches include formal surveys, focus groups, key informant approaches, advisory councils (collaborating groups, agencies, and organizations) and combinations of the preceding methods. Efforts will be made to ensure that the stakeholders involved will include representatives of the limited resources households in terms of geographic location, family status, income level, age, gender, disability status, and users or non-users of existing educational programs. Guideline manuals will be designed for collecting data from stakeholders and ensuring accomplishment of program priority goals.

Advisory Councils assist Agents/ Educators with identifying and engaging local advisory councils to gather information about the needs and issues in local counties. The Extension Advisory Council provides recommendations and identifies issues for educational programming. The Research Advisory committee will include researchers from USDA and State agencies, business representation and commodity groups. The Town Hall meeting will be implemented to identify issues or needs of citizens in cities targeting the general public. Open listening sessions and needs assessments will be conducted jointly between research and extension. A series of focus group sessions was implemented to further prioritize the issues identified in the public hearings (e.g., town hall meeting).

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)
- Survey of the general public
- Meeting specifically with non-traditional groups
- Survey specifically with non-traditional groups
- Meeting specifically with non-traditional individuals
- Survey specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public
- Survey of selected individuals from the general public
- Other (focus groups interviews, qualitative data,)

Brief explanation.

Multiple methods will be used for collecting stakeholder input. Town Hall Meetings, surveys, face-to-face, focus groups, one-on-one interactions, and, listening sessions will all be used to provide a means of collecting data for stakeholder input. In addition, internal faculty and staff committees, advisory committees and groups will be able to collect stakeholder input. As we build partnerships with federal, state, and local governments and agencies we will seek input. Informal, one-on-one, small group interactions, and Extension

Advisory Council will be the dominant means of garnering input.

3. A statement of how the input will be considered

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

Brief explanation.

Stakeholders' input is crucial in building relevant research and Extension programs. The stakeholder input process is essential in refocusing and reaffirming priorities on an ongoing basis. The stakeholders' input will help the research and Extension be adaptive to society's needs. The process is also critical in identifying emerging issues.

The stakeholder input will contribute to how business is conducted at all levels of the research and Extension. This will constantly cause us to shift direction in staffing arrangements and budgetary considerations based on the greatest need of the population. Inputs will be gathered and used to establish action plans and to set priorities.

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Improving Agriculture, Plant Pathology, and Economics
2	Developing Better Social Economic Sustainable Communities
3	Building Families and Communities
4	Creating Youth Pathways to Success

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Improving Agriculture, Plant Pathology, and Economics

2. Brief summary about Planned Program

Ohio is a rich agricultural and diverse state with 88 counties and over 11 million people. USDA Ag Census reports show that it has over 13, 960,604 million acres of farm land; 35,500, acres of vegetables, potatoes, melons; 8,900 acres of fruit and nuts; 506 certified USDA organic farms; 61 aquaculture farms, 35, 500; 1,400,000 number cattle; 2,000,000 hogs and pigs; 115,000, sheep; 51,000 goats; 6,390 poultry; and 21 nurseries/greenhouses/floricultures. In addition, Ohio Department of Natural Resources recognizes eight major lakes (Grand Lake, Indian Lake, Mohawk Reservoir, Mosquito Creek Lake, Piedmont Lake, Pymatuning Reservoir, Senecaville Lake, and William H. Harsha Lake) and 30 Ohio Rivers. Moreover, Ohio has a diverse farming population with 114,203, 000 landowners: 112,812, white; 661 (Hispanic/Latino/Spanish); 287 (more one race); 205 (African American); 169 (American Indian); and 144 (Asian) males and 8702 females. Ohio's agriculture industry contributes over \$93 billion to the state's economy. However, this diversity also presents state challenges. For instance, on March 12 2012, Governor Kasich charged ODNR, ODA, and Ohio EPA to develop recommendations for improving Ohio's water ways while maintaining the agriculture industry. The Ohio Board of Regents indicated that Ohio has identified water quality and infant mortality as two most important concerns of the state of Ohio. These issues have resulted in the state establishing goals for educating and training farmers and others. Furthermore, about 800 million people had been under or mal nourished globally in 2012-2014 (FAO, 2014). "By 2050, world food supplies will need to double from current levels to sustain an estimated population of nine billion people (USDA, AFRI)". As global population continues to rise, ensuring food security will become one of the key challenges.

For the 2017-2021 period, this Planned Program will support CSU Land Grant Center Extension and Research program activities. The research will be carried out a multi-disciplinary research team consisting of agricultural, water resources, environmental, agricultural systems scientists. We are identifying existing qualified faculty for research and are preparing to hire new research faculty by January 2017. We will be seeking researchers in the areas of soil science, entomology, plant science/ horticulture, animal science, water resources for agriculture, agricultural economics, agricultural machinery/engineers/systems and technology? CSU hopes to establish a valuable niche in research area water quality, alternative crops (e.g., medicinal plants and products, plants for bio-fuel production), specialty crops and sustainable farming methods such as organic. The following areas will be focused:

- Natural Resources and Environment- Water, Soil and Climate
- Agricultural Systems and Technology
- Plant Health, Production, and Plant Products
- Biomass and sustainable energy.
- Climate Change Impacts on Agriculture

CSU intends to take an interdisciplinary and integrated approach to address relevant issues that are interrelated to agricultural production, natural resources, environment and sustainability, food, nutrition and human health, and community planning and development. The research faculty for the research areas will define their goals: to advance the science and applications involving sustainable agriculture, plant pathology, and economics. This planned program is dedicated to advancing science,

teaching principles and application, and disseminating knowledge of biological products (such as food, feed, fiber, and fuel) while conserving natural resources, preserving environmental quality, and ensuring the health and safety of people. Partnerships among researchers will achieve certain objectives: a) explore strategies for communities to have access to sufficient, safe, and nutritious food; b) devise mechanisms and processes for safeguarding the environment and sustainability; c) determine the economic and environmental impacts of renewable energy production and consumption; d) increase farm productivity and resource utilization efficiency; e) provide international trade related educational programs, including trade shows, trade assistance, and consulting services; and f) understand the economic impact analyses and evaluating drivers of local economies. CSULGC will be undertaking 3 Research Programs as follows:

Project 1 - Optimal Agronomic Practices To Reduce Nutrient Loading In Ohio's Water Bodies

Project 2 - Development and Evaluation of Natural Products in Agriculture

Project 3 - Mechanized Non-Chemical Pest Management Technology 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 : 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
101	Appraisal of Soil Resources		5%		5%
102	Soil, Plant, Water, Nutrient Relationships		15%		15%
103	Management of Saline and Sodic Soils and Salinity		5%		0%
111	Conservation and Efficient Use of Water		0%		5%
112	Watershed Protection and Management		0%		5%
132	Weather and Climate		0%		5%
133	Pollution Prevention and Mitigation		0%		5%
135	Aquatic and Terrestrial Wildlife		12%		5%
136	Conservation of Biological Diversity		0%		5%
201	Plant Genome, Genetics, and Genetic Mechanisms		0%		5%
204	Plant Product Quality and Utility (Preharvest)		0%		5%
206	Basic Plant Biology		20%		10%
216	Integrated Pest Management Systems		5%		5%
306	Environmental Stress in Animals		0%		5%
402	Engineering Systems and Equipment		0%		5%
404	Instrumentation and Control Systems		5%		5%
405	Drainage and Irrigation Systems and Facilities		0%		5%
605	Natural Resource and Environmental Economics		13%		5%
608	Community Resource Planning and Development		20%		0%
	Total		100%		100%

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

About 800 million people had been under or mal nourished globally in 2012-2014 (FAO, 2014). "By 2050, world food supplies will need to double from current levels to sustain an estimated population of nine billion people (USDA, AFRI)". As global population continues to rise, ensuring food security will become one of the key challenges. USDA NIFA has identified food security as a national priority for research with a goal to provide global solutions. Though agriculture innovation could meet the rising global food demand, it

does so at the expense of the quality of natural resources. Excessive use of synthetic fertilizers and pesticides in food production deteriorated the environment and more importantly, degraded rich topsoil in the last century. Climate change will further exacerbate the problem of food security as it can create severe scarcity of water supply for agriculture (higher temperatures, lower precipitation, and increased evaporation). Scientists are anticipating large swaths of drought or flooding resulting in 10-20% reduction in food productivity. A need to increase agricultural activity to satisfy the world's hunger in the future might have to come at the expense of environmental quality and loss of natural resources. The solution to these conflicting demands is to reach food sustainably by striking a balance between food production, protection of the environment, and conservation of natural resources by taking into account impacts from climate change.

World population may rise to over 9.5 billion by 2050. Food production must increase by 70% to meet the needs of the growing population. Increasing food productivity through intensive agriculture by the use of fertilizers, synthetic herbicides and pesticides has degraded the environment. One may observe the negative effects in the continental scale by cumulative nutrient loading of water bodies such as hypoxia in the Gulf of Mexico. Soil and water conservation efforts after the dust bowl have primarily been focused on minimizing soil erosion. There have been recent efforts in improving water quality in streams that are impaired from agricultural activities using BMPs. Climate change has added an additional dimension to these challenges by altering the precipitation patterns, frequent recurrence of droughts or flooding, water scarcity or salinity issues. Recent droughts in California have made scientists rethink crop production under water stressed conditions.

In Ohio, recent efforts to manage municipal water supplies after being threatened by harmful algal blooms in Lake Erie have been pitted against demands posed on agriculture to increase food production to satisfy the demands from growing population. While scientists at UN FAO and USDA NIFA s have been struggling to optimize food production, conserve natural resources, and minimize environmental degradation, they are faced with addressing the gradual erosion of social justice in agriculture. According to the USDA National Agricultural Statistics Service 2012 Agriculture Census Preliminary Report, farming has shifted towards large farms (larger than 1000 acres) at the expense of the mid-size farms (6-1000 acres) (USDA NASS, 2014) in the past three decades. When small-size farms (smaller than 6 acres) keep up steadily, they do not bring enough income to the owners, and the median household income from farming shows a loss. While the minority farming operators make an improved 8% of the total 2.1 million farmers, percentage of female black farmers fell. Also, the female farmers operate smaller farms than men, but earn less. This data shows how complex an agricultural system can be with respect to the technological and socio-economical parameters. There is an urgent need to develop small, local and sustainable farms to address both technological and socio-economic factors. The planned work at CSU "Improving Agriculture, Plant, and Economics" is designed to address these critical issues facing stakeholders. Accordingly, CSU's topmost research priority is sustainable agriculture, which attempts to balance agricultural production with ecosystem restoration, environmental protection, and economic viability. One of the priorities of extension is to provide access of agricultural improvements to small, limited resource, and minority farmers. Another priority is to inspire local urban communities to participate in agriculture through engaging them in USDA initiatives such as "Helping people help the land", "Seed to Bloom", community gardens, aquaculture, and "nutrition through alternative and specialty crops".

2. Scope of the Program

- In-State Extension
- In-State Research
- Multistate Research
- Multistate Extension

- Integrated Research and Extension

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

1. Assumptions made for the Program

Cooperative Extension Program (CEP) and Agricultural, Food Sciences and Water Resources Field Research Center (AFWRC) will continue to provide research and extension services to the clients on sustainable agriculture. The extension services through The Center of Community, Farm, and Family Outreach (CCFFO) will interact with the communities to understand their needs which will translate into problems for research that can be solved using sustainable agricultural practices.

Key assumptions:

- needs and problems in our target communities will be identified through extension agents
- those needs that mirror broader issues across the nation will be identified through surveys, and scientific literature review
- communities and stakeholders are convinced that sustainable agriculture will lead to enhancement of ecosystem services and long term sustenance of food production and profitability
- all citizens benefit from food production through sustainable agriculture
- USDA funding will continue to be available; these funds can be used as leverage by the science and engineering faculty to attract additional extramural funds to pursue similar lines of inquiry from other federal agencies and private and industry partnerships
- state funds are available for matching the federal funds from USDA

2. Ultimate goal(s) of this Program

The ultimate goal of AFWRC and CEP is to start the land grant mission at CSU through advancing interdisciplinary research on the different aspects of agro-ecosystems' sustainability. The knowledge gained will be shared with target communities to ensure access, equitable participation, and representation.

V(E). Planned Program (Inputs)

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	0.0	5.5	0.0	2.0
2018	0.0	7.0	0.0	4.5
2019	0.0	8.0	0.0	6.0
2020	0.0	8.0	0.0	8.0
2021	0.0	8.0	0.0	8.0

V(F). Planned Program (Activity)

1. Activity for the Program

AFWRC research includes Natural Resources and Environment, Plant health, Production of Natural products, Agricultural systems and technology, Human Nutrition and Non-Food Products, Agricultural economics and Rural communities. Parallel CEP extension programs are soil health and water quality assessments and ecosystem services for small farms, community gardens, water and energy audits, "seed to bloom", "test your well" events, stream quality assessment, health disparities awareness and food nutrition and programs to promote healthy life style, and farmer's market for food from alternative crops. Extension programs are available for stakeholders for improvements in agriculture, plants, and economics based on science-based decisions and well-informed decisions on sustainable farming. As indicated previously 3 Research Projects are to be under taken: These are:

Project 1 - Optimal Agronomic Practices To Reduce Nutrient Loading In Ohio's Water Bodies

Ohio waterbodies, streams and lakes alike are suffering from overload of nutrients both due to agronomic practices and wastewater streams from cities. Hazardous algal bloom (HAB) in Ohio's water bodies has impacted negatively and has been recorded. Phosphate overloading also has impacted Ohio's streams. The deleterious consequences of nutrient overloading have impacted people, particularly around lakes in Ohio. Public groups, water consumers and people who make use of Ohio's lakes for different purposes including recreation have complained about this situation. Media outlets have highlighted the unsatisfactory water quality situation in Ohio. The State legislature is taking efforts to support research institutions in Ohio to find solutions to improve the water quality situation in water bodies with particular reference to nutrients. Nutrient loading is a nationwide problem and solutions towards solving this problem can be useful for the whole US. Technologies developed can also be adopted internationally. Central State University (CSU) is in an excellent position to address this problem with the research work it has conducted in the past in Lake Erie which is continuing.

The major goal of this research effort is to develop an overall strategy for reducing nutrients that lead to harmful consequences for humans and aquatic life in the water bodies of Ohio, considering the different sectors of the State economy, agricultural in particular. The expected solution will be a dynamic algorithm which will enable agronomic practice recommendations for farmers in the study area using Geographic Information Systems (GIS) that will incorporate a variety of data sets with input from farmers, agronomists, hydrologists, water quality experts, agricultural economists and others. The dynamic algorithm will be calibrated and validated for the Great Miami (Upper) River basin in Western Ohio. The Great Miami River (upper) basin is 748 square miles in extent, with 71% of area under cultivated crops, 8% pasture and hay, 9% forest and 9% developed. The river basin includes the Indian Lake and Lake Loramie where toxic algal bloom problems have been identified since 2010. There is consensus on the fact that a solution has to be developed on a long term and sustainable basis. This effort will be in collaboration with the Ohio State University (OSU) and it is expected that the algorithm will be adaptable to all watersheds the entire State of Ohio.

Project 2 - Development and Evaluation of Natural Products in Agriculture

The purpose of this research is to develop natural and more sustainable products that may be used for enhancing human health and reduce environmental degradation. Research will include fundamental research leading to the development of alternate crops for the production of nutraceuticals and botanical supplements; the development of environmentally friendly pest management strategies, biodegradable plastics and composite materials, and biofuels. Natural products from a variety of sources including insects, higher plants, fungi and bacteria may be evaluated for biologically active compounds to better clarify modes of action and biosynthesis. Examples of the type of research will include screening native plants and honeybee products for antimicrobial and antiviral activity, and visual indicators for food and consumer safety. Future research will promote exploring genetic diversity to enhance the nutraceutical value of plants with agricultural potential. The research activities will include cultivation of appropriate alternate crops for natural products, developing biopolymers and for biofuels.

A sub-project under this effort will be on Pollinator Efficiency for Agricultural Crops and the Environment (PEACE). The success of many agricultural crops, especially fruit and small fruit crops, lie with the

efficiency of pollination by honey bees and other native pollinators. However, honey bees are at critically low levels in Ohio and across the country because of pesticides, diseases, mites and mishandling. Research into population production, breeding, health and sustainable practices to enhance pollinator efficiency is critical to increasing agricultural production. Locally, dry and wetland prairies will be established on the Central State University campus and maintained to serve as a laboratory for this research. The pollination success rate by boxed bees is necessary to determine the relative pollination success, and percentage of pollination species. Artificial insemination to produce mite resistant and genetically successful pollinators that can survive environmental stressors in Ohio are key to increasing healthy boxed bee populations.

Project 3 - Mechanized Non-Chemical Pest Management Technology Development

Agriculture producers have long sought cost-effective, labor friendly methods to maximize crop yield by controlling weeds and pests sustainably. This is especially true for specialty crop and organic producers. Research will develop and evaluate precision agriculture, sensors and smart vision technologies to increase the efficiency of current pest management strategies and extend into non-chemical, mechanized pest management. New non-chemical methods for controlling weeds such as directed energy will be evaluated and tested for use in agricultural and conservation settings. Directed energy mimics the power of the sun with artificial light (40-80 times sun power) to kill weeds. As an outgrowth of a capacity building grant, pest management machinery and weed identification software will continue development to be integrated with smart vision to allow machines to identify weeds from crop plants to improve efficiency of weed control. Alternate uses for this technology will be evaluated for controlling tree crop diseases of the bark including bacterial, insect and viral infections. The research will focus on developing mechanized, non-chemical pest management control for small farms initially and then scale it up to larger farms.

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

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● eXtension web sites ● Web sites other than eXtension ● Other 1 (1890 USDA NIFA website)

3. Description of targeted audience

The targeted audiences are farmers in general and small farmers in particular, limited resource growers and families, and women and minority farmers. AFWRC and CEP information will be shared with fellow scientists from STEAM programs, fellow agencies such as Ohio DNR and EPA, political entities, K-12 administrators and counselors and fellow scientists and students in the fields of sustainable agriculture, water resources management, environmental engineering, manufacturing engineering, and agricultural education and food science.

V(G). Planned Program (Outputs)

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

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

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

V(H). State Defined Outputs

1. Output Measure

- Number of Educational demonstrations for farmers in general and small, limited-resource, and minority farm families in particular on best management practices and best available technologies on sustainable agriculture.
- Number of Educational programs, activities, or events on ecosystem services and sustainable agriculture
- Research publications related to different components of sustainable agriculture
- Research-based, reader-friendly pamphlets, and fact sheets on sustainable agriculture and farm economics
- In each output measure, we will take inventory on total number of participants.

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	To identify new knowledge, techniques and improved hypothesis on questions related to Natural Resources and Environment
2	To identify research activities Plant Health, Plant production and Products as to generate new knowledge, information, techniques, and tools.
3	To identify research activities related to Agricultural Systems and Technology such as new knowledge, techniques, improved hypothesis on questions.
4	To identify research activities such as new knowledge, techniques and improved hypothesis on questions related to Agricultural Economic and Rural Communities

Outcome # 1

1. Outcome Target

To identify new knowledge, techniques and improved hypothesis on questions related to Natural Resources and Environment

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 216 - Integrated Pest Management Systems
- 136 - Conservation of Biological Diversity
- 101 - Appraisal of Soil Resources
- 111 - Conservation and Efficient Use of Water
- 133 - Pollution Prevention and Mitigation
- 204 - Plant Product Quality and Utility (Preharvest)
- 135 - Aquatic and Terrestrial Wildlife
- 102 - Soil, Plant, Water, Nutrient Relationships
- 132 - Weather and Climate
- 112 - Watershed Protection and Management
- 402 - Engineering Systems and Equipment
- 201 - Plant Genome, Genetics, and Genetic Mechanisms

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 2

1. Outcome Target

To identify research activities Plant Health, Plant production and Products as to generate new knowledge, information, techniques, and tools.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 216 - Integrated Pest Management Systems
- 206 - Basic Plant Biology
- 402 - Engineering Systems and Equipment
- 135 - Aquatic and Terrestrial Wildlife
- 204 - Plant Product Quality and Utility (Preharvest)
- 133 - Pollution Prevention and Mitigation

- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 112 - Watershed Protection and Management
- 132 - Weather and Climate
- 101 - Appraisal of Soil Resources
- 605 - Natural Resource and Environmental Economics
- 405 - Drainage and Irrigation Systems and Facilities
- 102 - Soil, Plant, Water, Nutrient Relationships
- 136 - Conservation of Biological Diversity
- 111 - Conservation and Efficient Use of Water

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 3

1. Outcome Target

To identify research activities related to Agricultural Systems and Technology such as new knowledge, techniques, improved hypothesis on questions.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 404 - Instrumentation and Control Systems
- 112 - Watershed Protection and Management
- 133 - Pollution Prevention and Mitigation
- 405 - Drainage and Irrigation Systems and Facilities
- 101 - Appraisal of Soil Resources
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 204 - Plant Product Quality and Utility (Preharvest)
- 136 - Conservation of Biological Diversity
- 111 - Conservation and Efficient Use of Water
- 402 - Engineering Systems and Equipment
- 216 - Integrated Pest Management Systems
- 102 - Soil, Plant, Water, Nutrient Relationships
- 103 - Management of Saline and Sodic Soils and Salinity
- 132 - Weather and Climate
- 135 - Aquatic and Terrestrial Wildlife

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 4

1. Outcome Target

To identify research activities such as new knowledge, techniques and improved hypothesis on questions related to Agricultural Economic and Rural Communities

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 605 - Natural Resource and Environmental Economics
- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)
- Other (support in school for programs)

Description

Agricultural activities are vulnerable to weather, which prevents or delays growing seasons, as well as to increase drought conditions. May impact yield and quality of the crop. Natural disasters such as drought and hurricanes can affect production. Public policy changes, environmental regulations, and appropriation changes may have an impact on acceptance of sustainable farming. If farmers are able to get a good return on their product while holding down environmental and conservations costs, they will be motivated to use the inputs as they accept the new sustainable technologies. Government regulations and environmental regulations, may affect producers' ability to make a profit on these

enterprises. Prices for plant products are dependent on the local, state, and national economies. Additionally, shifting development patterns and global market pricing may affect outcome. Changes in the population (immigration, new cultural groupings, etc.) can lead to producer/neighbor issues that influence choice of production practices. The ability or willingness of young men and women in urban centers to become involved in production agriculture will affect the issues of unemployment and poverty in these areas. CSULGC's AFWRC and CEP are committed to working in this complex program throughout the planning period 2017-2021.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Research will be evaluated according to its relevance to Ohio and the nation. Output efforts will be a measure of the number of publications in journals and other delivery methods. The extent to which findings will be cited and enhance further studies in other institutions will serve as another evaluation measure of efforts, such as patents awarded and commercialization of findings. The following instruments will be used for evaluation studies.

1. Assess Feedback from stakeholders
2. Assess feedback from Advisory Board
3. Assess the support from elected state and federal officials for the institution
4. Assess the feedback from USDA NIFA in the form of annual reports
5. Ability to secure extramural funding from other agencies and CBG grants
6. Assess the support received by OBR, Board of Trustees, and Administration in terms of reporting accomplishments
7. Assess the feedback from OSU, Purdue, neighboring 1890 institutions and our standing among peer institutions
8. Media coverage of research and extension activities
9. Assess the feedback from faculty, staff, and students
10. Assess the feedback from surveys administered to various stakeholders

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Developing Better Social Economic Sustainable Communities

2. Brief summary about Planned Program

The Development of Better Social Economic Sustainable Communities planned program is formulated with a unifying goal to provide resource planning & economic development leadership to help farmers and urban communities better solve problems and address financial and economic issues. This planned program outlines measures that will be implemented in Ohio communities. The KA's (knowledge areas) that drive the plan are centered on (1) making better family economic decisions; (2) improving resource availability; (3) increased community planning and development activities; and (4) better control of animal reproductive performance.

This program intends to take an interdisciplinary and integrated approach to address relevant issues that are interrelated to agricultural production and community planning and development. It is no secret that there is a direct correlation between poverty and poor nutrition. This plan involves collaboration with other partner institutions, city governments, businesses, federal agencies, policymakers and communities. Specific areas of our planned program include, but are not limited to the following: explaining the economics and environmental impacts of renewable energy production and consumption; farm productivity and resource utilization efficiency; market analysis; community leadership, planning, and development, rural finance; needs of under-represented farmers/ producers with limited resources; analysis of institutional and infrastructural constraints; strengths and challenges of local communities; and providing international trade related educational programs, including trade shows, trade assistance, and consulting services. Another priority research area is conducting economic impact analyses and evaluating drivers of local economies.

In addition, the USDA report says that one out of every four children in rural areas lived in poverty and 21.2 percent of those households where children are present were considered to be food insecure. One in eight children in the same demographic lived in conditions of deep abject poverty (\$1000 or less family income for a family of 4 in 2012). Children living in poverty-stricken areas are less likely to do well in school and less likely to graduate from high school. Many of these families benefit from government-sponsored food assistance programs, which further enhances their ability to make good nutritional choices. The ability to eat for the month becomes the priority and nutrition takes a back seat. Early nutrition is a key component in reducing poverty. Children who are taught good nutritional habits earlier in age are healthier adults. These healthy adults are more productive, less likely to get sick, and according to Steve Baragona (2010), they will earn higher wages during their lives (nearly 46% more in their lifetime).

The 2017-2021 planned program will involve Agricultural, Food Sciences and Water Resources Field Research Center (AFWRC) research and Cooperative Extension Program (CEP) education programs that will strengthen the capacity of communities while developing their skills in the areas of leadership, business, non-profit, cooperative, and workforce (career) development. Addressing socioeconomic improvement will also be done through collaboration with The Center of Community, Farm, and Family Outreach (CCFFO), the College of Business, city governments, and municipal entities in Dayton, Columbus, Cincinnati, and Xenia to name a few. Future initiatives will involve a wider range of municipalities as greater resources become available and best practices are implemented. The intent of

involving these municipalities is to address the need for economic development and attract small business and entrepreneurs to the areas that are served by the planned program. Expanding business opportunities and providing training for stakeholders may create pathways for new jobs, rezoning of underutilized land to create urban farms, and small business opportunities for those with technical knowledge and requisite skills. Thus, the planned program for the 2017-2021 period will work to deliver the following: a) deliver financial education programs, b) facilitate workshops, and c) host and joint sponsor conferences. It is possible that given the wide berth of the current plan, addressing the social and economic issues in this program may affect multiple outcomes in other areas of the POW.

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
602	Business Management, Finance, and Taxation		10%		30%
603	Market Economics		10%		10%
607	Consumer Economics		20%		30%
608	Community Resource Planning and Development		40%		20%
801	Individual and Family Resource Management		20%		10%
	Total		100%		100%

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

1. Situation and priorities

The current socioeconomic state of many communities in the United States is unhealthy. Decisions of large manufacturing organizations to leave the state have left many of the cities in Ohio with thousands of acres of distressed land that remain unimproved and desolate. In many of these cases, left behind in the wake are those under-served populations that cannot afford to relocate. The lack of jobs in these areas has affected the municipal tax base, educational standards, increase in the number of families below the poverty level, and hindered the ability of families to provide regular and nutritious meals to children in these affected areas. In a recent study conducted by MCOF (Montgomery County Futures- a joint initiative sponsored by Montgomery County, Ohio Commissioners), "winning" counties are succeeding because they have (1) higher levels of educational attainment; (2) more diversified local economies; (3) comparative tax advantages relative to the competition; (4) an appreciation for, and track record of, regional collaboration; (5) a palpable sense of community pride; and (6) a stronger housing market. Each of these characteristics contributes to a stronger, healthier economy which invites and grows new businesses and provides jobs for growing families.

The current situation is compounded by the growing number of poor families in the United States. In the state of Ohio alone there are 340,000 poor families; this represents 11.6 percent of the families in the state. 16.0 percent of the population or 1,797,000 people in the state of Ohio fall below the poverty line. Much of the cause of this poverty is lack of opportunities in the local communities for jobs. According to the 2015 Ohio Poverty Report, families with children ranging from 7.3% among married couples to 55.3% for those headed by female single parent experienced poverty during the last year. Education and technical training are also identified as contributing factors in these poverty statistics. The situation in Ohio does mirror that of the United States. In 2006, Ohio began to outperform the nation in this statistic. The percentage of the poor in the state is now higher than that of U.S. Poverty statistics in the country are increasing and unfortunately poverty is an indicator of how well local economies are performing.

Agricultural, Food Sciences and Water Resources Field Research Center (AFWRC) can provide empirical, science-based solutions for healthier lifestyles, better financial and nutritional decisions, and better quality of life for families. These programs, where community organizations, schools, and collaborative partners are engaged, may be able to improve lives of people in these affected areas. The Cooperative Extension Program will give Central State University the opportunities to share the findings from research initiatives with broader communities and help reduce the number of those who suffer due to a lack of resources and education.

2. Scope of the Program

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

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

1. Assumptions made for the Program

It is assumed that through the work outlined in this document, CSU Conservation Center and all associated partners will support the stated objectives of the Program as they relate to addressing socioeconomic problems in the affected area(s). This planning period covers the 2017-2021 time frame and should allow the stakeholder communities and the extension system to become better prepared to identify emerging opportunities in order to address these socioeconomic issues more quickly. The key assumptions are as follows:

1. Citizens directly benefit from improved socioeconomic conditions and that reducing poverty will assist in this effort.
2. Research and extension initiatives in the area of family and personal economics are needed in order to improve current conditions and meet future needs of program participants.
3. Federal funding will continue to be available as well as leverage for extramural grants to support the Planned Program and the staff who may be employed to meet the objectives of the program.

Understanding of this program and how society utilizes and depends on the associated research and

extension are key to present and future decisions regarding the development of better socioeconomically sustainable communities.

2. Ultimate goal(s) of this Program

Cooperative Extension Program (CEP) and Agricultural, Food Sciences and Water Resources Field Research Center's (AFWRC) ultimate goal of this program is to conduct research and extension activities in order to address the need for improving socioeconomic sustainability of the greater community. The end goal is to provide families and individuals with empirical, science-based information that will help them make better economic decisions, experience better financial lives, live more healthy lives, and contribute to making their economies more sustainable.

V(E). Planned Program (Inputs)

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	0.0	5.5	0.0	3.0
2018	0.0	7.0	0.0	4.5
2019	0.0	8.0	0.0	5.0
2020	0.0	8.0	0.0	6.0
2021	0.0	8.0	0.0	8.0

V(F). Planned Program (Activity)

1. Activity for the Program

The chart above represents the two types of methods that will be employed in the Planned Program. It consists of Direct and Indirect Methods and these methods are included in the description below:

The following outlines a four-phased approach with the goal of transcending social, economic, political, and academic boundaries, all in the interest of assembling wide-ranging expertise in the delivery of services to vulnerable and under-served communities immediately around Central State University, in other areas of the state of Ohio, and eventually to a national and international audience. This approach should directly give voice to, and empower residents of under-served communities, educating them in the use of political and economic resources to improve their communities.

1. Seminar/conference bringing urban and food/farming/rural groups together - such as a city Urban League and groups such as the National Black Farmers Association, National Nurses Association, and the Academy of Nutrition and Dietetics, as well as political leaders and policymakers, and community groups and community leaders. These sessions would be a kick-off for continued collaborations of (1) professionals who can train entrepreneurs (such as ones who can organize food co-ops in distressed urban areas), (2) artisans such as the Black Farmers (who can help with community gardening and other farm-to-table initiatives), (3) practitioners such as those from the century-old Academy of Nutrition and Dietetics (who can assist families with fighting obesity and planning a healthy diet), and (4) CSU student participation by hospitality/management majors.

Suggested timeline:

Spring 2016

- Research and gather data on urban areas with under-served communities as evidenced by indicators such as obesity rates, food stamp recipients, distance to supermarkets and other sources of healthy foods, abandoned and distressed acreage.
- Identify the area most appropriate for the initial seminar/conference.

Summer 2016

- Define conference focus and short-term goals.
- Plan conference date, events, logistics/equipment.

Fall 2016

- Identify prospective collaborators; assess budget impact of their participation.
- Preliminary discussion with collaborators on short- and long-term goals,
- Securing their endorsement and support.
- Secure commitment from collaborators for conference participation.

Spring 2017

- Conference held and completed.
- Analyze feedback from conference participants, observers.
- Assess feedback, conference detail for goal of publishing conference proceedings with student co-authors.

1. Enrich existing curriculum or create new courses to expose CSU students to the civil society institutions that invigorate and sustain communities. As just one example, an idea is to add a local history focus/concentration under the existing history major. CSU students would thus be in a position to interact with populations in surrounding communities such as Wilberforce and Xenia. The potential also exists for curriculum development in other disciplines - a few examples are psychology and political science in the College of Humanities, Arts & Social Sciences, science/school administration teacher training in the College of Education, hospitality/management in the College of Business, and horticulture/water resource management in the College of Science & Engineering.

Suggested timeline:

Spring 2017

- Begin identifying and communicating with individuals and groups with expertise and interest in curriculum development in their areas, with the goal of establishing a group, tentatively named School-to-Community Education I, with overall responsibility for reviewing, approving and finalizing proposals.

Fall 2017

- Convene and charge SCEI, which then organizes itself.

Fall 2018

- SCEI reports on approved proposals.

1. Enrich existing or create new curriculum for K-12 with the goal of strengthening interaction among local schools and parents and other constituencies, Central State University, local business and professional organizations, and local political leaders and policymakers. Although only one or two focuses would be chosen in the short-term, these curriculum enhancements will eventually include a range of areas, such as consumer finance for students and community members, nutrition planning, fitness and obesity, and how to organize to secure support, for community needs and preferences, from political leaders and policymakers at the national, state, and local level. As an example, the community gardening and/or nutrition component of a K-12 science curriculum could be opened to parents and other interested residents, who then would have access to healthy foods and meal planning. Moreover, offering popular courses (in food preparation and storage, for example) in a fully or partially online format would accommodate parents and other community residents who are either unable or unwilling (some vulnerable populations have unpleasant memories of their school years) to engage with the educational process via traditional brick-and-mortar. Online and other alternative delivery methods could be offered in public libraries (or in schools after regular class), thereby increasing community engagement with these institutions.

Suggested timeline:

Spring 2018

- Begin identifying and communicating with individuals and groups with expertise and interest in curriculum development in their areas, with the goal of establishing a group, tentatively named School-to-Community Education II.

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

Extension

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

3. Description of targeted audience

More than 340,000 poor families live in Ohio; this represents 11.6 percent of the families in the state. 16.0 percent of the population or 1,797,000 people who fall below the poverty line. Much of the cause of this poverty is lack of opportunities in the local communities for jobs. According to the 2015 Ohio Poverty Report, families with children ranging from 7.3% among married couples to 55.3% for those headed by female single parent experienced poverty during the last year.

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

- Demonstrate how consumer behavior affects purchasing decisions. Conduct seminars on family economics and spending and their effect on local markets
- Conduct and evaluate seminars on poverty, welfare, and economic discrimination
- Conduct training for small, minority, farmers, and participate in small business development training with local partners (DDC, TEC, etc.)
- Conduct and evaluate seminars on poverty, welfare, and economic discrimination
- Establish urban farms within local (Greene and Montgomery County) municipalities.
- Conduct Personal Finance Seminars, Retirement Seminars
- Conduct Seminars in predatory lending and protecting the consumer.
- Conduct seminars in building better relationships and reducing household stress.

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	Demonstrate how consumer behavior affects purchasing decisions. Conduct seminars on family economics and spending and thier effect on local markets. The Planned Program will interface with local and regional relief agencies in order to sponsor seminars on selected topics including shopping in your neighborhood, consuming products grown and raised by local farmers, making better economic decisions, and leveraging the distribution of labor in the family.
2	Conduct and evaluate seminars on poverty, welfare, and economic discrimination in underserved and economically at-risk communities. These seminars will cover a variety of topics including fair housing, economic discrimination, equal pay in the workplace, job availability, and the availability of economic opportunities in the geographic area. Seminars will also be used to teach participants to dress for interviews, interviewing skills, completing employment applications, and career planning.
3	Engage economic development & entrepreneurial partners in Greene & Montgomery counties to conduct quarterly education workshops to promote sustainable agriculture development in urban areas Partner with Dayton Development Coalition & Dayton Entrepreneur Center to provide information on sustainable business formation by embedding agriculture specific business development with standard financial business management skills. Collaborate with the Greene County & Montgomery County Small Business Development Centers to provide group discussions to urban farm entrepreneurs to learn about funding sources and small business loans. Conduct yearly one-day seminar with County stakeholders with breakout sessions to include the following: entrepreneurial urban farming workshops with case studies, commercial food marketing, managing a startup business, and how to successfully transition from farm to market in an urban setting.
4	Programs in this area will develop business educational workshops to engage minority farmers in Ohio over a five year period resulting in effective farm to table management practices to benefit urban communities. Engage with municipality stakeholders to target green spaces in targeted food desert areas to develop community urban farming plots. Conduct group discussions in faith based locations to educate individuals how to raise their own gardens in urban settings and promote healthier food choices Conduct train-the-trainer demonstrations with agriculture partners on the most effective urban gardening techniques on an on-going basis.
5	Conduct Personal Finance Seminars teaching participants how to develop household budgets. Conduct seminars on retirement planning. Teach participants the benefit of having good credit ratings and how to develop banking habits that will result in having good credit.
6	Conduct seminars in building better relationships and reducing household stress and in relationship management focused on keeping children in functional households. Plan activities with the child support advocate groups. This outcome can also benefit from teen parenting seminars, alcohol and drug abuse resistance, and attending college.

Outcome # 1

1. Outcome Target

Demonstrate how consumer behavior affects purchasing decisions. Conduct seminars on family economics and spending and their effect on local markets. The Planned Program will interface with local and regional relief agencies in order to sponsor seminars on selected topics including shopping in your neighborhood, consuming products grown and raised by local farmers, making better economic decisions, and leveraging the distribution of labor in the family.

2. Outcome Type : Change in Action Outcome Measure

3. Associated Knowledge Area(s)

- 607 - Consumer Economics

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 2

1. Outcome Target

Conduct and evaluate seminars on poverty, welfare, and economic discrimination in underserved and economically at-risk communities. These seminars will cover a variety of topics including fair housing, economic discrimination, equal pay in the workplace, job availability, and the availability of economic opportunities in the geographic area. Seminars will also be used to teach participants to dress for interviews, interviewing skills, completing employment applications, and career planning.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 607 - Consumer Economics

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 3

1. Outcome Target

Engage economic development & entrepreneurial partners in Greene & Montgomery counties to conduct quarterly education workshops to promote sustainable agriculture development in urban areas Partner with Dayton Development Coalition & Dayton Entrepreneur Center to provide information on

sustainable business formation by embedding agriculture specific business development with standard financial business management skills. Collaborate with the Greene County & Montgomery County Small Business Development Centers to provide group discussions to urban farm entrepreneurs to learn about funding sources and small business loans. Conduct yearly one-day seminar with County stakeholders with breakout sessions to include the following: entrepreneurial urban farming workshops with case studies, commercial food marketing, managing a startup business, and how to successfully transition from farm to market in an urban setting.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 4

1. Outcome Target

Programs in this area will develop business educational workshops to engage minority farmers in Ohio over a five year period resulting in effective farm to table management practices to benefit urban communities. Engage with municipality stakeholders to target green spaces in targeted food desert areas to develop community urban farming plots. Conduct group discussions in faith based locations to educate individuals how to raise their own gardens in urban settings and promote healthier food choices

Conduct train-the-trainer demonstrations with agriculture partners on the most effective urban gardening techniques on an on-going basis.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 602 - Business Management, Finance, and Taxation
- 608 - Community Resource Planning and Development
- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 5

1. Outcome Target

Conduct Personal Finance Seminars teaching participants how to develop household budgets. Conduct seminars on retirement planning. Teach participants the benefit of having good credit ratings and how to develop banking habits that will result in having good credit.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 6

1. Outcome Target

Conduct seminars in building better relationships and reducing household stress and in relationship management focused on keeping children in functional households. Plan activities with the child support advocate groups. This outcome can also benefit from teen parenting seminars, alcohol and drug abuse resistance, and attending college.

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Government Regulations
- Competing Public priorities

- Competing Programmatic Challenges

Description

1. Economy
2. Natural Disasters (drought, weather extremes, etc.). Weather may cause programs to be delayed or postponed. This is likely to happen only during the winter months.
3. Appropriation changes, budget challenges or shifting priorities may become an issue.
4. Government Regulations. Interaction with several municipalities and various levels of bureaucracy may affect efficiencies.
5. Competing Public Priorities.
6. Competing Programmatic Challenges. Many of the planned programs will depend on individuals in other organizations.
7. Populations changes (immigration, new cultural groupings, etc.)

Creating socio economically sustainable communities is an arduous and involved undertaking. There are myriad facets and variables to consider. Many of these variables are directly affected by lifestyle, economics, genetics, support systems - both familial and communal, and the psychology of those who are to be helped the most through the Planned Program. As stated above, the limitations are tremendous but they are overcome by extension into the community and by using partners who are already in the communities affecting socioeconomic change. This Program will be impacted by variability in the lives of the participants. It is hoped that an aggregate difference can be made, but more importantly, affecting the lives of those who are economically disadvantaged and from underrepresented populations will be the driving force.

The Planned program is likely to encounter fluctuations in the availability of public monies. These fluctuations will have both positive and negative effects on the well-being of the proposed programs and individuals involved. There is no prescription to prevent these external problems from happening. The emphasis that is placed on resource management will help the program directors in overcoming the shortfalls that may happen. It may be worth mentioning here that the Planned Program is very welcomed by the greater community. There is an excitement that may afford the program objectives a greater amount of financial support in times of difficulty if they happen to occur. Funds may be available from extramural, formula, or state-matching funds. There is also the importance of research that will be conducted primarily by research faculty. The availability of such core funds is critical to meet the needs of the research. In the event that these funds (and/or extramural dollars) are not available, the programmatic demands may not be met, and this will affect the outcomes and the measurements used for assessment of the outcomes.

There are other external factors that are not within the control of the Planned Program. Population changes, learning styles, education level of participants, unemployment rates, etc. these factors may result in variations in the outcomes. These factors are likely to affect the measurement of the outcomes. In such cases, the facilitators may be able to alter instructional methods in order to meet the needs of the participants. Doing so may also affect the speed in which the outcomes are achieved. The Central State University and Extension Partners are committed to working in this complex and uncertain environment through to the completion of the Planned Program.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

The gathering of field data for needs assessment, formative assessment, and summative assessments. These documents will help the successes in achieving the program research and extension objectives and goals.

- A formal and an informal feedback from the participants in regard to their needs, willingness to participate, willingness to promote the institution, willingness to bring colleagues into the discussion and, satisfaction with the research and extension programs.
- The feedbacks from advisory committees that help determine the target clientele regarding the commercialization of the products from our research initiatives. The linkages with the new stakeholders, getting feedback, taking corrective action, and focusing on adaptive research initiative will all add to the quality and sustainability of the planned program.
- The accountability of external grants and contracts in realizing the stakeholders' felt needs. The level of the appropriate budget request to execute the plan of work.
- The report by the Department of Agricultural Sciences to contain the various budget requests and the number of faculty members needed to engage in research and extension.
- Journal publications including both peer reviewed and non-peer reviewed professional journals.
- The citation indexes of published journal articles/papers.
- The marketing of agricultural research findings and policy implications.
- The economic indicators of the base find external grants and competitive grants.
- The funds from external funding, competitive grants, business funding, city funding, county funding, chamber of commerce funding, and collaborative research funding.
- The assessment of the research and extension impact by direct phone surveys, target group surveys, and private organization surveys.
- The feedback from peer institutions, research organizations, support by Universities administration, and support by the Ohio Board of regents.
- The feedback from students, faculty, and staff in the institution.

Other methods not mentioned here that may become available during the research may be employed in the determination of the effectiveness of the Planned Program. In such cases, these methods will be documented and appropriately referenced in the Annual Report of Accomplishments and Results.

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Building Families and Communities

2. Brief summary about Planned Program

There are many challenges facing urban socially disadvantage families and communities today. They are confronted by issues related to a lack of financial resources, jobs, poor health, living arrangement, education, single families, poverty, relationships, and parenting. Also, issues such as aids, infant mortality, and obesity are higher in different cultures.

More than 340,000 poor families live in Ohio; this represents 11.6 percent of the families in the state. 16.0 percent of the population or 1,797,000 people who fall below the poverty line. Much of the cause of this poverty is lack of opportunities in the local communities for jobs. According to the 2015 Ohio Poverty Report, families with children ranging from 7.3% among married couples to 55.3% for those headed by female single parent experienced poverty during the last year. Education and technical training are also identified as contributing factors in these poverty statistics. In fact, in 2013, 62 percent of food-insecure households participated in at least one of the three major federal food assistance programs -Supplemental Nutrition Assistance Program (SNAP-formerly Food Stamp Program), The National School Lunch Program (NSLP), and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) (<http://www.feedingamerica.org/>).

More than one-third of U.S. adults are considered obese. During 2007-2010, adults consumed 11.3% of their daily calories from fast food. Furthermore, non-Hispanic black adults consumed a higher percentage of calories from fast food compared to non-Hispanic white and Hispanic adults (C.D. Fryer and R.B. Ervin, 2013; [/nchs/data/databriefs/db114.pdf](http://nchs/data/databriefs/db114.pdf)). The findings in the 2010 Fast Food FACTS report raised significant concerns about the effects of fast food marketing on the health of young people. Although all restaurants studied did offer some nutritious options, most fast food menu items - including kids' meal items - contained more calories, saturated fat, sugar, and/or sodium than recommended. The industry spent \$4.2 billion on advertising to encourage frequent visits to fast food restaurants, targeting children as young as two years old. From 2003 to 2009, fast food TV advertising to children and teens increased by more than one-third, and the majority of fast food ads viewed by youth promoted restaurants' high-calorie, nutritionally poor regular menu items (<http://www.fastfoodmarketing.org/>).

Health related conditions are associated with shortened life expectancies and can create financial burden on individuals with health care cost and other related consequences such as lack of interest in their personal life and leading to unproductive, life style. It is recognized that over all wellness positively impacts academic as well as life success and can create healthy community and healthy families. Health disparities in areas such as hypertension, hypercholesterolemia, obesity and diabetes can serve our demographic through research into better food choices and transferring them into the demographic.

CSU Land Grant Center (CSULGC) Planned Program "Building Families and Communities" project through Cooperative Extension Program (CEP) and Agricultural, Food Sciences and Water Resources Field Research Center (AFWRC) activities will address the following areas: a) nutrition education and behavior; b) childhood obesity, healthy lifestyles; c) individual and family resources; d) financial management; e) food safety human health and well being; f) strengthening family relationships; and) human development and family well-being. CSULGC CEP and AFWRC goal is to expand into these areas and prove services to urban communities.

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
701	Nutrient Composition of Food		5%		5%
702	Requirements and Function of Nutrients and Other Food Components		5%		5%
703	Nutrition Education and Behavior		30%		25%
704	Nutrition and Hunger in the Population		20%		25%
724	Healthy Lifestyle		5%		5%
801	Individual and Family Resource Management		20%		20%
802	Human Development and Family Well-Being		15%		15%
	Total		100%		100%

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

1. Situation and priorities

The rate of obesity varies. For instance, Clark, Greene and, Montgomery counties are 29.9%, 26.8% and 30.3% respectively. With the consumption of fruits and vegetables reported as fewer than 5 servings daily (Ohio Department of Health, <http://ship.oh.networkofcare.org>), there is an increasing number of overweight and obese adolescents and adults of lower socioeconomic status (SES) and marginally educated in urban settings. Given the disproportionately high rates of obesity-related morbidity among low-income, underrepresented minorities, nutrition education is critical.

The numerous health issues linked to obesity, being overweight, sedentary, high risk behaviors/lifestyles (e.g., tobacco, alcohol, and drug use, environment, high BMI, nutritional intake) and other non-favorable high risk behaviors/lifestyles could negatively affect the future workforce and local economy, if an intervention is not introduced. The 2017-2021 CSULGC and AFWRC joint planned program will employ a community-based "Building Families and Sustainable Communities concept. Education programs will be directed at teaching underrepresented and limited resource neighborhoods where children, youth, adolescents who are attending city school, adults of lower socioeconomic status, and without post-secondary education. It will also target specific issues related to unhealthy/unfavorable behaviors/lifestyles through a multidimensional approach. This includes educational programs that have been demonstrated to nurture the human mind and body through the promotion of regular exercise (i.e., 4-5 times a week for at least 45 minutes), active sports participation, and family wellness activities; including fine arts, recreation, healthy behaviors/lifestyles, and nutrition programs. Furthermore, it is postulated that

modifying and/or eliminating counterproductive behavioral/lifestyle patterns could improve BC and BMI, improving overall quality of life. In fact, it is recognized that all wellness has a positive effect on academic performance and life success, and could create healthy communities and families.

2. Scope of the Program

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

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

1. Assumptions made for the Program

During the 2017-2021 planning period, Building Families and Communities planned programs that OSU Extension will continue to support include extension and research activities purposed to building families and communities in 10 targeted cities in Ohio containing large numbers of individuals, families and communities with underrepresented, limited resources, and socially disadvantage populations. Some of the prevailing challenges confronting these individuals, families and communities will be addressed through education programs and research activities. Both will not only provide solutions to address the challenges impacting individuals (i.e., youth, adults, and seniors), families, and communities in those cities, but also enhance their strengths. Some key assumptions:

1. The key areas emphasized in the planned program are supported by literature and advocacy efforts for minority youth, adults, seniors, families and communities. Each point to the importance of addressing their needs in the designated knowledge areas and the allocation of resources.
2. The proposed extension education and research programs will not only address current needs but help meet future needs critical to building families and communities among the target individuals, families and communities.
3. The extension and research activities of the planned program must align with understanding of the interdisciplinary and cultural dynamics of the target groups and use best practices for successful delivery and outcomes.
4. The benefits of the planned program will be visible and measurable to the target audiences and all stakeholders. Outcomes will advance knowledge on the key issues and provide guidance for future decisions around strategies for building families and communities in the identified program recipients.
5. Federal base funding for the planned program will continue to be available and serve as leverage for attracting state and extramural funds to support the scientific staff carrying out the respective extension and research activities.

2. Ultimate goal(s) of this Program

The ultimate goal of the CSU Conservation Center (CSUCC) Cooperative Extension Program (CEP) and Agricultural, Food Sciences and Water Resources Field Research Center (AFWRC) is to conduct education and research programs that help strengthen minority group families and communities in the areas of nutrition, healthy lifestyles, resource management, and human and family development and well-being, giving special attention to issues of diversity.

V(E). Planned Program (Inputs)

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	0.0	5.0	0.0	3.0
2018	0.0	7.0	0.0	4.0
2019	0.0	8.0	0.0	5.0
2020	0.0	8.0	0.0	5.0
2021	0.0	8.0	0.0	8.0

V(F). Planned Program (Activity)

1. Activity for the Program

Centers for Disease Control (CDC's) Division of Nutrition, Physical Activity, and Obesity (DNPAO) utilizes a public health approach to address the role of nutrition and physical activity in improving the public's health and preventing and controlling chronic diseases. Given the complex nature of addressing families and communities needs as a subject, the areas are broadly supported in scientific areas ranging from nutrition education and behavior, healthy lifestyle, to individual and family resource management, and human development and family well-being. The Center of Community, Farm, and Family Outreach (CCFFO) and Cooperative Extension Program (CEP) will provide guidance for families and communities to make informed decisions regarding healthy living and their well-being. All programs will be affordable and accessible. Not all impacts related to an unhealthy lifestyle are found in this planned program.

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

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations ● Other 1 (one on one) 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● eXtension web sites ● Web sites other than eXtension

3. Description of targeted audience

Building Families and Communities planned program will be shared and made available, but not limited to specific individuals, families, and groups who have expressed assistance with healthy living or their well-being. Academic units who partner and support research related to The Center of Community, Farm, and Family Outreach (CCFFO) and Cooperative Extension Program (CEP) will support not only this project but our stakeholders' (fellow agencies and support organizations) research as well. Fellow agencies and support organizations will not only provide us the information, but will become brokers of the information. Information will be embedded in groups to change agents.

Individuals who have not requested the information but will likely benefit from the information are extended families and communities, other scientists and scientific groups, political entities, school

administrators, students from pre-school to post doctorate studies, businesses, and news 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

- Number of educational sessions held.

Total number of participants in this event/project who are defined as under-represented individuals (e.g. women, minorities, individuals with disabilities, small farm owners, etc.)

Total number of participants in this event/project who are defined as under-served individuals (i.e. individuals whose needs have not been addressed in past events)

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	Participants will identify influences on food intake and dietary patterns specifically in relation to decision making
2	Participants will describe and identify elements of a healthy lifestyle
3	Participants will describe elements of individual and family resource management
4	Participants will identify characteristics of human development related to social, cognitive, emotional, and physical development of individuals and families over the human lifespan

Outcome # 1

1. Outcome Target

Participants will identify influences on food intake and dietary patterns specifically in relation to decision making

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 724 - Healthy Lifestyle
- 703 - Nutrition Education and Behavior

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 2

1. Outcome Target

Participants will describe and identify elements of a healthy lifestyle

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 3

1. Outcome Target

Participants will describe elements of individual and family resource management

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

Outcome # 4

1. Outcome Target

Participants will identify characteristics of human development related to social, cognitive, emotional, and physical development of individuals and families over the human lifespan

2. Outcome Type : Change in Knowledge Outcome Measure

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Building families and communities is a multi-facet venture that cuts across many disciplines, venues, and resource types to produce favorable results for all parties involved. Changes in one aspect of the program plan can have a trickle-down effect on all the other components. With so many underlying issues, many external factors can affect desired outcomes, especially when considering diversity in families and communities.

The proposed extension and research activities may confront competing programmatic changes within the diverse academic programs that are a part of the program plan as they attempt to remain solvent and competitive. Research programs may experience change as funding agency research agendas change and funding allocations are reduced. Adhering to shifting government regulations may create boundaries and limitations in carrying out various aspects of the proposed extension and research that may result in delays or termination of some activities.

Physical, psychological, social, and financial changes within the family can impact programming directed at improving nutrition, healthy lifestyles, individual and family resources, and human and family development and well-being. These changes may affect learning capacities, receptivity, and continuity. Community changes in membership, financial composition, and social and political climate can equally impact implementation of the program plan in areas of support, participation, and assessment.

Cooperative Extension Program (CEP) and Agricultural, Food Sciences and Water Resources Field Research Center (AFWRC) are committed to performing the tasks outlined in the Plan of Work.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Cooperative Extension Program (CEP) and Agricultural, Food Sciences and Water Resources Field Research Center (AFWRC) will utilize multiple evaluation techniques to gather data regarding the Building Families and Communities project, including formative assessments and summative evaluations.

Project personnel will gather informal and formal feedback from stakeholders related to needs, level of participation and, level of community support.

Formative Evaluation - will be conducted through interviews and open-ended questionnaires. Members of the Building Families and Community Core Team will seek participant and stakeholder feedback regarding (but not limited to) usefulness of topics, clarity of materials, clarity of instruction, appropriateness of curriculum and program accessibility. Additional sources of formative data include the following:

- Analysis of food consumption patterns.
- Analysis of factors that influence a healthy lifestyle.
- Analysis of individual and family well-being.

Summative Evaluation - will begin with the establishment of baseline data at the beginning of the Project to assess their knowledge of nutrition and a healthy lifestyle. Data for the summative evaluation will focus on project defined outcomes as stated in V (I) of the Plan of Work.

- Evaluation of nutrition education and behavior programs.
- Evaluation of individual and family resource management.
- Evaluation of human development and family well-being knowledge.

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Creating Youth Pathways to Success

2. Brief summary about Planned Program

Today our youth is challenged with many issues.. Many young men and women are faced with issues brought on by poverty such as drugs, single parenting, relationship, sexuality, bullying, obesity, self-esteem, and education disparity. For example, out of a population of fifteen million youth, twenty one percent of all children are considered to be in poverty. According to the American Psychological Association, the U.S. Census data reveal that from 2009 to 2010, the total number of children under age 18 living in poverty increased to 16.4 million from 15.5 million. Child poverty rose from 20.7 percent in 2009, to 22 percent in 2010, and this is the highest it has been since 1993. "Poverty in Ohio is the highest since 1960, and about half of Ohioans are one paycheck away from not making ends meet. In 2012, 1.8 million Ohioans -- 16.3 percent of residents -- were living in poverty, up about 100,000 people from 2010. Poverty is growing fastest in Ohio's suburbs, nearly twice as fast as in metropolitan areas, according to the annual State of Poverty," report released this week by the Ohio Association of Community Action Agencies. Also, there are more than twenty eight million children being parented by single parents. Furthermore, there is a high percentage of high school seniors who say that they get high and drink alcohol. Finally, it was reported that disparity in educational quality is delineated by race and financial status. If you live in a poor neighborhood or are a minority, there is a good chance that the schools you attend are lacking many necessities. While Asians and Whites enjoy high graduating rates, African American and Latinos continue to lag behind. Not surprisingly, because job opportunities are fewer for dropouts, these two groups have the highest incarceration rates" (<http://www.toptenz.net/top-10-issues-facing-our-youth-today.php>).

The 2015 Ohio Poverty Report reported families with children ranging from 7.3% among married couples to 55.3% for those headed by female single parent experienced poverty during the last year. Education and technical training are also identified as contributing factors in these poverty statistics. In this knowledge-and skill-intensive global economy, governments and industries look to tertiary education for innovation needed for catalyzing and shaping economic and social development; it is therefore critical that our young people be prepared and equipped for the jobs and opportunities in the food and agriculture sector to meet their growing demand.

For the 2017-2021 planning period, the Cooperative Extension Program (CEP) and Agricultural, Food Sciences and Water Resources Field Research Center (AFWRC) planned program will emphasize several education and research programs: a) seed-to-bloom, b) mentoring, c) career preparedness, d) youth development, e) after school steam program, f) human development and family well being, and g) sociological impact of environmental change. According to statistics STEM education is critical to the future success of young people as STEM jobs in the United States are expected to grow nearly twice as fast as other fields by 2018. Unfortunately, there is a shortage of both interested and adequately prepared K-12 students in STEM subjects, especially among minority youth and young women. This planned program is designed to assist CEP and AFWRC to work with our stakeholders and create youth pathways to success.

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
801	Individual and Family Resource Management		10%		0%
802	Human Development and Family Well-Being		0%		50%
803	Sociological and Technological Change Affecting Individuals, Families, and Communities		0%		50%
806	Youth Development		90%		0%
	Total		100%		100%

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

1. Situation and priorities

The agricultural sector in the state of Ohio plays a very significant role in the national economy. According to the 2012 census, it was ranked number 13th in the total value of agricultural products sold in the United States. From National Statistics, there is a continuous decline of Farms and Farm operators in the united state. In the 2012 Census of Agriculture, 95.4 percent of principal operators reported being White. Other principal operators were Black or African American (1.6 percent), American Indians or Alaska natives (1.8 percent), Asians (0.6 percent), native Hawaiian or other Pacific Islanders (0.1 percent), and those reporting more than one race (0.5 percent). Hispanic origin was reported by 3.2 percent of the principal farm operators in 2012, up from 2.5 percent in 2007. Most significantly, the age group of the principal operators continues to rise. This workforce attrition will create additional opportunities for young professionals to advance in their careers.

The current situation is compounded by the growing number of poor families in the United States. In the state of Ohio alone there are 340,000 poor families; this represents 11.6 percent of the families in the state. 16.0 percent of the population or, 1,797,000 people in the state of Ohio, fall below the poverty line. Much of the cause of this poverty is lack of opportunities in the local communities for jobs. In 2006, Ohio began to outperform the nation in this statistic. The percentage of the poor in the state is now higher than that of the U.S. Poverty statistics in the country are increasing, and unfortunately poverty is an indicator of how well local economies are performing. In addition, a report by "Farmer's Futures" also found 4.9% aggregate growth in STEM employment opportunities in advanced agriculture fields projected over the next five years. Demand for agriculture-related positions is expected to grow with the world population projected to increase from 7 billion to 9 billion in 2050, hence the need to develop the human capital required to manage this. As a result, educators, researchers, policymakers and employers are currently motivated to improve the knowledge and skills of the STEAM workforce. A report from the STEAM Food & Ag Council has found that there's a growing gap between the number of graduates in agricultural related

science, technology, engineering and math fields and the number of available employment opportunities.

2. Scope of the Program

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

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

1. Assumptions made for the Program

Throughout this 2017-2021 planning period, Cooperative Extension Program (CEP) and Agricultural, Food Sciences and Water Resources Field Research Center (AFWRC), youth pathway to success program will continue to support teaching, research, and extension services related to youth development in the area of Agricultural- STEAM.

As we address youth development and leadership projects and activities within our stake holder communities (K-12), the program platform will become better prepared and equipped to take advantage of emerging opportunities.

Key assumptions are:

1. The numbers are low for African-American and minority STEAM workforce.
2. The numbers are low for African -American and minority in Farm ownership/operations.
3. There is very little interest in after school programs amongst the K-12 minority students.
4. There is growing need to educate youths with proper academic and technical skills to fulfill the growing demand of Agricultural -sector as a result of projected world population growth.
5. Soft and Life Skills development are essential for creating a sustainable workforce.
6. Funding will continue to be available to educate K-12 minority in STEAM related programs especially Agriculture science fields.

2. Ultimate goal(s) of this Program

The Cooperative Extension Program (CEP) and Agricultural, Food Sciences and Water Resources Field Research Center (AFWRC) goal is to create youth planned programs that allow CSU Conservation Center to develop youth programs, increase awareness and stimulate interest of underrepresented youths in Agriculture by providing personal and professional development (leadership) skills that prepare young people to make positive impact in their communities. This program hopes to provide a pipeline of STEAM majors into Central State's Sustainable Agriculture program.

V(E). Planned Program (Inputs)

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

Year	Extension		Research	
	1862	1890	1862	1890
2017	0.0	5.0	0.0	3.0
2018	0.0	7.0	0.0	4.0
2019	0.0	8.0	0.0	5.0
2020	0.0	8.0	0.0	5.0
2021	0.0	8.0	0.0	8.0

V(F). Planned Program (Activity)

1. Activity for the Program

Cooperative Extension Program (CEP), and Agricultural, Food Sciences and Water Resources Field Research Center (AFWRC) implementation of the program involves **an outreach** component whereby the CSU Conservation Center (CSUCC) and The Center of Community, Farm, and Family Outreach (CCFFO) visit partnering K-12 schools, youth leadership programs in the community, churches, and community colleges to sensitize and stimulate interest in the STEAM curriculum. This community based outreach and sensitization is very critical to the success of the program as it builds long lasting relationships and subsequently it attracts students to Central State campus and hence will develop a sustainable student pipeline.

This initiative will be enhanced by an **"After -School"** mentoring, seed-to-bloom, after school art, educational programs. These hands-on, inquiry-based, fun but relevant and experiential activities will help sustain the level of interest of the STEAM courses. This will be focused on K-5 and Middle School students at their respective institutions.

The teachers will be trained and equipped with all the relevant tools to implement, evaluate and assess the program. CSU Conservation Center (CSUCC) Cooperative Extension Program (CEP) will conduct a four-week **residential summer school**: STEAM Youth development and Leadership Camp. Thirty (30) rising 6th, 7th and 8th grade students will be selected to participate in the program. This program seeks to bring together all the qualified participants from partnering institutions. During the day they will be exposed to all major areas of STEAM courses and their interconnectivity to Agriculture in addition to the Youth Professional Development courses in alignment with nationally recognized 4-H programs. All the STEAM courses will focus on Agricultural based projects. Field trips to partnering agricultural-based businesses are part of the program.

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

Extension

Direct Methods	Indirect Methods
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<ul style="list-style-type: none">● Education Class● Workshop● One-on-One Intervention● Demonstrations● Other 1 (after school activity)	<ul style="list-style-type: none">● Public Service Announcement● Newsletters● eXtension web sites● Web sites other than eXtension
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3. Description of targeted audience

Three groups from public and private schools, FFA, and 4H clubs will be targeted:
K-5; 2. Rising 6th, 7th, 8th grade and 3. High school 9th, 10th, 11th grade

- Elementary School (K-5) : discovery of science and its importance to every day life.
- Middle School: (6-8): exploring science (building skills) and leadership development
- High Schools (9-11): skill's applications and leadership 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

- Technical skills development (STEM): Discovery , exploration and application of STEM (Ag-STEM connectivity)
 - How to obtain and use available resources of time, money, and human capital to achieve and improve quality of life.
 - Understand the factors that affect decision making processes such as availability of resources, life events, living patterns, values, goals, interests, and external issues such as public issues, policies and programs.
 - Get an understanding of the social, cognitive and emotional development of individuals
 - Promotion of positive youth development
 - Promotion of positive youth development
 - Understanding Civic, public and academic structures. Civic engagement
 - Community service/ Volunteerism
- 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	Technical skills development Science, Technology, Engineering, Agriculture, and Math (STEAM): Discovery , Exploration, and Application of STEM (Ag-STEM connectivity)

Outcome # 1

1. Outcome Target

Technical skills development Science, Technology, Engineering, Agriculture, and Math (STEAM):
Discovery , Exploration, and Application of STEM (Ag-STEM connectivity)

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
- 806 - Youth Development

4. Associated Institute Type(s)

- 1890 Extension
- 1890 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Appropriations changes
- Public Policy changes
- Competing Public priorities

Description

The proposed extension and research activities may confront competing programmatic changes within the diverse academic programs that are a part of the program plan as they attempt to remain solvent and competitive. With so many underlying issues, many external factors can affect desired outcomes especially when considering diversity in problems facing youth today. Funding agency agenda's change as well as government regulations.

These changes may affect learning capacities, receptivity, and continuity. Community changes in membership, financial composition, and social and political climate can equally impact implementation of the program plan in areas of support, participation, and assessment.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

The program will be implemented annually to assess progress against milestones. The objectives of the program evaluation include assessment of project progress in terms of the goals set and the successes achieved. The measures will be both quantitative and qualitative. The Program Director in collaboration with the Institute for student Opportunity will develop a database of student activities and

performance, while the OIA&R will assist in the formative and summative evaluation aspects of the project. It has all the systems in place to measure required and relevant metrics such as recruitment, retention, grade point averages, rates of successful completion of specific courses, graduate school enrollment of CSU graduates, and placement rates. In addition to this, it will develop collaboration with National Institute on Out-of-School Time (NIOST) to develop and customize an Afterschool Program Assessment System (APAS) for our targeted demographics. APAS is one of the only assessment systems available wherein afterschool programs link quality and youth outcomes together in a comprehensive, flexible and integrated fashion. It comprises of two other measurement tools-the Survey of Afterschool Youth Outcomes (SAYO) and the Assessing Afterschool Program Practices Tool (APT).

A logic model that will enable the evaluation of program objectives of the various targeted pathways such as focused recruiting and retention of Ag-STEM majors, after school programs, youth development camps, etc. These valuable evaluation and assessment data/reports will be utilized by the Institute Management Team, Advisors, and evaluation steering committee to make adjustment recommend relevant changes in the assessment/evaluation process that will better serve the needs of the program.