2012 University of Illinois Combined Research and Extension Plan of Work

Status: Accepted

Date Accepted: 06/23/2011

I. Plan Overview

1. Brief Summary about Plan Of Work

The College of Agricultural, Consumer and Environmental Sciences Strategic Goals

In the coming months and years, the strategies and the methods employed by the College to achieve success will need to be flexible, but the essential goals remain the same: global preeminence in our scholarship and exceptional value to society, especially on issues relevant to Illinois.

ACES will be recognized as the global leader in learning, discovery, and engagement in the most promising areas of scholarship broadly relevant to agricultural, consumer, and environmental sciences. ACES will be acknowledged in Illinois, across America, and around the world for preparing globally competitive undergraduate, graduate, and mid-career students; for first-class discovery research that is purposefully translated into practice; and as the preferred source of knowledge that informs sound individual and collective decisions, transforms lives, and deepens cooperative relationships.

The College of ACES is currently engaged with the citizens of Illinois to determine ways to accomplish our aspirations. For example, the Vision of Illinois Agriculture has attracted a cohort of committed stakeholders to implement a tangible set of goals for the future of agriculture in this state. Our partners expect the University to step up and do its part to meet real needs with real solutions.

University of Illinois Extension

The mission of University of Illinois Extension [Extension] is to provide practical, research-based information and programs to help individuals, families, businesses, and communities in Illinois. Its mission, in short, is to help Illinois residents put knowledge to work.

Recognizing that severe budget cuts were in the offing, University of Illinois Extension Administration began to develop a plan for budget reduction in 2009. At the outset of this process, the loss of funding was projected at $2-4 million. The new organizational plan was introduced in March and adopted in mid-June of 2010. The plan included creating 27 multi-county units with an associated reduction of 49 county director positions, elimination of 74 educator positions located off campus, closure of 12 regional centers with relocation of educators to multi-county offices or research stations, and elimination of four Associate Regional director positions. Sixty-eight [68] Extension staff members located in the field and five campus faculty members with partial Extension appointments left last summer through a voluntary service incentive program offered by the campus. Professional staff members who were not selected to fill the newly configured staffing structure will be leaving employment at the end of June of 2011. In addition, reductions in civil service support positions have yet to be initiated, and some of the current academic positions in counties remain unfilled in view of a projected $7.6 million reduction in funding for the current year [FY2010].

An additional significant activity related to Extension's fiscal viability took place during this past year. As a part of Stewarding Excellence @ Illinois, an on-goinginitiative at the campus level to identify cost-saving measures across campus, a cross-section team representing diverse areas of campus and

composed of faculty, staff and students was charged with exploring options for University of Illinois Extension. The team's report, consisting of nine recommendations, was submitted to the Chancellor in July of 2010 and posted for comments. A process to further explore those recommendations is in progress and will be used to guide future NIFA Plan of Work adjustments.

Although reduction in faculty and staff will likely reduce the scope of educational outreach, University of Illinois Extension remains committed to serving both urban and rural areas by offering programs that address critical issues facing Illinois residents. Extension's educational outreach will focus on healthy society; food security and safety; environmental stewardship; a sustainable and profitable food production and marketing system; and enhancing youth, family, and community wellbeing.

The Illinois Agricultural Experiment Station [Office of Research] [IAES]

IAES is administratively assigned to the College of ACES and is a directly reviewed subsidiary for campus budget review purposes. The unit is situated in the Office of Research and manages a portfolio of research projects underwritten by statutory federal and state appropriations, as well as grants and contracts. IAES research encompasses programs in the College of ACES and in other units funded in part through the IAES. These units include the Colleges of Veterinary Medicine, Engineering, Liberal Arts and Sciences, and Law, as well as the Illinois Natural History Survey. The IAES also funds some research with partners in other institutions.

Faculty and staff with research responsibilities in the College of ACES have some percentage of their research appointments in the IAES. In identifying and responding to new opportunities, the IAES plays a leadership role in articulating and interpreting the research efforts of faculty, departments, and programs in the College, in the spirit of the Hatch Act, and aims to catalyze multidisciplinary research focused on agriculture, food, the environment, and communities. The long-term strategic goal of the College of ACES is to undertake new investments in research that are a balance between discovery and application, as well as between long-term and short-term outcomes, to ensure both new knowledge creation and relevance to the state's food, agricultural, environmental, and human interests. The IAES is devoted to mission-oriented outcomes focused primarily on development of a sound and competitive agriculture industry. Research and practical translation of knowledge to solve specific problems for IAES stakeholders enables their continuing competitive advantages. IAES research benefits the nation by applying relevant science to the unique conditions of the State of Illinois, including her soil, climate, ecosystems, and agricultural communities. To produce science that matters, the research portfolio demands strong entrepreneurial motivation, as well as elements that are very responsive to those with a stake in the agricultural and food system. More than ever, our research must respond swiftly to the rapid pace of change in today's era of globalization.

Modifications to the Plan of Work

The most significant changes to the Plan of Work reflect the reorganization of University of Illinois Extension to adjust to reduction in funding provided by the State of Illinois. The elimination of 123 field-based professionals is reflected in the anticipated numbers of direct teaching contacts when the new organization is in place on July 1, 2011. Included in the reduction of educators was the elimination of all four positions assigned to focus on farm business and farm management and the reduction of those with consumer family economics assignments from nine to two positions. The Agricultural and Consumer Economics Plan no longer includes consumer related activities. Those have been included in the Human Development and Family Wellbeing Planned Program to reflect the interdisciplinary approach that addresses issues encompassing the majority of activities in the latter Planned Program area. Extension programs in the agricultural economics area will be addressed by Extension faculty and staff located on campus.

Other changes in field staffing include the reduction in the number of local positions assigned to address commercial agriculture and the creation of new positions assigned to focus on local foods and small farms. In addition, 30 local positions remain open which will further reduce the capacity to deliver programs. Although only 23 campus faculty and staff FTE's are supported with Extension funding, primary responsibility for program delivery is being assigned to them with an expectation that distance delivery will be increased. The process of identifying the level of multi-county support staff positions has yet to be finalized in view of funding uncertainties and employment policies and procedures.

The reorganization process has focused on developing budgets and identifying staffing plans. Written state plans of work have not been developed to identify and describe the priority issues and the inputs, outputs, and outcomes/impact evaluation activities; therefore, the majority of the modifications in the Planned Programs encompass deletions of specific Extension program activities. Discussions of programming roles and responsibilities for the remaining educators and county directors who now serve formalized multi-county areas are in various stages, impeded somewhat by vacancies and civil service staffing uncertainties.

Importance of Hatch Funds

The funds provided to support research through the Hatch Act provide basic capacity funding for the State Agricultural Experiment Stations. Hatch funds allow the Illinois Station to fund translational research capacity that allows us to turn discoveries into tools and technologies that farmers, livestock producers, and other stakeholders can use to produce agriculture systems by efficiently utilizing our research, education, and outreach capacities across the state of Illinois [given our unique soil and temperature conditions] and beyond, they support strategic investments in research initiatives of importance to Illinois stakeholders, they enable targeted research efforts balanced between discovery and application as well as between long-term and short-term outcomes, and they provide critical seed funding for faculty research efforts that lead to further competitive and private sector support. Hatch funds are used to support the seven stations of the Illinois Research and Education Network [St. Charles, Brownstown, Dixon Springs, South Farms, Orr, Monmouth, and Shabonna], to support the Center for Advanced Bioenergy Research [CABER], the National Soybean Research Laboratory [NSRL], the Plant Breeding Center, the Center for Family Resiliency, and the Environmental Change Institute. They also help fund the ongoing work of the National Atmospheric Deposition Program [which has provided measurements of the chemicals in precipitation since 1977], as well as studies on the effect of food insecurity on childhood obesity, the use of acoustic energy as a practical food safety intervention for liquid food processing, research into beef cattle grazing systems that improve production and profitability while minimizing risk and environmental impacts, germ cell and embryo development and manipulation for improvement of livestock, and work to increase ethanol production efficiency from corn and cellulosic biomass.

Importance of Smith-Lever Funds

The funds provided to support University of Illinois Extension through the Smith-Lever allocation also provide valuable basic capacity funding to address priority issues that are global, national, and statewide in scope. These dollars create flexibility in accessing the latest information technologies to reach a broad segment of our population through eXtension and the extensive website presence that Illinois has developed, as well as through webinars, online self-paced modules, podcasts, and blogs. At the same time Smith-Lever funding enables access to and resources to maintain a staff presence throughout the state essential in meeting the needs of limited resource audiences who need personal supportive interaction in addressing health issues such as child obesity. Smith-Lever funds are also used to ensure that Extension can address these issues through staff support to initiate new innovative programs such as the Master Naturalist program that enhances an understanding of climate change and its relation to environmental stewardship and building. These funds also have created capacity resulting in the leveraged continuation of matching funds and new funds to support ongoing efforts related to safe food

production and demonstration of biomass [e.g. perennial grasses] conversion as a viable alternative energy source. The flexibility provided by Smith-Lever funds also allows Extension to continue to support successful grant-funded programs that address priority issues after the grant funding is no longer available.

The Planned Programs

4-H Youth Development: Drawing on research conducted in the College of ACES in nutrition and health, leadership, and youth involvement in groups, as well as the expertise of faculty in the Colleges of Engineering, Medicine, and Education and the Graduate School of Library and Information Science, the University of Illinois Extension 4-H Youth Development program will focus on the three national mission mandates of the National 4-H Program: Science, Engineering, and Technology [SET], Healthy Lifestyles, and Youth in Civic Engagement/Leadership through priority programs that involve: 1.] learning employment skills; 2.] experiencing healthy relationships; 3.] becoming physically fit; 4.] thinking green; and 5.] engaging in science. Volunteer training will also receive significant attention.

Agricultural and Biological Engineering: Research activities will include integrated work to improve moisture control and practical design of biofilters for treating exhaust air from livestock buildings, efforts to improve the precision application of agricultural chemicals, the development of sampling and sensor array technologies that will allow us to monitor the health of livestock via breath analysis, and research designed to provide a database of effective, low cost and easily available media for biofilter designs. Extension efforts focus on manure management and technological advancements related to preserving soil and water quality, and biomass conversion to heat and electricity.

Agricultural and Consumer Economics: The Department of Agricultural and Consumer Economics, drawing on economics, business, and law, analyzes issues related to individuals and families, agriculture and natural resources, and food -- all ranging in scope from local to global. Research activities will focus on legal issues affecting agricultural production, an economic assessment of changes in trade arrangements, effects of bio-terrorism threats and renewable fuel requirements on the United States grain and oilseed sectors, the ongoing development of tools for crop insurance decision making, and the study of firm and consumer behavior in a vertically linked agri-food sector. Extension activities will focus on farm financial management including marketing and risk management delivered by campus faculty through websites and web-based tools, regional conferences, and podcasts.

Animal Health and Production: Priorities in the Animal Health and Production Planned Program focus on production management [addressing new issues involving health, feeding, reproduction, genetics, and management] but also deal with issues that cut across several other planned programs, such as human development [companion and recreational animals], youth development [teaching youth about the importance of caring for animals and capitalizing on the animal as a tool for youth development], natural resource utilization [with an emphasis on environmental protection and water quality], agricultural economics [improving marketing skills and business planning], and of course food safety [developing educational programs that encourage participation in quality assurance, residue avoidance, and Hazard Analysis Critical Control Point [HACCP] programs].

Childhood Obesity: Activities will include research into counteracting the complications of diabesity with vanadium, a project with the long-term goal of developing a sustainable, functional dietary intervention strategy to reduce obesity and other related diseases such as insulin resistance and diabetes, the ongoing work of the PONDER-G [Prevent Obesity and Nutrition-related Diseases: Environmental Resources and Genomics] program, characterization of processes and rheological profiles of high protein soy foods targeted at alleviation of obesity, a study of the osteoporosis risk in type two diabetes, exploring success in involving Latino families and their children in culturally-sensitive activities that address healthy living, the effect of distribution of easy-to-prepare food to at-risk children, and the association between genetic

predisposition, environmental factors, and obesity and related outcomes. Extension efforts focus on making healthy food choices [low in fat, high in fiber] and engaging in recommended levels of physical activity.

Climate Change: Research activities include continued support of the National Trends Network, a comparison of the ecology of ratsnakes across the complete range of this species to assess how the snakes' ecology is likely to be affected by climate change, continued collection of precipitation data with pH and complete chemistry [a long term record of over thirty years worth of data is available due to this project], and ongoing support of SoyFACE [SoyFACE is designed to discover the effects of atmospheric change on the agronomy and productivity of Midwestern crops as well as to find solutions that will lead to crops better adapted in the future]. No significant Extension educational outreach has been identified or planned.

Community Resource Planning and Development: Extension activities will focus on leadership development and education, community planning and design, organizational development, and economic development/sustainability. Research activities will include a study of the factors that influence the mental and physical health of poor rural mothers and their children, research on the factors that influence immigrant use of discretionary income, development of youth programs as contexts for development of real-world skills in rural youth, and a project focusing on the causes of racial/ethnic and socioeconomic gaps in student achievement and school-related behaviors and their implications for educational and occupational attainment.

Food Safety: Extension activities will focus on safe food handling during production, distribution , retailing, and food preparation in homes, commercial entities, and public settings. Research activities will include work to improve the use of alternative sources in food formulation, research to improve our ability to predict and control textural properties, the utilization of acoustic energy as a practical food safety intervention for liquid food processing, a study into the effects of natural and synthetic antioxidants on oxidative stability of fresh and pre-cooked meat systems, the utilization of zein to develop films for coating and protecting foods from degradation, efforts to utilize traceability modeling in agricultural products for improved food security, a study of mastitis resistance to enhance dairy food safety, and research focusing on the beneficial and adverse effects of natural, bioactive dietary chemicals on human health and food safety.

Global Food Security and Hunger: Extension programs will address corn, soybean, fruit, and vegetable crop production and management including integrated pest management, support for local food systems development, and access to adequate healthy food for those at greatest risk of hunger. Research activities will include selection for key agronomic and dry milling traits in grain corn used for human food, work to develop soy-based solutions for the protein gap around the world, and the development of disease-resistant cultivars to improve postharvest quality and safety in fresh-cut vegetables and fruits.

Human Development and Family Wellbeing: Extension activities will focus on six areas: 1.] parenting and childcare education; 2.] care giving education for those who care for adults; 3.] work-life management education; [4] reducing the risk of and managing chronic diseases with an emphasis on proper nutrition; 5.] planning ahead for long-term care; and 6.] balancing income and expenses. Research activities include a project examining how children's early attachment relationships may foster or hinder their ability to manage conflict, research indentifying chronic stressors in the lives of low-income African American families, work to help families succeed through the promotion of health and wellbeing, research and outreach focused on helping couples develop work-life management skills, and an investigation into the impacts of residual nature on walking and vitality in older adults.

Natural Resources and the Environment: Extension activities will focus on tillage systems, soil and water management, the development of volunteer natural resource stewards, and environmental

stewardship education for new and inexperienced small acreage landowners. Research activities include work to determine the effects of widespread pesticide use on the dynamics of vector borne disease, work to develop nutrient criteria for Illinois streams and basins, evaluation of long-term changes in forest soils, a study into the long-term sustainability of forests under new harvesting rules, work focusing on the impact of urbanization on native wildlife species, and a study of the effects of food and fuel production on wildlife in Illinois.

Plant Health, Systems and Production: Activities include research focusing on the functional genomics for maize kernel growth in response to nitrogen, efforts to educate crop producers on managing waterhemp, improved management of Phytophthora blight, efforts to better understand the variety selection process of Illinois soybean producers, research to identify the genomic structure of the fungus causing soybean rust, improved management of Aphis glycines Matsumara, work to reduce the impact of western corn rootworm, improvement of design and analysis methods of cultivar evaluation trials, the use of integrated genomics and management systems to control fire blight, and ongoing work in the study of genomics and genetic manipulations in higher plants [focusing on apples]. Extension activities will address alternative agriculture production, invasive and/or exotic pest diagnosis and management, integrated pest management, and selection and plant management practices for maintaining healthy lawns and public properties through the assistance of trained volunteers [Master Gardeners].

Sustainable Energy: Drawing on several disciplines, this Planned Program will focus on the generation of chemicals and biofuels from renewable biomass sources using a comparative and functional genomic approach. The current focus is on perennial rhizomatous grasses, such as switchgrass and Miscanthus, which are particularly well-suited as bioenergy crops. Work will also be conducted to evaluate the impact of biofuels on emission-reducing technologies for off-road diesel engines and to produce bio-butanol from low-value DDGS. Future economic development aspects will focus on technology transfer and biotech startups. Extension programming will focus on disseminating biofuel research findings and information on alternative energy resources, as well as ways to advance successful and profitable commercialized biomass-based heat and electric energy and to reduce the use of non-renewable energy sources.

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

Year	Extension		Research	
	1862	1890	1862	1890
2012	133.5	0.0	110.0	0.0
2013	133.5	0.0	110.0	0.0
2014	120.0	0.0	110.0	0.0
2015	117.0	0.0	110.0	0.0
2016	115.0	0.0	110.0	0.0

II. Merit Review Process

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

- Internal University Panel
- External Non-University Panel
- Combined External and Internal University Panel
- Other (Extension Staff Program Teams)

2. Brief Explanation

Research and outreach projects and programs have always been subject to a review process. Formula funded research projects undergo a merit review process at the departmental level by at least three faculty members in a related discipline to insure the projects are scientifically sound, relevant to society's needs, and not duplicative of efforts undertaken elsewhere. Formula projects are then submitted to NIFA for final review and approval. Internal research grants are all reviewed internally. Greater detail on the Hatch review process is included in the Annual Report.

In Extension, state program leaders have been charged with the responsibility for ensuring that Extension programs are research-based. Local program reviews by teams of field staff and administrators have been discontinued during reorganization and the continuation of this process has not yet been confirmed. Campus faculty and staff are expected to deliver the bulk of statewide programs and efforts to increase distance delivery will be a focus. In most cases, local programs and curriculum will be developed by more than one educator and reviewed by several of their peers who have the same assigned specialized areas of delivery. Curriculum materials are sometimes sent for review directly to peers in other states and 4-H curriculum materials are often sent through a national jury process in order for them to be shared across state lines. In addition, during annual performance reviews attention is given to programming quality. Finally, the merit of all new program efforts and a selected number of ongoing programs is evaluated by participants regarding content and delivery. Efforts will continue related to identifying and evaluating the actual knowledge, practice, and condition change outcomes generated.

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?

Extensive consultation is ongoing with stakeholders on both a formal and informal basis to help establish program priorities that are reflected in the Planned Programs included in the Plan of Work. The College of Agricultural, Consumer and Environmental Sciences [ACES] has drafted a strategic plan to guide the College within the context of the larger University of Illinois community. The development of research and Extension agendas are driven by the needs of the state as expressed by advisory councils at the state [such as C-FAR and State Extension Advisory Council], departmental, and local levels and by formal assessment of stakeholder needs.

Interaction between College research and Extension faculty and multi-county Extension staff will continue to be through periodic meetings that address the development and promotion of integrated planned programs in global food security and hunger, sustainable energy, and food safety. Interactions of College research and Extension faculty and staff at out-of-state and national conferences and professional associations will provide opportunities

to identify multi-state interest in research and Extension program development. Examples of integrated and multi-state efforts that address these priorities include: [1] co-location of Extension educators at experiment station locations such as the Dixon Springs Agriculture Center to facilitate integrated programs that address global food security and hunger; [2] integrated efforts to explore the use of perennial grasses as a viable sustainable energy source; [3] delivery of research at multi-state conferences for producers of food crops that focus on production as well as safe food handling practices; [4] the Illinois-Indiana Sea Grant program's focus on water quality [a high priority of educational interest in Illinois] and it's relation to climate change; and [5] participation in a number of North Central Extension joint networks that develop programs such as the Agroecology/Sustainable Agriculture Program that oversees grants funded in part by USDA Sustainable Agriculture Research and Education [SARE].

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

Considerable efforts have been made and continue to be made to insure that nontraditional stakeholders are given a voice in identifying needs to be addressed and in shaping the research and programmatic responses to these needs through membership on College and Extension advisory groups [includes 6.9% minority group members] and through formal and informal input through planned needs assessment. Currently, 8.4% of the web page hits are for Spanish sites. More than 50 websites are available in Spanish as well as two in Chinese and one in Korean. The integrated research and Extension diabetes educational project has a website in Spanish and is sited in a suburban county where it is delivered in Spanish. The New Horizon Spanish Radio Program originating from the University of Illinois College of ACES is distributed weekly and broadcast by stations in 24 states. Unfortunately, state funding designated for Cook County/Chicago Extension was reduced by 39% for the current year and may see further reductions in upcoming years as legislators seek to lower the state's large debt level. Thus, the number of Cook County staff providing outreach to under-served and under-represented populations will be negatively affected. Priorities with respect to resources available to address the following Cook County initiatives are being revisited: [1] science, technology, engineering, and math; [2] urban environment and natural resources; [3] urban community health; [4] civic engagement and economic development; and [5] community education for adults and youth. The Expanded Food and Nutrition Education Program [EFNEP] and the Supplemental Nutrition Assistance Education Program [SNAP-Ed] will likely continue to be primary outreach models to reach under-represented and under-served audiences; however, changes in matching requirements and uncertainty of local and state funds may result in staff reductions in these two program areas and subsequent reduced participation levels.

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

Hatch multi-state projects represent a significant component of the total Hatch portfolio. Both Hatch and Multi-state Hatch projects are reviewed on an annual basis when deciding which projects to feature in the Plan of Work and Annual Report. Of course, projects included represent only the Illinois research portion of a given program. Multi-state committees publish an Annual Report of their work that allows stakeholders to view the impact of the project on a regional or national basis. When selecting programs to be included in the Plan of Work, special attention is given to including those that display a significant Extension/research partnership. Examples currently include programs supporting agribusinesses [Farmdoc], work focused on childhood obesity [Abriendo Caminos], and safe food production and preservation. Individuals providing leadership for multi-state and integrated activities will be asked to submit a report that includes documentation of the indicators of outcomes and impacts. Opportunities to share

information regarding the indicators of outcomes and impacts of these reports include the ACES Afield newspaper [the annual College of ACES update supported by integrated funds] that details activities for stakeholders who receive the publication. Data collected through follow-up evaluations distributed and collected from educational program participants will also be noted in marketing and promotion of the activities to targeted future participants.

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

Multi-state projects play a unique role in the ACES research portfolio. Multi-state research allows researchers to collaborate with other investigators on issues that are of regional [and in some cases national] significance, to develop new relationships that lead to further collaborations, and to interact with top scientists who share similar research interests but also bring to the table viewpoints from stakeholders in their part of the country that may be significantly different. Joint activities are also especially important in that they allow Extension educators to have access to cutting-edge research while at the same time allowing investigators to receive input from stakeholders through their participation in Extension programs. Multi-state Extension activities are expected to prevent duplication of work and allow sharing of expertise across state lines. Extension multi-state conferences and distance education delivery will tap the varied expertise of university faculty and staff in each state. Likewise, many planned multi-state and integrated activities involve delivery through websites, which have no geographical boundaries.

Output targets in terms of participation, academic publications, and research projects completed provide a basis for monitoring Research and Extension program implementation. Measures of outcomes provide a basis for estimating program effectiveness. The monitoring of both kinds of measures provides a basis for determining effectiveness, a necessary precursor to determining efficiency.

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 traditional stakeholder individuals
- Targeted invitation to selected individuals from general public
- Survey of traditional stakeholder groups
- Survey of the general public

Brief explanation.

It should be noted that not every technique is used every year. All programs in the College are continually subjected to a diverse process of stakeholder input. The College, the Office of Research, the Office of Extension and Outreach, academic departments, and many programs within the College have advisory groups and councils made up of stakeholders. In this context, stakeholders may represent organized entities in the state with a particular interest in a program area, but they also include individual stakeholders.

In the past, the Office of Research has benefitted from an especially powerful process of stakeholder input through the Illinois Council on Food and Agricultural Research [C-FAR]. C-FAR represents stakeholders throughout the state such as organizations dealing with environmental quality and resource conservation issues, sustainable agriculture groups, commodity groups, and rural development interests. However, budget reductions have significantly reduced C-FAR's

effectiveness. Extension, in addition to its advisory council structure, from local [county-level] councils through regional councils and a statewide council, also has other mechanisms in place for continuous stakeholder input.

Local Extension Councils are comprised of volunteers nominated locally and appointed by the College to provide advice on educational programming. The makeup of the councils [including 6.1% minority group representatives] reflects local populations and local participation in Extension programs. As a part of Extension reorganization, the local advisory council structure has been restructured from a single to a multi-county structure that includes a diverse representation from each of the counties. Although more recently involved in providing input on these multi-county configurations, the primary multi-county office location, and local staff positions to be retained [based on fiscal resources], these councils will identify program priorities to meet local needs. In addition to the local multi-county advisory councils, regional councils and a statewide council also are tapped for input.

The State Program Planning Committee had intended to use the results of a statewide online survey of educational interest in topics associated with ten broad issue areas that was conducted in the spring of 2009 to set statewide priorities that would be incorporated in both state and the federal long-range plan of work for 2010 and beyond. However, major funding deficits for the University and Extension precipitated a focus on reorganizing Extension and uncertainty regarding staff resources that are crucial to developing a realistic long-range plan of work. All statewide activity to develop state plans of work has been put on hold until staffing and funding issues are resolved and in place on July 1 of 2011. Input data from the 2009 survey representing both 9,030 English respondents and 319 Spanish respondents that included 33% who had never used Extension services has been summarized for the new multi-county units and provided to the county directors for their use in planning programs.

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

1. Method to identify individuals and groups

- Use Advisory Committees
- Open Listening Sessions
- Use Surveys

Brief explanation.

A variety of methods and techniques are used to identify individuals and groups. As part of the University of Illinois Extension Affirmative Action plan, County Extension Directors, Extension Educators, and Specialists identify individuals to serve on formal local, regional, and state advisory groups for Extension and the College. These groups will play a key role in identifying research and Extension priority activities, as well as suggesting others who should be contacted. In addition, Extension staff are actively involved in community collaborations at the local level and will use these contacts to provide input for other stakeholders that should be contacted. Extension leadership at the regional and state level also network with traditional and non-traditional internal and external individuals and groups and will use these contacts to seek suggestions for other key stakeholders that can be contacted to provide direction for reseach and Extension.

As a part of the process to adjust University of Illinois Extension to match available

shrinking financial funding sources, the Interim Director of Extension conducted face-to-face meetings and webinar listening sessions with stakeholders/users of Extensions to listen to what they suggested as actions for coping with funding shortfalls. Councils considered options for joining in multi-county arrangements to share staffing beginning July 1, 2011 and will be involved in evaluating and prioritizing program delivery. The Interim Director also engaged in conversations with key statewide groups and individual stakeholders including the State Extension Advisory Committee and Extension Partners [a grassroots group formed to support Extension]. A website was also created to receive suggestions from stakeholders on how to adjust the Extension organization to the decline in funding support.

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
- Meeting specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public

Brief explanation.

C-FAR members continue to provide input, although in a more limited role than in years past. The ABG "Vision for Illinois Agriculture" initiative provides additional stakeholder input.

Until the reorganization process is completed, Extension Planned Programs will continue at reduced levels. Most stakeholder input on program content will likely be gathered from program participants through end of program surveys and discussions with multi-county Extension Advisory Council members.

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.

Continuation, redirection, or initiation of new research and Extension programs draws heavily on stakeholder input from formalized groups and various needs assessment methods. The State Extension Program leaders will continue to meet with multi-county Extension Educators in identifying priority programs to be delivered and those programs not addressing high priority areas will be discontinued.

Stakeholders including the Council on Food and Agriculture Research, local and state Extension Advisory Council members, and Extension Partners [a grassroots group formed to support Extension] members will continue to be influential in expressing research and Extension needs to local, state, and federal government officials responsible for continuing, restoring, or increasing funding for research and Extension and from private entities and, as mentioned, providing input related to budgeting and allocating or reallocating funds and identifying faculty and staff expertise.

V. Planned Program Table of Content

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Plant Health, Systems And Production

2. Brief summary about Planned Program

Research at the University of Illinois and its partners covers the gamut of approaches from basic plant research to applied research, all leading to improving production both commercially and for the home grower. Through the Illinois-Missouri Biotechnology Alliance, Illinois partners with others to strengthen the agriculture and food sectors of the American Midwest while seeking to improve food quality and safety.

As a contributing partner to the North Central states Integrated Pest Management Program [IPM], Illinois research and Extension supports the combination of research/Extension implementation projects, the development of individual pest control tactics, as well as Extension education and training. Funded research addresses emerging concerns such as the control of exotic, invasive weeds and pest management for the production of organic vegetable crops.

Multi-county Extension Educators focusing on horticulture work with State Extension Specialists in the Department of Crop Sciences who are both faculty members and research scientists. This provides the opportunity for further integration of research and Extension functions to assist the environmental horticulture industry, also known as the "Green Industry", which is comprised of a variety of businesses involved in production, distribution and services associated with ornamental plants, landscape and garden supplies and equipment. The planned program also encompasses education for the homeowner regarding environmentally safe practices in maintaining lawns and landscaping.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	0%		10%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		10%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	5%		10%	
205	Plant Management Systems	30%		10%	
206	Basic Plant Biology	10%		15%	
211	Insects, Mites, and Other Arthropods Affecting Plants	20%		5%	
212	Pathogens and Nematodes Affecting Plants	5%		10%	
213	Weeds Affecting Plants	5%		10%	
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	5%		5%	
216	Integrated Pest Management Systems	20%		15%	
	Total	100%		100%	

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

1. Situation and priorities

Illinois producers strive to produce a wide variety of crops that are affordable to consumers while at the same time produced in a manner that is environmentally responsible. College of ACES researchers are working with producers to advance and document the frontiers of plant sciences and applicable disciplines to improve the quality and quantity of plants and their products, including food, feed, fuel, and fiber production while at the same time developing and enhancing plant production systems that integrate pest and other management practices while protecting the environment. Extension priorities include addressing the threat of new invasive or exotic pests that affect the quality and economics of plants that enhance human environments both public and private, as well as management practices that ensure healthy plants and meet new and existing laws and regulations. Homeowners have been and will likely continue to be a priority audience as evidenced by their comments in the 2009 statewide series of meetings with the Director of University of Illinois Extension and stakeholders. Although 16 multi-county Extension Educator positions are included in the University of Illinois Extension 2011 reorganization plan, Master Gardener volunteer recruitment and training will be vital to meet the needs of homeowners with respect to lawn care. Working with local educators, Extension campus faculty share research findings with commercial entities and with officials responsible for maintaining plants [shade trees and ornaments] on private and public property.

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

While a safe and affordable food supply will always be a top priority, we expect that other areas of plant production will continue to play an important role in driving this Planned Program, such as the demand for organic foods and biofuel inputs, as well as maintaining healthy human environments. In addition, as urban growth continues, demand for ornamental horticulture by public and private property owners to enhance those properties will increase. Final assumptions are that interest will also grow with respect to maintaining those plants in a way that ensures healthy human environments and that recognition and interest in the restoration of natural areas will be economically viable.

2. Ultimate goal(s) of this Program

To maximize the benefits from specialty crop production systems, to conduct cutting edge research that will increase crop production with minimal energy input and minimal negative impact on the environment and translate the results to producers and their advisors, to identify techniques that will obviate crop production factors that result in degradation of the environment, and to increase the number of Ph.D. graduates in plant breeding and expand research in plant breeding. Extension will extend the achievement of these research goals so that individuals responsible for commercial horticulture production and home yard and garden care will gain knowledge and apply that knowledge through the most economically viable management practices while using safe and recommended pest control measures and conservation of water to ensure the preservation of natural resources.

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
2012	5.0	0.0	19.0	0.0
2013	5.0	0.0	19.0	0.0
2014	6.0	0.0	19.0	0.0
2015	6.0	0.0	19.0	0.0
2016	6.0	0.0	19.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Research activities include the use of high-performance computing, enumerative analysis, and machine learning to control gene expression in crops, a long term selection study of corn for oil and protein content, a study of the functional genomics for maize kernel growth in response to nitrogen, efforts to educate crop producers on managing waterhemp, management of soilborne fungal pathogens, management of Phytophthora blight, efforts to better understand the variety selection process of Illinois soybean producers, research to identify the genomic structure of the fungus causing soybean rust, improved management of Aphis glycines Matsumara [which arrived in 2000 and has already established itself as one of the most important soybean insect pests], work to reduce the impact of western corn rootworm, research leading to better methods for controlling the apple maggot, improvement of design and analysis methods of cultivar evaluation trials, research designed to assess the changing weed spectrum in Illinois, the use of integrated genomics and management systems to control fire blight, efforts to develop a multi-factor calibration of the Illinois soybean nitrogen test [ISNT], and ongoing work in the study of genomics and genetic manipulations in higher plants [focusing on apples].

Extension activities in this program area will address invasive and/or exotic pest diagnosis and management, integrated pest management, and selection and plant management practices for maintaining healthy lawns and public properties. Master Gardener volunteers will be recruited and trained using a statewide curriculum via online or webinar/on-site sessions and will in turn answer questions, make presentations, distribute materials, and promote an extensive set of websites that address a variety of horticulture topics. A distance diagnostic system and campus plant clinic will be staffed to identify and respond to concerns related to pests and diseases. Extension specialists and educators will provide statewide webinars, podcasts, and use social media to share information on a timely basis with homeowners and public officials. A three-year multi-state Great Lakes Restoration Initiative will involve Sea Grant specialists and horticulture educators in presenting workshops for decision-makers who can affect the reduction of lawn application of phosphorus, thus preventing future degradation of the Great Lakes and other water resources. Extension will also provide leadership for pesticide safety education and networking/partnering with commercial horticulture associations and other post-secondary institutions to explore educational needs and workforce training for current and future employees.

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

Extension

Direct Methods	Indirect Methods
● Education Class	● Newsletters
● Workshop	● TV Media Programs
● Group Discussion	● Web sites other than eXtension
● One-on-One Intervention	● Other 1 (Online courses)
● Demonstrations	
● Other 1 (Digital Diagnostics System)	
● Other 2 (Webinars/audio conferences)	

3. Description of targeted audience

The target audiences include agricultural producers, landowners, certified crop advisors, horticulturists, individuals interested in organic and other alternative food production, industry representatives including pesticide applicators, owners, managers, and retail employees, green industry firms, homeowners, master gardener volunteers, and teachers.

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 Completed Hatch Research Projects

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

V(I). State Defined Outcome

O. No	Outcome Name
1	Percentage Of Nitrogen Utilization By Wheat
2	More Informed User Of Pesticides
3	Providing Management Information To Farmers With Regard To Managing Soybean Cyst Nematode Heteroda, Glycines
4	Choosing Plant Varieties That Are Known To Be Resistant to Insects And Diseases

Outcome # 1

1. Outcome Target

Percentage Of Nitrogen Utilization By Wheat

2. Outcome Type : Change in Knowledge Outcome Measure

2012:53	**2013:**53	**2014:**53	**2015:**54	**2016:**54

3. Associated Knowledge Area(s)

- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 205 - Plant Management Systems
- 206 - Basic Plant Biology

4. Associated Institute Type(s)

- 1862 Research

Outcome # 2

1. Outcome Target

More Informed User Of Pesticides

2. Outcome Type : Change in Knowledge Outcome Measure

2012:3000	**2013:**3000	**2014:**3000	**2015:**3000	**2016:**3000

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Providing Management Information To Farmers With Regard To Managing Soybean Cyst Nematode Heteroda, Glycines

2. Outcome Type : Change in Knowledge Outcome Measure

2012:2800	**2013:**2800	**2014:**2800	**2015:**2800	**2016:**2800

3. Associated Knowledge Area(s)

- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 212 - Pathogens and Nematodes Affecting Plants
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 4

1. Outcome Target

Choosing Plant Varieties That Are Known To Be Resistant to Insects And Diseases

2. Outcome Type : Change in Action Outcome Measure

2012:100	**2013:**100	**2014:**100	**2015:**100	**2016:**100

3. Associated Knowledge Area(s)

- 205 - Plant Management Systems
- 206 - Basic Plant Biology
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Since a great deal of plant research is done in the field rather than the laboratory, it is much more difficult to control for confounding variables, any one of which can make results more difficult to interpret. Examples include unusually harsh [or unusually mild] growing seasons, unforeseen invading pests, and contamination from outside pollutants. These are especially important given the long time horizon of many plant studies. These same factors affect decisions that producers, green industry businesses, and homeowners make with respect to their crop, lawn, and garden management.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Reorganization will necessitate working with campus faculty and Extension Educators to identify potential efforts to be evaluated to determine their impact and evaluation methods to be used. Evaluation of new Master Gardener training regarding knowledge change at the end of the last training session will be continued.

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Community Resource Planning And Development

2. Brief summary about Planned Program

Dramatic changes in the United States and around the world are altering individual life courses and the communities in which people live. These fundamental social and economic shifts have created new challenges for communities and their residents. Leadership for community development rests with the University of Illinois Extension Community and Economic Development program team and the Department of Human and Community Development; however, faculty and staff from various University of Illinois entities [Institute for Government and Public Affairs, Department of Urban and Regional Planning, Illinois State Water Survey, Laboratory for Community and Economic Development] and other institutions of higher education such as the University of Illinois Springfield and Western Illinois University have and will be tapped for research-based support.

University of Illinois Extension educational outreach will be primarily through academic professionals located in multi-county units providing practical, research-based information and programs for communities, organizations, businesses, and leaders to address local needs, rural and urban. Extension programs will focus on participatory community planning, organizational development, community leadership development, and economic development/sustainable communities. In addition, they will provide primary delivery of education to enhance the availability of data and decision-making skills of local officials, leadership skills of emerging and current community leaders, citizen input for community planning, establishment of entrepreneurial communities, and the knowledge necessary to ensure successful small businesses. Depending on local priorities and available resources, community and economic development educators will collaborate with other educators to address interests in developing and accessing local food systems. Given the challenges faced by Illinois communities whether small towns or villages or an urban neighborhood, this Planned Program will play an important role in assisting communities and their residents in addressing these needs.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
608	Community Resource Planning and Development	75%		60%	
802	Human Development and Family Well-Being	5%		10%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	5%		10%	
805	Community Institutions, Health, and Social Services	10%		10%	
806	Youth Development	5%		10%	
	Total	100%		100%	

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

1. Situation and priorities

Illinois communities face a host of issues that demand leadership and strategies to address the rapidly changing social and economic landscape and are struggling to create a competitive advantage in a rapidly changing global economy. Many communities in Illinois are experiencing declines and changes in population and a declining economy. These communities are characterized by the lack of viable community organizations, businesses, workforce opportunities, and recreation opportunities. These communities may also be characterized by a lack of planning, a shortage of leadership, and local officials who need quality information, tools, and skills to revitalize their communities.

2. Scope of the Program

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

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

1. Assumptions made for the Program

That residents given training and information are best able to determine the ultimate solutions to the problems they and their communities face; that local policies and environments can in turn influence business and economic development; and that resources [local, state and federal] will remain at a level which adequately funds the needed research and Extension programs.

2. Ultimate goal(s) of this Program

Researchers are studying community activism, mobilization, and leadership in rural communities to assist in developing strong institutions that will foster revitalization of rural life. Extension seeks to increase the knowledge and skills of current and future leaders of local government, organizations, and agencies to improve the economic and social conditions of targeted communities.

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
2012	15.0	0.0	2.0	0.0
2013	15.0	0.0	2.0	0.0
2014	15.0	0.0	2.0	0.0
2015	15.0	0.0	2.0	0.0
2016	15.0	0.0	2.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Research activities include cross-national studies of developmental risk and resilience of migrant families, a study of the factors that influence the mental and physical health of poor rural mothers and their children, research on the factors that influence immigrant use of discretionary income in the host community and for remittances to the country of origin, an ongoing study on the utilization of mass media by social movement organizations, development of youth programs as contexts for development of real-world skills in rural youth, research focusing on how immigrant and second-generation youth build political capital in their families and communities, and a project focusing on the causes of racial/ethnic and socioeconomic gaps in student achievement and school-related behaviors and their implications for educational and occupational attainment.

With the staffing phase of reorganization nearly completed, discussion regarding priority educational activities has begun but the scope of activities has not been finalized. Preliminary discussions indicate continuation of educational activities focusing on community leadership development, participatory community planning, development of community organizations, and economic development. Examples include: [1] leadership academies such as the Illinois Leadership Conference; [2] developing online training modules to build skills in data gathering and application for community decision-making; [3] developing case studies and eTeams to champion the use of broadband technology as a critical community communications infrastructure; [4] providing tools to assist community leaders in supporting future entrepreneur development; [5] local governance and public policy [Certified County Officials webinars]; and [6] workshops, podcasts and webinars on small business formation and management. Other activities may include communication skills for the workforce [Engaging Generations], disaster planning, and curriculum revision and online training development for teachers to educate students about local government [Tomorrow's Leaders: Understanding Illinois Local Government].

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

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Other 1 (Webinars) ● Other 2 (Community Forums)	● Web sites other than eXtension ● Other 1 (Fact Sheets) ● Other 2 (Podcasts)

3. Description of targeted audience

Audiences include local elected officials, current and emerging community leaders, current or potential business owners/managers, bankers, entrepreneurs, economic development organizations, government agency representatives, teachers and their students, and residents of targeted communities.

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 Completed Hatch Research Projects

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

V(I). State Defined Outcome

O. No	Outcome Name
1	Number Of Individuals Who Worked On/Gave Leadership To Specific Community Issues
2	Number Of Plans Developed/Adopted/Adjusted By Communities Through Citizen Engagement
3	Dollar Value Of Grants And Resources Leveraged/Generated [Includes Gifts, Grants, Private Investments, Equipment, Workforce Training, Budget Allocations, Etc.]
4	Acceptance Of New Leadership Roles And Opportunities

Outcome # 1

1. Outcome Target

Number Of Individuals Who Worked On/Gave Leadership To Specific Community Issues

2. Outcome Type : Change in Action Outcome Measure

2012:1000	**2013:**1000	**2014:**1000	**2015:**1000	**2016:**1000

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development
- 802 - Human Development and Family Well-Being
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 805 - Community Institutions, Health, and Social Services
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Number Of Plans Developed/Adopted/Adjusted By Communities Through Citizen Engagement

2. Outcome Type : Change in Action Outcome Measure

2012:30	**2013:**30	**2014:**30	**2015:**30	**2016:**30

3. Associated Knowledge Area(s)

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Dollar Value Of Grants And Resources Leveraged/Generated [Includes Gifts, Grants, Private Investments, Equipment, Workforce Training, Budget Allocations, Etc.]

2. Outcome Type : Change in Condition Outcome Measure

2012:500000	**2013:**500000	**2014:**500000	**2015:**500000	**2016:**500000

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development
- 802 - Human Development and Family Well-Being
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 805 - Community Institutions, Health, and Social Services
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

Acceptance Of New Leadership Roles And Opportunities

2. Outcome Type : Change in Action Outcome Measure

2012:100	**2013:**100	**2014:**100	**2015:**100	**2016:**100

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 805 - Community Institutions, Health, and Social Services
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges

Description

Competing public and programmatic priorities can influence the level of attention provided to community economic development by non-subject matter staff such as County Directors, as can environmental conditions that affect areas such as water quality, employment opportunities in a given community, migration into or out of the area, community funding for emergency preparedness, interactions between community, county, state, and national lawmakers, and the impacts of national priorities on local issues.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Since the Community and Resource Planning and Development plan of work is not yet finalized for the reorganized University of Illinois Extension, the program leader for Community and Economic Development and Director for Program Planning and Assessment will continue working with Extension staff to finalize indicators and evaluation plans that will be carried out statewide. Two evaluations have been created to be used at the end of intensive leadership training programs as well as a twelve month follow-up. Other efforts will draw on the work of the joint North Central Extension program leaders in community and economic development and are described in the following section.

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Animal Health And Production

2. Brief summary about Planned Program

Leadership for programs in animal science is provided by the Department of Animal Sciences of the College of Agricultural, Consumer and Environmental Sciences and by the College of Veterinary Medicine.

Research programs range from those at the molecular level [molecular genetics] to applied research on farms and herds throughout the state. These programs cover all major species. Examples include the molecular mechanisms regulating skeletal muscle growth, tracking antibiotic resistant genes in swine, reproductive health, and optimization of animal welfare. Animal science is a strong component of the research and outreach efforts of the Colleges of ACES and Veterinary Medicine, from the use of animals for food and fiber to their role as companions for human beings.

Extension and outreach is conducted primarily by campus faculty and two Extension Educators located at research stations in Southern and Western Illinois, and at the State 4-H Office to facilitate youth livestock projects and activities. Outreach includes an extensive internet presence through the Illinois TRAILLS portal located at http://www.livestocktrail.uiuc.edu/. Additionally, Extension programs are conducted on both a multi-state and in-state basis organized to address specific species.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals	20%		15%	
302	Nutrient Utilization in Animals	10%		15%	
303	Genetic Improvement of Animals	0%		15%	
305	Animal Physiological Processes	0%		15%	
307	Animal Management Systems	25%		10%	
311	Animal Diseases	15%		15%	
315	Animal Welfare/Well-Being and Protection	5%		10%	
806	Youth Development	25%		5%	
	Total	100%		100%	

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

1. Situation and priorities

Priorities in the Animal Health and Production Planned Program focus on production management [addressing new issues involving health, feeding, reproduction, genetics, and management] but also deal with issues that cut across several other planned programs, such as human development [companion and recreational animals], youth development [teaching youth about the importance of caring for animals and capitalizing on the animal as a tool for youth development], natural resource utilization [with an emphasis on environmental protection and water quality], agricultural economics [improving marketing skills and business planning], and of course food safety [developing educational programs that encourage participation in quality assurance, residue avoidance, and Hazard Analysis Critical Control Point [HACCP] programs].

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

It is assumed that consumption of and demand for meat and dairy products will remain. Concerns over animal treatment present a need that researchers and Extension educators are well positioned to meet. As resources continue to tighten at both the state and national levels, every effort will be made to continue to serve these needs as they relate to both Illinois and national stakeholders. Multi-state activities will continue to be available as a way to provide dairy production information, since as a consequence of retirements and fiscal constraints, faculty and educator positions in dairy production have been discontinued.

2. Ultimate goal(s) of this Program

The goals of this planned program are to develop management practices that enhance efficiency of production by food-producing animals, to develop nutrition and management practices that optimize the health of domestic animals, to develop management practices that enhance animal wellbeing and minimize the impacts of animal production on the environment, to improve methods for diagnosis, prevention and treatment of infectious diseases in food animals, to develop new strategies to improve food safety, to educate animal producers and owners on keeping their animals healthy, and to provide veterinarians with the latest health information to best serve their clients.

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
2012	8.0	0.0	28.0	0.0
2013	8.0	0.0	28.0	0.0
2014	7.0	0.0	28.0	0.0
2015	7.0	0.0	28.0	0.0
2016	7.0	0.0	28.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Research activities will include a metagenomic analysis of the rumen microbial community, a study of the effect of grooming devices on performance and behavior in feedlot cattle, research designed to monitor the environmental conditions on swine trailers during transport, efforts to control emerging and re-emerging poultry respiratory diseases in the United States, a study of the impact of nondigestible carbohydrates on intestinal gene and protein expression in canines, research focusing on manure management and composting, an investigation of chemical castration of pigs as an alternative to the regular surgical castration procedure, research that will direct owners and veterinarians in their treatment of osteoarthritis, utilization of genetic selection and crossbreeding to enhance reproduction and survival of dairy cattle, testing of fecal collection methods to maximize the ability to amplify and sequence DNA from

cattle, a study of the cellulosome of ruminococcus flavefaciens with the ultimate goal of improving feed digestibility, and a comprehensive study of the representation and expression of neuropeptide genes in pigs [neuropeptides are important intercellular messengers and play a critical role in reproduction, development, growth, and health traits].

Additional research activities will include the utilization of reproductive cloning techniques to solve problems related to animal husbandry and meat quality, experiments studying the sperm acrosome reaction to limit losses of valuable breeding stock [about 35% of male infertility is due to defects in the acrosome region], research into the detection and control of porcine reproductive and respiratory syndrome virus and emerging viral diseases of swine, germ cell and embryo development and manipulation for the improvement of livestock, the development of a challenge model to simulate polymicrobial infections in swine, identification of quantitative trait loci markers influencing feed efficiency, product yield and meat quality traits in beef cattle, research addressing how wastewater reuse from dairy and beef farms contributes to the problem of animal hormones and veterinary antibiotics in the environment, and the utilization of genetic and functional approaches to improving production and quality of pork.

Extension activities will include updating of the comprehensive Illinois Livestock Trail website. Programs addressing dairy production will include multi-state conferences. Seminars and regional programs that provide research updates on livestock production for specific species of livestock include the Illinois Horse Breeder's Short Course, Swine Reproductive Programming for Spanish Speaking Employees, and Pet Extravaganza. Workshops, podcasts, and webinars that focus on small ruminant animals will be developed and targeted for new farmers. Livestock clinics, ethics training, and online certification for new 4-H members enrolled in livestock are also major program activities that will be conducted.

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

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● One-on-One Intervention ● Demonstrations ● Other 1 (Audio conference) ● Other 2 (Online courses)	● Newsletters ● Web sites other than eXtension

3. Description of targeted audience

The target audience includes all members of the animal production chain, from suppliers of inputs to producers to processors to final consumers. Other audiences include youth, veterinarians, owners of companion animals, vaccine manufacturers, animal nutritionists, and livestock trailer manufacturers.

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 Completed Hatch Research Projects

☐ 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	Increased Knowledge Of Livestock Care And Management
2	Utilization Of Waste Management Tools Such As The Illinois Manure Management Plan Workbook And Website

Outcome # 1

1. Outcome Target

Increased Knowledge Of Livestock Care And Management

2. Outcome Type : Change in Knowledge Outcome Measure

2012:	**2013:**	**2014:**	**2015:**	**2016:**
1200	1200	1200	1200	1200

3. Associated Knowledge Area(s)

- 301 - Reproductive Performance of Animals
- 302 - Nutrient Utilization in Animals
- 307 - Animal Management Systems
- 311 - Animal Diseases
- 315 - Animal Welfare/Well-Being and Protection
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Utilization Of Waste Management Tools Such As The Illinois Manure Management Plan Workbook And Website

2. Outcome Type : Change in Knowledge Outcome Measure

2012:	**2013:**	**2014:**	**2015:**	**2016:**
70	70	70	70	70

3. Associated Knowledge Area(s)

- 302 - Nutrient Utilization in Animals
- 307 - Animal Management Systems
- 315 - Animal Welfare/Well-Being and Protection

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Consumer preferences for animal products are one important external factor [such as a preference shift from milk to bottled water or from beef to pork or chicken]. Of the utmost importance is maintaining public confidence that animals are treated humanely. Changes in legislation and the increasing difficulty of maintaining funding and staffing levels are also very important external factors. In addition, drought can affect grazing practices and profitability.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Reorganization will necessitate working with campus faculty and Extension Educators at the research stations to identify potential efforts for evaluating their impact and the methods to be used.

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Natural Resources And The Environment

2. Brief summary about Planned Program

Leadership through the University of Illinois for the Natural Resources and the Environment Planned Program is provided through a multidisciplinary approach as exemplified by the College of ACES Department of Natural Resources and Environmental Sciences [NRES].

Research topics of NRES faculty and affiliates explore ranges of subjects from aphids to zebra mussels, and everything from individual genes to the ecosystem of the planet earth. Hatch-sponsored projects range from researching the relationship between how humans experience being part of nature and how that in turn influences environmentally responsible behavior to how chemical inputs from atmospheric deposition influence good nutrient management in both crop and forest systems. Of critical interest to both agriculture and ecosystem management is how fertilizer application affects nutrient management under various management scenarios.

Extension Educators with assignments in environment and energy stewardship, local food/small farms, and crop sciences along with faculty from NRES will have primary responsibility for conducting programs that address reduced tillage techniques, soil and water quality management, and environmental sustainability and stewardship in a state that is undergoing increasing urbanization, changing demographics, shifting land use, and a decline in outdoor recreational and educational activity use. Educational delivery methods for addressing these areas include online courses, conservation field days and activities, workshops, websites, forums, conferences, and volunteer training.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	35%		30%	
112	Watershed Protection and Management	25%		25%	
123	Management and Sustainability of Forest Resources	5%		15%	
133	Pollution Prevention and Mitigation	5%		10%	
405	Drainage and Irrigation Systems and Facilities	5%		10%	
605	Natural Resource and Environmental Economics	5%		5%	
806	Youth Development	20%		5%	
	Total	100%		100%	

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

1. Situation and priorities

It is more apparent than ever that being a wise steward of our natural resources not only makes for good citizenship but also makes good sense. Ensuring a safe and adequate water supply is an issue in both urban and rural areas of Illinois. Protecting the environment was the broad issue area selected by the third largest number of respondents [85% of 9,439] who completed the 2009 Extension survey of the public's educational interests. Water quality was by far the topic of most interest under this issue area. Chemical use by agricultural producers and homeowners and soil erosion are viewed as serious contaminants of the environment. In addition, chemical use has been identified as affecting air quality and destroying beneficial plant life. Forestry management for timber, wildlife, or recreation is a high priority for landowners. Wildlife management concerns range from habitat enhancement to nuisance management. This program seeks to balance the needs and demands of resource utilization with environmental quality and sustainability.

2. Scope of the Program

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

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

1. Assumptions made for the Program

That researchers and Extension educators will be able to convince growers that "less is more" in that

decreasing the use of fertilizers and pesticides can result in lower costs as well as the beneficial effect of having a smaller quantity of these chemicals in the neighboring environment, that rapidly-growing niche markets such as organic farming are in desperate need of science-based information in areas such as sustainability, and that even in an ever-increasingly competitive environment, stakeholders will continue to see the importance of protecting and best utilizing our natural resources.

2. Ultimate goal(s) of this Program

To ensure environmental friendliness and resource utilization efficiency, best utilization of insect management in agricultural cropping systems, and minimizing agricultural impacts on the environment and to enable citizen involvement in the preservation of natural resources through forest, prairie, watershed, and wildlife management by applying research-based knowledge.

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
2012	9.0	0.0	10.0	0.0
2013	9.0	0.0	10.0	0.0
2014	6.0	0.0	10.0	0.0
2015	6.0	0.0	10.0	0.0
2016	6.0	0.0	10.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Research projects will include work to determine the effects of widespread pesticide use on the dynamics of vector borne disease [the United States accounts for one third of the total amount of pesticides used to control agricultural and public health pests around the world], the integration of entomopathogens into pest management systems, work to develop nutrient criteria for Illinois streams and basins, evaluation of long-term changes in forest soils, the development of quantitative and qualitative models for collaborative and participative management of natural resources, the study of tile drainage modifications to reduce nitrate losses in agricultural watersheds, a study into the long-term sustainability of forests under new harvesting rules, research into the effects of stressors associated with land use patterns on freshwater fish [focusing on implications for conservation], work focusing on the impact of urbanization on native wildlife species, and the development of a better understanding of the response of microbial communities and processes to land use change [which is essential to restoring wetland water quality functions].

Additional projects include efforts to better align the goals of agricultural production with the complex interactions and cycles present in both managed and unmanaged systems [focusing on the impact of synthetic chemical fertilizers such as nitrogen and pesticides], work to better inform management practices

focusing on invasive species, research targeted toward conservation organizations who are interested in reintroduction of aquatic insects in agricultural systems, research focusing on managing and marketing environmental plants for improved production, profitability and efficiency, a study of the effects of food and fuel production on wildlife in Illinois, and an evaluation of the competitiveness of weed species commonly found in Midwestern agricultural fields.

Extension activities will include statewide webinars addressing issues in tillage, soil, and water management, conservation days [for youth], natural resource management online courses for Certified Crop Advisors, and updates and promotion of websites in areas such as human/wildlife interactions. Extension will also continue to collaborate in implementing the Governor's Biennial Conference on the Management of the Illinois River System. Master Naturalist training offers science-based educational opportunities that connect people with nature and help them to become engaged environmental stewards. Living on the Land, a multi-session program that provides basic production as well as environmental stewardship information for new and inexperienced small acreage landowners will be offered in selected locations around the state.

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

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations ● Other 1 (Online course) ● Other 2 (Webinars)	● Newsletters ● TV Media Programs ● Web sites other than eXtension

3. Description of targeted audience

Members of the target audience include environmental professionals in pollution management, scientists who examine and teach about healthy freshwater systems, land managers and farmers who manage landscapes that have an impact on fresh water, recreational fishermen, producers, crop consultants, greenhouse managers, organic growers and growers interested in sustainable farming practices, land improvement contractors, certified crop advisers, drainage contractors, state and federal agency staff, environmental regulatory agencies, citizens who have a strong interest and desire to volunteer to preserve and showcase natural resources, and youth.

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 Completed Hatch Projects

☐ 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	Increased Knowledge Of Human Actions That Negatively Affect The Environment

Outcome # 1

1. Outcome Target

Increased Knowledge Of Human Actions That Negatively Affect The Environment

2. Outcome Type : Change in Knowledge Outcome Measure

2012:500	**2013:**500	**2014:**500	**2015:**500	**2016:**500

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 112 - Watershed Protection and Management
- 133 - Pollution Prevention and Mitigation
- 605 - Natural Resource and Environmental Economics
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

External factors include concerns at the global level [events that have an impact on the environment as a whole such as current concerns about greenhouse emissions], federal and state level [most importantly revolving around governmental policy decisions and the availability of resources], and local level [that owners of natural resources are wise stewards not only of their own resources but are aware of the impact their actions have on the community].

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Reorganization will necessitate working with campus faculty and Extension Educators to identify potential efforts to be evaluated to determine their impact and evaluation methods to be used. Master

Naturalist program impact evaluations documenting behavior change will continue to be used.

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Food Safety

2. Brief summary about Planned Program

Ensuring a safe food supply requires an interdisciplinary approach by various segments of the College of Agricultural, Consumer, and Environmental Sciences [ACES] and University of Illinois Extension program areas. Research on food product development and improving the safety of food processing techniques while improving the nutritional quality of food products rests with the Department of Food Science and Human Nutrition. The College also hosts the National Soybean Research Laboratory which houses the Illinois Center for Soy Foods. The Center has among its interests the study of the efficacy and safety of soy food products to improve human health. University of Illinois Extension faculty and Extension Educators in Nutrition and Wellness provide education to address the issue of safe food processing for home and public consumption. The expansion of interest in local food systems also provides an opportunity for Extension to educate producers on safety practices related to food production based on research centered in the Department of Crop Sciences and Department of Animal Sciences.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
501	New and Improved Food Processing Technologies	0%		20%	
502	New and Improved Food Products	0%		25%	
503	Quality Maintenance in Storing and Marketing Food Products	20%		10%	
702	Requirements and Function of Nutrients and Other Food Components	0%		15%	
703	Nutrition Education and Behavior	0%		5%	
704	Nutrition and Hunger in the Population	0%		10%	
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	60%		15%	
806	Youth Development	20%		0%	
	Total	100%		100%	

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

1. Situation and priorities

Food safety is an issue for all families regardless of household resource level and affects food producers, processors, establishments serving food to the public and consumers. A food production or food service contamination outbreak causing serious foodborne illnesses can have widespread affects on food producers, distributors, and retailers resulting in serious economic impacts for those in the food production and service chain and higher prices for the consumer. Evan mild cases may have economic losses associated with absence from work. The Center for Disease Control [CDC] posted 2011 estimates that roughly 1 in 6 Americans [or 48 million people] get sick each year, 128,000 are hospitalized, and 3,000 die of foodborne diseases. A recently released study [March, 2010] funded by the Pew Charitable Trust estimates that the price of foodborne illness in the United States $152 billion a year which averages out to $1,850 each time someone gets sick from food. In 2009 the Illinois Department of Public Health reported that foodborne illness with the highest levels of incidence per year included Salmonella [1,484] and Shigella [620]; these represent the lowest levels in four years. As of October 1, 1999 the Food Service Sanitation Code required Illinois certified food service sanitation managers to attend food safety training with a minimum of five hours or to complete a re-certification exam to be eligible for re-certification; regulations regarding safety practices were updated in 2008. Extension's 2009 statewide public survey of educational interests revealed that over 1,600 of the ,9500 respondents were interested in learning more about safe food crop and meat production and nearly 2,000 were interested in learning more about safe handling of food served to the public. Education to ensure certification will remain a priority for University of Illinois Extension.

2. Scope of the Program

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

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

1. Assumptions made for the Program

We assume that the causes of foodborne illnesses and pathogens are well understood, that foodborne illnesses are best controlled through an analysis of how food is handled to avoid contamination and pathogen growth, and that additional safety can be assured in what foods are selected for use. We also assume that new methods of food product development will be able to balance the competing needs of improving food safety, improving processing efficiency, lowering costs, making products more widely available, and maintaining a high level of consumer acceptance.

2. Ultimate goal(s) of this Program

To develop safe food products and processing techniques for food preparation, storage, and use by the food processing industry, households, and consumers. To increase the use of safe food handling practices by producers, distributors, retailers, households, consumers [adults and youth], and establishments that prepare food for public consumption.

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
2012	2.0	0.0	4.0	0.0
2013	2.0	0.0	4.0	0.0
2014	2.0	0.0	4.0	0.0
2015	2.0	0.0	4.0	0.0
2016	2.0	0.0	4.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Extension activities include workshops, website postings and presentations that focus on safe food handling during production, distribution, retailing, preparation, and serving. Extension Educators will continue to teach: 1.] Serve It Safely-a workshop for volunteers who sell food for fundraising; 2.] the Illinois Department of Public Health five-hour refresher course and a 15-hour food service sanitation managers

certification for commercial food service establishments that sell food for public consumption; and 3.] proper hand washing techniques for youth reached through the Supplemental Nutrition Assistance Program Education [SNAP-Ed]. Training on good agricultural processes for producers of local foods will focus on water usage and water quality testing, worker health and hygiene, facilities and equipment sanitation, manure handling and field application, and record keeping.

Research activities will include a project that has the potential to improve the use of alternative sources in food formulation [providing practical rules on how to choose these ingredients to obtain a stable final product], research to improve our ability to predict and control textural properties [which is a key to designing successful food products that will lead to high consumer appreciation], the utilization of acoustic energy as a practical food safety intervention for liquid food processing, a study into the effects of natural and synthetic antioxidants on oxidative stability of fresh and pre-cooked meat systems, research into lipid polymorph impact on food quality, the utilization of zein to develop films for coating and protecting foods from degradation, efforts to utilize traceability modeling in agricultural products for improved food security, a study of mastitis resistance to enhance dairy food safety, the utilization of nanostructured zein for microencapsulation of food components, and research focusing on the beneficial and adverse effects of natural, bioactive dietary chemicals on human health and food safety.

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

Extension

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

3. Description of targeted audience

Nutritionists and food scientists, food microbiologists, soy processors, food manufacturers ranging from ingredient providers to packaging operations, food industry professionals, food producers and their employees, distributors and retailers of fresh produce, employees of establishments that prepare food for public consumption, volunteers who serve food for public consumption or teach others how to safely prepare and serve food, regulatory agencies, and youth.

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 Completed Hatch Projects
- Number Of Individuals Completing Food Safety Certification Required Training

☐ 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	Increase Knowledge Of Personal Cleanliness Habits That Prevent The Spread Of Disease Through Food
2	Using Appropriate Hygiene Procedures When Handling Food [Fresh Or Processed]
3	Practices Adopted That Prevent Foodborne Illness Contamination During The Production And Distribution Of Fresh Produce

Outcome # 1

1. Outcome Target

Increase Knowledge Of Personal Cleanliness Habits That Prevent The Spread Of Disease Through Food

2. Outcome Type : Change in Knowledge Outcome Measure

2012:100	**2013:**100	**2014:**100	**2015:**100	**2016:**100

3. Associated Knowledge Area(s)

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Using Appropriate Hygiene Procedures When Handling Food [Fresh Or Processed]

2. Outcome Type : Change in Action Outcome Measure

2012:200	**2013:**200	**2014:**200	**2015:**200	**2016:**200

3. Associated Knowledge Area(s)

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Practices Adopted That Prevent Foodborne Illness Contamination During The Production And Distribution Of Fresh Produce

2. Outcome Type : Change in Action Outcome Measure

2012:100	**2013:**100	**2014:**100	**2015:**100	**2016:**100

3. Associated Knowledge Area(s)

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Natural disaster may influence the availability of facilities for safely developing, storing, distributing, and using food products. The changes in the economy and appropriation changes may influence the resources available for research/Extension programs. Government regulations may influence food product development and processing. Competing priorities [public and programmatic] may influence the level of programmatic effort from Extension staff.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Reorganization will necessitate working with campus faculty and Extension Educators to identify potential efforts to be evaluated to determine their impact and evaluation methods to be used. An evaluation has been developed to follow up with food producers who participate in training targeted at preventing contamination that causes food borne illness. An evaluation to determine practice changes may also be updated and distributed to participants' in food safety certification programs for those who serve food to the public. Observation or a pre- post-test will be completed by youth to assess if they are washing their hands properly.

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Agricultural And Consumer Economics

2. Brief summary about Planned Program

The Department of Agricultural and Consumer Economics targets research and outreach programs aimed at improving the economic and environmental wellbeing of producers, consumers, and families. Drawing on economics, business, and law, the department analyzes issues related to individuals and families, agriculture and natural resources, and food - all ranging in scope from local to global. Researchers in the department partner with Extension Educators and Extension County Directors located in multi-county offices who work with local Extension councils and stakeholders in identifying needs and establishing programs to meet those needs. These interactions in turn influence the research agenda of the College. This planned program encompasses the research and outreach activities associated with agricultural economics. Extension activities associated with consumer financially-related issues and activities are encompassed in the Human Development and Family Wellbeing Planned Program due to the interdisciplinary nature of this planned program and the now limited number of Extension educators providing consumer education.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
602	Business Management, Finance, and Taxation	70%		40%	
603	Market Economics	20%		15%	
605	Natural Resource and Environmental Economics	10%		15%	
607	Consumer Economics	0%		10%	
610	Domestic Policy Analysis	0%		10%	
801	Individual and Family Resource Management	0%		10%	
	Total	100%		100%	

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

1. Situation and priorities

Agricultural producers, including those engaged in horticulture businesses, express concerns about their enterprise's sustainability and profitability and about how to manage changes with competing demands for limited resources.

2. Scope of the Program

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

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

1. Assumptions made for the Program

That international developments in agricultural law have an increasing impact on the legal situation in the United States; that farmers lack the information to best utilize crop yield and revenue insurance products; that many current environmental economic tools are simplistic and could provide better insight to policy makers if they were enriched by considering special issues [such as paying closer attention to heterogeneity of land, consumers, and producers; and that resources will continue to be available to allow agricultural economists at Illinois to continue to provide thoroughly-researched policy advice to policy makers and producers at both the local and national levels.

2. Ultimate goal(s) of this Program

To inform and improve decisions related to the midwest commercial food and agricultural sectors involving production, financing, marketing, and risk management, to identify and estimate the impact of federal and state policies on rural communities, agricultural producers, and society, to help inform the policy making process, and to describe and measure the well-being of communities resulting from changes in economic and regulatory conditions.

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
2012	5.0	0.0	14.0	0.0
2013	5.0	0.0	14.0	0.0
2014	5.0	0.0	14.0	0.0
2015	5.0	0.0	14.0	0.0
2016	5.0	0.0	14.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Extension activities will focus on farm financial management including marketing and risk management delivered by campus faculty. However, sevral Extension educator positions with expertise in this area have been eliminated in the reorganization of Extension effective July 1, 2011. Delivery methods will include continuous updating and promotion of the Farmdoc website, regional conferences featuring research updates, workshops on using web-based farm management tools such as the Farm Analysis Solution Tool [FAST], tax schools, and podcasts by Extension campus faculty and staff.

Research activities will include research focusing on legal issues affecting agricultural production, marketing and the environment, work that identifies policies and private actions that increase social welfare in the environmental arena, research that applies both stated and revealed preference methods to estimate the benefits of environmental improvement, an economic assessment of changes in trade arrangements, bio-terrorism threats and renewable fuel requirements on the United States grain and oilseed sectors, the ongoing development of tools for crop insurance decision making, effots to forecast the effects of toxic waste sites on property values surrounding areas of concern, and the study of firm and consumer behavior in a vertically linked agri-food sector.

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

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● One-on-One Intervention ● Other 1 ()	● Newsletters ● TV Media Programs ● Web sites other than eXtension

3. Description of targeted audience

Producers at both the local and national levels, practicing lawyers and academic lawyers, farmers, processors, retail distributors of natural and organic products, agriculture biotechnology firms, farm credit institutions, agribusinesses, policy makers, environmental economists, applied econometricians, public officials in the Great Lakes areas, real estate developers and builders, community planning and building officials, managers of small public water supply systems, and conservation groups.

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 Completed Hatch Projects

☐ 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	Page File Requests Made To Farmdoc [Note That Projections Have Been Significantly Modified Per Request Of PI]
2	Number Of Web Hits On The Varietal Information Program For Soybeans Website
3	Number Making Decisions To Reduce Risk In Agriculture Production

Outcome # 1

1. Outcome Target

Page File Requests Made To Farmdoc [Note That Projections Have Been Significantly Modified Per Request Of PI]

2. Outcome Type : Change in Knowledge Outcome Measure

2012:	**2013:**	**2014:**	**2015:**	**2016:**
4000000	4000000	4000000	4000000	4000000

3. Associated Knowledge Area(s)

- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics
- 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Number Of Web Hits On The Varietal Information Program For Soybeans Website

2. Outcome Type : Change in Knowledge Outcome Measure

2012:	**2013:**	**2014:**	**2015:**	**2016:**
100000	100000	100000	100000	100000

3. Associated Knowledge Area(s)

- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics
- 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 3

1. Outcome Target

Number Making Decisions To Reduce Risk In Agriculture Production

2. Outcome Type : Change in Action Outcome Measure

2012:	**2013:**	**2014:**	**2015:**	**2016:**
100	100	100	100	100

3. Associated Knowledge Area(s)

- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Changes in legislation, changes in state and national economic variables such as employment, interest rates, and availability of capital, and challenges faced in the emerging private research and development sectors in developing countries.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Reorganization will necessitate working with campus faculty to identify specific potential educational efforts to be evaluated to determine their impact and evaluation methods to be used.

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Sustainable Energy

2. Brief summary about Planned Program

The United States is the largest user of energy in the world, accounting for over 25% of total consumption. Thus, any change in global energy use will require a change in production and consumption of energy in the U.S. The major renewable energy systems include solar, wind, biomass, hydroelectric, and geothermal. Biofuels have been gaining ground since the 1980's, but several limitations need to be overcome before plant/crop-based resources and processes become a viable alternative to petrochemical-based systems for chemicals and energy. These include improvements in the efficiency of bioconversion of plant fibers to value-added products and extraction of high value products.

The University of Illinois is home to the Center for Advanced BioEnergy Research. CABER works closely with the nine UIUC colleges, multiple disciplinary and professional units, and faculty and students to provide a facilitative structure for campus outreach, teaching and research in areas related to bioenergy systems. CABER facilitates the development of cross-disciplinary research and development, education and outreach programs that promote the greater and more efficient use of bio-renewable resources, and, more specifically, support the emergence of advanced bio-fuels and chemicals. CABER focuses on sustainable bioenergy systems, including plant, microbial, downstream processing, and economics and policy issues as they relate to bio-based products.

Extension educational efforts will be provided primarily by faculty in the Department of Agricultural and Biological Engineering and the Department of Crop Science and multi-county Extension Educators, focusing on the environment and energy stewardship.

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

4. Program duration : Medium Term (One to five years)

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
133	Pollution Prevention and Mitigation	15%		0%	
201	Plant Genome, Genetics, and Genetic Mechanisms	0%		40%	
206	Basic Plant Biology	5%		20%	
402	Engineering Systems and Equipment	25%		25%	
601	Economics of Agricultural Production and Farm Management	15%		15%	
801	Individual and Family Resource Management	20%		0%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	15%		0%	
806	Youth Development	5%		0%	
	Total	100%		100%	

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

1. Situation and priorities

Bio-based renewable resources can be obtained from a wide range of agricultural crops, forestry products, and processing industries. The U.S. has access to significant amounts of bio-based resources, including those of the highly productive corn/soybean cropping system in the central U.S., arguably the largest man-made ecosystem on the planet. This agro-ecosystem is still largely focused on providing raw materials for the food, feed, and fiber industries and not on chemicals and fuels.

Over 8,400 [90%] of 9,349 respondents to the 2009 Extension online survey of the public's educational interests wanted to know more about high energy costs, particularly about managing home energy costs, energy efficiency, and alternative energy sources. These areas received more 'votes' of interest than topics under any of the nine other broad issue areas and provide support for Extension to give priority to educational programming related to sustainable energy that is based on current research such as that on growing perennial grasses [Miscanthus and Tropical Maize] as bio-based sources of energy for heat and electricity.

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

There already exists growing support for biofuels as evidenced by the marketing of biodiesel blends in many states, and the provision of tax incentives for its use. We assume that this trend will continue and funding will be available to allow us to take advantage of this trend. Access to other entities on campus for research-based information on other alternative energy sources and energy efficience will ensure Extension's ability to provide assistance to consumers on reducing energy costs.

2. Ultimate goal(s) of this Program

The current level of production of fuel from plants or animals is currently about one third of the level mandated by lawmakers for 2022, according to an energy taskforce reporting to President Obama. As a member of the Midwest Consortium for Biobased Products and Bioenergy, the University of Illinois is committed to working regionally to improve on our current progress toward meeting this goal. Specific goals include providing fuel and materials for sustainability, improving biofuel production and carbon sequestration, and developing a research base that will allow for the development of management systems that efficiently and economically produce bioenergy crops. Identification and reliance on sustainable energy sources will keep energy costs reasonable and prevent adverse effects on the environment.

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
2012	3.0	0.0	6.0	0.0
2013	3.0	0.0	6.0	0.0
2014	3.0	0.0	6.0	0.0
2015	2.0	0.0	6.0	0.0
2016	1.0	0.0	6.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

We will combine and focus the specialized research abilities of faculty members from several disciplines to generate chemicals and biofuels from renewable biomass sources using a comparative and functional genomic approach. Future economic development aspects include technology transfer, biotech startups, attracting national talents including faculty, students and postdoctoral associates, and training of a first-class workforce.

Activities will include work to model the impacts of advanced biofuel production [integrating models of crop production and its environmental effects with models of economic behavior], a study on the impacts of crop residue removal for biofuel on soils, the use of pre-treatment and conversion of fiber rich distiller's dried grains for the production of value-added products, the use of high-yielding perennial grasses for commercial bioenergy production, an ongoing study on the impact of biofuels emissions reducing technologies for off-road diesel engines, development of a systems informatics infrastructure with the ultimate goal being the provision of effective procedures for decision making in a concurrent way [all the stages of biomass feedstock production should be able to handle data simultaneously], research to develop plant lines with increased biomass [by adding nucleotype selection with other known selections for increased biomass, plant breeders will have another tool at their disposal to use to breed lines with increased biomass], improved utilization of co-products from the biofuels industry by growing pigs, and the development of fuel extenders from glycerol and ethanol using green technology.

Extension activities will include continuing promotion of the annual Bioenergy Feedstock Symposium on campus, narrated tours at field research sites, heating system conversions using perennial grass pellets, presentations related to producing biomass energy crops through crop management conferences, podcasts, and distribution of research reports related to costs, efficiencies, and by-products of biofuel production. In addition, Extension staff will also support the existing working groups of representatives from industry biomass end-users, agricultural producers, government agencies, not-for-profit organizations, and University faculty and staff to advance successful and profitable commercialized biomass-based heat and electric energy. Extension staff will also tap and disseminate research on other alternative energy resources such as wind, solar, and nuclear through a series of webinars, other web-based information, and access to energy audits to help individuals and families reduce the use of non-renewable energy sources. Extension activities will also focus on hands-on experiences and 4-H projects for youth.

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

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations ● Other 1 (Experiments) ● Other 2 (Webinars)	● Newsletters ● TV Media Programs ● Web sites other than eXtension ● Other 1 (Podcasts)

3. Description of targeted audience

The beneficiaries of this research will be agriculture and agriculture-based industries in Illinois, although ultimately all of us will benefit as consumers of energy. Extension audiences will include agriculture producers, landowners, power suppliers, industry segments providing supply chain components, technologies and marketing expertise, government officials, consumers, and youth.

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 Completed Hatch Projects

☐ 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	Proportion Of The Use Of Biomass Relative To Total Energy [Currently At 4-5%]
2	Percent Reduction In NOx Emissions From Biodiesel
3	Increased Knowledge Of Current And Future Energy Source Options
4	Number Implementing Recommended Practices To Reduce Energy Use

Outcome # 1

1. Outcome Target

Proportion Of The Use Of Biomass Relative To Total Energy [Currently At 4-5%]

2. Outcome Type : Change in Condition Outcome Measure

2012:6	**2013:**6	**2014:**6	**2015:**7	**2016:**7

3. Associated Knowledge Area(s)

- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 206 - Basic Plant Biology
- 402 - Engineering Systems and Equipment
- 601 - Economics of Agricultural Production and Farm Management

4. Associated Institute Type(s)

- 1862 Research

Outcome # 2

1. Outcome Target

Percent Reduction In NOx Emissions From Biodiesel

2. Outcome Type : Change in Condition Outcome Measure

2012:50	**2013:**50	**2014:**55	**2015:**55	**2016:**55

3. Associated Knowledge Area(s)

- 402 - Engineering Systems and Equipment

4. Associated Institute Type(s)

- 1862 Research

Outcome # 3

1. Outcome Target

Increased Knowledge Of Current And Future Energy Source Options

2. Outcome Type : Change in Knowledge Outcome Measure

2012:2000	**2013:**2000	**2014:**2000	**2015:**2000	**2016:**2000

3. Associated Knowledge Area(s)

- 206 - Basic Plant Biology
- 402 - Engineering Systems and Equipment
- 601 - Economics of Agricultural Production and Farm Management
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

Number Implementing Recommended Practices To Reduce Energy Use

2. Outcome Type : Change in Action Outcome Measure

2012:500	**2013:**500	**2014:**500	**2015:**500	**2016:**500

3. Associated Knowledge Area(s)

- 801 - Individual and Family Resource Management
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Economy
- Public Policy changes
- Government Regulations
- Competing Programmatic Challenges

Description

Both environmental [global warming] and economic [high energy prices] concerns will drive the demand for biofuels research. Improvements in crop productivity and the utilization of bioenergy will also continue to be important external factors.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Extension reorganization will necessitate working with campus faculty and Extension educators to identify specific potential educational efforts to be evaluated to determine their impact and evaluation methods to be used. The following evaluations have been discussed briefly with respect to on-going activities: [1] follow-up evaluations to determine practice changes of those registered participants in the webinar energy series; [2] end-of-meeting/tours evaluations to determine knowledge change regarding specific energy research findings; and [3] follow-up evaluations with attendees at biomass energy crop field location tours.

V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Human Development And Family Wellbeing

2. Brief summary about Planned Program

The stresses on American families are well known. Although rates of divorce have stabilized in the last 20 years, 50 percent of all marriages end in divorce. The number of children growing up in poverty is a breathtaking 20 percent. The number of adults raising children while also caring for an aging parent has grown, and rates of children diagnosed with attention, learning, and behavioral problems have soared, particularly as we have become more skilled in recognizing these problems. Still, there is compelling evidence that many families [including those living under difficult circumstances] manage to raise their children successfully and support their members. Because family strengths tend to be difficult to quantify, they can easily be overlooked or dismissed as unimportant. The result is a significant gap in our knowledge base. We need to know from research the factors that make for strong families.

Within the Department of Human and Community Development in the College of ACES is the Family Resiliency Program [www.familyresiliency.uiuc.edu]. Established in 2000, the program is dedicated to enriching child, individual, and family wellbeing in the context of communities. The program supports innovative research, education, and public engagement outreach activities that hold potential for strengthening families' ability to be resilient in the face of life stressors and to successfully navigate the competing demands of work and family. The Center focuses activities around three themes: [1] positive human development; [2] family wellness; and [3] strengthening family and community connections.

Ongoing Extension interdisciplinary programs address family issues at all stages of the life cycle from infancy through issues of aging and care of dependent adults. In addition, human development and family wellbeing is dependent on financial stability and good health. Due to the interdisciplinary focus of Extension programs, multi-county Extension Educators with assignments in nutrition and wellness, consumer economics, and family life will work together and will draw on research and expertise through the Department of Human and Community Development, Department of Food Science and Human Nutrition, Department of Agricultural and Consumer Science in the College of ACES, and from the Colleges of Applied Health Sciences, Education, and Fine and Applied Arts to deliver educational programming to enhance successful financial and health management by individuals and families.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
802	Human Development and Family Well-Being	100%		80%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	0%		20%	
	Total	100%		100%	

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

1. Situation and priorities

As noted in the overview, what determines positive family outcomes is not always easily predictable. The ongoing research being conducted is attempting to determine how family resiliency can be enhanced. Aging Americans and their families are faced with shifting roles in care-giving and relationships within the family. Balancing work and family often brings increased stress, fatigue, illness, and strained relationships. In addition, teens find establishing and maintaining healthy relationships with their peers and the opposite sex to be challenging and stressful. Parenting can become overwhelming, often resulting in child abuse or an environment that is not supportive of the healthy development of youth because parents lack knowledge and skills regarding best parenting practices. In addition, grandparents who are caring for grandchildren are struggling to cope with complex changes that affect lifestyles, employment, and family relations. Health advances have led to a longer life-span requiring individuals to plan ahead for financial security and the needs of aging adults, as well as tools to assist caregivers needed for self-care. Responses to the 2009 Extension public survey of educational interest clearly indicated a high level of interest in learning more about planning for retirement, health care costs, living within their income, healthy food choices, the effects of physical activity on health, and diabetes and heart disease.

2. Scope of the Program

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

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

1. Assumptions made for the Program

That resource levels will remain sufficient for family, nutrition, and consumer finance research and educational programming and that our current understanding of the complex relationships involved among family members is sufficient to provide research-based educational programming.

2. Ultimate goal(s) of this Program

Researchers are studying the factors that enhance or hinder resilience in families in order to create programs and policies that will foster healthy families. Researchers are also studying the processes of positive social and emotional development in children and adolescents in order to develop ways in which parents, teachers, and other adults can foster healthy development. Through Extension programs, families will thrive by managing work-life challenges, understanding children's development and how to foster it, coping with the challenges of aging and intergenerational issues, improving their financial condition, and coping with chronic diseases through diet, exercise, and social support.

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
2012	17.0	0.0	7.0	0.0
2013	17.0	0.0	7.0	0.0
2014	16.0	0.0	7.0	0.0
2015	16.0	0.0	7.0	0.0
2016	16.0	0.0	7.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Extension activities will focus on the following areas: 1.] parenting and childcare education; 2.] care giving education for those who care for adults; 3.] work-life management education;.4.] reducing the risk of and management of chronic diseases with an emphasis on proper nutrition; 5]. planning ahead for long-term care and retirement; and 6.] balancing income and expenses. With limited staffing capacity, delivery methods will primarily include webinars, live and taped video training, informational websites, electronic newsletters, blogs, podcasts, and social media networking communities. Additional activities will focus on maintenance and expansion of the Parenting 24/7 and Plan Well, Retire Well websites and newsletters and local and regional workshops related to long-term care and self-care for caregivers [Care-Giving Relationships: For Those Who Care for Adults], preventing and managing chronic diseases [I on Diabetes, Meals for a Healthy Heart], and managing the challenges of contemporary working life [Intentional Harmony curriculum]. Additional activities will also include train-the-trainer discussion guides and handouts [All My Money, Healthy Living Throughout the Lifespan], and fact sheets and brochures such as the Your Young Child series.

Research activities will include a project examining how children's early attachment relationships may foster or hinder their ability to manage conflict and negative emotions with friends, research indentifying chronic stressors in the lives of low-income, African American families living in inner-city neighborhoods and the coping strategies used to address these stressors, a study of the socialization of children's belief systems about relationships, research focused on building supportive sibling relationships in middle childhood through the enrichment of social and emotional competencies, work to help families succeed through the promotion of health and wellbeing, research and outreach focused on helping couples develop work-life management skills, a prospective, exploratory study focusing on investigating the pathways and outcomes associated with mothers' postseparation coparenting relationships [with a particular focus on experiences of intimate partner violence], a continuing study of the importance of father

involvement, and an investigation into the impacts of residual nature on walking and vitality in older adults.

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

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Other 1 (DVD's)	● Newsletters ● Web sites other than eXtension ● Other 1 (Train The Trainer)

3. Description of targeted audience

Target audiences include professionals who work with young children including childcare providers, pre-school teachers and public health staff, professionals who provide support, assistance, and training to parents including agency staff, parent educators, and high school teachers, parents including teen parents, grandparents, foster parents of youth from birth through adolescence, caregivers of aging audiences, working couples, adults concerned with long-term care issues, consumers interested in planning for the future, and adolescent youth. Individuals at-risk for or coping with diabetes or heart disease will be a priority recipient of Extension programming, as will families living in low-income and high-risk neighborhoods and will be adapted to reach racially, ethnically, and culturally diverse audiences.

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 Completed Hatch Projects

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

V(I). State Defined Outcome

O. No	Outcome Name
1	Number Of Research Projects Utilizing The Child Development Laboratory Research Database
2	Increased Knowledge Of Children's Behavior At A Given Stage Of Development And Parenting Practices To Foster That Behavior
3	Increased Parenting Practices That Promote Nurturing Relationships

Outcome # 1

1. Outcome Target

Number Of Research Projects Utilizing The Child Development Laboratory Research Database

2. Outcome Type : Change in Knowledge Outcome Measure

2012:20	**2013:**20	**2014:**20	**2015:**20	**2016:**20

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1862 Research

Outcome # 2

1. Outcome Target

Increased Knowledge Of Children's Behavior At A Given Stage Of Development And Parenting Practices To Foster That Behavior

2. Outcome Type : Change in Knowledge Outcome Measure

2012:100	**2013:**100	**2014:**100	**2015:**100	**2016:**100

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Increased Parenting Practices That Promote Nurturing Relationships

2. Outcome Type : Change in Knowledge Outcome Measure

2012:100	**2013:**100	**2014:**100	**2015:**100	**2016:**100

3. Associated Knowledge Area(s)

- 802 - Human Development and Family Well-Being

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Any significant trend that affects the family, including changes in divorce rates, parents delaying having children until later in life [or on the opposite side an increase in teen pregnancy], a downturn in the economy [or other forms of economic hardships], and continued migration from rural to urban areas.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Reorganization will necessitate working with campus faculty and Extension Educators to identify potential efforts to be evaluated to determine their impact and evaluation methods to be used. Evaluations will continue for Parenting Partners and Parenting 24/7 and the Welcome to the Real World simulation in 2012 and will likely be developed related to diabetes education and changes in healthy food consumption practices.

V(A). Planned Program (Summary)

Program # 9

1. Name of the Planned Program

4-H Youth Development

2. Brief summary about Planned Program

Youth development programs are designed to allow youth and adults to work together in family and community environments to create real life learning laboratories that help youth practice skills they need today and will continue to need for the rest of their lives, to reach youth in their own neighborhoods and communities with unique, hands-on learning strategies suited to their needs, to address current youth issues through positive prevention programs, and to promote positive youth/adult partnerships involving them in significant decision making and encouraging their participation in community roles.

Due to state budget deficits which have affected funding for University of Illinois Extension, the number of Extension Educators focusing on 4-H youth development has been reduced to 35 multi-county and metro positions that will be in place as of July 1, 2011 [representing a loss of 15 field-based positions]. Additional decisions regarding the number and location of civil service 4-H youth development program positions are still being finalized based on available funding at the local level. These investments in youth through informal education are expected to continue to return significant benefits to the public while addressing important issues such as science, healthy lifestyles, and leadership education.

National research continues to indicate that positive youth development involves creating opportunities to experience belonging, independence, generosity, and mastery--the focus of 4-H Youth Development program delivery. Drawing on research conducted in the College of ACES in nutrition and health, leadership, and youth involvement in groups, as well as the expertise of faculty in the Colleges of Engineering, Medicine, and Education and the Graduate School of Library and Information Services, the University of Illinois Extension 4-H Youth Development program will delivery programs that address the three national mission mandates of the National 4-H Program: [1] science, engineering, and technology [SET]; [2] healthy lifestyles; and [3] youth in civic engagement/leadership. Drawing on data collected in 2005 through statewide youth focus groups and a statewide survey of the public's educational interests conducted in 2009, the Illinois 4-H Youth Development Program has identified five areas of focus [listed in the situation and priorities section].

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
724	Healthy Lifestyle	10%		0%	
806	Youth Development	90%		0%	
	Total	100%		0%	

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

1. Situation and priorities

The priorities for the Illinois 4-H Youth Development program encompass: 1.] learning employment skills; 2.] experiencing healthy relationships; 3.] becoming physically fit; 4.] thinking green; and 5.] engaging in science. Reports of college degrees awarded, media reports, and business and industry leader's expressed concerns about the declining interest of youth in science, engineering, and technology have identified this decline as a situation that may undermine the country's standard of living and global position of leadership. Respondents to the 2009 statewide Extension survey of educational interest selected 'expanding youth interest in science, math, and technology' education more frequently than any of the other topics related to education and workforce preparation. Data also shows the growing prevalence of childhood obesity. The Illinois Department of Public Health cites recent survey findings that 38% of third graders in Illinois are at risk of being overweight or are overweight/obese; lack of adequate physical activity is one of the contributing factors. Research also supports the value of youth education related to social emotional learning, dating relationships, financial literacy, and experiences with nature in developing adults who attain healthy workplace relationships, stable marriages, economic stability, and who are aware of human actions that affect the environment.

2. Scope of the Program

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

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

1. Assumptions made for the Program

That funding exists and that staff and volunteers can be located to expand programs and that faculty expertise from the College of ACES, as well as corporate and community partners, can be recruited to support the development of 4-H materials and programs.

2. Ultimate goal(s) of this Program

To develop youth who are: 1.] prepared and interested in pursuing careers in science, engineering, and technology; 2.] assuming leadership roles in government or community organizations that focus on community enhancement; and 3.] developing lasting habits related to proper nutrition and physical activity. In addition, youth involved in 4-H activities will develop good character and exhibit social and emotional

development required of adults who can contribute to society.

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
2012	35.0	0.0	0.0	0.0
2013	35.0	0.0	0.0	0.0
2014	35.0	0.0	0.0	0.0
2015	35.0	0.0	0.0	0.0
2016	35.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

In an effort to involve 50,000 new youth in 4-H by 2013, workgroups of staff are identifying activities that are encompassed under the priority focus areas. Delivery systems will include community clubs, special interest groups, camps, field trips, and online interactive experiences that encompass the essential elements of positive youth development. SET has targeted the following: [1] robotics; [2] geospatial technologies and community mapping; [3] sustainable energy; and [4] exploring the Wonders of Science [SET Career Exploration]. Specific activities will also include SET-focused internship experiences for college students, a mobile science laboratory, summer career academies, and beginning and advanced Science Siesta [two-day workshops to connect youth and scientists in collaborative science investigations]. Health Jam, a multi-session program that focuses on healthy eating and physical activity practices and health careers will be expanded to several locations in the state. 4-H Youth Development Extension staff are also involved in interdisciplinary efforts with other Extension staff to provide teacher training focused on Welcome to the Real World independent living simulations.

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

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations ● Other 1 (Camps) ● Other 2 (Webinars)	● Newsletters ● Web sites other than eXtension

3. Description of targeted audience

All youth including special targeting to reach minority youth and female youth, youth leaders [paid and volunteer], teachers, parents, and community members.

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

- New Extension Program Curricula Developed

☐ 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	Increased Knowledge About Science And Health Careers
2	Increased Knowledge Of Positive Youth Development

Outcome # 1

1. Outcome Target

Increased Knowledge About Science And Health Careers

2. Outcome Type : Change in Knowledge Outcome Measure

2012:200	**2013:**200	**2014:**200	**2015:**200	**2016:**200

3. Associated Knowledge Area(s)

- 724 - Healthy Lifestyle
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Increased Knowledge Of Positive Youth Development

2. Outcome Type : Change in Knowledge Outcome Measure

2012:100	**2013:**100	**2014:**100	**2015:**100	**2016:**100

3. Associated Knowledge Area(s)

- 724 - Healthy Lifestyle
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Economy
- Appropriations changes
- Public Policy changes
- Competing Public priorities
- Competing Programmatic Challenges

Description

Additional loss of state funding for professional positions and subsequent reduction of Extension educators will likely significantly affect the level of programming and youth involvement. The economy may affect the ability of youth to participate in programs and the rising costs of a college education may affect enrollment and preparation of scientists. A number of other youth-serving organizations and activities compete for time youth have for discretionary out-of-school activities.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Evaluations of statewide 4-H volunteer training will be ongoing, new evaluation tools have been developed for use with 4-H special interest groups that address positive youth development as well as skills. Impact data will continue to be developed related to national science experiments and Health Jam. An exit survey will be developed as a part of a North Central region grant to survey the perceptions of the effect of 4-H . We will be forming a work group to discuss and identify impact evaluation priorities for 4-H Youth Development.

V(A). Planned Program (Summary)

Program # 10

1. Name of the Planned Program

Agricultural And Biological Engineering

2. Brief summary about Planned Program

Leadership is provided by the Department of Agricultural and Biological Engineering. The Department contributes to using engineering in an interdisciplinary manner to solve problems in agricultural, food, and biological systems. Significant research projects are carried out in all five of the Department's groups that contribute to the Extension and Outreach programs of the College. These groups consist of: [1] Bioenvironmental Engineering; [2] Food and Bioprocess Engineering; [3] Off-Road Equipment; [4] Soil and Water Resources; and [5] Biological Engineering. In addition to the research noted in other Planned Programs, research is conducted on agricultural infotonic systems, animal waste management, livestock production environments, and improving the value of coproducts produced in grain processing. Faculty and staff in the Department of Agricultural and Biological Engineering with joint research and Extension appointments focus their outreach education on manure management, integrated pest management, and biomass conversion for heat and electricity. Agricultural and Biological Engineering is submitted as a Planned Program because of the critical role this area plays in commercial agriculture and in solving the problems facing the State of Illinois related to preserving soil, water, and air quality.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
112	Watershed Protection and Management	30%		10%	
141	Air Resource Protection and Management	0%		5%	
401	Structures, Facilities, and General Purpose Farm Supplies	10%		20%	
402	Engineering Systems and Equipment	5%		20%	
403	Waste Disposal, Recycling, and Reuse	50%		20%	
404	Instrumentation and Control Systems	5%		15%	
405	Drainage and Irrigation Systems and Facilities	0%		10%	
	Total	100%		100%	

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

1. Situation and priorities

Engineering technology plays a major role in developing and maintaining competitive livestock and crop industries in Illinois. It also contributes to increasing worker safety in agriculture and related industries. Such technology is also addressing concerns and problems related to odors and air quality, animal waste, animal treatment, protection and management of water resources, and biomass conversion to heat and electricity.

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

That new technologies can be developed that are cost-effective in the field [and affordable for smaller producers] and that resources will be available to continue to develop and refine these technologies.

2. Ultimate goal(s) of this Program

To improve agricultural productivity through the use of intelligent machines, to integrate biological science and engineering for enhancement of living systems, to utilize holistic approaches to provide engineering solutions, and to mitigate conditions through knowledge and practices regarding manure management to preserve or improve water and air quality.

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
2012	2.0	0.0	5.0	0.0
2013	2.0	0.0	5.0	0.0
2014	0.5	0.0	5.0	0.0

Year	Extension		Research	
	1862	1890	1862	1890
2015	0.5	0.0	5.0	0.0
2016	0.5	0.0	5.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Research activities include integrated work to improve moisture control and practical design of biofilters for treating exhaust air from livestock buildings, efforts to improve the precision application of agricultural chemicals, work that will allow us to monitoring the health of livestock via breath analysis through the development of sampling and sensor array technologies, research that aims to provide a database of effective, low cost and easily available media for biofilter designs in the Midwestern U.S., the development of systems for controlling air pollutant emissions and indoor environments of animal facilities, efforts to improved the application of pest control substances, and the development of biosystems automation technology.

Extension activities will include website expansion and online quizzes and training sessions to certify livestock managers are knowledgeable about manure management. All other Extension efforts related to natural resources, pesticide application, and bio-based energy production and use are noted in other Planned Program sections [such as Sustainable Energy, Natural Resources and the Environment, and Global Food Security and Hunger].

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

Extension

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

3. Description of targeted audience

Pesticide users [and environmentally-concerned citizens], crop growers, land owners, organic farmers and specialty-crop growers, animal producers [and all building designers in that improved ventilation technologies for agriculture buildings provide insights that can result in better-developed buildings for any use], and agricultural engineers.

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 Completed Hatch Projects

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

V(I). State Defined Outcome

O. No	Outcome Name
1	Number Of Subsurface Bioreactor Acres In Illinois
2	Producer Reported Changes/Improvement In Manure Management And Application Method To Reduce Odor
3	Development And Use Of A Manure Management Plan

Outcome # 1

1. Outcome Target

Number Of Subsurface Bioreactor Acres In Illinois

2. Outcome Type : Change in Knowledge Outcome Measure

2012:400	**2013:**400	**2014:**400	**2015:**400	**2016:**400

3. Associated Knowledge Area(s)

- 402 - Engineering Systems and Equipment
- 405 - Drainage and Irrigation Systems and Facilities

4. Associated Institute Type(s)

- 1862 Research

Outcome # 2

1. Outcome Target

Producer Reported Changes/Improvement In Manure Management And Application Method To Reduce Odor

2. Outcome Type : Change in Action Outcome Measure

2012:50	**2013:**50	**2014:**50	**2015:**50	**2016:**50

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 402 - Engineering Systems and Equipment
- 403 - Waste Disposal, Recycling, and Reuse

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Development And Use Of A Manure Management Plan

2. Outcome Type : Change in Action Outcome Measure

2012:100	**2013:**100	**2014:**100	**2015:**100	**2016:**100

3. Associated Knowledge Area(s)

- 112 - Watershed Protection and Management
- 402 - Engineering Systems and Equipment
- 403 - Waste Disposal, Recycling, and Reuse
- 404 - Instrumentation and Control Systems

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

External factors include development of new technologies in closely related fields, demand for a given agricultural product, environmental concerns, and the availability of resources.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Surveys of livestock manager workshop attendees regarding practice changes will be conducted periodically.

V(A). Planned Program (Summary)

Program # 11

1. Name of the Planned Program

Climate Change

2. Brief summary about Planned Program

The efforts of the University of Illinois on climate change span multiple departments and units, including the Department of Natural Resources and Environmental Sciences, the Department of Crop Sciences, the Department of Agricultural and Biological Engineering, and the Institute of Natural Resource Sustainability/Illinois State Water Survey and are on local [such as scientists working to identify the impact of agricultural chemicals and Extension specialists working to educate farmers on how to minimize agricultural impacts without sacrificing yields], regional [such as working to determine the impact of climate change on animal habitats], and global [such as the National Atmospheric Deposition Program's monitoring network's data, which is used to measure the rate and geographic distribution of air pollutant deposition] scales.

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

4. Program duration : Medium Term (One to five years)

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	15%		15%	
104	Protect Soil from Harmful Effects of Natural Elements	0%		15%	
111	Conservation and Efficient Use of Water	0%		15%	
124	Urban Forestry	10%		0%	
125	Agroforestry	10%		0%	
132	Weather and Climate	30%		20%	
133	Pollution Prevention and Mitigation	30%		20%	
136	Conservation of Biological Diversity	0%		15%	
806	Youth Development	5%		0%	
	Total	100%		100%	

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

1. Situation and priorities

The United States Environmental Protection Agency defines climate change as 'any significant change in measures of climate [such as temperature, precipitation, or wind] lasting for an extended period [decades or longer]' and identifies three major causes of climate change: [1] natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun; [2] natural processes within the climate system [such as changes in ocean circulation]; and [3] human activities that change the atmosphere's composition [through the burning of fossil fuels] and the land surface [deforestation, reforestation, urbanization, and desertification]. Scientists are certain that human activities are changing the composition of the atmosphere through increasing the concentration of greenhouse gases, which will change the planet's climate by trapping heat on the earth's surface. They are just not sure by how much it will change, at what rate it will change, or what the exact effects will be. Human health can be affected directly and indirectly by climate change through extreme periods of heat and cold, storms, climate-sensitive diseases such a malaria, and smog episodes. Respondents to the 2009 Extension survey of educational interests frequently indicated interest in learning more about global warming [38% of the 7,977 those who checked topics under the broad area of protecting the environment].

Reduction of energy-related activities is a priority since three-quarters of our human-generated greenhouse gas emissions are carbon dioxide from burning fossil fuels. Extension can educate farm and forest landowners about the wide variety of potential carbon emission reduction methods and enhancing carbon removal from the atmosphere and storage through returning biomass to the soil [sequestration of carbon] and to explore selling carbon credits that might accumulate through that process. Other educational priorities will focus on protecting existing forests/trees [which store carbon in their biomass] and helping individuals and businesses discover ways to decrease greenhouse gas emissions, increase the nation's energy independence, and also save money.

2. Scope of the Program

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

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

1. Assumptions made for the Program

While climate change is a global issue, we believe that Illinois researchers and Extension educators are making significant contributions toward identifying causes and offering solutions. We expect these contributions to continue to grow as the President and the National Institute of Food and Agriculture have stressed the need to focus on climate change as a national priority.

2. Ultimate goal(s) of this Program

To balance human needs for agricultural products, living space, and economic productivity with wise stewardship of our natural resources.

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
2012	0.5	0.0	2.0	0.0
2013	0.5	0.0	2.0	0.0
2014	0.5	0.0	2.0	0.0
2015	0.5	0.0	2.0	0.0
2016	0.5	0.0	2.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Research activities will include continued support of the National Trends Network coordinating activities at 250 sites [the NTN provides the only long-term nationwide record of wet deposition in the U.S.], a comparison of the ecology of ratsnakes across the complete range of this species to assess how the snakes' ecology is likely to be affected by climate change, continued collection of precipitation data with pH and complete chemistry [a long term record of over thirty years worth of data is available due to this project], ongoing support of SoyFACE [SoyFACE is designed to discover the effects of atmospheric change on the agronomy and productivity of Midwestern crops as well as to find solutions that will lead to crops better adapted to this future], research with the goal of determining and developing management practices for sustainable biomass feedstock production, a study of the impacts of environmental change and related policies on cultural ecosystem services in multifunctional rural regions, and research into the systematic quality enhancement of data needed for above-ground forest carbon dynamics modeling.

Facing significant reductions and the current reorganization of University of Illinois Extension, neither conversations nor formal planning have taken place to suggest if and how Extension educators and faculty might address this Planned Program. The activities related to the Sustainable Energy Planned Program regarding dissemination of research progress in identifying substitutes for fossil fuels and activities in the Plant Health, Systems and Production Planned Program to prevent destruction of forests and urban tree populations by invasive pests will likely be the only ones undertaken with respect to climate change for the current or coming years. Referrals to reliable research-based sources will be provided in response to inquiries.

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

Extension

Direct Methods	Indirect Methods
● Education Class ● One-on-One Intervention ● Demonstrations	● Web sites other than eXtension

3. Description of targeted audience

The target audience includes policy makers, concerned citizens, agricultural producers, land managers, natural resource specialists, researchers, Extension educators, land managers, and regulators.

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 Completed Hatch Projects

☐ 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	Dissemination Of Air Quality And Atmospheric Data Through Web Hits On The National Atmospheric Deposition Program Website
2	Identifying Ways Greenhouse Gases Can Be Removed From the Atmosphere

Outcome # 1

1. Outcome Target

Dissemination Of Air Quality And Atmospheric Data Through Web Hits On The National Atmospheric Deposition Program Website

2. Outcome Type : Change in Knowledge Outcome Measure

2012:1500000	**2013:**1500000	**2014:**1500000	**2015:**1500000	**2016:**1500000

3. Associated Knowledge Area(s)

- 132 - Weather and Climate
- 133 - Pollution Prevention and Mitigation
- 136 - Conservation of Biological Diversity
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension
- 1862 Research

Outcome # 2

1. Outcome Target

Identifying Ways Greenhouse Gases Can Be Removed From the Atmosphere

2. Outcome Type : Change in Knowledge Outcome Measure

2012:200	**2013:**200	**2014:**200	**2015:**200	**2016:**200

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 132 - Weather and Climate
- 133 - Pollution Prevention and Mitigation
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Demand for information and research may increase based on issuance of any government regulations of fossil fuel emission levels, discovery of viable alternative renewable energy sources, and reduced use of non-renewable resources. Extension program delivery to date has been minimal and anticipated reductions in Extension staff due to declining state funding may prohibit shifting resources to enhance programming in this area.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

{NO DATA ENTERED}

V(A). Planned Program (Summary)

Program # 12

1. Name of the Planned Program

Childhood Obesity

2. Brief summary about Planned Program

Leadership for childhood obesity research and education efforts rests primarily with the Department of Food Science and Human Nutrition, the Department of Human and Community Development, the Division of Nutritional Sciences, and the University of Illinois Extension Service. One example of the multidisciplinary efforts being made to combat childhood obesity is the "STRONG Kids" project. This project takes a comprehensive approach with the overarching vision to: [1] discover and document salient predictors of and mechanisms through which individuals develop health-related behaviors and beliefs; and [2] to develop tailored prevention and intervention programs for families and children that promote healthy development, that are evidence-based, and that are grounded in developmental theory. Another project, Abriendo Caminos, aims to involve the whole family in culturally sensitive activities that promote healthy eating, positive family interactions, and active living in immigrant families with school age children through the development of a new set of materials in an after-school program. Research evaluating the impact of the BackPack Program, a partnership between food banks and schools to distribute child friendly easy-to prepare food to children who are at-risk for hunger is also in progress. UP-AMIGOS involves self-reports by college applicants to a Mexican University to explore associations between genetic predisposition, environmental factors, and obesity and related outcomes.

Extension activities that address healthy food choices will be delivered by Expanded Food and Nutrition Education Program [EFNEP] staff and Supplemental Nutrition Assistance Program Education [SNAP-Ed] staff who conduct hands-on activities with children and their parents who have limited incomes. Curriculum and training will be provided for elementary teachers to encourage healthy eating and physical activity.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior	55%		15%	
704	Nutrition and Hunger in the Population	10%		35%	
724	Healthy Lifestyle	10%		15%	
802	Human Development and Family Well-Being	10%		20%	
805	Community Institutions, Health, and Social Services	5%		15%	
806	Youth Development	10%		0%	
	Total	100%		100%	

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

1. Situation and priorities

Obesity [BMI equal to or greater than 95th percentile] is a serious health concern for children and adolescents. Data from the most recent National Health and Nutrition Examination Survey [NHANES] showed that the prevalence of obesity has increased. From the 1976-1980 survey to the 2003-2006 survey the obesity prevalence for children aged 2-5 years increased from 5.0% to 12.4%; for those aged 6-11 years, prevalence increased from 6.5%-17.0%; and for those aged 12-19 years, prevalence increased from 5.0% to 17.6%. The Healthy People 2020 National Initiative has targeted a goal of reducing this prevalence by 10%. According to the 2008-2009 Healthy Smiles, Healthy Growth data from the Illinois Department of Public Health, [38%] of Illinois' third grade students are at risk of being overweight [17.6%] or are overweight/obese [20.4%]. Overweight children are at risk of remaining overweight into adulthood, with being overweight by age eight predicting the most severe adult obesity. In response to this increasingly important problem, the President and First Lady have announced that they are making childhood obesity a top priority of the administration. In January of 2010 Health and Human Services Secretary Kathleen Sebelius announced that over $650 million in economic stimulus money would be invested in wellness and prevention programs aimed at obesity and smoking cessation.

2. Scope of the Program

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

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

1. Assumptions made for the Program

Unfortunately, the assumption that childhood obesity will continue to be an increasingly important

problem seems to be a safe one for at least the next several years. We believe that increasing public attention [including the attention of the First Family] will result in an increase in resources devoted to not only the obvious causes such as a lack of nutrition research and education but also other, often less-recognized, causes such as media exposure, family stability, and peer networks. We believe that Illinois researchers and Extension educators are well-positioned to assist families in Illinois and beyond in reducing childhood obesity.

2. Ultimate goal(s) of this Program

The ultimate goal of this planned program is to provide research in areas such as human nutrition and family development that will help to identify the key causes of childhood obesity and to provide families with greater access through Extension educators to information that will help them in making smart food choices and selecting healthy behaviors by providing options that are relatively easy to incorporate in pre-existing lifestyle routines for their children [and for themselves as well].

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
2012	12.0	0.0	2.0	0.0
2013	12.0	0.0	2.0	0.0
2014	10.0	0.0	2.0	0.0
2015	10.0	0.0	2.0	0.0
2016	10.0	0.0	2.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Extension activities that address healthy food choices will be delivered by Expanded Food and Nutrition Education Program [EFNEP] staff and Supplemental Nutrition Assistance Program Education [SNAP-Ed] staff who conduct hands-on activities with children and their parents who have limited incomes. Education regarding the Food Guide Pyramid, food safety, and the importance of physical activity is stressed in preschool, school classrooms, and summer day camps and cooking schools. Materials are available for both youth and their parents. Through a grant and partnership, Extension will work with school personnel to adopt the OrganWise, Inc. programs and materials to be offered in elementary school classrooms. Delivery will primarily be through teachers, with Extension staff providing instruction periodically through the school year. Wisercise materials will be used under the leadership of 4-H Youth Development Extension staff to encourage an adequate level of physical activity. In addition, two websites are available to the public in English and Spanish that provide information on diabetes, a potential consequence of obesity and one that provides games for middle-school youth on for health education via the internet [Healthy Outcomes for Teens--HOT].

Research activities will include efforts to better educate teens on the importance of diet and exercise during the adult transition period [which has been found to be a critical stage of life for adoption of lifelong health behaviors], research into counteracting the complications of diabesity with vanadium, a project with

the long-term goal of developing a sustainable, functional dietary intervention strategy to reduce obesity and other related diseases such as insulin resistance and diabetes, the ongoing work of the PONDER-G [Prevent Obesity and Nutrition-related Diseases: Environmental Resources and Genomics] program, characterization of processes and rheological profiles of high protein soy foods targeted at alleviation of obesity, a study of the role of macronutrient composition in the development of obesity, research focusing on how food insecurity and stress affect childhood obesity, efforts to help consumers get the maximum health benefits from cruciferous vegetables, the development of dietary means to prevent and/or reduce the severity of rotavirus infectivity to reduce infant morbidity, and a study of the osteoporosis risk in type two diabetes.

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

Extension

Direct Methods	Indirect Methods
● Education Class ● Workshop ● Group Discussion ● Demonstrations	● Newsletters ● Web sites other than eXtension ● Other 1 (Podcasts)

3. Description of targeted audience

Childcare providers, health professionals, researchers in the fields of economics, public health, and nutrition, policy makers charged with improving the wellbeing of low-income Americans, program administrators overseeing food assistance programs, teachers, and preschool and elementary youth and their parents.

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 Completed Hatch Research Projects

☐ 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	Knowledge Of Food That Is Low In Fat And High In Fiber And/Or The Importance Of Increasing Physical Activity Levels
2	Increased Consumption Of Foods Low In Fat And High In Fiber And/Or Increased Physical Activity Levels

Outcome # 1

1. Outcome Target

Knowledge Of Food That Is Low In Fat And High In Fiber And/Or The Importance Of Increasing Physical Activity Levels

2. Outcome Type : Change in Knowledge Outcome Measure

2012:500	**2013:**1000	**2014:**1000	**2015:**1000	**2016:**1000

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population
- 724 - Healthy Lifestyle
- 802 - Human Development and Family Well-Being
- 805 - Community Institutions, Health, and Social Services
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Increased Consumption Of Foods Low In Fat And High In Fiber And/Or Increased Physical Activity Levels

2. Outcome Type : Change in Action Outcome Measure

2012:100	**2013:**500	**2014:**500	**2015:**500	**2016:**500

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population
- 724 - Healthy Lifestyle
- 802 - Human Development and Family Well-Being
- 805 - Community Institutions, Health, and Social Services
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Economy
- Appropriations changes
- Public Policy changes
- Competing Programmatic Challenges

Description

External factors include anything which could encourage or impede the ability of children and their parents to make smart food choices. These include obvious factors such as access to foods that are high both in nutritional quality and in child acceptance and access to information provided by Extension educators in selecting foods that are both affordable and healthy. Also included is almost any factor that significantly impacts the life of a family, whether it be economic [such as a parent losing their job and feeling much more limited in the food choices they can make] or interpersonal [for example, a stable family is much more likely to engage in activities with their child such as going for walks that encourage physical fitness].

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Reorganization will necessitate working with campus faculty and Extension Educators to identify potential efforts to be evaluated to determine their impact and evaluation methods to be used.

V(A). Planned Program (Summary)

Program # 13

1. Name of the Planned Program

Global Food Security and Hunger

2. Brief summary about Planned Program

While we have attempted to segregate programs for this Planned Program, perhaps more so than any other theme global food security is an issue that flows throughout virtually every planned program in this report. Educators under the 4-H Youth Development planned program work to fight hunger by helping youth to develop healthier eating habits, work in Agricultural and Biological Engineering improves productivity in areas such as the utilization of intelligent machines, work in Agricultural and Consumer Economics in areas such as international law and improving production through better agribusiness management, Animal Health and Plant Health through production, Biofuels through efforts to minimize the impact of crop use for fuel on food availability, and the obvious linkages to Food Safety and Childhood Obesity. The focus of programs to be delivered as a part of this plan represent the integrated efforts of research and Extension faculty and staff to strengthen the quantity and quality of food crop production and accessibility to meet both global and local needs to alleviate hunger.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
111	Conservation and Efficient Use of Water	5%		10%	
133	Pollution Prevention and Mitigation	5%		10%	
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	25%		15%	
205	Plant Management Systems	25%		5%	
216	Integrated Pest Management Systems	25%		5%	
604	Marketing and Distribution Practices	10%		10%	
701	Nutrient Composition of Food	0%		20%	
703	Nutrition Education and Behavior	0%		10%	
704	Nutrition and Hunger in the Population	5%		15%	
	Total	100%		100%	

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

1. Situation and priorities

A recent Food Security Assessment published by the USDA Economic Research service highlighted the difficult realities we are currently facing. The report found that the number of food-insecure people in seventy developing countries is expected to continue increasing [in large part due to the global economic downturn]. The ERS estimates that the number of food-insecure people in these seventy countries is now well over 800 million. Given that Illinois usually ranks second in both corn and soybean production and accounts for seven percent of agricultural exports, priority will be given to enhancing the quality of these products to meet global needs. Likewise, given our existing priorities in areas such as nutrition education, food development [in particular soy foods], and production efficiency, the College of Agricultural, Consumer and Environmental Sciences is well-positioned to provide solutions that will make meaningful improvements in the lives of food-insecure populations locally, nationally, and globally.

Extension specialists have been and will continue to be instrumental in meeting the educational needs of the largest network of certified crop advisors [over 1,500 in Illinois] in the United States. Many educational programs are directed at farmers who produce field crops [26 million acres in Illinois]. In addition, successful and highly visible Extension programs will continue to be available to fruit and vegetable growers [at least 64 vegetables and 15 fruit crops are produced commercially in Illinois]. Extension Educators focusing on local foodsand small farms are charged with addressing the growing interest in local foods systems and 'urban food deserts' with little or no access to healthy food sources such as fresh fruit and vegetables. Through Supplemental Nutrition Assistance Program Education [SNAP-Ed], Extension acts on the priority of addressing hunger within Illinois.

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

With the 2005 disaster of hurricane Katrina still fresh in our minds, the need for improved access to basic necessities for at-risk populations was further highlighted by the horrifying earthquake that hit Haiti in early 2010. We are confident that even in the difficult economic climate facing our state and our nation that the importance of this issue will insure that resources are available to continue to conduct research and outreach programs addressing food security. We are also confident that while many of these programs focus on local needs, the knowledge developed and disseminated will have a reach far beyond the borders of our state.

2. Ultimate goal(s) of this Program

The ultimate goal of this Planned Program is to utilize ACES expertise across the entire food security chain from production [in areas such as plant an animal health] to marketing and distribution [in areas such as agricultural and consumer economics] to consumption [in areas such as nutrition education and diet adequacy] to improve the quantity and quality of food and drinking water available to at-risk populations.

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
2012	20.0	0.0	7.0	0.0
2013	20.0	0.0	7.0	0.0
2014	18.0	0.0	7.0	0.0
2015	16.0	0.0	7.0	0.0
2016	16.0	0.0	7.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Research activities will include a project that will lead to the development of technology to monitor and determine the distribution of soybean aphid biotypes in soybean production areas, efforts to introduce soy-based protein for use in local foods around the world, to optimize diet regimens during pregnancy in obese women to reduce childhood obesity, and to understand the pathogenesis and management of diarrheal illnesses and the associated dehydration [a leading cause of global childhood mortality and morbidity], the use of sensory-directed flavor [aroma] analysis techniques to identify key aroma components of muscadine grape and pomegranate juices, identification, characterization and analysis of new soybean genes for resistance to pathogens and pests, selection for key agronomic and dry milling traits in grain corn used for human food, work to develop soy-based solutions for the protein gap around the world [a growing challenge for developing nations] utilizing knowledge transfer, training, and product development, improved screening of cultivars resistant to soybean cyst nematode [the major pathogen of Glycine max in the U.S.], research to create seed corn inbreds and hybrids resistant to aflatoxin [aflatoxin is a serious problem in the central United States and often an annual problem in southern states], the study of mycotoxins as it relates to biosecurity and food safety, efforts to improve economic and environmental sustainability in tree-fruit production through changes in rootstock use, work to engineer disease resistance and health-promoting value in soybean, toxicological analysis of emerging drinking water disinfection by-products, the utilization of genetic approaches to modifying sweet corn and broccoli germplasm for improved nutritional quality, and the development of disease-resistant cultivars to improve postharvest quality and safety in fresh-cut vegetables and fruits.

Extension activities in this area will focus food crop production and management, integrated pest management including invasive and/or exotic pest diagnosis and management. Activities will include the statewide Corn and Soybean Classics which highlight the latest research and the two-day regional Crop Management Conferences, multi-state conferences, field days at research stations, pesticide safety application training, distance education presentations, and distance diagnosis of crop pests. Another set of activities includes multi-state conferences and webinars, Extension activities that addressed hunger within Illinois are delivered by Expanded Food and Nutrition Education Program [EFNEP] staff and

Supplemental Nutrition Assistance Program Education [SNAP-Ed] staff members who conduct hands-on activities with children and their parents with limited incomes. These activities include using food stamps, meal planning, wise shopping, and use of food pantries.

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

Extension

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

3. Description of targeted audience

The target audience includes populations living in underdeveloped parts of the world, producers, processors, and consumers of corn and soybean products, scientists involved in trying to improve grain composition in corn, policy makers, regulators, water scientists, state and federal agencies involved in water issues, soy food manufacturers, distributors, and producers and residents in communities with limited resources and limited access to food, especially fresh produce.

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 Completed Hatch Research Projects

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

V(I). State Defined Outcome

O. No	Outcome Name
1	Number Increasing Knowledge Of New Corn And Soybean Crop Management Techniques
2	Number Changing Application Of Recommended Pest Control Practices For Corn And Soybean Production
3	Dollars Saved Through Safe And Effective Pesticide Application

Outcome # 1

1. Outcome Target

Number Increasing Knowledge Of New Corn And Soybean Crop Management Techniques

2. Outcome Type : Change in Knowledge Outcome Measure

2012:500	**2013:**500	**2014:**500	**2015:**500	**2016:**500

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water
- 133 - Pollution Prevention and Mitigation
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 205 - Plant Management Systems
- 216 - Integrated Pest Management Systems
- 604 - Marketing and Distribution Practices
- 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Number Changing Application Of Recommended Pest Control Practices For Corn And Soybean Production

2. Outcome Type : Change in Action Outcome Measure

2012:1500	**2013:**100	**2014:**100	**2015:**100	**2016:**100

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water
- 133 - Pollution Prevention and Mitigation
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 205 - Plant Management Systems
- 216 - Integrated Pest Management Systems
- 604 - Marketing and Distribution Practices
- 704 - Nutrition and Hunger in the Population

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Dollars Saved Through Safe And Effective Pesticide Application

2. Outcome Type : Change in Knowledge Outcome Measure

2012:6000000	**2013:**100000	**2014:**100000	**2015:**100000	**2016:**100000

3. Associated Knowledge Area(s)

- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Since a great deal of plant research is done in the field rather than the laboratory, it is much more difficult to control for confounding variables, any one of which can make results more difficult to interpret. Examples include unusually harsh [or unusually mild] growing seasons, unforeseen invading pests, and contamination from outside pollutants. These are especially important given the long time horizon of many plant studies. These same factors affect decisions that producers and landowners make with respect to crop management. The economic stability of retailers who can provide fresh produce in communities of reisdents with limited incomes can affect access to adequate food.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Reorganization will necessitate working with campus faculty and Extension Educators to identify potential efforts to be evaluated to determine their impact and evaluation methods to be used. Information on changes in application of pesticides as a result of participation in Extension delivered pesticide safety education programs [PSEP] will be collected in 2012.