

2012 University of Wisconsin Extension Plan of Work

<p>Status: Accepted</p> <p>Date Accepted: 07/22/2011</p>
--

I. Plan Overview

1. Brief Summary about Plan Of Work

University of Wisconsin-Extension Cooperative Extension applies university knowledge and research to meet the needs of citizens and communities. As Wisconsin grows more ethnically diverse, this diversity both enhances and challenges communities. Extension partners with state, regional, and local organizations, farmers, consumers, business owners, support services, coalitions, decision makers, and public and tribal government agencies to develop educational initiatives that build on the strengths of diverse communities.

Wisconsin Cooperative Extension county educators and state specialists at the University of Wisconsin-Madison, UW-Platteville, UW-River Falls, UW-Stevens Point and UW-Superior conducted multi-year statewide program planning during 2007 and 2008, engaging more than 600 diverse stakeholders from all 72 counties. Campus and county faculty and staff analyzed community issue statements to determine how to address emerging concerns through 4-H Youth Development, Agriculture and Natural Resources Extension, Community, Natural Resource and Economic Development, and Family Living Programs. The needs identified through this planning process focused research and extension education for nearly 50 statewide self-directed teams.

Historically the University of Wisconsin-Extension Cooperative Extension and the University of Wisconsin-Madison College of Agricultural and Life Sciences have submitted separate plans and reports. While this remains the case with this plan, the intent on the part of both institutions is to improve the linkage of the plans in areas such as stakeholder and research input, evaluation of integrated activity, and outcome evaluation.

The 2012-2016 Wisconsin Cooperative Extension federal plan of work describes how statewide interdisciplinary teams provide research-based education and assistance to sustain and grow the state's vital agricultural economy - and the \$26 billion dairy industry at its heart - across the new NIFA priorities:

1. Global Food Security, Food Availability: Crops and Agronomic Plants
2. Global Food Security, Food Availability: Dairy and Livestock
3. Global Food Security, Food Accessibility: Hunger
4. Food Safety
5. Childhood Obesity
6. Climate Change
7. Sustainable Energy

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

Year	Extension		Research	
	1862	1890	1862	1890
2012	82.0	0.0	0.0	0.0

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

Year	Extension		Research	
	1862	1890	1862	1890
2013	82.0	0.0	0.0	0.0
2014	82.0	0.0	0.0	0.0
2015	82.0	0.0	0.0	0.0
2016	82.0	0.0	0.0	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 University Panel
- External Non-University Panel
- Combined External and Internal University Panel
- Combined External and Internal University External Non-University Panel
- Expert Peer Review

2. Brief Explanation

Merit review is ongoing as statewide self-directed teams develop specifics for the duration of planned programs. At the state level, program area administrators review and oversee team programming. Teams co-chaired by campus and county faculty set the direction for their initiatives, complete a statewide team plan of work, develop research-based educational resources, and report progress toward planned outcomes.

Merit reviews are conducted jointly by team leaders and program directors. Teams use reviewers' recommendations to improve program quality and relevance for the intended audience, and include review comments in annual accomplishment reports and plans of work.

UW-Extension Cooperative Extension curricula and publications are peer reviewed by research and extension faculty, government or industry colleagues and professionals as appropriate to the content, purpose and intended audience. Translations are also reviewed for cultural appropriateness. Scholarly peer review and cultural review assure the quality and relevance of educational materials and outreach scholarship.

At the county level, local programming addresses priority issues identified through strategic program planning. Local elected officials review county programs as part of their oversight of extension programming.

III. Evaluation of Multis & Joint Activities

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

The University of Wisconsin-Extension Cooperative Extension 2012-2016 federal plan of work outlines seven planned programs reporting work from among Wisconsin Cooperative Extension's nearly 50 statewide programming teams. These teams are co-chaired by campus-based specialists and community-based educators. Structuring team leadership in this manner is intentional, building relationships and linkages between communities of research interest, communities of practice, and communities of locale. Teams develop plans focused on interests that cut across these communities. They do so from the point of issue identification and priority-setting, to resource commitment, plan implementation and evaluation. This same approach applies to multi-state efforts, whether regional or national.

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

UW-Extension Cooperative Extension statewide program teams implement a variety of approaches to assess and address the needs of Wisconsin's under-served and under-represented populations. When appropriate, teams develop culturally sensitive educational strategies; translate and review educational materials for cultural relevance; and partner with agencies and groups representing and supporting under-served and under-represented populations. Statewide team efforts accord with the local context, where all 72 Wisconsin county extension offices have civil rights plans designed to reach traditionally under-served audiences.

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

Outcomes and impacts of each of the seven planned programs are specified in the individual 2012-2016 plans that follow. Directors of Wisconsin Cooperative Extension's four program areas - Agriculture and Natural Resources Extension; Community, Natural Resource and Economic Development; Family Living Programs; and 4-H Youth Development - are all working with their regional counterparts in other states to define outcomes and indicators of common interest. Their work will provide the foundation for evaluating multi-state efforts.

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

Multi-state and joint activities will result in improved program effectiveness and/or efficiencies if they adhere to the following principles.

- They must be developed from the ground up with significant staff involvement. Ultimately staff members are the ones who will have to provide leadership for multi-state and joint efforts.
- New indicators used in common across the North Central Region reflect a multi-state collaboration and agreement on a core set of measurable outcomes and indicators.
- Collaborations should be developed as win-win options that result in more effective research and programming, and not as a strategy to meet budget reductions.

- An inventory of current and expected capacities needs to be developed across state lines before alternative multi-state approaches can be established. Both extension and research capacities, along with audience needs and relationships, need to be considered when establishing multi-state collaborations.
- Coordinating mechanisms, memoranda of understanding, expectations, and specific roles and responsibilities, must be clearly articulated.

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 non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals
- Targeted invitation to selected individuals from general public
- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Survey of the general public
- Other (Meeting specifically with non-traditional groups)

Brief explanation.

University of Wisconsin-Extension Cooperative Extension initiates a multi-year planning process every five years. UW-Extension Cooperative Extension engaged in statewide multi-year planning during 2007 and 2008. This process is the primary, institution-wide effort to seek broad-based, diverse stakeholder input. Extension's program development model provides the overall framework for soliciting, analyzing, and summarizing stakeholder input. The model includes situation analysis, priority-setting, inputs, outputs, anticipated outcomes and evaluation planning. Campus and county faculty and staff participate in regular grower, producer, consumer, network, community, school, government, business and community coalition meetings to stay informed of key stakeholders' changing needs.

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

1. Method to identify individuals and groups

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

Brief explanation.

Stakeholder identification and involvement were key components of the UW-Extension Cooperative Extension multi-year planning process. While county offices had latitude in

tailoring their planning process to their unique needs, they were strongly encouraged to use methods that solicited feedback from their communities' diverse populations and from both internal and external stakeholders of Cooperative Extension. Ongoing county civil rights reviews examine the methods used during the stakeholder identification phase and formulate recommendations intended to strengthen this aspect in future planning initiatives.

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

Brief explanation.

Input has been gathered from diverse and under-represented audiences statewide through focus groups, interviews, listening sessions and case studies of youth-adult partnerships. When appropriate, teams develop culturally sensitive educational strategies; translate and review educational materials for cultural relevance; and partner with agencies and groups representing and supporting under-served and under-represented populations. Statewide team efforts accord with the local context, where all 72 Wisconsin county extension offices have civil rights plans designed to reach traditionally under-served audiences.

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
- To Set Priorities

Brief explanation.

Results from stakeholder input identified priority issues. County issue statements were analyzed and summarized by types of capital and across disciplines, and reviewed by teams at a planning summit in April 2008. This planning is ongoing and will continue to set direction for extension and research to address priority issues, for incorporation into budget and staffing decisions through nearly 50 statewide self-directed teams, and shape team implementation and evaluation plans as well as

statewide federal plans of work.

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Global Food Security, Food Availability: Crops and Agronomic Plants
2	Global Food Security, Food Availability: Dairy and Livestock
3	Global Food Security, Food Accessibility: Hunger
4	Food Safety
5	Childhood Obesity
6	Climate Change
7	Sustainable Energy

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Global Food Security, Food Availability: Crops and Agronomic Plants

2. Brief summary about Planned Program

Wisconsin ranks first in the nation for cranberry production, second for oats. Combined corn, soybeans and small grains valued more than \$2 billion in 2009. Commercial vegetables such as potatoes, carrots, peas and beans are grown on sandy soils where drinking water is dwindling. The economic and environmental sustainability and profitability of individual food crop enterprises is closely linked to crop management decision-making and the use of economically sound production practices. The complexity of food crop production systems requires an integrated management approach.

For 2012, Wisconsin Cooperative Extension campus faculty at the University of Wisconsin-Madison, UW-Platteville, UW-River Falls, UW-Stevens Point and agricultural research stations will work with extension agriculture and community resource development agents in 72 counties to address emerging issues faced by grains, vegetable and fruit crop growers and those who serve them in the areas of food crop agronomy, soil and nutrient management, Integrated Pest Management systems, market economics and enterprise profitability. Integrated research and extension programs are identifying and communicating best management practices for the Great Lakes Region, from selecting hardy, palatable, disease and pest resistant varieties through harvest and storage. Five statewide interdisciplinary teams also recognize growing consumer demand and acreage of organic production, and are targeting integrated research and extension education toward strengthening the sustainability of organic crop production and marketing including preserving farmland for the future.

The audience includes North Central Region colleagues, agricultural professionals and other educational partners, grains, commercial vegetable and fruit crop growers and workers, 4-H and FFA youth, grower associations, food processors and entrepreneurs, food coalitions and cooperatives, agricultural service providers, agronomic retail and wholesale suppliers, local and tribal officials, planning commissions, state and federal rural development and regulatory agencies.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	6%			
131	Alternative Uses of Land	6%			
201	Plant Genome, Genetics, and Genetic Mechanisms	6%			
202	Plant Genetic Resources	6%			
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	6%			
205	Plant Management Systems	5%			
211	Insects, Mites, and Other Arthropods Affecting Plants	5%			
212	Pathogens and Nematodes Affecting Plants	5%			
213	Weeds Affecting Plants	5%			
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	5%			
215	Biological Control of Pests Affecting Plants	5%			
216	Integrated Pest Management Systems	5%			
601	Economics of Agricultural Production and Farm Management	5%			
602	Business Management, Finance, and Taxation	5%			
603	Market Economics	5%			
604	Marketing and Distribution Practices	5%			
608	Community Resource Planning and Development	5%			
902	Administration of Projects and Programs	5%			
903	Communication, Education, and Information Delivery	5%			
	Total	100%			

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

1. Situation and priorities

Wisconsin is a major cash grain producer, ranking second among the states for oat production, tenth for corn and fourteenth for soybeans. Wisconsin's 3.85 million acres of corn and 1.63 million acres of soybeans plus small grains were valued at more than \$2 billion as of 2009. Potatoes and processing crops include carrots, snap beans, wax beans, dry beans, peas and field peas.

Cranberry growers continue to expand production and consolidate the state's number one position in the industry despite a prolonged period of low prices and minimal profit margins. Fruit crop values include cranberries at \$103 million, 440 growers; apples \$18 million, 300 growers; strawberries \$5 million, 200 growers; and cherries \$2 million, 50 growers.

The economic and environmental sustainability and profitability of individual food crop enterprises is closely linked to crop management decision-making and the use of economically sound production practices. Economic efficiency is improved when growers have the knowledge to select among available tools to address both crop challenges and opportunities effectively. Cooperative Extension is uniquely positioned to provide current unbiased information to assist Wisconsin farmers in evaluating these tools and making choices appropriate to their individual operations and goals.

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

Resources are/will be available in a timely manner. Education can/will lead to the desired expected change. The research base is accurate and relevant. Participants attend/engage. Motivation exists/can be generated. Projected timeline for program implementation is realistic. Interest/mandates remain consistent/stable.

2. Ultimate goal(s) of this Program

The Crops and Agronomic Plants planned program will enhance Wisconsin's agricultural production, efficiency and economic and environmental sustainability.

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	13.0	0.0	0.0	0.0
2013	13.0	0.0	0.0	0.0
2014	13.0	0.0	0.0	0.0
2015	13.0	0.0	0.0	0.0

Year	Extension		Research	
	1862	1890	1862	1890
2016	13.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

For 2012, Wisconsin Cooperative Extension plans collaboration among the interdisciplinary statewide Grains Team, Commercial Vegetable Crops Team, Fruit Crops Team, Community Planning and Plan Implementation Team, Local Government and Finance Team, colleagues and partners providing timely research-based education and assistance to improve food availability through innovations and increased efficiencies in production, building capacity among regional agricultural service providers, helping researchers and breeders identify which plants are worthy of more intensive research and cultivar development, preserving farmland for long-term sustainability, enhancing economic and environmental sustainability of agribusinesses, and managing and minimizing losses due to plant pests and diseases throughout the Upper Midwest.

The complexity of food crop production systems requires an integrated management approach. Wisconsin Cooperative Extension statewide teams have identified areas of focus to address emerging issues faced by grains, vegetable and fruit crop growers and those who serve them: food crop agronomy, soil and nutrient management, Integrated Pest Management systems, market economics and enterprise profitability. Integrated research and extension programs are identifying and communicating best management practices for the Great Lakes Region, from selecting hardy, palatable, disease and pest resistant varieties through harvest and storage. The teams also recognize growing consumer demand and acreage of organic production, and are targeting integrated research and extension education toward strengthening the sustainability of organic crop production and marketing as well.

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

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Other 1 (Train-the-trainer) ● Other 2 (Group facilitation, peer network) 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● Web sites other than eXtension ● Other 1 (News media releases) ● Other 2 (Web-based training)

3. Description of targeted audience

The audience includes North Central Region colleagues, agricultural professionals and other educational partners, grains, commercial vegetable and fruit crop growers and workers, 4-H and FFA youth, grower associations, food processors and entrepreneurs, food coalitions and cooperatives, agricultural service providers, agronomic retail and wholesale suppliers, local and tribal officials, planning commissions, state and federal rural development and regulatory agencies. Thousands of agricultural

professionals from Wisconsin, Minnesota, Iowa, Illinois, Indiana and Michigan who attend the annual Wisconsin Crop Management Conference produce a large multiplier effect as Wisconsin Cooperative Extension research-based recommendations ultimately reach an increasing portion of the Great Lakes Region crop production sector including farmers.

V(G). Planned Program (Outputs)

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

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

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

V(H). State Defined Outputs

1. Output Measure

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

V(I). State Defined Outcome

O. No	Outcome Name
1	Manage and minimize the loss due to plant pests and/or diseases.
2	Enhance the economic and environmental sustainability of agribusiness.
3	Build the capacity of the agriculture service and support industry.
4	Innovations and increased efficiencies in production.

Outcome # 1

1. Outcome Target

Manage and minimize the loss due to plant pests and/or diseases.

2. Outcome Type : Change in Action Outcome Measure

2012:0 2013:0 2014:0 2015:0 2016:0

3. Associated Knowledge Area(s)

- 211 - Insects, Mites, and Other Arthropods Affecting Plants
- 212 - Pathogens and Nematodes Affecting Plants
- 213 - Weeds Affecting Plants
- 214 - Vertebrates, Mollusks, and Other Pests Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Enhance the economic and environmental sustainability of agribusiness.

2. Outcome Type : Change in Action Outcome Measure

2012:0 2013:0 2014:0 2015:0 2016:0

3. Associated Knowledge Area(s)

- 131 - Alternative Uses of Land
- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Build the capacity of the agriculture service and support industry.

2. Outcome Type : Change in Condition Outcome Measure

2012:0 2013:0 2014:0 2015:0 2016:0

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 205 - Plant Management Systems
- 216 - Integrated Pest Management Systems
- 601 - Economics of Agricultural Production and Farm Management
- 603 - Market Economics
- 902 - Administration of Projects and Programs
- 903 - Communication, Education, and Information Delivery

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

Innovations and increased efficiencies in production.

2. Outcome Type : Change in Action Outcome Measure

2012:0 2013:0 2014:0 2015:0 2016:0

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 202 - Plant Genetic Resources
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 205 - Plant Management Systems
- 601 - Economics of Agricultural Production and Farm Management
- 603 - Market Economics

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
- Populations changes (immigration, new cultural groupings, etc.)

Description

Government regulations: While a federal law has sparked concern, state law has provided for ensuring long-term sustainability of food production. On one hand, the Food Quality and Protection Act (FQPA) has caused concerns over pest control options, strategies and alternatives for the future. An increased need for resistance management strategies and programs are necessary as pesticides are being lost due to the onset of resistance. A change in pesticide options and the increased use of reduced-risk applications is the trend for the future. Research-based production recommendations of nutrient and pesticide management for specific varieties must be developed to maximize production on specific cultivars. Integrated research and extension programs are identifying and communicating best management practices for the Great Lakes Region, from selecting hardy, palatable, disease and pest resistant varieties through harvest and storage.

On the other hand, preserving prime agricultural land becomes increasingly important as farmland continues to disappear. In 2009, the state of Wisconsin reformed the Farmland Preservation Program to reinvigorate preservation of Wisconsin's working lands through new programs that encourage exclusive agricultural preservation zoning, provide for establishment of agricultural enterprise areas, and facilitate the purchase of agriculture conservation easements. Many landowners and local government officials expressed interest in learning about the intricacies of this new legislation, especially about how it may impact their land and municipalities, and how to file petitions for Agricultural Enterprise Area designation. Interdisciplinary campus and county Agriculture and Natural Resources Extension and Community, Natural Resource and Economic Development campus and county faculty are facilitating planning to ensure long-term sustainability of food production in Wisconsin.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Evaluation plans are preliminary. Evaluation specialists will work with relevant teams to determine appropriate evaluation studies.

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Global Food Security, Food Availability: Dairy and Livestock

2. Brief summary about Planned Program

Wisconsin Cooperative Extension statewide interdisciplinary teams provide research-based education and assistance to sustain and grow the state's vital \$59.16 billion agricultural economy and the \$26 billion dairy industry at its heart. Livestock production encompasses beef and dairy beef, small ruminants (sheep and goats), swine, horses and poultry. Part-time production, small farms, hobbyists, and youth projects comprise a substantial portion of the Wisconsin animal agriculture industry. The 2007 Census of Agriculture reported that half of Wisconsin farmers identified as principal operators were 55 years old or older. Recent research in Wisconsin and five other states shows that few farmers have identified a successor or developed farm business succession plans, nor have most discussed their retirement or succession plans with anyone. Families face legal and financial challenges, personality and generational differences, and an increasingly volatile agriculture economy.

As the number of certified organic herds increases to supply growing consumer demand, integrated faculty at UW-Madison and UW-River Falls are identifying and communicating best management strategies to maintain animal health, comply with stringent animal health provisions of U.S. National Organic Standards, and produce high-quality organic products to strengthen this niche market for consumers at home and around the world. Other dairy and animal sciences integrated faculty participate in research projects improving reproductive health, evaluating and identifying the type of crossbreeding systems and appropriate breeds to maximize profitability and hybrid vigor.

The audience includes extension colleagues, veterinarians, agricultural professionals and other educational partners, youth and adult dairy and livestock producers and workers, forage growers and grazing networks, cheesemakers, meat and dairy food processors and entrepreneurs, agricultural service providers, farm lenders, local and tribal officials, and state and federal regulatory agencies. Integrated faculty and county extension agents are engaged in international and multi-state collaborations to increase sustainability of the food supply by developing new and updated research-based recommendations for farm owners and managers nationwide. In 2010, 10,534 youth enrolled in 4-H dairy cattle curricula. Another 7,251 Wisconsin 4-H youth enrolled in beef, sheep and swine projects, many of them in multiple projects with the goal of producing a quality meat animal.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
301	Reproductive Performance of Animals	8%			
307	Animal Management Systems	8%			
308	Improved Animal Products (Before Harvest)	7%			
311	Animal Diseases	7%			
315	Animal Welfare/Well-Being and Protection	7%			
401	Structures, Facilities, and General Purpose Farm Supplies	7%			
601	Economics of Agricultural Production and Farm Management	7%			
602	Business Management, Finance, and Taxation	7%			
603	Market Economics	7%			
608	Community Resource Planning and Development	7%			
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	7%			
806	Youth Development	7%			
902	Administration of Projects and Programs	7%			
903	Communication, Education, and Information Delivery	7%			
	Total	100%			

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

1. Situation and priorities

Wisconsin Cooperative Extension statewide interdisciplinary teams provide research-based education and assistance to sustain and grow the state's vital \$59.16 billion agricultural economy and the \$26 billion dairy industry at its heart. Livestock production encompasses beef and dairy beef, small ruminants (sheep and goats), swine, horses and poultry. Part-time production, small farms, hobbyists, and youth projects comprise a substantial portion of the Wisconsin animal agriculture industry. The current Wisconsin situation requires educational efforts that focus on the continued safety and adequacy of the nation's food supply. External political factors and animal diseases could threaten both the food supply and economic viability of the animal industries. National efforts to monitor and detect potentially devastating diseases; identify and track the potentially infected animals along the marketing channels, and pinpoint the disease source and premises origin within a time frame are of importance for all animal species. Premises and individual animal identification, combined with food quality and safety, become major programs of emphasis.

The 2007 Census of Agriculture reported that half of Wisconsin farmers identified as principal operators were 55 years old or older. Recent research in Wisconsin, Iowa, Pennsylvania, New Jersey, North Carolina and California shows that few farmers have identified a successor or developed farm business succession plans, nor have most discussed their retirement or succession plans with anyone. Further, farmers can no longer just draft a simple will to transfer ownership to their children. Successfully transferring the farm business to the next generation takes place over a number of years, requiring good planning and communication. Families face legal and financial challenges, personality and generational differences, and an increasingly volatile agriculture economy.

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

Resources are/will be available in a timely manner. Education can/will lead to the desired expected change. The research base is accurate and relevant. Participants attend/engage. Motivation exists/can be generated. Projected timeline for program implementation is realistic. Interest/mandates remain consistent/stable.

2. Ultimate goal(s) of this Program

The Dairy and Livestock planned program will enhance Wisconsin's dairy and livestock production, efficiency and economic and environmental sustainability.

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	36.0	0.0	0.0	0.0
2013	36.0	0.0	0.0	0.0
2014	36.0	0.0	0.0	0.0
2015	36.0	0.0	0.0	0.0
2016	36.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Wisconsin Cooperative Extension statewide interdisciplinary teams provide research-based education and assistance to sustain and grow the state's vital agricultural economy and the \$26 billion dairy industry at its heart. To increase profitability, productivity and quality of life among farmers and rural communities, the Wisconsin Cooperative Extension Dairy Team, Livestock Team, Farm and Risk Management Team, Team Forage, colleagues and partners provide timely education and technical assistance on developing successful business or farm succession plans, low-cost modernized retrofit dairy parlors, raising quality dairy replacements cost-effectively, calculating income over feed costs, evaluating alternative feed ingredients, cost-saving management options, research-based best management and disease-prevention practices, bilingual calf management, herd health, reproduction and herdsmanhip training for Spanish-speaking workers through presentations on farms and in class, workshops close to home for hard-to-reach women farm owners, producer meetings, field days, farm tours and pasture walks, conferences and teleconferences, peer networking and mentoring, 4-H animal science curricula and career exploration, and dissemination of teaching materials through web sites, publications, farm news media, CDs, DVDs and software.

Due largely to volatile prices prolonging severe financial stress, farmers are encouraged to use management teams to improve their viability. These include milk quality, herd health, farm succession and business planning, modernization, and the new Grow Wisconsin herd management team program partnership among Wisconsin Cooperative Extension, UW-Madison Center for Dairy Profitability and county extension offices, the Wisconsin Department of Agriculture, Trade and Consumer Protection and Wisconsin Technical Colleges. As the number of certified organic herds increases to supply growing consumer demand, integrated faculty at UW-Madison and UW-River Falls are identifying and communicating best management strategies to maintain animal health, comply with stringent animal health provisions of U.S. National Organic Standards, and produce high-quality organic products to strengthen this niche market for consumers at home and around the world. Other animal and food science integrated faculty participate in research projects evaluating and identifying the type of crossbreeding systems and appropriate breeds to maximize profitability and hybrid vigor.

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

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Other 1 (Train-the-trainer) ● Other 2 (Group facilitation, peer network) 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● Web sites other than eXtension ● Other 1 (News media releases) ● Other 2 (Web-based training)

3. Description of targeted audience

The audience includes extension colleagues, veterinarians, agricultural professionals and other educational partners, youth and adult dairy and livestock producers and workers, forage growers and grazing networks, cheesemakers, meat and dairy food processors and entrepreneurs, agricultural service

providers, farm lenders, local and tribal officials, and state and federal regulatory agencies. Integrated faculty and county extension agents are engaged in international and multi-state collaborations to increase sustainability of the food supply by developing new and updated research-based recommendations for farm owners and managers nationwide. In 2010, 10,534 youth enrolled in 4-H dairy cattle curricula. Another 7,251 Wisconsin 4-H youth enrolled in beef, sheep and swine projects, many of them in multiple projects with the goal of producing a quality meat animal.

V(G). Planned Program (Outputs)

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

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
 - Number of patents submitted
 - Number of peer reviewed publications
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

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

V(I). State Defined Outcome

O. No	Outcome Name
1	Manage and minimize the loss due to animal disease.
2	Enhance the economic and environmental sustainability of agribusinesses.
3	Build the capacity of the agriculture service and support industry.
4	Innovations and increased efficiencies in production.

Outcome # 1

1. Outcome Target

Manage and minimize the loss due to animal disease.

2. Outcome Type : Change in Action Outcome Measure

2012:0	2013:0	2014:0	2015:0	2016:0
---------------	---------------	---------------	---------------	---------------

3. Associated Knowledge Area(s)

- 301 - Reproductive Performance of Animals
- 307 - Animal Management Systems
- 308 - Improved Animal Products (Before Harvest)
- 311 - Animal Diseases
- 315 - Animal Welfare/Well-Being and Protection
- 401 - Structures, Facilities, and General Purpose Farm Supplies
- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 803 - Sociological and Technological Change Affecting Individuals, Families, and Communities

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Enhance the economic and environmental sustainability of agribusinesses.

2. Outcome Type : Change in Action Outcome Measure

2012:0	2013:0	2014:0	2015:0	2016:0
---------------	---------------	---------------	---------------	---------------

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Build the capacity of the agriculture service and support industry.

2. Outcome Type : Change in Action Outcome Measure

2012:0 2013:0 2014:0 2015:0 2016:0

3. Associated Knowledge Area(s)

- 315 - Animal Welfare/Well-Being and Protection
- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics
- 806 - Youth Development
- 902 - Administration of Projects and Programs
- 903 - Communication, Education, and Information Delivery

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

Innovations and increased efficiencies in production.

2. Outcome Type : Change in Action Outcome Measure

2012:0 2013:0 2014:0 2015:0 2016:0

3. Associated Knowledge Area(s)

- 315 - Animal Welfare/Well-Being and Protection
- 601 - Economics of Agricultural Production and Farm Management
- 603 - Market Economics

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
- Competing Public priorities
- Populations changes (immigration, new cultural groupings, etc.)

Description

{NO DATA ENTERED}

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Evaluation plans are preliminary. Evaluation specialists will work with relevant teams to determine appropriate evaluation studies.

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Global Food Security, Food Accessibility: Hunger

2. Brief summary about Planned Program

Nearly 1 in 10 Wisconsin households is food insecure, meaning they do not have access at all times to enough food for a healthy, active life. Certain households are at particularly high risk, including poor households (31% are food insecure). People are considered poor if their household income is below the poverty line, calculated at roughly three times the cost of a household's basic food needs. In Wisconsin, more than 450,000 people are poor - almost 9% of the population. On the other hand, food insecurity is not limited to either the poor or the unemployed - 65% of food insecure households have income above the poverty line. Almost three-quarters of food insecure households in Wisconsin have at least one worker, including more than half with a full-time worker.

Food insecurity can be offset when there are strong and widely used nutrition assistance programs, like food stamps, school breakfast, and summer feeding programs. However, the role played by these programs varies greatly around the state, and many eligible low-income people either do not have access to or do not use valuable food programs. Wisconsin Cooperative Extension Family Living Programs specialists work with county extension colleagues, coalitions, community, state, federal and tribal agency partners to build local capacity for strengthening food security among those in need. Five statewide interdisciplinary teams provide timely research-based education and assistance to improve food accessibility by strengthening local and regional food markets and systems, responding to growing consumer demand for sustainably produced local foods, and increasing the food supply for vulnerable populations.

The audience includes farmers' market managers, vendors and customers, small-scale producers, producer associations, food processors and entrepreneurs, gardeners and Master Gardener volunteers, food coalitions and cooperatives, hunger coalitions and task forces, food pantries and other community service providers, local and tribal governments, school boards, school food service directors, teachers and parents of school-age children, low-income women with infants and young children, local, state and tribal agency personnel, and others.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	7%			
131	Alternative Uses of Land	7%			
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	7%			
205	Plant Management Systems	7%			
601	Economics of Agricultural Production and Farm Management	6%			
602	Business Management, Finance, and Taxation	6%			
603	Market Economics	6%			
604	Marketing and Distribution Practices	6%			
607	Consumer Economics	6%			
608	Community Resource Planning and Development	6%			
703	Nutrition Education and Behavior	6%			
704	Nutrition and Hunger in the Population	6%			
801	Individual and Family Resource Management	6%			
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	6%			
902	Administration of Projects and Programs	6%			
903	Communication, Education, and Information Delivery	6%			
	Total	100%			

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

1. Situation and priorities

In an ideal world, adequate amounts of nutritious food should be consumed by every inhabitant of the planet. Given the wealth of arable land, production capacity, know-how, and other ingredients, this vision should be readily achievable by a nation such as the United States. Yet USDA indicates that 17 million households were food insecure throughout 2008. A substantial portion of the U.S. population does not have access to and is not consuming healthy food. Negative consequences are most acute in poor communities.

People are considered poor if their household income is below the poverty line, calculated at roughly

three times the cost of a household's basic food needs. In Wisconsin, more than 450,000 people are poor - almost 9% of the population. Increasing poverty stems from several factors: changes in income, erosion of health benefits, and racial inequality, according to the University of Wisconsin-Madison Center on Wisconsin Strategy (COWS). Many low-income working families struggle to make ends meet, and the decline in economic performance in the past several years has added to that stress. Increasingly, the face of poverty is that of the working poor.

Nearly 1 in 10 Wisconsin households is food insecure, meaning they do not have access at all times to enough food for a healthy, active life. Certain households are at particularly high risk, including poor households (31% are food insecure), households headed by a single mother (33%), households in which someone is disabled (24%), households in central cities (15%), and households headed by African Americans (30%). Among households with all of these risk factors, the likelihood of experiencing food insecurity is almost 75%. On the other hand, food insecurity is not limited to either the poor or the unemployed - 65% of food insecure households have income above the poverty line. Almost three-quarters of food insecure households in Wisconsin have at least one worker, including more than half with a full-time worker. A Wisconsin Cooperative Extension survey of food pantry clients found that 44% of client households had at least one worker.

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

Resources are/will be available in a timely manner. Education can/will lead to the desired expected change. The research base is accurate and relevant. Participants attend/engage. Motivation exists/can be generated. Projected timeline for program implementation is realistic. Interest/mandates remain consistent/stable.

2. Ultimate goal(s) of this Program

Wisconsin's Food Security Food Accessibility: Hunger planned program will strengthen local food systems and increase household access to food.

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	11.0	0.0	0.0	0.0

Year	Extension		Research	
	1862	1890	1862	1890
2013	11.0	0.0	0.0	0.0
2014	11.0	0.0	0.0	0.0
2015	11.0	0.0	0.0	0.0
2016	11.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

For 2012, Wisconsin Cooperative Extension plans collaboration among the statewide interdisciplinary local Foods Team, Horticulture Team and trained Master Gardner volunteers, Family Financial Education and Management Team, Poverty and Food Insecurity Team, colleagues and partners, providing timely research-based education and assistance to improve food accessibility by strengthening local food markets and systems, responding to growing consumer demand for sustainably produced local foods, and increasing the food supply for vulnerable populations.

Food insecurity can be offset when there are strong and widely used nutrition assistance programs, like food stamps, school breakfast, and summer feeding programs. However, the role played by these programs varies greatly around the state, and many low-income people either do not have access to or do not use valuable food programs. For instance, the share of low-income children who attend a school that offers breakfast ranges from 0 to 100%, and the share of people who participate in the Food Stamp Program in Wisconsin are between 50% and 60% of those eligible, and this participation rate varies dramatically from county to county. Wisconsin Cooperative Extension Family Living Programs specialists work with county extension colleagues, coalitions and community partners to build local capacity for strengthening food security among those in need.

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

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Other 1 (Train-the-trainer) ● Other 2 (Group facilitation, peer network) 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● Web sites other than eXtension ● Other 1 (News media releases) ● Other 2 (Web-based training)

3. Description of targeted audience

The audience includes farmers' market managers, vendors and customers, small-scale producers, producer associations, food processors and entrepreneurs, gardeners and Master Gardener volunteers, food coalitions and cooperatives, hunger coalitions and task forces, food pantries and other community

service providers, local and tribal governments, school boards, school food service directors, teachers and parents of school-age children, low-income women with infants and young children, local and state agency personnel, and others.

V(G). Planned Program (Outputs)

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

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

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

V(H). State Defined Outputs

1. Output Measure

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

V(I). State Defined Outcome

O. No	Outcome Name
1	Strengthen local food markets and systems.
2	Increase household access to food for vulnerable populations.

Outcome # 1

1. Outcome Target

Strengthen local food markets and systems.

2. Outcome Type : Change in Action Outcome Measure

2012:0	2013:0	2014:0	2015:0	2016:0
---------------	---------------	---------------	---------------	---------------

3. Associated Knowledge Area(s)

- 131 - Alternative Uses of Land
- 602 - Business Management, Finance, and Taxation
- 603 - Market Economics
- 604 - Marketing and Distribution Practices
- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Increase household access to food for vulnerable populations.

2. Outcome Type : Change in Action Outcome Measure

2012:0	2013:0	2014:0	2015:0	2016:0
---------------	---------------	---------------	---------------	---------------

3. Associated Knowledge Area(s)

- 607 - Consumer Economics
- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population

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
- Competing Public priorities
- Populations changes (immigration, new cultural groupings, etc.)

Description

{NO DATA ENTERED}

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Evaluation plans are preliminary. Evaluation specialists will work with relevant teams to determine appropriate evaluation studies.

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Food Safety

2. Brief summary about Planned Program

While Hazard Analysis and Critical Control Point (HACCP) implementation in meat, poultry and seafood processing is credited for reducing key foodborne illnesses, pathogenic *Escherichia coli* associated with beef slaughter and processing remain a public health threat recognized by the U.S. Centers for Disease Control and Prevention. Integrated research and extension through the University of Wisconsin-Madison Center for Meat Process Validation and Meat Science Laboratory, departments of Food Science, Dairy Science and Animal Sciences and the School of Veterinary Medicine focus on understanding the behavior of non-O157 Shiga toxin-producing *Escherichia coli* in meat and meat model systems, new organic and natural meat products, organic and conventional dairies. This research will lead to development of recommendations for safely processing natural and organic meat products, for reducing these pathogens for beef processing operations to implement as part of their HACCP plans, for dairy farm managers, veterinarians and agricultural service professionals nationwide, as well as state and federal regulators, public health officials and research microbiologists worldwide.

Consumers are concerned about food safety and animal welfare. Industry-driven programs, often based on university animal behavior and meat science research, are educational programs being sought by producers to comply with the demands of processors and consumers. Wisconsin Cooperative Extension campus and county faculty and trained volunteer advisers address animal care and carcass quality issues through species-specific programs. Twenty county extension educators and state specialists are Beef Quality Assurance trainers, two Swine Team members are certified Transport Quality Assurance trainers and all four are Pork Quality Assurance Plus Advisors who also help train certified 4-H youth and volunteer leaders in Meat Animal Quality Assurance required for participation in county and state fair swine, beef and sheep projects and auctions. While face-to-face programs are a hallmark of Cooperative Extension, educators reach Wisconsin residents around the clock through web-based materials and print publications. Online resources keep consumers and food processors up to date on safe food preservation and handling: <http://www.foodsafety.wisc.edu>

The audience includes colleagues, veterinarians and other professionals, families, 4-H and FFA youth and school-age children, small food processors and entrepreneurs, crop, dairy and livestock producers and commercial haulers, producer associations, artisan cheesemakers, dairy foods processors, natural, organic and conventional meat processors and others preserving food safely and keeping the food supply safe and wholesome.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
315	Animal Welfare/Well-Being and Protection	17%			
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	17%			
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	17%			
806	Youth Development	17%			
902	Administration of Projects and Programs	16%			
903	Communication, Education, and Information Delivery	16%			
	Total	100%			

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

1. Situation and priorities

Progress has been made in reducing the incidence of key foodborne illnesses, with at least some of the decrease attributable to mandatory implementation of the Hazard Analysis and Critical Control Point (HACCP) in the nation's meat, poultry, and seafood processing establishments. However, pathogenic *Escherichia coli* associated with beef slaughter and processing remains a concern. Information is surfacing that Shiga toxin-producing *E. coli* (STEC) strains O26:[H11], O103:H2, O111:[H8] and O145:[H28], in addition to commonly recognized O157:H7, present a public health threat recognized by the U.S. Centers for Disease Control and Prevention. Intervention strategies to reduce shedding pathogens pre- and post-harvest are beneficial to improve food safety of meat producers.

Wisconsin ranks fourth in the country for fresh meat production, and second for the most processing plants: 145 federally inspected meat processing plants, about 300 state-inspected and another 60 with custom licenses, providing services only for specific clients. In Wisconsin, 96% of dairy cows are ultimately harvested for domestic beef consumption, providing 18% of the U.S. ground beef supply. According to federal food safety inspection records, Wisconsin ranks at the top of the list for number of antibiotic residue violations in the country. Even though less than 1% of cattle slaughtered are found to have violative antibiotic residues - unsafe levels for consumption - of violations detected, 90% are black and white Holstein dairy cattle.

Beef packing plants are required both to test carcasses randomly for violative drug residues as well as to test suspect carcasses identified by the USDA Food Safety Inspection Service (FSIS). Each carcass that tests positive is condemned and does not enter the food supply. When violators are detected they are reported to the U.S. Food and Drug Administration, who is required to investigate. Fines can be assessed to the producer, and their names are posted on the public national FSIS web site. As a consequence of being found on the violator list, those producers face limited market access for their animals, and in some cases their milk as well. Even the seemingly low 1% rate of violations detected is unacceptable to many consumers.

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

Resources are/will be available in a timely manner. Education can/will lead to the desired expected change. The research base is accurate and relevant. Participants attend/engage. Motivation exists/can be generated. Projected timeline for program implementation is realistic. Interest/mandates remain consistent/stable.

2. Ultimate goal(s) of this Program

Wisconsin's Food Safety planned program will improve the safety of the state's food supply and consumer food safety practices.

V(E). Planned Program (Inputs)

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

Year	Extension		Research	
	1862	1890	1862	1890
2012	6.0	0.0	0.0	0.0
2013	6.0	0.0	0.0	0.0
2014	6.0	0.0	0.0	0.0
2015	6.0	0.0	0.0	0.0
2016	6.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

For 2012, Wisconsin Cooperative Extension plans collaboration among the interdisciplinary Wisconsin FIRST Food Industry Research, Service and Training Team, the new Swine Team and Beef Extension Advisory Committee nested within the Livestock Team, Family Living Programs campus and county faculty, staff and trained Master Food Preserver volunteers, colleagues and partners, providing timely research-based education and assistance to improve the safety of the food supply by helping

agricultural producers, small and very small food processors comply with government regulations, and developing and implementing behavioral interventions that improve consumer food safety practices. Twenty county extension educators and state specialists are Beef Quality Assurance trainers, two Swine Team members are certified Transport Quality Assurance trainers and all four are Pork Quality Assurance Plus Advisors who also help train certified 4-H youth and volunteer leaders in Meat Animal Quality Assurance required for participation in county and state fair swine, beef and sheep projects and auctions.

While face-to-face programs are a hallmark of Cooperative Extension, educators reach Wisconsin residents round-the-clock through web-based materials and print publications. Online resources keep consumers and food processors up to date on safe food preservation: <http://www.foodsafety.wisc.edu>

Integrated research and extension through the University of Wisconsin-Madison Center for Meat Process Validation and Meat Science Laboratory, departments of Food Science, Dairy Science and Animal Sciences and the School of Veterinary Medicine focus on understanding the behavior of non-O157 Shiga toxin-producing Escherichia coli in meat and meat model systems, new organic and natural meat products, organic and conventional dairies, especially as compared to the behavior of other pathogens: E. coli O157, Salmonella spp., Listeria monocytogenes, and Staphylococcus aureus. This research will lead to development of recommendations for safely processing natural and organic meat products, for controlling and eliminating these pathogens for beef processing operations nationwide for implementation as part of their HACCP plans, for dairy farm managers, veterinarians and agricultural service professionals nationwide, as well as state and federal regulators, public health officials and research microbiologists worldwide.

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

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Other 1 (Train-the-trainer) ● Other 2 (Group facilitation, peer network) 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● Web sites other than eXtension ● Other 1 (News media releases) ● Other 2 (Web-based training)

3. Description of targeted audience

The audience includes colleagues, veterinarians and other professionals, individuals, families, 4-H and FFA youth and school-age children including deaf students, small food processors and entrepreneurs, crop, dairy and livestock producers, Producer associations, artisan cheesemakers, dairy foods processors, natural, organic and conventional meat processors and others preserving food safely and keeping the food supply safe and wholesome. In 2010, more than 6,500 individuals received assistance through Family Living educational programs on how to preserve food safely. To help meet this growing need, 100 trained Master Food Preserver volunteers pledged to commit an average of 20 volunteer hours per year for each of the next three years - a total of 6,000 hours - in service to their communities as part of the Volunteer Master Food Preserver program.

V(G). Planned Program (Outputs)

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

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
 - Number of patents submitted
 - Number of peer reviewed publications
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

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

V(I). State Defined Outcome

O. No	Outcome Name
1	Improve the safety of the food supply.
2	Develop and implement behavioral interventions that improve consumer food safety practices.

Outcome # 1

1. Outcome Target

Improve the safety of the food supply.

2. Outcome Type : Change in Action Outcome Measure

2012:0	2013:0	2014:0	2015:0	2016:0
---------------	---------------	---------------	---------------	---------------

3. Associated Knowledge Area(s)

- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 902 - Administration of Projects and Programs
- 903 - Communication, Education, and Information Delivery

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Develop and implement behavioral interventions that improve consumer food safety practices.

2. Outcome Type : Change in Action Outcome Measure

2012:0	2013:0	2014:0	2015:0	2016:0
---------------	---------------	---------------	---------------	---------------

3. Associated Knowledge Area(s)

- 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 902 - Administration of Projects and Programs
- 903 - Communication, Education, and Information Delivery

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
- Populations changes (immigration, new cultural groupings, etc.)

Description

Federal regulations: The Wisconsin Cooperative Extension Swine Team formed in July 2009 to help meet the educational needs of the Wisconsin pork industry, providing quality assurance training programs for producers, transporters, youth and volunteer leaders in Meat Animal Quality Assurance required for participation in county and state fair swine, beef and sheep projects and auctions. Swine Team members made more than 1,500 educational contacts in 2010. Team members also play an integral role in the Wisconsin Pork Expo, Badger Pork Day, Wisconsin Farm Technology Days, the Extension Educators Conference, and livestock activities at the Wisconsin State Fair. Educational partners include Cooperative Extension county colleagues statewide, UW-Madison Department of Animal Sciences, agricultural campuses at UW-Platteville and UW-River Falls, agricultural research stations, the Wisconsin Pork Association, Wisconsin Animal ID Consortium, and National Pork Board.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Evaluation plans are preliminary. Evaluation specialists will work with relevant teams to determine appropriate evaluation studies.

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Childhood Obesity

2. Brief summary about Planned Program

Childhood obesity has become an especially common health problem among low-income populations. In 2008, 13.6% of 2- through 5-year-old children participating in the Wisconsin Supplemental Nutrition Program for Women, Infants and Children (WIC) were at or above the 95th percentile of BMI for age and 29.9% were at or above the 85th percentile. This puts more than 2 in 5 at risk of obesity. Studies show that more than half of obese children become overweight at or before age two. Mothers most often are the dominant influence on children's food consumption and dietary habits. Positive modeling is key to preventing childhood obesity as children's food preferences mirror those of their mothers. Effective research-based interventions that are practical to implement and sustain are needed to prevent obesity among preschoolers, helping parents help their children develop positive eating behaviors.

For 2012, Wisconsin Cooperative Extension plans collaboration among the statewide Family Living Programs Eating Well and Being Active Team, Healthy Families and Communities Team, colleagues and partners, providing timely research-based education and assistance for preventing childhood obesity through developing and implementing behavioral interventions that improve nutrition and increase physical activity, as well as building capacity among community partners to improve nutrition and physical activity. Diverse participants make informed, science-based decisions regarding nutrition, childhood obesity, health and physical activity.

The audience includes colleagues and other professionals, diverse children and youth, caregivers, parents and family members, local and tribal officials, public and private collaborating and community agencies, teachers, school districts, administrators, state, federal and tribal agencies and others in a variety of educational settings to reach under-represented audiences including low-income Latino/a, African American, American Indian and Hmong parents, families and youth, translating and interpreting as needed.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior	75%			
704	Nutrition and Hunger in the Population	10%			
724	Healthy Lifestyle	15%			
	Total	100%			

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

1. Situation and priorities

Illnesses related to obesity and lack of exercise, such as diabetes, cancer and heart disease, are shortening lives and driving up health care costs. Diet-linked diseases account for an estimated \$250 billion each year in increased medical costs and lost productivity, according to the Center for Nutrition Policy and Promotion Strategic Plan. As documented in the national objectives of Healthy People 2010, improving the U.S. diet and boosting physical activity could reduce cardiovascular disease, diabetes and cancer. The importance of education to improve nutrition and physical activity behaviors is further documented by reports from the Centers for Disease Control and Prevention that state: "Poor diet and physical inactivity are associated with 300,000 deaths each year, second only to tobacco use."

Childhood obesity has become an especially common health problem among low-income populations. In 2008, 13.6% of 2- through 5-year-old children participating in the Wisconsin Supplemental Nutrition Program for Women, Infants and Children (WIC) were at or above the 95th percentile of BMI for age and 29.9% were at or above the 85th percentile. This puts more than 2 in 5 at risk of obesity. Studies show that more than half of obese children become overweight at or before age two. Mothers most often are the dominant influence on children's food consumption and dietary habits. Positive modeling is key to preventing childhood obesity as children's food preferences mirror those of their mothers. In children as young as 2 years old, food preferences were associated with those of their mothers. Effective research-based interventions that are practical to implement and sustain are needed to prevent obesity among preschoolers, helping parents help their children develop positive eating behaviors.

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

Resources are/will be available in a timely manner. Education can/will lead to the desired expected change. The research base is accurate and relevant. Participants attend/engage. Motivation exists/can be generated. Projected timeline for program implementation is realistic. Interest/mandates remain consistent/stable.

2. Ultimate goal(s) of this Program

Wisconsin's Childhood Obesity planned program will improve individual, family and community partner decision-making about health and well-being.

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	6.0	0.0	0.0	0.0
2013	6.0	0.0	0.0	0.0
2014	6.0	0.0	0.0	0.0
2015	6.0	0.0	0.0	0.0
2016	6.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

For 2012, Wisconsin Cooperative Extension plans collaboration among the statewide Family Living Programs Eating Well and Being Active Team, Healthy Families and Communities Team, colleagues and partners, providing timely research-based education and assistance for preventing childhood obesity through developing and implementing behavioral interventions that improve nutrition and increase physical activity, as well as building capacity among community partners to improve nutrition and physical activity. Diverse participants make informed, science-based decisions regarding nutrition, childhood obesity, health and physical activity.

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

Extension	
Direct Methods	Indirect Methods

<ul style="list-style-type: none">● Education Class● Workshop● Group Discussion● One-on-One Intervention● Other 1 (Train-the-trainer)● Other 2 (Group facilitation, peer network)	<ul style="list-style-type: none">● Public Service Announcement● Newsletters● Web sites other than eXtension● Other 1 (News media releases)● Other 2 (Web-based training)
--	---

3. Description of targeted audience

The audience includes colleagues and other professionals, diverse children and youth, caregivers, parents and family members, local and tribal officials, public and private collaborating and community agencies, teachers, school districts, administrators, state and federal agencies and others in a variety of educational settings to reach under-represented audiences including low-income Latino/a, African American, American Indian and Hmong parents, families and youth, translating and interpreting as needed.

V(G). Planned Program (Outputs)

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

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

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

V(H). State Defined Outputs

1. Output Measure

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

V(I). State Defined Outcome

O. No	Outcome Name
1	Develop and implement behavioral interventions that improve nutrition and increase physical activity.
2	Build capacity among community partners to address issues related to nutrition and childhood obesity.
3	Develop community strategies to address factors influencing excessive weight gain.

Outcome # 1

1. Outcome Target

Develop and implement behavioral interventions that improve nutrition and increase physical activity.

2. Outcome Type : Change in Action Outcome Measure

2012:0	2013:0	2014:0	2015:0	2016:0
---------------	---------------	---------------	---------------	---------------

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Build capacity among community partners to address issues related to nutrition and childhood obesity.

2. Outcome Type : Change in Action Outcome Measure

2012:0	2013:0	2014:0	2015:0	2016:0
---------------	---------------	---------------	---------------	---------------

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population
- 724 - Healthy Lifestyle

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Develop community strategies to address factors influencing excessive weight gain.

2. Outcome Type : Change in Action Outcome Measure

2012:0 2013:0 2014:0 2015:0 2016:0

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population
- 724 - Healthy Lifestyle

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
- Competing Public priorities
- Populations changes (immigration, new cultural groupings, etc.)

Description

{NO DATA ENTERED}

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Evaluation plans are preliminary. Evaluation specialists will work with relevant teams to determine appropriate evaluation studies.

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Climate Change

2. Brief summary about Planned Program

A momentous impetus to shift from fossil fuels to energy efficiency and renewable energy is occurring due to the carbon economy's impacts on costs of national security, the economy, ecosystems and human welfare. While providing a huge opportunity, making this shift requires changing the predominant way society has been getting and using energy since the Industrial Revolution. The agriculture industry, governments and businesses must become learning organizations, tap into innovation and creativity, and integrate sustainability with lean approaches to create value and save money.

For 2012, Wisconsin Cooperative Extension plans collaboration among the interdisciplinary Energy Conservation and Renewable Energy Team, Estuary and Coastal Wetlands Protection Team, Future Land Use and Priorities Team, Sustainability Team, colleagues and partners, providing timely research-based education and assistance to adapt to and mitigate climate change impacts through developing, implementing and evaluating outreach programs to reduce carbon, nitrogen, energy and water footprints in their communities. Extension specialists at the UW-Madison College of Agricultural and Life Sciences, Environmental Resources Center, Solid and Hazardous Waste Education Center and Discovery Farms, UW-Platteville Pioneer Farm, UW-Stevens Point Center for Land Use Education and UW-Superior Northern Center for Community Economic Development collaborate with county extension faculty and staff, state urban and regional planning, national and international colleagues to research and align best practices and facilitate stakeholder involvement in making informed decisions to meet local needs.

The audience includes colleagues and other professionals, growers and grower associations, custom manure applicators, coalitions and cooperatives, community leaders, business owners, local elected officials, town, city, county and tribal governments, utilities, local planning departments, regional planning commissions, school districts, economic development practitioners, diverse individuals, youth and families, and others.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	13%			
112	Watershed Protection and Management	13%			
133	Pollution Prevention and Mitigation	13%			
205	Plant Management Systems	13%			
405	Drainage and Irrigation Systems and Facilities	12%			
601	Economics of Agricultural Production and Farm Management	12%			
605	Natural Resource and Environmental Economics	12%			
608	Community Resource Planning and Development	12%			
	Total	100%			

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

1. Situation and priorities

Wisconsin crop producers irrigate 377,680 acres of land for harvested crops (2007 Census of Agriculture). Central Wisconsin, the heart of processed vegetable country, irrigates 196,274 acres, most of which is under vegetable production. Irrigation improves crop yield and quality. Because most irrigated land in central Wisconsin is sandy, this creates increased potential for groundwater contamination by nitrates and pesticides if overwatered. Good irrigation management also plays a role in disease management. Proper soil moisture levels are critical to successful potato production from planting to harvest. Proper soil moisture can likewise reduce a harmful byproduct of overwatering, avoiding saturated cropland that would convert nitrogen to the greenhouse gas nitrous oxide.

A momentous impetus to shift from fossil fuels to energy efficiency and renewable energy is occurring due to the carbon economy's impacts on costs of national security, the economy, ecosystems and human welfare. While providing a huge opportunity, making this shift requires changing the predominant way society has been getting and using energy since the Industrial Revolution. Governments and businesses must become learning organizations, tap into innovation and creativity, and integrate sustainability with lean approaches to create value and save money.

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

Resources are/will be available in a timely manner. Education can/will lead to the desired expected change. The research base is accurate and relevant. Participants attend/engage. Motivation exists/can be generated. Projected timeline for program implementation is realistic. Interest/mandates remain consistent/stable.

2. Ultimate goal(s) of this Program

Wisconsin's Climate Change planned program will improve producers' ability to adapt to changing environmental conditions while sustaining their economic vitality.

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	7.0	0.0	0.0	0.0
2013	7.0	0.0	0.0	0.0
2014	7.0	0.0	0.0	0.0
2015	7.0	0.0	0.0	0.0
2016	7.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

For 2012, Wisconsin Cooperative Extension plans collaboration among the interdisciplinary Energy Conservation and Renewable Energy Team, Estuary and Coastal Wetlands Protection Team, Future Land Use and Priorities Team, Sustainability Team, colleagues and partners, providing timely research-based education and assistance to adapt to and mitigate climate change impacts through developing, implementing and evaluating outreach programs to reduce carbon, nitrogen, energy and water footprints in their communities, as well as actually reducing atmospheric greenhouse gas emissions through business peer-to-peer learning. Extension specialists collaborate with county extension faculty and staff, state urban and regional planning, national and international colleagues to research and align best practices and stakeholder involvement in making informed decisions to meet local needs. Supporting this work is the new Environmental Resources Center Teaching About Climate Change web site, providing resources reviewed and selected to help extension educators answer questions or facilitate group planning and community decision-making: <https://blogs.ces.uwex.edu/climatechangeeducation>

The National Estuarine Research Reserve (NERR) System is a nationwide network of protected

coastal estuaries designated and supported through the National Oceanic and Atmospheric Administration. The NERR program integrates research, outreach, and stewardship activities. Wisconsin Cooperative Extension successfully facilitated the nomination of the St. Louis River freshwater estuary along the border between Wisconsin and Minnesota at the headwaters of the Great lakes. With its designation in October 2010, the 16,697-acre Lake Superior National Estuarine Research Reserve joined Old Woman Creek (Ohio) as the second Great Lakes freshwater estuary in the NERR System. The Lake Superior NERR, which has partners in Wisconsin, Minnesota and tribal governments, is partnering with Ohio's Old Woman Creek NERR on Great Lakes Planning for Climate Change workshops in Minnesota, Wisconsin, Michigan and Ohio.

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

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Other 1 (Train-the-trainer) ● Other 2 (Group facilitation, peer network) 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● Web sites other than eXtension ● Other 1 (New media releases) ● Other 2 (Web-based training)

3. Description of targeted audience

The audience includes colleagues and other professionals, growers and grower associations, coalitions and cooperatives, community leaders, business owners, local elected officials, town, city, county and tribal governments, plan commissions, local planning departments, school districts, economic development practitioners, the news media, and diverse individuals, youth and families.

V(G). Planned Program (Outputs)

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

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

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

V(H). State Defined Outputs

1. Output Measure

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

V(I). State Defined Outcome

O. No	Outcome Name
1	Develop, implement and evaluate outreach programs that reduce carbon, nitrogen, energy and water footprints in their communities.
2	Reduce atmospheric greenhouse gas emissions.
3	Maximize carbon sequestration potential in agriculture and forests.

Outcome # 1

1. Outcome Target

Develop, implement and evaluate outreach programs that reduce carbon, nitrogen, energy and water footprints in their communities.

2. Outcome Type : Change in Action Outcome Measure

2012:0	2013:0	2014:0	2015:0	2016:0
---------------	---------------	---------------	---------------	---------------

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 112 - Watershed Protection and Management
- 133 - Pollution Prevention and Mitigation
- 205 - Plant Management Systems
- 405 - Drainage and Irrigation Systems and Facilities
- 601 - Economics of Agricultural Production and Farm Management
- 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Reduce atmospheric greenhouse gas emissions.

2. Outcome Type : Change in Action Outcome Measure

2012:0	2013:0	2014:0	2015:0	2016:0
---------------	---------------	---------------	---------------	---------------

3. Associated Knowledge Area(s)

- 133 - Pollution Prevention and Mitigation
- 605 - Natural Resource and Environmental Economics
- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Maximize carbon sequestration potential in agriculture and forests.

2. Outcome Type : Change in Action Outcome Measure

2012:0	2013:0	2014:0	2015:0	2016:0
---------------	---------------	---------------	---------------	---------------

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 133 - Pollution Prevention and Mitigation
- 205 - Plant 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
- Competing Public priorities
- Populations changes (immigration, new cultural groupings, etc.)

Description

Public policy changes: The Wisconsin Initiative on Climate Change Impacts (WICCI) statewide collaboration brings scientists and stakeholders together to find adaptation strategies to reduce potential negative impacts of climate change in Wisconsin. WICCI issued its first Adaptive Assessment Report in early 2011. Wisconsin Cooperative Extension waste management and reduction specialist David S. Liebl leads the WICCI outreach effort, chairing the WICCI Advisory Committee and serving on the WICCI Science Council. WICCI's outreach program focuses on building capacity among Wisconsin decision makers to integrate climate projections into resource management decisions:
<http://www.wicci.wisc.edu>

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Evaluation plans are preliminary. Evaluation specialists will work with relevant teams to determine appropriate evaluation studies.

V(A). Planned Program (Summary)

Program # 7

1. Name of the Planned Program

Sustainable Energy

2. Brief summary about Planned Program

The increased interest in and funding for renewable energy sources have the potential to bring new economic opportunities to northern Wisconsin. The region's forests and farmlands offer a rich supply of herbaceous and woody biomass for use in the emerging bioeconomy. Recognizing the feedstock availability, a number of companies have announced plans to establish or expand their use of woody biomass for energy production. Yet little is known about the performance of candidate woody biomass crops such as hybrid poplar, larch, or willow in the climate and soils of Ashland and Bayfield counties, nor are there agronomic or management recommendations for producers. The most daunting challenge for bioenergy projects and development is the issue of sustainable biomass supply - assuring sufficient year-round organic feedstocks for profitable conversion to energy.

The new Wisconsin Cooperative Extension Bioenergy and the Bioeconomy Team is a cross-program area effort. More than 20 active team members are conducting integrated research and extension programs and building capacity among extension colleagues. UW-Madison Environmental Resources Center sustainability studies scientist Sharon Lezberg is collaborating with 50 North Central Region colleagues to develop the BioEnergy and Renewable Energy Community Assessment Toolkit and Energy Independence, BioEnergy Generation and Environmental Sustainability curricula. The toolkit is out for review and curriculum development teams are working on three courses: Bioenergy and Sustainability, On-Farm Energy Conservation and Efficiency, and Anaerobic Digestion:
<http://www.uwex.edu/erc/sustainableag/Bioenergy>

The audience includes regulated and unregulated utilities, liquid biofuels, anaerobic digester and biomass conversion technology firms, biomass producers and aggregators, food processors, loggers, procurement foresters, wood products professionals, haulers, farmers, business owners, woodland owners, recycling volunteers, public and private agencies, government officials, universities and technical colleges. Since biofuel firms tend to represent large organizations - as do utilities - they are not typical extension clients, and in this sense are considered under-served. This is markedly apparent in reaching biomass-based, non-corn/soybean operations.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	13%			
133	Pollution Prevention and Mitigation	13%			
203	Plant Biological Efficiency and Abiotic Stresses Affecting Plants	13%			
403	Waste Disposal, Recycling, and Reuse	13%			
601	Economics of Agricultural Production and Farm Management	12%			
602	Business Management, Finance, and Taxation	12%			
605	Natural Resource and Environmental Economics	12%			
608	Community Resource Planning and Development	12%			
	Total	100%			

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

1. Situation and priorities

Uncertain and uncoordinated policies at both state and federal levels coupled with low fossil fuel prices had prompted significant slowdown in renewable energy project development and financing. However, given recent momentum and continued stakeholder interest, educational and research opportunities remain strong, and in some sectors growing. The new Wisconsin Cooperative Extension Bioenergy and the Bioeconomy Team focused educational programs on biogas, liquid biofuels, and biomass feedstocks and conversion, providing educational information and assistance for clients and public-private partners in all areas of the state and Upper Peninsula Michigan. Their most daunting challenge for bioenergy projects and development is the issue of sustainable biomass supply - assuring sufficient year-round organic feedstocks for profitable conversion to energy.

The increased interest in and funding for renewable energy sources have the potential to bring new economic opportunities to northern Wisconsin. The region's forests and farmlands offer a rich supply of herbaceous and woody biomass for use in the emerging bioeconomy. Recognizing the feedstock availability, a number of companies have announced plans to establish or expand their use of woody biomass for energy production. For example, Xcel Energy received approval to nearly double their use of woody biomass at the Bayfront power plant in Ashland. Little is known about the performance of candidate woody biomass crops such as hybrid poplar, larch, or willow in the climate and soils of Ashland and Bayfield counties, nor are there agronomic or management recommendations for producers.

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

Resources are/will be available in a timely manner. Education can/will lead to the desired expected change. The research base is accurate and relevant. Participants attend/engage. Motivation exists/can be generated. Projected timeline for program implementation is realistic. Interest/mandates remain consistent/stable.

2. Ultimate goal(s) of this Program

Wisconsin's Sustainable Energy planned program will enhance the state's sustainable energy capacity by focusing on efforts related to biomass use for biofuels, crop design and scalable conversion technologies.

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	0.0	0.0
2013	3.0	0.0	0.0	0.0
2014	3.0	0.0	0.0	0.0
2015	3.0	0.0	0.0	0.0
2016	3.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

The new Wisconsin Cooperative Extension Bioenergy and the Bioeconomy Team is a cross-program area effort. More than 20 active team members are conducting programs and building capacity among extension colleagues. Team co-chair David Liebl developed BioEnergy Roundtables - presentations by leading bioenergy researchers from the University of Wisconsin System and other stakeholder organizations - providing professional training, building innovative applied research and outreach collaborations and sharing team project information. As a result, campus and county extension faculty plan initiatives in these areas for 2012:

1. Biogas projects: Vendors, sponsors, communities, farmers, manufacturers, lenders, utilities and others

will benefit from business and pricing counseling, seminars, policy research and education and traditional technology transfers for agricultural, industrial, engineering, finance and public sector stakeholders.

2. Biofuels, liquid: Seminars serving the educational needs of landowners, local officials and private sector stakeholders throughout Wisconsin and Upper Peninsula Michigan will improve understanding of and access to emerging federal programs.

3. Biomass supply and conversion: The most daunting of the challenges for bioenergy projects and development is the issue of supply, making biomass supply research and education a top priority for all team members. For example:

Environmental Resources Center sustainability studies scientist Sharon Lezberg is collaborating with 50 North Central Region colleagues to develop the BioEnergy and Renewable Energy Community Assessment Toolkit and Energy Independence, BioEnergy Generation and Environmental Sustainability curricula. The toolkit is out for review and curriculum development teams are working on three courses: Bioenergy and Sustainability, On-Farm Energy Conservation and Efficiency, and Anaerobic Digestion: <http://www.uwex.edu/erc/sustainableag/Bioenergy>

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

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Other 1 (Train-the-trainer) ● Other 2 (Group facilitation, peer network) 	<ul style="list-style-type: none"> ● Public Service Announcement ● Newsletters ● Web sites other than eXtension ● Other 1 (News media releases) ● Other 2 (Web-based training)

3. Description of targeted audience

The new interdisciplinary Bioenergy and the Bioeconomy Team is addressing statewide emerging bioenergy education needs. Farmers and foresters are interested in supplying feedstocks to the bioenergy industry as a potential alternative market and source of revenue. Communities are interested in developing renewable energy industries for energy independence, job creation, and economic development. At the onset of the bioenergy industry, policy makers, as well as entrepreneurial businesses, encouraged the rapid development of new energy sources using biomass as a renewable feedstock. Given Wisconsin's wealth of resources in forests and agricultural production, there is great interest among state businesses and communities in producing alternative fuels and feedstocks from biomass.

The audience includes regulated and unregulated utilities, liquid biofuels, anaerobic digester and biomass conversion technology firms, biomass producers and aggregators, food processors, loggers, procurement foresters, wood products professionals, haulers, farmers, business owners, woodland owners, recycling volunteers, public and private agencies, and government officials. Since biofuel firms tend to represent large organizations - as do utilities - they are not typical extension clients, and in this sense are considered under-served. This is markedly apparent in reaching biomass-based, non-corn/soybean operations.

V(G). Planned Program (Outputs)

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

- Number of contacts
 - Direct Adult Contacts
 - Indirect Adult Contacts
 - Direct Youth Contacts
 - Indirect Youth Contact
 - Number of patents submitted
 - Number of peer reviewed publications
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(H). State Defined Outputs

1. Output Measure

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

V(I). State Defined Outcome

O. No	Outcome Name
1	Develop biomass use for biofuels.
2	Build capacity to create, refine and implement scalable conversion technologies.
3	Design forestry and crops for bioenergy production.

Outcome # 1

1. Outcome Target

Develop biomass use for biofuels.

2. Outcome Type : Change in Action Outcome Measure

2012:0 2013:0 2014:0 2015:0 2016:0

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- 601 - Economics of Agricultural Production and Farm Management
- 605 - Natural Resource and Environmental Economics

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Build capacity to create, refine and implement scalable conversion technologies.

2. Outcome Type : Change in Action Outcome Measure

2012:0 2013:0 2014:0 2015:0 2016:0

3. Associated Knowledge Area(s)

- 403 - Waste Disposal, Recycling, and Reuse
- 601 - Economics of Agricultural Production and Farm Management
- 602 - Business Management, Finance, and Taxation
- 608 - Community Resource Planning and Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Design forestry and crops for bioenergy production.

2. Outcome Type : Change in Action Outcome Measure

2012:0 2013:0 2014:0 2015:0 2016:0

3. Associated Knowledge Area(s)

- 601 - Economics of Agricultural Production and Farm Management
- 605 - Natural Resource and Environmental Economics
- 608 - Community Resource Planning and 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
- Competing Public priorities
- Populations changes (immigration, new cultural groupings, etc.)

Description

Economy: While still a small part of the agricultural, forestry and industrial sectors, bioenergy production and new bioenergy facilities continue to be explored. As volatile energy costs continue, the Wisconsin Cooperative Extension Bioenergy and the Bioeconomy Team will play a key role in helping new bioenergy projects - from ultra-small to large - create new jobs for new industries. These uncertain times require careful analysis by an informed developer to ensure the best chance for a proposed project's success. While some larger-scale projects have been put on hold, extension business education and assistance will continue to bring research and innovation to an emerging bioeconomy.

Public policy changes: State and federal policies are driving research and development of the bioeconomy, and projects that can generate energy from bio-based residuals and specialty crops are being widely investigated. However, the changing political and economic landscapes in energy and environment have complicated bioeconomic development decision-making.

Competing public priorities: Given Wisconsin's wealth of resources in forests and agricultural production, there is great interest among state businesses and communities in producing alternative fuels and feedstocks from biomass. Outreach and extension collaborations needed further development. Professional training and cross-discipline sharing of research and information needed additional collaboration to effectively and efficiently bring new technology to application. A new collaboration was formed among Wisconsin Cooperative Extension, the University of Wisconsin-Madison College of Agricultural and Life Sciences and Wisconsin Bioenergy Initiative to develop

curriculum for USDA Farm Service Agency Biomass Crop Assistance Program education.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Evaluation plans are preliminary. Evaluation specialists will work with relevant teams to determine appropriate evaluation studies.