

2012 Oregon State University Extension Plan of Work

Status: Accepted

Date Accepted: 06/14/2011

I. Plan Overview

1. Brief Summary about Plan Of Work

It is the mission of the Oregon State University Extension Service to engage the people of Oregon with research-based knowledge and education that focus on strengthening communities and economies, sustaining natural resources, and promoting healthy families and individuals. It is our vision to lead Oregon State University's outreach mission by engaging with Oregon's people and communities to have positive impacts on community livability, economic vitality, natural resources sustainability, and the health and wellbeing of people. OSU Extension Service's Core Values and Operating Principles are as follows:

- Value 1: Community-based: We value community relationships and connect OSU to local people and issues to enhance the present and the future of the people and communities of Oregon.
- Value 2: Accountability: We focus on achieving measurable outcomes, and document and communicate the impact and value of our work.
- Value 3: Credibility: We deliver relevant, research-based knowledge through our educational programs.
- Value 4: Diversity: We exhibit respect, value differing perceptions and world views, and encourage diversity.
- Value 5: Partnerships: We collaborate with academic, public, and private partners to achieve greater results and build community capacity. We value the public good that comes from collaborating with volunteers.
- Value 6: Responsiveness: We engage with community partners and learners to identify priority issues and needs, to design timely responses, and to build future capability.

The OSU Extension Service Goals are:

Goal 1: Improve Access to High-quality Learner Services -- Extension will provide access to the knowledge resources of OSU by being focused and nimble in engaging Oregon's diverse people and communities in high-quality learner services that help build sustainable community futures.

Goal 2: Invest for Excellence and Impact -- Extension will increase and diversify its funding base and encourage program excellence through strategic investments within three thematic areas: strengthen communities and economies, sustain natural resources, and promote healthy families and individuals. This will create measurable outcomes and impacts that will be reported widely to stakeholders.

Goal 3: Increase Effectiveness with Appropriate Technology -- Extension will use established and new technologies strategically to increase efficiencies, expand outreach, and enhance and report the outcomes of its educational services.

This 2012-2016 Plan of Work reflects our ongoing commitment to the vision, values, and goals of Oregon State University Extension. The 2012-2016 Plan of Work is a major re-write and focuses on the five high-priority areas defined by NIFA as OSU Extension planned programs. The changes reflect the continual improvement process of responding to the needs and issues facing Oregon communities and people. The changes are also consistent with Oregon State University's strategic plan that identifies three areas of excellence . . . Healthy People, Healthy Planet, Healthy Economy.

The new on-line planning and reporting system (SOARS) was fully implemented at the end of 2007, and allows us to collect specific data related to FTEs for planned programs, program outputs and outcomes, and publications for 2009 and beyond. As anticipated, SOARS greatly improved our ability to modify and update Oregon's federal plan of work more accurately with each passing year.

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

Year	Extension		Research	
	1862	1890	1862	1890
2012	187.0	0.0	0.0	0.0
2013	175.0	0.0	0.0	0.0
2014	175.0	0.0	0.0	0.0
2015	175.0	0.0	0.0	0.0
2016	175.0	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
- Expert Peer Review

2. Brief Explanation

The 2012-16 Plan of Work is the result of experts within the four colleges with active Extension programs working closely with the Extension program leaders to identify the unique intellectual contribution Oregon State University can make to the identified priorities and to determine how OSU Extension can operationalize the knowledge for community outreach, engagement and adoption. The annual plan was reviewed internally by the OSU Provost and the four Deans leading Extension programs within their colleges.

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?

Oregon State University Extension faculty (located in all 36 counties in Oregon) work closely with local stakeholders including farmers and ranchers, foresters, agency personnel, elected leaders, educators, health professionals, environmental organizations, researchers,

and a myriad of other public and private entities to establish need and design appropriate programming. In many cases, stakeholders are directly involved in the programming as volunteers or by permitting demonstrations and applied research trials on their properties. Additionally, faculty utilize critical demographic and economic data, and examine current research findings to identify societal needs and opportunities for significant social, environmental and economic impacts. Programming is then planned based upon this input within each of the four academic colleges with Extension programs (Forestry, Agricultural Sciences, Health and Human Sciences, and Sea Grant). The Oregon State University Extension Service provides funding to these colleges on the basis of planned outcomes outlined in a biennial plan submitted by each college. All Extension FTE must be accounted for in these plans. The plans are reviewed annually and span a two-year timeframe. Annual evaluations are conducted by the Director of the OSU Extension Service to determine how effectively each planned program is addressing key needs and delivering the anticipated outcomes and impacts described in each plan.

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

Under-served and under-represented audiences are identified through demographic analyses and through interaction with appropriate stakeholders including minority serving organizations. Extension faculty and program assistants are recruited with language skills and cultural knowledge to enable effective programming for specific target audiences. This includes active recruitment of faculty and paraprofessionals from within minority populations. These individuals have been extremely successful in delivering programming in ways that are compatible with the customs and cultures of these audiences. Specifically, programs described in this plan of work will be developed to reach Native American, Latino, African American, Russian, and Hmong audiences. Additionally, programs are planned to reach developmentally and physically challenged individuals and high risk populations such as inmates and persons on probation. Finally, significant resources are applied supporting programming designed to assist older adults and/or those with limited resources.

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

An on-line accountability system was developed in 2007 to aid in documentation of outcomes and impacts of programming. Now in its fourth full year of operation, SOARS (Stories, Outcomes, and Accomplishments Reporting System) has increased usability and provides easier connections between the different levels within OSU Extension (e.g. local programming, campus specialists, Extension program areas, college and Extension administration, and NIFA). This system provides a uniform process based on the Logic Model for all faculty to report the outcomes of their programming, and how the results of local programming are contributing to the long-term outcomes identified by each Extension program area. To facilitate this assessment, individual faculty members conduct on-site evaluations to determine the degree of learning that occurs within programs conducted. Additionally, follow up surveys and site visits will be used to document the extent of application of knowledge acquired through Extension programs. Finally, blocks of programming called "program work areas" are evaluated at least once during each 5-year period to assess the long-term social, environmental and economic benefits of the Extension programming. Funding is allocated to each college with Extension programs and applied to support an in-depth analysis of the impacts of the programs utilizing recognized and appropriate evaluation procedures and tools.

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

Annual assessments of program effectiveness through SOARS are used to determine if programs are reaching the desired audiences, the cost of program delivery, the amount of learning taking place, and the degree of application of learning. These data allow Extension leadership to make tactical decisions about changes in program design or reallocation of

resources to more effectively and efficiently reach desired audiences leading to desired outcomes and impacts. Additionally, new technologies are incorporated to augment program efficiency and to improve and expand the reach of programming. This includes application of technologies such as digital video devices, delivery of live educational events through video conferencing, active Internet-based teaching, and extensive use of web-based information delivery. Additionally, OSU actively participates in the development of the eXtension initiative. New and exciting materials are now available through this resource.

IV. Stakeholder Input

1. Actions taken to seek stakeholder input that encourages their participation

- 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 individuals
- Survey of the general public
- Survey of selected individuals from the general public

Brief explanation.

Input is solicited through a statewide advisory network that directly advises the Vice Provost for Outreach and Engagement and Director of Extension. This advisory committee is made up of individuals representing production agriculture and forestry, environmental groups, county government, youth and family-serving organizations, organizations representing coastal issues, and business and industry. The committee meets 1-2 times per year for two days. Additionally, the committee is connected with the Vice Provost's and Director's office via email, conference calls and webinars throughout the year. In 2009 a similar group was formed to advise Extension leadership on needs and issues primarily related to Oregon's urban populations in the Portland Metro area.

Every county in the state maintains an advisory structure. These include both general broad-based advisory systems and those that are more specific to programming areas. These advisory groups generally meet 4-12 times per year to actively review programming and to provide input to county faculty and Extension leadership.

Each academic college with Extension programming maintains advisory structures at the college and departmental level. These inform Extension programming within each of these units.

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

1. Method to identify individuals and groups

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

- Other (Web searches of potential participants, Organizational Transformation faculty panel, Extension Demographer, Visioning Project and Strategic Planning)

Brief explanation.

Many mechanisms are used to identify individuals, groups, and organizations that are Extension stakeholders. Some specific efforts are cited below.

- Internet searches are used to identify organizations with stakes in various programs.
- We confer with partnering organizations to identify and engage appropriate stakeholders.
- We confer with existing advisors about other groups and individuals that should provide input.
- We actively solicit internal input about appropriate stakeholders to add to advisory structures or to survey about need and effectiveness of Extension programming.
- We utilize demographic data to ensure that all segments of society are adequately represented among identified stakeholder groups and especially among those groups providing input to the decision-making processes.

In 2006, Extension added a full-time demographer to the faculty in order to access, interpret, and respond to Oregon's demographics more effectively. In 2007 we collaborated with WSU and their Center for Bridging the Digital Divide in a visioning project that helped define the possibilities for OSU in the year 2017. This project, a series of in-depth interviews with key stakeholders, yielded both formative and summative data for planning purposes. In 2009 and early 2010 a faculty panel for organizational transformation was charged to develop a holistic framework to engage stakeholders in identifying and exploring issues and needs facing Oregon communities and people. From the data collected a menu of opportunities were developed and shaped the Plan of Work for 2012-2016.

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

Brief explanation.

See response 2(A).

3. A statement of how the input will be considered

- In the Budget Process
- To Identify Emerging Issues
- Redirect Extension Programs
- In the Staff Hiring Process

- To Set Priorities

Brief explanation.

Stakeholder input is widely used to set priorities at all levels of the organization. This influences budgetary outlays for various programs and subsequently affects the program delivery. Stakeholders serve on virtually all faculty search committees and thus directly affect hiring decisions. The process of involving stakeholders in the hiring process works well, with stakeholders feeling a greater commitment to helping new hires be successful in their Extension assignments. Stakeholders who have a vested interest in the program and/or community are the most effective.

In addition, with the implementation of SOARS in 2007, each Extension program area is asked to develop an annual program plan of work that will include a description of how stakeholder input was gathered and used to determine the priority work areas and their associated program outcomes.

V. Planned Program Table of Content

S. No.	PROGRAM NAME
1	Climate Change
2	Food Safety
3	Global Food Security and Hunger
4	Reducing Childhood Obesity
5	Sustainable Energy

V(A). Planned Program (Summary)

Program # 1

1. Name of the Planned Program

Climate Change

2. Brief summary about Planned Program

There is no longer doubt that the earth's climate is changing. According to the National Academy of Sciences, projections of future climate change anticipate additional warming of 2.0 to 11.5 degrees F over the 21st century, on top of the 1.4 degrees F already observed over the past 100 years. Warming will be the greatest over land areas and at higher latitudes. Projected impacts include the following:

- Water availability will decrease in many areas that are already drought-prone and in areas where rivers are fed by glaciers or snowpack.
- A higher fraction of rain will fall in the form of heavy precipitation, increasing the risk of flooding and, in some regions, the spread of water-borne illness.
- People and ecosystems in coastal zones will be exposed to higher storm surges, intrusion of saltwater into freshwater aquifers, and other risks as sea levels rise.
- Coral reefs will experience widespread bleaching as a result of increasing temperatures, rising sea levels, and ocean acidification.

New and traditional audiences will need new research and outreach related to both adaptation and mitigation of climate change. Farmers and ranchers, forest owners, business owners, fishermen, and others will need to understand how to reduce their carbon imprints, as well as reduce reliance on energy intensive practices, chemical use, water use, etc. Changes in practices such as new crop varieties, insect and disease control strategies, seed zone changes and other management practices need further research and subsequent outreach to user groups. Clear linkages between Extension Services and research programs need to be established and fostered, particularly in the climate science arena. As climate models become more robust and downscalable, there will be even more interest in using them to predict outcomes and influence management practices on an ownership level. Additionally, homeowners and families need information on reducing their carbon and environmental imprints overall, and many are interested in making changes to a more sustainable lifestyle. Extension is uniquely positioned to use the university-based knowledge and local reach through county offices to make real differences in how people adapt to climate change.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
101	Appraisal of Soil Resources	5%			
102	Soil, Plant, Water, Nutrient Relationships	5%			
103	Management of Saline and Sodic Soils and Salinity	3%			
112	Watershed Protection and Management	5%			
121	Management of Range Resources	5%			
122	Management and Control of Forest and Range Fires	5%			
123	Management and Sustainability of Forest Resources	5%			
136	Conservation of Biological Diversity	5%			
201	Plant Genome, Genetics, and Genetic Mechanisms	5%			
212	Pathogens and Nematodes Affecting Plants	5%			
215	Biological Control of Pests Affecting Plants	5%			
302	Nutrient Utilization in Animals	4%			
303	Genetic Improvement of Animals	5%			
311	Animal Diseases	4%			
604	Marketing and Distribution Practices	4%			
605	Natural Resource and Environmental Economics	5%			
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	5%			
723	Hazards to Human Health and Safety	5%			
804	Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures	5%			
902	Administration of Projects and Programs	10%			
	Total	100%			

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

1. Situation and priorities

A changing climate is expected to have dramatic impacts on natural and managed ecosystems as well as human populations. At higher latitudes these effects are already evident on the landscape. We need to act now with needed research and development to (a) understand the impending climate changes and their effects, (b) predict the magnitude and extent of the changes, based on downscaled model results, (c) determine how best to respond through adaptation and mitigation measures at multiple scales, and (d) blend the needed biological, social, and physical sciences along with outreach efforts so that research results are practical, useful, and relevant. The USDA Climate Change Science Plan lists ten strategic approaches to dealing with this issue. Particularly relevant to us are the following:

- Ensure that research is relevant to the needs of the public, stakeholders, USDA program, and strategic decision-makers. USDA agencies will continue to maintain mechanisms for feedback from the public and other stakeholders.
 - Work with collaborators and research partners where appropriate to implement climate change activities. Leverage the work of other agencies and departments.
 - Emphasize educational partnerships that convey climate change information to farmers, resource managers, and professionals at the local, state, regional, tribal, national, and international levels. USDA research agencies will enhance communication for collaboration between researchers, research program managers, and the consumers of research products.

In Oregon, focus will be on understanding climate impacts on forest and agricultural production systems, and ways to adapt to and mitigate negative effects. We will also seek to understand the carbon storing capacities of our natural and managed ecosystems, and ways to enhance the storage capacity. Climate impacts are certain to affect our coastal ecosystems and the vitality of our coastal communities in dramatic ways. Research and Extension will seek to understand these environmental, social, and economic impacts and develop ways to cope positively. Homeowners and families can do much to modify their lifestyles to cope with energy use and reduce carbon footprints. Research and extension will assist willing communities, homeowners, and families to adapt to sustainable living concepts to improve local economic and environmental conditions.

2. Scope of the Program

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

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

1. Assumptions made for the Program

For any five year planned program certain assumptions are necessary. This is just a plan. In order for us to be successful in its implementation, we assume:

- Climate change will continue to be an issue that is supported by federal funding. It is no secret that the concept of climate change (is the climate changing, if so how much, and who is responsible, and how much can humans impact the change through carbon manipulation) is a controversial subject.
 - Climate change will continue to be a gradual effect, and no natural disasters or major events will occur to exacerbate the effects of this gradual process. Natural disaster examples include major storms or floods, volcanic eruptions, and earthquakes and subsequent tsunamis.
 - State support for Extension will continue as per 2011. State financial support has been decreasing in prior biennia.
 - End users will be receptive to new research results and both adaptation and mitigation strategies that

the research indicates will help the end users to cope with the effects of climate change.

2. Ultimate goal(s) of this Program

- End users, such as farmers and ranchers, forest owners and managers, policy makers and community leaders, and others will understand the potential impacts of a changing climate, will embrace the results of our research and development efforts, and will modify their practices and investments in order to minimize the impacts.
- Citizens who are willing and financially able will modify their living styles and adopt practices to reduce waste and energy use, lower their carbon footprints, and generally contribute to sustainable communities and environment.
- Coastal communities will understand the potential impacts of a changing climate on their natural coastal environment and the ocean-based economic engines that fuel their economies. In addition, community leaders and policy makers will adopt strategies that insure human health and well-being, stable and vibrant economies, and support infrastructure that is necessary to deal with potential impacts such as rising sea levels, more intense storms, and coastline erosion.
- Extension professionals will be better trained to respond to and assist various audiences with climate-related educational issues and needs.

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	10.0	0.0	0.0	0.0
2013	10.0	0.0	0.0	0.0
2014	10.0	0.0	0.0	0.0
2015	10.0	0.0	0.0	0.0
2016	10.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Our approach to climate change outreach will involve both traditional and non-traditional methods. We will integrate climate change content into our existing educational programs, and address climate-related impacts such as drought and adverse storm damage response. This "stealth" approach to climate change education is less likely to turn off potentially hostile audiences and has worked well in other states. We will also develop and deliver educational programs, based on current research, that shows mitigation strategies and adaptations that can be accomplished now. For example, our forest geneticists are now developing revised seed zone maps that account for changing climate. This can assist forest owners and managers who are making planting decisions today for forests that will grow for over 50 years,

and are likely to be under the effects of a different climate 50 years from now.

Other activities will include volunteer-based programs such as Climate Masters and Master Naturalists, workshops and seminars, consultations and facilitations, web-based instructional programs, web sites, stand alone and web-based videos, publications of all types, mass media, and social networking.

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

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations ● Other 1 (Webinars) ● Other 2 (Social Media) 	<ul style="list-style-type: none"> ● Newsletters ● TV Media Programs ● Web sites other than eXtension

3. Description of targeted audience

Audiences for the Oregon Extension Service are quite diverse. They include the agricultural sector, including farmers and ranchers, as well as small farms. This includes vineyards, orchards, row crops, animal livestock, nurseries, Christmas trees, and a host of others. Oregon is the second largest forested state in the nation. Timber production is a large industry and forest owners and managers constitute a large client group. Along the Coast the fishing and tourism industries represent the main economic engines, with the possibility of ocean energy coming on line in the near future. Policy makers such as county commissioners and judges, elected officials, and state and federal agency personnel represent another important client group. Finally, family and youth, communities, and individual homeowners and citizens are reached everyday through various educational programs.

V(G). Planned Program (Outputs)

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

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

V(H). State Defined Outputs

1. Output Measure

- Number of educational classes
 - Number of workshops
 - Number of demonstrations
 - Number of recurring newsletters published
 - Number of web sites maintained
- Clicking this box affirms you will continue to collect data on these items and report the data in the Annual Report of Accomplishments and Results.

V(I). State Defined Outcome

O. No	Outcome Name
1	Percentage of participants who increase their knowledge of management practices and understanding of climate variability and change.
2	Percentage of participants in educational programs who improve mitigation strategies for climate, such as reducing greenhouse gas emissions and increasing carbon sequestration in agricultural production and natural resource management systems.
3	Percentage of clients who employ climate adaptation strategies or incorporate climate-based management practices.

Outcome # 1

1. Outcome Target

Percentage of participants who increase their knowledge of management practices and understanding of climate variability and change.

2. Outcome Type : Change in Action Outcome Measure

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

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 103 - Management of Saline and Sodic Soils and Salinity
- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 122 - Management and Control of Forest and Range Fires
- 123 - Management and Sustainability of Forest Resources
- 136 - Conservation of Biological Diversity
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 212 - Pathogens and Nematodes Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 302 - Nutrient Utilization in Animals
- 303 - Genetic Improvement of Animals
- 311 - Animal Diseases
- 604 - Marketing and Distribution Practices
- 605 - Natural Resource and Environmental Economics
- 723 - Hazards to Human Health and Safety
- 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures
- 902 - Administration of Projects and Programs

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Percentage of participants in educational programs who improve mitigation strategies for climate, such as reducing greenhouse gas emissions and increasing carbon sequestration in agricultural production and natural resource management systems.

2. Outcome Type : Change in Action Outcome Measure

2012:65

2013:65

2014:65

2015:60

2016:60

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 103 - Management of Saline and Sodic Soils and Salinity
- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 122 - Management and Control of Forest and Range Fires
- 123 - Management and Sustainability of Forest Resources
- 136 - Conservation of Biological Diversity
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 212 - Pathogens and Nematodes Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 302 - Nutrient Utilization in Animals
- 303 - Genetic Improvement of Animals
- 311 - Animal Diseases
- 604 - Marketing and Distribution Practices
- 605 - Natural Resource and Environmental Economics
- 723 - Hazards to Human Health and Safety
- 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures
- 902 - Administration of Projects and Programs

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Percentage of clients who employ climate adaptation strategies or incorporate climate-based management practices.

2. Outcome Type : Change in Action Outcome Measure

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

3. Associated Knowledge Area(s)

- 101 - Appraisal of Soil Resources
- 102 - Soil, Plant, Water, Nutrient Relationships
- 103 - Management of Saline and Sodic Soils and Salinity
- 112 - Watershed Protection and Management
- 121 - Management of Range Resources
- 122 - Management and Control of Forest and Range Fires
- 123 - Management and Sustainability of Forest Resources
- 136 - Conservation of Biological Diversity
- 201 - Plant Genome, Genetics, and Genetic Mechanisms
- 212 - Pathogens and Nematodes Affecting Plants
- 215 - Biological Control of Pests Affecting Plants
- 302 - Nutrient Utilization in Animals
- 303 - Genetic Improvement of Animals
- 311 - Animal Diseases
- 604 - Marketing and Distribution Practices
- 605 - Natural Resource and Environmental Economics
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 723 - Hazards to Human Health and Safety
- 804 - Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures
- 902 - Administration of Projects and Programs

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

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

Description

All of the above factors could affect the ability of the OSU Extension Service to effectively implement this plan of work. We are not strangers to natural disasters here in the Pacific Northwest. Many of us remember 1980 when Mount St. Helens erupted. Tsunami warnings along Oregon's coast are not uncommon. Pacific coastal storms are notoriously fierce and becoming stronger, with enormous coast line erosion as a result. Over the past two biennia state support for the OSU Extension Service has decreased. In addition, the two most populous counties in Oregon no longer support Extension at the local level. Plan implementation is contingent on stable federal, state, and local funding, as well as supplemental funding from contracts and grants.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

A host of program evaluation procedures are used routinely by the OSU Extension Service. We have a full time Evaluation Specialist on staff to assist with this important part of the program delivery process. Extension faculty are expected to conduct program evaluations and report impacts in the annual reporting system (Stories, Outcomes and Accomplishments Reporting System, or SOARS). Some combination of the above listed evaluation methods are used each year by Extension faculty members. Quantitative data are compiled and are used in the faculty evaluation process. Many faculty also obtain approval through the Institutional Review Board (IRB) and publish the results of their evaluation studies.

V(A). Planned Program (Summary)

Program # 2

1. Name of the Planned Program

Food Safety

2. Brief summary about Planned Program

Increasingly, the American lifestyle emphasizes health maintenance and disease prevention. As understanding of the complex relationships between diet and health expands, demand for safe, highly nutritious foods and for functional foods and biopharmaceuticals will increase. Our existing strengths in biotechnology and genomics, agricultural production systems, food processing and food safety, environmental toxicology and agricultural marketing, trade, and economics position the OSU Extension Agriculture program to further enhance regional agricultural and food systems. Conventional, organic, and biotechnology-based approaches will provide an array of strategies for sustainable production of nutritious food supplies. These products will ensure a range of marketing niches for producers while providing the consumer with robust choices within a safe and secure food system. Expanded consumer education about the relationships of food, nutrition, and health will inform individual choices among an array of foods and food products.

In addition, individuals, families, and communities require education relating to numerous aspects of food safety, such as food handling and hygiene, prevention of food-borne diseases, and correct methods of food preservation. The OSU Extension Family and Community Health program has expertise and experience in developing and delivering effective educational programs to individuals and families.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
501	New and Improved Food Processing Technologies	12%			
502	New and Improved Food Products	11%			
701	Nutrient Composition of Food	12%			
703	Nutrition Education and Behavior	8%			
711	Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources	12%			
712	Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins	11%			
722	Zoonotic Diseases and Parasites Affecting Humans	8%			
723	Hazards to Human Health and Safety	8%			
901	Program and Project Design, and Statistics	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

Increasing, the American lifestyle emphasizes health maintenance and disease prevention. Understanding of the complex relationships between diet and health expands, demand for safe, highly nutritious foods will increase. The demand to develop more value-added food products, and to ensure safety of the fresh and processed food supply have increased dramatically, mainly driven by intense globalization pressures, increasing imports of agricultural products into the U.S., and highly publicized outbreaks of food borne diseases. The established food processing industry is a critical Northwest sector, which generates over \$6.1 billion annual sales and employs more than 23,000 workers in Oregon alone. Rapid changes in consumer demand for safe, high quality products, technology needs, and cost structures compel the regional food industry to become more globally competitive. The support needs of the food industry equally affect large and small producers, and the urban and rural communities in which they are located. Food processors are seeking ideas, inputs and support for adding value to products. This includes innovations in packaging, processing, enhancement of product quality and safety, and approaches to develop novel products that meet specific market needs. Effective Integrated Pest Management seeks to minimize impacts on human and environmental health while assuring effective pest limitation. Our existing strengths in biotechnology and genomics, agricultural production systems, food processing and food safety, environmental toxicology and agricultural marketing, trade, and economics position the OSU Extension Agriculture program to further develop regional agricultural and food systems. Conventional,

organic, and biotechnology-based approaches will provide an array of strategies for sustainable production of safe, nutritious food supplies and a secure food system. Expanded consumer education about the relationships of food, nutrition, and health will inform individual choices among an array of foods and food products. Educational programs that result in safe food handling and safe methods of food preservation and preparation will reduce the prevalence of food-borne illnesses.

2. Scope of the Program

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

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

1. Assumptions made for the Program

Faculty members will effectively collaborate with professional peers throughout OSU campuses and field offices, as well as university and governmental scientists in the state, region and the country and with peers internationally. They work with commodity commission and grower association leaders. They converse directly with growers, participants at various levels of the supply chain, and with consumers. They are members of successful regional and national competitive grant consortia. Through this array of contacts they have a keen awareness of local, state, regional, national and international outreach needs and opportunities in post-harvest handling and related food safety practices. How Oregon's resources are managed to assure food is available, affordable, safe, and produced in a manner that sustains the health of people and the environment depends, in part, on improved understanding of the potential for adverse impacts of practices employed in agriculture and related industries.

Interest among Oregonians in learning about food preservation is rapidly growing. Audiences across the state are increasingly interested in educational programs that focus on food preservation topics, especially using foods from gardens or local commercial sources. Evidence-based educational programs result in behavioral changes that increase the safe handling of food in the home, thereby decreasing food-borne illnesses. Extension faculty have the knowledge base, educational expertise, and programming skills to deliver up to date, scientifically accurate, and well received programs on a variety of food safety / food preservation topics.

2. Ultimate goal(s) of this Program

- Consumers will have greater choice of safe, quality foods and bio-based products, and the US food supply will remain secure.
- Human health risks from pest management practices will be reduced (includes risks to applicators, non-applicators, food consumers, and non-target areas). Education of Spanish speaking workers will reduce health risks and improve effective use of IPM practices in the agricultural workforce.
- Food preparers and servers will increase the use of best practices relating to food safety principles in a variety of public and private settings.
- Education of food preparers will reduce the prevalence of diseases related to improper food handling and preparation.

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	6.2	0.0	0.0	0.0
2013	6.2	0.0	0.0	0.0
2014	6.2	0.0	0.0	0.0
2015	6.2	0.0	0.0	0.0
2016	6.2	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Developing and applying new technology of food processing systems
- Developing products, curriculum, resources
- Developing services
- Presenting seminars and professional talks
- Conducting workshops and training sessions
- Publishing scientific findings
- Partnering
- Providing community education classes
- Maintaining a statewide food safety hotline
- Working with and supervising volunteers to deliver high quality information and programming about food safety topics

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

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> • Education Class • Workshop • Group Discussion • One-on-One Intervention • Demonstrations • Other 1 (Case studies) • Other 2 (Statewide food safety hotline) 	<ul style="list-style-type: none"> • Newsletters • TV Media Programs • Web sites other than eXtension • Other 1 (Radio Media Programs)

3. Description of targeted audience

There are diverse audiences for information this program generates. They can be classified into five general groups: (1) the general public and food consumers; (2) state and federal food regulatory agencies; (3) the research community including scientists working in government, industry, and academic sectors; (4) the commercial food processing industry and commodity groups; and (5) professional food handlers in organizations such as schools and other institutions, as well as restaurants.

V(G). Planned Program (Outputs)

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

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

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

V(H). State Defined Outputs

1. Output Measure

- Number of educational classes
- Number of workshops
- Number of demonstrations
- Number of recurring newsletter published
- Number of web sites maintained

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

V(I). State Defined Outcome

O. No	Outcome Name
1	Number of specialty food and mainstream food processors accessing and applying science based information to produce and distribute safe, nutritious, high-quality foods.
2	Number of individuals improving their practices of safe food handling, food preparation, and food preservation.

Outcome # 1

1. Outcome Target

Number of specialty food and mainstream food processors accessing and applying science based information to produce and distribute safe, nutritious, high-quality foods.

2. Outcome Type : Change in Action Outcome Measure

2012:395 2013:395 2014:395 2015:395 2016:395

3. Associated Knowledge Area(s)

- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 723 - Hazards to Human Health and Safety
- 901 - Program and Project Design, and Statistics
- 902 - Administration of Projects and Programs
- 903 - Communication, Education, and Information Delivery

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Number of individuals improving their practices of safe food handling, food preparation, and food preservation.

2. Outcome Type : Change in Action Outcome Measure

2012:250 2013:250 2014:250 2015:250 2016:250

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins
- 722 - Zoonotic Diseases and Parasites Affecting Humans
- 723 - Hazards to Human Health and Safety
- 901 - Program and Project Design, and Statistics
- 902 - Administration of Projects and Programs
- 903 - Communication, Education, and Information Delivery

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Description

This program focuses in part on disseminating understanding and knowledge of food product development, that is, food processing technologies (edible coatings, vacuum infusion and high pressure processing), microbial detection methods for research/food production, food chemistry, and sensory quality. Multiple external factors inform decisions regarding priorities Extension activities. Recent food recall incidents, media exposure, or current "hot topics" can drive the food research agenda. In addition, food safety regulations at the federal and state level have implications for producers who distribute farm direct. Agricultural commodity groups, state natural resource agencies, the major food processing industry, and consumer interest groups influence allocation of state and federal funds through the legislative process.

This program also focuses on increasing understanding about transfer, fate, and effects of environmental contaminants, especially those transmitted through the production of food. Our efforts look at food quality and safety, water quality, and sustainability of ecosystem structure and organization that provides society beneficial uses. Agricultural commodity groups, state natural resource agencies, Native American Tribes, and environmental interest groups influence allocation of state funds through the legislative process. Scientific peer review panels are especially important in directing federal support for Extension. Public opinion is also a powerful force in determining both state and federal resource commitments necessary to sustain this program. The program also focuses on educating individuals, families, and organizations about best practices related to food safety, resulting in positive behavior changes and, ultimately, reduced incidence of food-borne illnesses. Therefore our evaluation of these educational programs will include attention to a variety of significant outcomes, particularly changes that are being produced in participants' knowledge, attitudes, skills, and behaviors.

"Note on "Appropriations": These projections are based on an assumption that budget will remain level across the five years in the plan."

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Most evaluation will be retrospective or post- then pre-. Efforts will be evaluated based on the stated objectives, and the entire programmatic project will undergo periodic evaluation. The evaluation process will assess project planning, implementation and outcomes. Publications, survey to assess adoption, SOARS (Extension's Stories, Outcomes and Accomplishments Reporting System) and the Oregon Invests! database will be utilized in evaluation. Data collection will occur as appropriate in accordance with the expected outcomes.

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Global Food Security and Hunger

2. Brief summary about Planned Program

As the world's human population grows, land and water resources increasingly will be called upon to provide not only food and fiber in sustainable production systems, but also "ecosystem services" to maintain the health of the planet. Sustainable agricultural systems must be economically viable, utilize ecological principles that preserve environmental quality, enhance food safety and security, and promote healthy communities. Only a combination of approaches will ensure production of food, fiber, and fuels in a sustainable fashion, despite decreasing availability of water, labor, and land. Increasing market demands require growers to meet new sustainability standards in order to maintain access to markets, as well as creating new market opportunities for integrated farming and food systems that support rural and urban economic development. Outcomes of Extension activities may include support of adoption of new plant varieties, sustainable production systems, a wide range of plants developed for use in the delivery of plant-based ecosystem solutions to environmental problems, sustainable use of aquatic and marine ecosystems, new engineering schemes, new economic methods of valuation, new agricultural policies, 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 : Yes

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	8%			
111	Conservation and Efficient Use of Water	8%			
121	Management of Range Resources	8%			
205	Plant Management Systems	8%			
211	Insects, Mites, and Other Arthropods Affecting Plants	7%			
212	Pathogens and Nematodes Affecting Plants	8%			
213	Weeds Affecting Plants	7%			
214	Vertebrates, Mollusks, and Other Pests Affecting Plants	7%			
215	Biological Control of Pests Affecting Plants	8%			
216	Integrated Pest Management Systems	8%			
307	Animal Management Systems	8%			
311	Animal Diseases	6%			
901	Program and Project Design, and Statistics	3%			
902	Administration of Projects and Programs	3%			
903	Communication, Education, and Information Delivery	3%			
	Total	100%			

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

1. Situation and priorities

Crop Production Systems: Berry, Viticulture, Tree Fruit & Nut, Vegetable, Field Crops, Nursery, IPM, Organic Production Systems. The climate and soils in Oregon allow for production of a diverse range of irrigated and non-irrigated crops with high yield and exceptional quality. Growers must consider that many markets for Oregon's crops have become global and maintaining a competitive advantage is critical. Developing cultivars and production methods that maximize health properties of foods or other product differentiation schemes may strengthen market niches. Production efficiency or profitability of Oregon crops is expected to improve as new cropping systems, cultivars, and practices are implemented. Technologies will be adapted or developed to reduce production costs and improve competitiveness in global markets. Integrated pest management programs will continue to be developed and disseminated as best management practices for diseases, pests, and weeds of importance are researched. In organic and conventional systems, environmental quality will be improved with enhanced soil health, improved

irrigation and nutrient management, and development of research-based organic production systems. Social change will enhance quality of life in rural areas by improving economic stability of family farms with new practices and cropping systems.

Small Farms: Over 60% of all farms in Oregon are less than 50 acres in size and constitute an important economic contribution to the economy. Many farms of this scale are pioneering new crops, exploring niche markets and using direct marketing methods. Many thousands of non-commercial small acreage landowners are not inventoried in the census of agriculture and need assistance in managing the natural resources on their property, especially soil and water quality. Challenges to small farmers include pest management, nutrient management, preserving soil and water quality, sustaining and expanding marketing opportunities, limited processing facilities, public policy and regulation, sustaining rural communities and integrating with urban communities.

Gardens, Turf, Green Industry: Turf, landscape and gardening contribute to Oregon's livability and lush environment. Oregonians live and interact within diverse ecosystems across the state, yet most people manage landscapes in very traditional ways. Only recently have people begun to see urban and community horticulture as city landscapes with streams, homes, business centers, parks, trees, roads, and people interacting within this complex environment. The green industry in Oregon comprises retail nurseries, golf courses, parks managers, professional landscape contractors, and hundreds of supply stores. Complementing this industry are 4,000 Master Gardener volunteers, hundreds of garden clubs, and other gardeners that contribute Oregon's portion to the \$26 billion industry nationally.

Livestock, Rangeland and Watershed Management, Dairy: Cattle and calves are the second largest agricultural commodity in Oregon, with a farm gate value \$429 million. Ranches and feeding operations are the backbone of the economy in much of Eastern Oregon. Dairy is in the top 5 largest commodities in Oregon with a farm gate value of \$272 million. Dairy producers provide an important component of the economic base of several rural communities. Public rangelands provide an important contribution to the forage base for grazing in beef and sheep production. Challenges include being competitive in the world markets, maintaining profitability, assuring a safe high quality product, and management of waste products while preserving environmental quality.

2. Scope of the Program

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

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

1. Assumptions made for the Program

Faculty members will effectively collaborate with professional peers throughout OSU campuses and field offices, as well as university and governmental scientists in the state, region and the country and with peers internationally. They work with commodity commission and grower association leaders. They converse directly with growers, participants at various levels of the supply chain, and with consumers. They are members of successful regional and national competitive grant consortia. Through this array of contacts they have a keen awareness of local, state, regional, national and international outreach needs and opportunities in crop production practices, pest management, and alternative crops

2. Ultimate goal(s) of this Program

Crop Production Systems:

- Growers access and apply knowledge about new cultural practices, innovative technologies, pest control, and organic systems to remain competitive in global markets;
- Communication networks will be developed to enable timely communication and utilization of technologies such as those used in pest control that are weather dependent and change rapidly.
- Reduced costs, increased benefits, and production efficiencies from use of water and nutrient budgets, groundwater contamination and human health impacts resulting from improper water management activities will be reduced, improved pest management with environmentally safer pest control tools will be available; environmental quality also will improve with the use of cover crops; and reduced tillage.

Small Farms:

- Improved environmental quality from increased use of IPM and other biologically-based agriculture production systems by small farmers, conservation of biodiversity, and reduced nutrient and soil runoff from small acreage livestock operations are areas of identified need.
- Expanding local food economies based on direct marketing promote economic sustainability.
- Enhanced community life based on social networking associated with local food systems; and social change from mitigating aspects of the urban/rural divide.

Gardens, Turf, Green Industry:

- Environmental change will occur from enhanced water and wildlife conservation; reduced runoff, fire incidence and pests; improved nutrient use and recycling; and other ecosystem services.
- Consumer awareness of the abundance of locally grown ornamental plant materials and native species for use in landscapes will increase, as will awareness of invasive species; accuracy of land-use change predictions will increase and adverse impacts on wildlife species are reduced; consumers will have greater choice of high quality, healthy foods;
- Social change will occur through new perceptions of green technologies and social value of horticultural landscapes to enhance human health, wellness and social networks, and ecosystem services.

Livestock, Rangeland and Watershed Management, Dairy:

- Improved profitability resulting from improved management practices such as: early weaning; improved herd or flock health, selenium fertilization, reduced feed costs and more efficient feed utilization, and other production efficiencies. Value of beef carcasses will improve due to application of Beef Quality Assurance practices. Post-mating nutrition will produce increased weight gain and productivity consistent with and greater than accepted industry standards.
- Watersheds are managed for soil stability, clean water production, and grazable grasslands for a quality environment and a sustainable resource production base. Feed rations improve profitability and decrease nutrient loading on land and in surface waters. Science-based waste management systems decrease regulatory compliance issues and some waste handling costs while protecting soil and water quality. Manure use is optimized for crop and pasture fertilization, improved water quality and attainment of regulatory standards in confined animal feeding operations.

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	63.0	0.0	0.0	0.0
2013	63.0	0.0	0.0	0.0
2014	63.0	0.0	0.0	0.0
2015	63.0	0.0	0.0	0.0
2016	63.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

Organic, value-added, and technological approaches complement conventional agriculture. By utilizing contemporary tools in agronomy, animal or soil science, plant nutrition, pest management, and pesticide safety, this program will disseminate improved practices and enhance the potential use of alternative crops, reduce soil erosion, reduce the economic, social, and environmental costs of crop pests, and maintain or increase soil health. Animal systems will reduce wastes and discharges while improving productivity and management techniques.

Extension agriculture also will look at key areas of various social changes in the marketplace impacting producers, retailers and consumers. We aim to disseminate information on (1) how technology impacts the market place, with a special emphasis on rural markets in Oregon; (2) improving the well-being of consumers; and (3) development of economic linkages at every level of the supply chain for community development.

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

Extension

Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations ● Other 1 (Case Studies) 	<ul style="list-style-type: none"> ● Newsletters ● TV Media Programs ● Web sites other than eXtension

3. Description of targeted audience

- Professional peers and scientific communities, Extension faculty, veterinarians, vaccine producers;
- State commodity commissions, grower groups, packers, crop consultants;

- Wholesale and retail suppliers to the agricultural sector, seed producers and distributors
- Natural resource industry clientele - growers, farm workers, field representatives, grower co-ops and partnerships;
 - Processors and handlers, export - import sectors;
 - County, state and federal agencies - USDA-ARS, Oregon Department of Agriculture, Natural Resources, others;
 - Conservation Service, Bureau of Indian Affairs, Confederated Tribes of the Umatilla Indian Reservation, US Forest Service; and Bureau of Land Management;
 - Policy makers, public health officials, and community leaders;
 - Teachers and students, Extension personnel and other educators;
 - Genetic companies;
 - Nutritional consultants;
 - Nonprofit conservation groups and ecologists;
 - Food system participants, the general public and consumers.

V(G). Planned Program (Outputs)

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

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

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

V(H). State Defined Outputs

1. Output Measure

- Number of Educational Classes Delivered
- Number of Workshops Delivered
- Number of One-on-one Interventions
- Number of Demonstrations
- Number of Web Sites Maintained

- 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	Crop Production Systems -- Berry, Viticulture, Tree Fruit & Nut, Vegetable, Field Crops, Nursery, IPM, Organic Production Systems: number of farmers, field reps, and others accessing and applying information or knowledge resources originating from educational programs, publications, websites, or other events to improve production efficiencies; pest management; pesticide safety, including better, linguistically appropriate information about pesticide safety; organic and conventional production practices; post-harvest quality; improved cultivars; and to remain competitive in global and local markets.
2	Small Farms: number of small-scale farmers accessing and applying information or knowledge resources originating from educational programs, publications, websites, or other events about appropriate management of nutrients and soil runoff; utilization of IPM, biological, or conventional production practices, or selection of new crops; implementation of profitable and diverse scale-appropriate production and value-added processing systems; farmers accessing markets.
3	Gardens, Turf, Landscape: number of farmers, field reps, and others accessing and applying information or knowledge resources originating from educational programs, publications, websites, or other events to improve production efficiencies; pest management; pesticide safety, including better, linguistically appropriate information about pesticide safety; organic and conventional production practices; post-harvest quality; improved cultivars; and to remain competitive in global and local markets.
4	Livestock, Rangeland and Watershed Management, Dairy: number of farmers, ranchers and land managers, accessing or applying prescribed feeding methods; practices that increase birth weights and survival of offspring; specific management techniques such as early weaning, improved herd or flock health; improved production efficiency and beef quality parameters; practices with the intent to enhance water and soil quality or practices that favor appropriate plant communities and do not allow for accelerated erosion.
5	Number of public policy makers and other interested stakeholders will be better informed about the science basis of policy options when crafting policy related to land use, production agriculture, alternative marketing channels, public and private recreational lands, rangeland and other public lands, urbanized watersheds, and other agricultural policy issues.

Outcome # 1

1. Outcome Target

Crop Production Systems -- Berry, Viticulture, Tree Fruit & Nut, Vegetable, Field Crops, Nursery, IPM, Organic Production Systems: number of farmers, field reps, and others accessing and applying information or knowledge resources originating from educational programs, publications, websites, or other events to improve production efficiencies; pest management; pesticide safety, including better, linguistically appropriate information about pesticide safety; organic and conventional production practices; post-harvest quality; improved cultivars; and to remain competitive in global and local markets.

2. Outcome Type : Change in Action Outcome Measure

2012:2518	2013:2518	2014:2518	2015:2518	2016:2518
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3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 205 - Plant Management Systems
- 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
- 901 - Program and Project Design, and Statistics
- 902 - Administration of Projects and Programs
- 903 - Communication, Education, and Information Delivery

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Small Farms: number of small-scale farmers accessing and applying information or knowledge resources originating from educational programs, publications, websites, or other events about appropriate management of nutrients and soil runoff; utilization of IPM, biological, or conventional production practices, or selection of new crops; implementation of profitable and diverse scale-appropriate production and value-added processing systems; farmers accessing markets.

2. Outcome Type : Change in Action Outcome Measure

2012:538 2013:538 2014:538 2015:538 2016:538

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 205 - Plant Management Systems
- 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
- 307 - Animal Management Systems
- 311 - Animal Diseases
- 901 - Program and Project Design, and Statistics
- 902 - Administration of Projects and Programs
- 903 - Communication, Education, and Information Delivery

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Gardens, Turf, Landscape: number of farmers, field reps, and others accessing and applying information or knowledge resources originating from educational programs, publications, websites, or other events to improve production efficiencies; pest management; pesticide safety, including better, linguistically appropriate information about pesticide safety; organic and conventional production practices; post-harvest quality; improved cultivars; and to remain competitive in global and local markets.

2. Outcome Type : Change in Action Outcome Measure

2012:7530 2013:7530 2014:7530 2015:7530 2016:7530

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 205 - Plant Management Systems

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

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 4

1. Outcome Target

Livestock, Rangeland and Watershed Management, Dairy: number of farmers, ranchers and land managers, accessing or applying prescribed feeding methods; practices that increase birth weights and survival of offspring; specific management techniques such as early weaning, improved herd or flock health; improved production efficiency and beef quality parameters; practices with the intent to enhance water and soil quality or practices that favor appropriate plant communities and do not allow for accelerated erosion.

2. Outcome Type : Change in Action Outcome Measure

2012:1167

2013:1167

2014:1167

2015:1167

2016:1167

3. Associated Knowledge Area(s)

- 102 - Soil, Plant, Water, Nutrient Relationships
- 111 - Conservation and Efficient Use of Water
- 121 - Management of Range Resources
- 205 - Plant Management Systems
- 213 - Weeds Affecting Plants
- 307 - Animal Management Systems
- 311 - Animal Diseases
- 901 - Program and Project Design, and Statistics
- 902 - Administration of Projects and Programs
- 903 - Communication, Education, and Information Delivery

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 5

1. Outcome Target

Number of public policy makers and other interested stakeholders will be better informed about the science basis of policy options when crafting policy related to land use, production agriculture, alternative marketing channels, public and private recreational lands, rangeland and other public lands, urbanized watersheds, and other agricultural policy issues.

2. Outcome Type : Change in Knowledge Outcome Measure

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

3. Associated Knowledge Area(s)

- 111 - Conservation and Efficient Use of Water
- 121 - Management of Range Resources
- 205 - Plant Management Systems
- 215 - Biological Control of Pests Affecting Plants
- 216 - Integrated Pest Management Systems
- 307 - Animal Management Systems
- 311 - Animal Diseases
- 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
- Competing Programmatic Challenges

Description

Note on "Appropriations": These projections are based on an assumption that budget will remain level across the five years in the plan.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Appropriate surveys will be conducted; industry trends and data on production practices in the industry will be monitored; input and equipment sales will be an indicator of adoption of some practices; case study measurements of soil and water quality will provide an indication of progress; producer surveys will also provide an indication of adoption.

V(A). Planned Program (Summary)

Program # 4

1. Name of the Planned Program

Reducing Childhood Obesity

2. Brief summary about Planned Program

The program will include a wide variety of educational strategies and activities with focus on:

- promoting healthy eating by children and their families
- increasing children's levels of physical activity

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior	30%			
704	Nutrition and Hunger in the Population	10%			
724	Healthy Lifestyle	10%			
802	Human Development and Family Well-Being	5%			
806	Youth Development	20%			
901	Program and Project Design, and Statistics	10%			
902	Administration of Projects and Programs	5%			
903	Communication, Education, and Information Delivery	10%			
	Total	100%			

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

1. Situation and priorities

Childhood obesity is a national epidemic and has increased significantly in recent decades, and the problem is significant in Oregon as well. Research has demonstrated that childhood obesity is linked to numerous factors including, e.g., low availability and high cost of healthy foods, low levels of physical

activity in children, extensive advertising of high-calorie, high-fat fast food chains, and lack of awareness on the part of families about multiple aspects of a healthy diet. The problem is more severe in rural areas where options, and frequently family resources, are limited. Extension is in a good position to provide educational programs to address behavioral factors related to childhood obesity through innovative, effective programs at the individual, family and community levels.

2. Scope of the Program

- In-State Extension

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

1. Assumptions made for the Program

- Obesity, especially childhood obesity, is a health and social issue that is responsive to improvement through Oregonians' behavioral and lifestyle changes.
- Delivering educational programs for children and parents, in multiple forms depending on audience characteristics, program goals, etc., can be an effective strategy for combating childhood obesity.
- Significant and durable change is best supported by "systems-based" or "contextual approaches" to addressing childhood obesity. That is, programs which target individual behavior change must be augmented by programs that change environments in which young people live (families, schools, communities, and policies).

2. Ultimate goal(s) of this Program

- To increase patterns and frequency of healthy eating among Extension's audiences in Oregon
- To increase levels of children's physical activity
- To increase families' abilities to maintain healthy weight through behavioral and lifestyle changes
- To reduce levels of obesity among children in Oregon
- Empower community members, and especially youth, to become advocates for healthy eating and physical activity.

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	4.0	0.0	0.0	0.0
2013	4.0	0.0	0.0	0.0
2014	4.0	0.0	0.0	0.0
2015	4.0	0.0	0.0	0.0

Year	Extension		Research	
	1862	1890	1862	1890
2016	4.0	0.0	0.0	0.0

V(F). Planned Program (Activity)

1. Activity for the Program

- Evidence-based educational programs and activities that are directed at parents, children, professionals, partner agencies, and other audiences. These efforts will address the stated goals (see section V-D-2) in creative, innovative, and effective ways.
 - Research on new strategies through which Extension can address issues affecting childhood obesity.
 - Develop or select new 4-H foods curricula that focus on the youth learning to prepare healthy, local foods.
 - Develop a curriculum designed to help older youth become local advocates for healthy eating and physical activity in their communities. The curriculum will help young people learn how to conduct community assessments and lead community change efforts that focus on education, system building, and policy development.

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 • Demonstrations 	<ul style="list-style-type: none"> • Newsletters • Web sites other than eXtension

3. Description of targeted audience

- Children, youth, and families across Oregon
- Youth professionals
- Agency personnel who work with children 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

- Educational Events and Workshops to be Delivered
 - Newsletters to be Published
 - Web Sites to be Developed/Maintained
- 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	Children practice healthy eating as defined by the current U.S. Dietary Guidelines for Americans. (Percentage of target audience indicating positive change in measured outcome.)
2	Children engage in healthy levels of physical activity as defined by national physical activity guidelines. (Percent of target audience indicating positive change in measured outcome.)
3	Increases in positive levels of Knowledge, Attitude, Skill and Aspiration (KASA) outcomes (as per Bennett & Rockwell, 1995) related to goals of reducing obesity. (Percent of target audience indicating positive change in measured outcomes.)

Outcome # 1

1. Outcome Target

Children practice healthy eating as defined by the current U.S. Dietary Guidelines for Americans. (Percentage of target audience indicating positive change in measured outcome.)

2. Outcome Type : Change in Action Outcome Measure

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

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population
- 724 - Healthy Lifestyle
- 802 - Human Development and Family Well-Being
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Children engage in healthy levels of physical activity as defined by national physical activity guidelines. (Percent of target audience indicating positive change in measured outcome.)

2. Outcome Type : Change in Action Outcome Measure

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

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population
- 724 - Healthy Lifestyle
- 802 - Human Development and Family Well-Being
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Increases in positive levels of Knowledge, Attitude, Skill and Aspiration (KASA) outcomes (as per Bennett & Rockwell, 1995) related to goals of reducing obesity. (Percent of target audience indicating positive change in measured outcomes.)

2. Outcome Type : Change in Knowledge Outcome Measure

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

3. Associated Knowledge Area(s)

- 703 - Nutrition Education and Behavior
- 704 - Nutrition and Hunger in the Population
- 724 - Healthy Lifestyle
- 802 - Human Development and Family Well-Being
- 806 - Youth Development

4. Associated Institute Type(s)

- 1862 Extension

V(J). Planned Program (External Factors)

1. External Factors which may affect Outcomes

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

Description

Childhood obesity is a multi-component, complex issue, and all of the above indicated factors can potentially affect its prevalence in Oregon.

Note on "Appropriations": These projections are based on an assumption that budget will remain level across the five years in the plan.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Annual performance monitoring data will be collected from participating counties to develop aggregate measures of program participants who have gained knowledge related to diet or physical activity.

V(A). Planned Program (Summary)

Program # 5

1. Name of the Planned Program

Sustainable Energy

2. Brief summary about Planned Program

Oregon State University Extension recognizes Oregon's, and the nation's, needs for energy independence through biofuels and other alternative energy sources. We plan to continue to build program expertise in this area over the next five years. Currently, OSUE is involved in research and Extension activities related to the production of biofuels using agricultural crops, animal and forest waste, as well as wind and wave energy. We will continue to pursue economically and environmentally sustainable sources of energy and engage stakeholders on the variety of issues associated with competing uses of the land and water resources.

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

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

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

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

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
125	Agroforestry	10%			
403	Waste Disposal, Recycling, and Reuse	40%			
601	Economics of Agricultural Production and Farm Management	20%			
608	Community Resource Planning and Development	20%			
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

As worldwide stocks of petroleum decline, there is increased interest in alternative sources of energy. Ideally, such sources will be more economically and environmentally sustainable than fossil fuels. Because of its unique wealth of natural resources, Oregon has many opportunities for alternative energy production including bio-energy crops, utilization of forest slash, wind, solar, and wave energy.

2. Scope of the Program

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

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

1. Assumptions made for the Program

Public interest in clean, sustainable energy will continue as we are faced with vital issues such as climate change, ecosystem health, and other pressures regarding fossil fuels.

Funds will be available from Federal and State sources to establish and maintain research and Extension programs on sustainable energy.

2. Ultimate goal(s) of this Program

OSU Extension will contribute to the nation's energy independence by developing crops used for biofuels and producing value-added, bio-based forest products. We will also engage in outreach activities related to wind, solar, and wave energy.

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

Year	Extension		Research	
	1862	1890	1862	1890
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

- Lead short course and training seminars for industry personnel and growers;
- Conduct basic and applied research in alternative fuel sources, energy saving techniques and recycling of green waste products;
- Engage with community and environmental organizations;
- Contribute to trade and peer reviewed journal publications.

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

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

3. Description of targeted audience

- Forest owners and managers;
- Agricultural managers;
- Community members;
- Environmental organizations;
- Livestock growers and managers;
- Energy (and bio-energy) industry;
- Research community at large

V(G). Planned Program (Outputs)

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

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

V(H). State Defined Outputs

1. Output Measure

- Number of Educational Classes to be Conducted
 - Number of Workshops to be Conducted
 - Number of Group Discussions to be Conducted
 - Number of Demonstrations to be Conducted
 - Number of Newsletters to be Published
 - Number of Web Sites to be Developed and Maintained
- 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	Agricultural producers increase their knowledge regarding the use of agricultural crops for energy production. (Percent increase of attendees to workshops, field days and demonstrations.)
2	Forest owners and managers increase their knowledge regarding the use of forest biomass as an energy source. (Percentage increase in knowledge of attendees to workshops, field days, and demonstrations.)
3	Coastal stakeholders increase their knowledge of wave energy. (Percentage increase in knowledge of attendees to workshops, field days, and demonstrations.)

Outcome # 1

1. Outcome Target

Agricultural producers increase their knowledge regarding the use of agricultural crops for energy production. (Percent increase of attendees to workshops, field days and demonstrations.)

2. Outcome Type : Change in Knowledge Outcome Measure

2012:40	2013:40	2014:40	2015:40	2016:40
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3. Associated Knowledge Area(s)

- 403 - Waste Disposal, Recycling, and Reuse
- 601 - Economics of Agricultural Production and Farm Management
- 608 - Community Resource Planning and Development
- 902 - Administration of Projects and Programs
- 903 - Communication, Education, and Information Delivery

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 2

1. Outcome Target

Forest owners and managers increase their knowledge regarding the use of forest biomass as an energy source. (Percentage increase in knowledge of attendees to workshops, field days, and demonstrations.)

2. Outcome Type : Change in Knowledge Outcome Measure

2012:40	2013:40	2014:40	2015:40	2016:40
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3. Associated Knowledge Area(s)

- 125 - Agroforestry
- 403 - Waste Disposal, Recycling, and Reuse
- 608 - Community Resource Planning and Development
- 902 - Administration of Projects and Programs
- 903 - Communication, Education, and Information Delivery

4. Associated Institute Type(s)

- 1862 Extension

Outcome # 3

1. Outcome Target

Coastal stakeholders increase their knowledge of wave energy. (Percentage increase in knowledge of attendees to workshops, field days, and demonstrations.)

2. Outcome Type : Change in Action Outcome Measure

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

3. Associated Knowledge Area(s)

- 608 - Community Resource Planning and Development
- 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

Description

Implementation of this plan is subject to both funding and competing topics. While we expect to continue, and perhaps broaden, our work in alternative energy, OSU Extension will make adjustments in programmatic themes and efforts on an ongoing basis.

V(K). Planned Program - Planned Evaluation Studies

Description of Planned Evaluation Studies

Oregon State University Extension uses a variety of evaluation methods to track changes in knowledge, attitudes, and behavior. We have a full time Evaluation Specialist on staff to assist with this important part of the program delivery process. Extension faculty conduct program evaluations and report impacts in the annual reporting system (Stories, Outcomes and Accomplishments Reporting System or SOARS). Quantitative data are compiled and are used in the faculty evaluation

process. Many faculty also obtain approval through the Institutional Review Board (IRB) and publish the results of their evaluation studies.