# 2007 Colorado State University Combined Research and Extension Plan of Work

**Brief Summary about Plan of Work**

The Agricultural Experiment Station and Cooperative Extension at Colorado State University are committed to excellence in basic and applied research and outreach programs in the areas of agricultural, ornamental, and equine industries on topics of inputs, production, processing, merchandizing, management, finance, policy, food quality, landscape design, environmental impacts, and community development, using plant, animal, soil, ecological, and economic sciences. Animal agriculture is a major economic sector in the United States and the leading agricultural activity in Colorado. In 2003, live meat animal sales in Colorado were valued at $3.252 billion and the value of dairy production was $264 million. Livestock and livestock products accounted for 60% of crop and livestock sales in Colorado. Remaining competitive requires that the industry produce with the most technically sophisticated systems available while considering environmental and animal welfare dimensions to maintain confidence of the consuming public. Ruminant agriculture on range is the only significant agricultural enterprise which is ubiquitous in Colorado. In addition to novel and economic production practices, today's livestock producers must be knowledgeable of alternative supply chains to select a lucrative market, be aware of animal identification and trace-back requirements, understand the effects of emerging animal public health conditions, and understand the international and domestic trade environment and trends and how to respond with risk management strategies. Colorado State has many resources devoted to this broad subject, and it is a fertile field to foster multi-department, multi-college, and multi-county interactions.
Colorado State University is in a strong position to assist with the economic development of Colorado's livestock and equine industry, to enhance environmental quality, and to enhance the public health of citizens with improved livestock environmental solutions by educating livestock and equine industry professionals and small acreage owners in best management practices for nutrient management and odor and dust control; researching technical and economic issues related to improved animal production practices; and being actively involved with livestock and equine industry personnel, governmental agencies, and small acreage owners, to assure that the latest knowledge is incorporated in management and regulatory decisions.
Fundamental plant biology linking basic science with applied science is important to bring the results of basic plant science toward a usable form for applied agricultural sciences. Molecular biology and genomics are opening many new pathways for crop plant improvement and pest management, which will enhance the economic development of agricultural regions, enhance human health through more nutritious and safer food products, and find fundamental solutions to societal issues through renewable and sustainable crop production and pest management. Successful applied crop science, environmental science, and pest management do not occur in the absence of scientists actively involved in fundamental plant and pest sciences.
Colorado State University is in a strong position to assist with the economic development of Colorado's agricultural industry and to enhance the public health and well-being of citizens with research in fundamental genetic potentials of crop plants, management of plant pests, and preparation of industry, government, and academic scientists.
The miracles of molecular biological science have presented new opportunities to extend the selection and improvement of Colorado crops to incorporate improved human nutritional characteristic. The quantity and quality of the foods we eat have a dramatic impact on the current epidemic of metabolic diseases, e.g., cardiovascular disease, Type 2 diabetes, cancer, and obesity. Metabolites (like lipids and anti-oxidants) present in food and in the human body are critical to understand the development and prevention of metabolic disease. Colorado State has invested in building the capacity to be a leader in discovery research in metabolomics by establishing an interdisciplinary research consortium to determine relationships between metabolites and disease, and to identify metabolites in animal and crop foods to help prevent disease and improve health.
Colorado State University is in a strong position to assist with the economic development of Colorado's agricultural industry and to enhance the public health of citizens with research to improve crops which resist environmental and biological pests, increase price and lower cost of production, and incorporate higher human nutritional values of food, and by educating agricultural industry, governmental, and academic professionals in the principles of crop selection and improvement.

The state of Colorado can be viewed as an ecosystem with its basic parts consisting of soil, air, water, plant life, animal life, and human inhabitants. Many connections exist among the system components as each affects the other and each is affected by the other, e.g., the dependence of humans on soil, water, plants and animals for food and the effects of humans on land use and water availability and quality through actions and policy. The Colorado ecosystem is shared by agricultural producers, a rapidly growing human population, and wildlife. As competition grows for finite water, land, and air resources, and as agricultural and natural resource policies and international markets change, opportunities to maximize the economic value of agriculture in Colorado will change continuously. The complex relationships of ecosystem variables must be well understood to predict these opportunities. Twentieth century agriculture focused on mono-cultural production of commodity foods, however, 21st century agriculture will focus on a broader array of food products of higher value, differentiated in the marketplace and produced with much higher cost land and water resources in more crowded environments.
Colorado State University is in a strong position to assist with the economic development of Colorado's agricultural industries within the context of increasing population, higher competition for land and water, and changing policy environment by educating agricultural and resource industry professionals, researching technical and economic issues related to improved resource

utilization, and enhancing international competitiveness by being actively involved with agricultural industries and governmental agencies to assure that the latest knowledge is incorporated in management and regulatory decisions which are important to sustain the agricultural industry with rapidly evolving competition for resources.

Colorado is an urban and urbanizing state in which demographic evolution is changing the scope of “agriculture.” The landscape (green) industry of Colorado, and the nation, is large and growing and comprises a significant part of Colorado agriculture (the green industries have been recognized as “agriculture” by the Colorado General Assembly). The industry includes production, wholesale, and retail sales for floriculture, nursery, and tree crops, garden supplies, irrigation equipment, outdoor equipment, and development and care services for landscapes, such as golf courses, landscape design and construction, and landscape maintenance for homes, businesses, and public gardens and cemeteries. Colorado expenditures on garden-related products, landscape and lawn service, and other related green industries (irrigation, botanical gardens, and outdoor equipment) have averaged 10 percent annual growth since 1993, resulting in $1.67 billion in direct sales, in 2002. (This generates an economic impact of $2.1 to $5.0 billion depending on the economic multiplier used.) The value of the Colorado golf industry alone is $1.2 billion. The landscape-related industries of Colorado employ nearly 34,000 positions (6 percent average annual growth) with a payroll of $825 million annually (18 percent average annual growth). Thirty percent of industry revenues are generated from out of state (domestic and international) sales. Appropriate design and management of the landscape, especially in the environmentally sensitive regions that typify subdivisions and development of ranch lands, are essential for the quality of life in Colorado and for economic development related to tourism, industry location, retention of home valuation, and the green industry itself. Community landscaping strongly influences the physical/biological environment and mitigates many aspects of urban development by moderating climate, conserving energy, using carbon dioxide, improving air quality, controlling rainfall runoff and flooding, lowering noise levels, preserving green spaces, harboring wildlife, and enhancing the attractiveness of cities. Colorado State University is in a strong position to assist with the economic development of Colorado’s green industry and to enhance the well-being of tourists and citizens by educating green industry professionals, researching commercial and residential issues related to ornamental plantings and landscape restoration, and providing continuing education to industry employees and citizens on best practices for plant selection, plant production and maintenance, water conservation and irrigation, pest control, and landscape design.

Production agriculture has changed over the years. Price and income supports are no longer the centerpiece of U. S. farm policy and with the new round of international trade negotiations, these supports likely will be of less value in the future. Agricultural producers now operate in a market-oriented, individual-responsibility environment. Producers, individually or in groups, are finding greater profitability in differentiated, consumer-oriented products requiring knowledge of supply and marketing chains, product differentiation, consumer product marketing, corporate accounting, and new risk and financial management tools. The newest themes for farmers, local commodity handlers, processors, and rural businesses are “total resource management” and “rural entrepreneurship.” Also, the Census of Agriculture reports that there are decreasing numbers of mid- and large-sized farms and a significant increase in the number of small farms; the latter category of individuals frequently does not contain much agricultural business knowledge.

Colorado State University is in a strong position to assist with the economic development of Colorado’s agricultural and rural industries and to enhance the viability of agricultural and rural business by educating professionals for the agricultural industries with knowledge of modern business practices, researching technical and economic issues related to differentiated agricultural products in the ever-changing domestic and international market place, and by being actively involved with agricultural industry personnel and governmental agencies to assure that land managers and communities can evaluate a broad range of opportunities to enhance viability.

Colorado communities are changing rapidly as a result of external influences, like loss of agricultural water, influx of retirement populations, development and demise of mineral extraction industries, changes in military deployments, and changes in cultural composition of residents. Communities struggle to develop and maintain resources: human, financial, physical, social, environmental, and political. They also are challenged to provide the organizational capacity to assess, plan, and implement activities to address resource development and management. These issues especially are acute in smaller rural communities. Colorado’s communities are relatively unique in terms of sparse populations, a high natural amenity and public lands base, a transitory population, and relatively low public service provision. People in rural areas tend to be older, poorer, more likely to be uninsured, and less educated than their urban counterparts. Communities require knowledge to evaluate their resource base, their economic and social service alternatives, and their futures.

Colorado State University will enhance outreach to Colorado’s youth through 4-H and Youth Development programs in county 4-H clubs, schools, state-wide programs, and county and state fairs. This family-based program emphasizes personal growth of young people through experiential learning with well-designed curricula and projects. Development of volunteers to provide much of the leadership to this organization and private fund-raising are especially important. 4-H is Cooperative Extension’s (CE) youth development program. Positive youth development addresses broader developmental needs of youth and focuses on the development of assets, in contrast to deficit-based models which focus solely on youth problems. Studies have shown that youth who have developed these assets are involved in positive group settings and become productive citizens and

successful young adults.
Colorado State University will enhance its focus and depth in applied research and outreach education in a coordinated set of programs related to community health in Colorado and be recognized by state agencies, nongovernmental agencies, and citizens within Colorado as a leading source of information and activities promoting the health of individuals, families, and communities. This will include research, education, and active statewide and community programs in health promotion and chronic disease prevention, food security for limited resource families, food safety, early childhood and out-of-school age care, strengthening families and marriage, family economics and credit management, and healthy home environments.

**Estimated number of professional FTEs/SYs total in the State.**

| Year | Extenion | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| 2007 | 139.0 | 0.0 | 69.0 | 0.0 |
| 2008 | 139.0 | 0.0 | 69.0 | 0.0 |
| 2009 | 139.0 | 0.0 | 69.0 | 0.0 |
| 2010 | 139.0 | 0.0 | 69.0 | 0.0 |
| 2011 | 139.0 | 0.0 | 69.0 | 0.0 |

**Merit Review Process**

**The merit review process that will be employed during the 5-Year Plan of Work cycle**

- Internal University Panel
- External Non-University Panel
- Combined External and Internal University External Non-University Panel

**Brief explanation**

All projects conducted by the AES and CE are subjected to a peer review process. Each College at Colorado State University has adopted a process for conducting a peer review on all AES and CE projects submitted for support by state and federal funds. Documentation is available upon request for the specific process adopted by each College and approved by the AES Director.

In addition, CE programs are subject to review by the Program Leadership Team (PLT) and Core Competency Area (CCA) leaders. CE has identified through a futuring process, 6 areas of emphasis in programming: Strong Families, Healthy Homes; Nutrition, Health, and Food Safety; 4-H and Youth Development, Community Resource Development; Natural Resources and the Environment; and Competitive & Sustainable Agricultural Systems. The Futuring effort included representation from constituents, funders, partner agencies, and CE staff. In each of those areas, the Futuring Report suggested a focused approach. Consequently, CE specialists and agents teamed together to establish 23 work teams, jointly lead by a specialist and an agent. Each work team completed a logic model, including providing a situation statement, identification of inputs, outputs and impacts. Those logic model plans were evaluated by additional CE staff who committed to work as a part of th work team. These program plans were reviewed and approved by an external Cooperative Extension Advisory Committee of non-Extension, non- University professionals. This state level advisory committee has representation from CE constituents, partners (green industry, agricultural organizations, human service agencies), and county commissioners.

At the county level, all county Extension programs are required at a minimum to have an Extension Advisory Committee composed of constituents, partner agencies (such as the school districts, councils on aging, county health and human services, commodity groups, etc.). In addition, many counties have multiple 'program' advisory groups that guide the county staff in identification of specific programs of emphasis. In the most recent survey of these committees, the 59 Extension county programs have a total of 112 advisory committees involving close to 2000 individuals in the program review process. County programs are reviewed and evaluated by these county advisory groups. The county programs are then categorized under the six core competency areas and are further reviewed by the State Extension Advisory Committee.

**Evaluation of Multis & Joint Activities**

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

The AES and CE are active participants in meetings of Advisory Committees consisting of state, county, and organizational leaders. AES and CE programs are discussed and input is solicited on future priorities for research activities. In addition, the AES regularly participates in meetings held by CSU Cooperative Extension where current and future program needs are discussed. A variety of joint research programs are conducted with USDA-ARS programs in Fort Collins, Akron, and other locations as well as collaborative programs with USDA-FS, USDA-NRCS and USDA-NASS. Numerous programs are also conducted in cooperation with individuals.
Regional listening sessions lead by the AES and CE are held in the various regions of the state (southeast, northeast, San Luis Valley, southwest, and northwest). Both AES and CE programs are modified to reflect the input received where appropriate and feasible. All sessions are open to the public and advertised in the local media prior to the meeting.
Critical issues addressed by multi-state and integrated activities include the following: 1) invasive plants; 2) obesity; 3) animal and municipal waste management; 4) food safety; 5) commuity development; 6) water quality and environmental issues; and the emerging area of bioenergy.

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

Framework for the Future: A Strategic Plan for Cooperative Extension identifies a core value of Colorado Extension as "We are accessible to all constituencies and honor diverse viewpoints." Acting on that value, all CE individual and work team plans of work must address the issue of reaching out to under-served and under-represented audiences. In-service education has been, and continues to support this requirement. Active 4-H Expansion and Review committees in each county continue to address this issue as it relates to the 4-H program.

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

A variety of measures will be used based on the goals of the program. Example outcomes include adoption of improved plant/animal systems, adoption of recommendations by constituents, success in attracting contract and grant funding, and economic impact. Each work team operating under the six core competency areas in Extension has completed a logic model and identified both outputs and outcomes for each of their respective program areas.

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

Programs will be subject to annual review as well as a more in depth review each 5 years. All projects conducted by the CAES are subjected to a peer review process. Each College at Colorado State University has adopted a process for conducting a peer review on all CAES projects submitted for support by state and federal funds. The peer review process involves the Dean/Department Head soliciting reviews from faculty on the research approach and methodology followed by incorporation of suggested changes by the investigator. In addition, each work team conducts a yearly update of their specific logic model plan, making necessary changes as suggested through the review process, or as indicated by the evaluations conducted on the specific program. The goal is continual evaluation and strengthening of program efforts, including changes that will increase effectiveness and efficiency.

## Stakeholder Input

**1. Actions taken to seek stakeholder input that encourages their participation (Check all that apply)**

- Use of media to announce public meetings and listening sessions
- Targeted invitation to traditional stakeholder groups
- Targeted invitation to non-traditional stakeholder groups
- Targeted invitation to traditional stakeholder individuals
- Targeted invitation to non-traditional stakeholder individuals
- Targeted invitation to selected individuals from general public
- Survey of traditional stakeholder groups
- Survey of traditional stakeholder individuals
- Survey specifically with non-traditional groups
- Survey specifically with non-traditional individuals

**Brief explanation.**

The Agricultural Experiment Station (AES) and Cooperative Extension (CE) annually utilize multiple means of obtaining stakeholder input on programs conducted and solicit input on changes in program direction. The AES and CE support programs in 7 of the 8 colleges on the Colorado State University campus as well as at 9 off-campus research centers 59 individual county offices and 3 area programs. Each year, the off-campus research centers hold a public meeting where research results are presented and proposed programs are discussed. Public input is solicited on all proposed programs. It should be noted that many of the programs discussed involve faculty and staff located on the Fort Collins campus as well as at the off-campus research centers and CE county or area offices. Each County/Area Extension program is required to have a stakeholder advisory committee, representing all programmatic and geographic areas, as well as the diversity found in the county. Evidence of the advisory commitee must be documented in performance appraisals, as well as during the regularly scheduled affirmative action reviews. These advisory committees are expected to meet on a regular basis and provide guidance on programming and target audiences. Finally, a state Cooperative Extension Advisory Committee, reperesenting both program recipient groups, as well as programmatic collaborators provides oversight and input at the state level. Yearly the county advisory committees review the county plans of work which are then incorporated into the statewide work team plans. These plans are reviewed by the State Advisory Committee for additional input and acceptance. Yearly there is a call for additional work teams so that additional priority areas may be identified and state wide focus provided.

**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
- Use Surveys
- Other (Council for Agricultural Research, Extension, and Teaching)

**Brief explanation.**

Both AES and CE meet regularly with advisory committees to solicit feedback on programs and also invite the general public to participate in listening sessions.

**2(B). 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. Methods for collecting Stakeholder Input**

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

**Brief explanation**

As a regular part of the regularly scheduled county affirmative action reviews, extension personnel are expected to know the demographics of their county/area. Identification of under-served and under-represented groups is required, as well as documentation of the efforts taken to reach those groups/individuals. Each county is expected to complete a comprehensive needs assessment, inovlving both traditional and non-traditional audiences, on a regular basis. This needs assessment may take a variety of forms, including, but not limited to, a random survey of county residents, a focus group of invited traditional or under-respresented groups/individual, or individual one-on-one interviews.

**3. A statement of how the input will be considered**

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

**Brief explanation.**

Input from stakeholder groups/individual is expected to be reflected in programming changes - both suggestions for new programs and changes to existing programs at the county/area level. In addition, programmative suggestions are funneled from county stakeholders to the State Extension Advisory Committee for consideration, recommendation, and implementation. The CAES research program is modified based on input from stakeholders. For example, an evaluation of oil seeds was initiated to assess bioenergy potential based on stakeholder requests; multi-disciplinary and integrated activities are conducted on invasive plants; goals of wheat breeding program reflects needs of the wheat industry; and numerous other examples could be cited. In essence, ongoing interaction with stakeholders through formal and informal means is used to insure program relevancy.

# Planned Program Table of Content

**1. Name of the Planned Program**

4-H Youth Development

**2. Program knowledge areas**

- 806 70% Youth Development
- 802 30% Human Development and Family Well-Being

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

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

**5. Brief summary about Planned Program**

Colorado State University will enhance outreach to Colorado's youth through 4-H and Youth Development programs in county 4-H clubs, schools, after-school programming, state-wide programs, and special interest learning experiences. This family-based program emphasizes personal growth of young people through experiential learning with well-designed curricula and projects. Development of volunteers to provide much of the leadership to this organization and private fund-raising are especially important.

**6. Situation and priorities**

Overall in 2004/05, 121,477 Colorado youth were touched by 4-H (7.03% of Colorado's youth population compared with 11.57% of youth nationally). Specifically, 17,169, or close to 1% of Colorado's youth participate in traditional 4-H Clubs (The 2000 Census indicates a total youth population of 1,728,070). 4-H club programs are most effective in bringing youth and adults together in a long-term relationship for experiential learning. This compares with the national average of the youth population served by 4-H clubs of 2.56%. Special interest, short term programs serve 4,182 Colorado youth (0.24% in Colorado compared with the national average of 3.88%). School aged child care serves 7,456 Colorado youth (0.43% in Colorado compared with the national average of 0.15%). School enrichment through 4-H resources serves 89,696 Colorado youth (5.19% in Colorado compared with the national average of 6.17%). Priorities for the program include:
Increase the number of youth reached by the 4-H program so that it is closer to the national average by expanding traditional 4-H club membership in the urban areas of the state, without affecting in-school, after-school, or rural club programs. With 85 percent of Colorado citizens living in an urban environment, the urban areas of the state hold the most promise for expansion of the program.
Re-think the kinds of projects that 4-H offers. If educational opportunities are in-line with the interests of young people, traditional club and special interest enrollment numbers can grow.
Volunteer 4-H leaders are the life blood of the 4-H program. Volunteers must be pulling in the same direction as Extension staff to create an effective 4-H team. Effective volunteer recruitment, training, and recognition, and evaluation are essential and will be a priority.
Funding for 4-H is essential to the program's growth. Therefore, emphasis on fundraising will continue, including encouraging donors to endow the future of the 4-H program by creating endowed 4-H agent positions in every county of Colorado.
Identify the optimal staffing pattern for state, regional, area, and county delivery of the 4-H program including state and regional specialists, county and area Extension agents, and 4-H program assistants.

**7. Assumptions made for the Program**

In Colorado, 33% of K-12 youth are responsible for taking care of themselves after school (Afterschool Alliance)
77% of children from single-parent Colorado households have a parent who works.
Poor parent-child relationships, disorganized homes, abuse and neglect, poor attachment and non nurturing parenting styles are directly linked to the major problem behaviors that occur in youth.
Family-based programs that work with parents and youth together have a powerful influence on not only the home management skills of youth but also the developmental level of the youth.
Caring adults are interested in being a part of the development of youth and will become and stay as volunteers if they are supported appropriately (recruited, trained, evaluated, recognized).

**8. Ultimate goal(s) of this Program**

Th goal of the 4-H program is to develop youth into contributing, effective members of society through experiences that develop their leadership, citizenship and life skills. This goal is accomplished through the help of numerous volunteers who serve as positive role models for youth. Thus, a secondary goal of the 4-H program is to recruit, train, retain, evaluate and recognize an increasing number of volunteer leaders.

**9. Scope of Program**

- In-State Extension
- Multistate Extension

## Inputs for the Program

**10. Expending formula funds or state-matching funds :** Yes

**11. Expending other then formula funds or state-matching funds :** Yes

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

| Year | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| 2007 | 35.0 | 0.0 | 0.0 | 0.0 |
| 2008 | 35.0 | 0.0 | 0.0 | 0.0 |
| 2009 | 35.0 | 0.0 | 0.0 | 0.0 |
| 2010 | 35.0 | 0.0 | 0.0 | 0.0 |
| 2011 | 35.0 | 0.0 | 0.0 | 0.0 |

## Outputs for the Program

**13. Activity (What will be done?)**

Support traditional club program by recruiting and establishing new clubs
Conduct after school and school enrichment programs that provide curriculum in leadership, citizenship and life skills development.
Develop new curriculum in response to new audience needs
Strengthen the volunteer management system needed to implement the 4-h program by:
Conduct agent trainings to develop volunteer management skills
Develop tools to support volunteer management system
Conduct volunteer leader training
Develop new funding support through individual and group solicitation, grant applications and fee-for-service programs.

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

| Extension | |
|---|---|
| Direct Methods | Indirect Methods |
| • Education Class<br>• Workshop<br>• Group Discussion<br>• One-on-One Intervention<br>• Demonstrations | • Public Service Announcement<br>• Newsletters<br>• Web sites |

**15. Description of targeted audience**

For 4-H programming - all Colorado youth. For volunteers - interested adults, parents, community members, seniors, partner agencies (Boys and Girls Clubs, etc.).For increased funding - potential funders, including grant providers.

**16. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

| | Direct Contacts Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---|---|---|---|---|
| Year | Target | Target | Target | Target |
| 2007 | 11000 | 5000 | 25000 | 80000 |
| 2008 | 11500 | 5000 | 26000 | 80000 |
| 2009 | 12000 | 5000 | 27000 | 80000 |
| 2010 | 12500 | 5000 | 28000 | 80000 |
| 2011 | 12500 | 5000 | 29000 | 80000 |

**17. (Standard Research Target) Number of Patents**

**Expected Patents**

2007 : 0 2008 : 0 2009 : 0 2010 : 0 2011 : 0

**18. Output measures**

**Output Target**

Increased funding for 4-H through private dollarsby increasing support from the Colorado 4-H Youth Fund.

2007: 100000 2008: 150000 2009: 175000 2010: 20000 2011: 225000

**Output Target**

Number of web hits regarding 4-H topics

2007: 5000 2008: 7500 2009: 10000 2010: 12500 2011: 15000

**Output Target**

Number of youth reached by all 4-H delivery methods-club, after school, school enrichment.

2007: 25000 2008: 26000 2009: 27000 2010: 28000 2011: 29000

**Output Target**

New/revised curriculum to meet changes in needs for youth audiences.

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

**Output Target**

Number of volunteer managment trainings held and tools developed.

2007: 10 2008: 10 2009: 10 2010: 10 2011: 10

**Output Target**

Number of volunteer leaders.

2007: 12000 2008: 12500 2009: 13000 2010: 13500 2011: 14000

## Outcomes for the Program

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Target**
Youth building life skills including leadership, citizenship, decision making and communications skills. Percent of youth reporting positive change in these skills as a result of 4-H participation.

**Outcome Type:** Long

| 2007: | 70 | 2008: | 75 | 2009: | 75 | 2010: | 80 | 2011: | 80 |
|---|---|---|---|---|---|---|---|---|---|

**Outcome Target**
Percent of volunteers reporting increase skills in area of responsibility.

**Outcome Type:** Long

| 2007: | 70 | 2008: | 70 | 2009: | 70 | 2010: | 75 | 2011: | 75 |
|---|---|---|---|---|---|---|---|---|---|

**20. External factors which may affect outcomes**

- Economy
- Appropriations changes
- Other (competing family priorities)

**Description**
Participation in 4-H does not come without cost. If funding is not sufficient, scholarship help for families may not be available and individuals may be forced to not participate. Families have the opportunity to choose from many different activities for youth. 4-H may lose membership to other youth activities.

**21. Evaluation studies planned**

- After Only (post program)
- Before-After (before and after program)
- During (during program)
- Comparisons between program participants (individuals,group,organizations) and non-participants

**Description**
Regular pre-post evaluations are used. Colorado 4-H will also participate in the Tufts evaluation in cooperation with the National 4-H Council

**22. Data Collection Methods**

- Sampling
- Whole population
- On-Site
- Observation
- Tests

**Description**
Pre-post tests, standard survey technology

**1. Name of the Planned Program**

Animal Production Systems

**2. Program knowledge areas**

- 311 10% Animal Diseases
- 315 10% Animal Welfare/Well-Being and Protection
- 307 30% Animal Management Systems
- 601 10% Economics of Agricultural Production and Farm Management
- 302 10% Nutrient Utilization in Animals
- 301 10% Reproductive Performance of Animals
- 303 20% Genetic Improvement of Animals

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

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

**5. Brief summary about Planned Program**

AES will focus on fundamental and applied research in breeding, nutrition, physiology, behavior, integrated resource management systems, economics, health, and range/forage management. CE outreach will span the breadth of the topics of research to assure that industry participants have practical knowledge in modern beef, dairy, and sheep production systems, biosecurity, economic and risk management, and response to policy and consumer changes. Outreach to youth involved in livestock production and judging events will continue as part of experiential learning in 4-H, FFA, and college judging.

**6. Situation and priorities**

Animal agriculture is a major economic sector in the United States and the leading agricultural activity in Colorado. In 2003, live meat animal sales in Colorado were valued at $3.252 billion and the value of dairy production was $264 million. Livestock and livestock products accounted for 60% of crop and livestock sales in Colorado. Remaining competitive requires that the industry produce with the most technically sophisticated systems available while considering environmental and animal welfare dimensions to maintain confidence of the consuming public. Ruminant agriculture on range is the only significant agricultural enterprise which is ubiquitous in Colorado. In addition to novel and economic production practices, today's livestock producers must be knowledgeable of alternative supply chains to select a lucrative market, be aware of animal identification and trace-back requirements, understand the effects of emerging animal public health conditions, and understand the international and domestic trade environment and trends and how to respond with risk management strategies.

**7. Assumptions made for the Program**

Research in beef production management systems and nutrition is conducted on owned facilities at the Agricultural Research, Development, and Education Center (ARDEC), Eastern Colorado Research Center, Southeastern Colorado Research Center, and the Rouse Ranch in Saratoga, Wyoming. An integrated "Beef Alliance" coordinates teaching, research, and outreach in beef across all facilities focused on value-added production systems. Strong relationships exist between animal scientists and agricultural management and marketing economists. ARDEC hosts seedstock herds for Angus and Hereford, as well as a ram test. The University has several significant assets, including the Western Center for Integrated Resource Management, the Center for Genetic Evaluation of Livestock, the congressionally sponsored National Beef Cattle Evaluation Consortium and strength in research and graduate programs in beef nutrition and breeding. The San Juan Basin Research Center conducts research and outreach on cow-calf, forage and range management systems. Livestock industry outreach includes a team of campus specialists in livestock management systems, economics, trade, policy, manure management, meat science, alternative marketing chain participation, and animal identification systems.

**8. Ultimate goal(s) of this Program**

Develop improved animal production systems that are economical and environmentally sound including genetics and breeding, nutrition, and management components.
Develop information and methods to improve reproductive efficiency including increasing pregnancy rate, decreasing embryonic mortality and decreasing prenatal mortality.
Conduct extension and outreach programs to enhance animal agriculture in Colorado and the region.

**9. Scope of Program**

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

## Inputs for the Program

**10. Expending formula funds or state-matching funds :** Yes

**11. Expending other then formula funds or state-matching funds :** Yes

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

| Year | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| 2007 | 15.0 | 0.0 | 9.5 | 0.0 |
| 2008 | 15.0 | 0.0 | 9.5 | 0.0 |
| 2009 | 15.0 | 0.0 | 9.5 | 0.0 |
| 2010 | 15.0 | 0.0 | 9.5 | 0.0 |
| 2011 | 15.0 | 0.0 | 9.5 | 0.0 |

## Outputs for the Program

**13. Activity (What will be done?)**

Workshops and educational classes for producers
Demonstration plots and field days to showcase the results
Individual counseling on producers specific problems
Conduct basic and applied resesarch on livestock, primarily beef, dairy, sheep, and horses

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

| Extension | |
|---|---|
| Direct Methods | Indirect Methods |
| • Education Class<br>• Workshop<br>• Group Discussion<br>• One-on-One Intervention<br>• Demonstrations<br>• Other 1 (Field Days) | • Public Service Announcement<br>• Newsletters<br>• Web sites |

**15. Description of targeted audience**

Individual agricultural producers, commodity groups,  agri-business partners

**16. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

| | Direct Contacts Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---|---|---|---|---|
| Year | Target | Target | Target | Target |
| 2007 | 800 | 5000 | 2500 | 2500 |
| 2008 | 800 | 5000 | 2500 | 2500 |
| 2009 | 800 | 5000 | 2500 | 2500 |
| 2010 | 800 | 5000 | 2500 | 2500 |
| 2011 | 800 | 5000 | 2500 | 2500 |

**17. (Standard Research Target) Number of Patents**

**Expected Patents**

2007 : 0 2008 : 0 2009 : 0 2010 : 0 2011 : 0

**18. Output measures**

**Output Target**

Number of attendees at workshops/trainings/field days

2007: 500 2008: 500 2009: 500 2010: 500 2011: 500

**Output Target**

Amount of grant dollars garnered to support animal research and outreach programs

2007: 30000 2008: 30000 2009: 30000 2010: 30000 2011: 30000

**Output Target**

Number of technical and referreed journal articles published

2007: 20 2008: 20 2009: 20 2010: 20 2011: 20

## Outcomes for the Program

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Target**

Number of participants in workshops/trainings/field days indicating an increase in knowledge gained

**Outcome Type:** Short

2007: 60 2008: 60 2009: 60 2010: 60 2011: 60

**Outcome Target**

Percent of participants indicating change in behavior/ best practices adopted

**Outcome Type:** Medium

2007: 50 2008: 50 2009: 50 2010: 50 2011: 50

**Outcome Target**
Economic impact of the change in behavior reported

**Outcome Type:** Long

| 2007: | 300000 | 2008: | 300000 | 2009: | 300000 | 2010: | 300000 | 2011: | 300000 |
|---|---|---|---|---|---|---|---|---|---|

**20. External factors which may affect outcomes**

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

**Description**
Individuals' ability to attend fee-for-service programs may be impacted by economic downturns. Extensions's ability to provide programming and scholarships for these programs may be impacted if appropriations continue to decrease and staff is lost. Inclement weather may impact an individual producer's ability to remain viable. Government subsidy programs may impact the viability of an individual producer. Availability of funding for research programs will govern magnitude and scope of program.

**21. Evaluation studies planned**

- After Only (post program)
- Before-After (before and after program)
- During (during program)
- Case Study

**Description**
Regular pre-post evaluations are used. Formative evaluations are often used during programs to adjust focus and direction. Case studies are used to clearly demonsstrate impact.

**22. Data Collection Methods**

- Sampling
- Case Study
- Observation
- Tests

**Description**
Pre-post tests. Standard survey methods.

**1. Name of the Planned Program**

Community Resource Development

**2. Program knowledge areas**

- 803 10% Sociological and Technological Change Affecting Individuals, Fam
- 605 30% Natural Resource and Environmental Economics
- 608 20% Community Resource Planning and Development
- 601 40% Economics of Agricultural Production and Farm Management

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

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

**5. Brief summary about Planned Program**

Research and outreach will be targeted to municipal, county, state, and federal agencies, nongovernmental organizations, and citizens to provide information and analysis promoting community development. This will include community impact analyses of economic activity, community organization for progress, evaluation of the drivers of local development, and workforce professional and personal development.

**6. Situation and priorities**

Communities struggle to develop and maintain reosurces (human, financial, physical, social, environmental, and political. They are also challenged in providing the needed organizational capapcity to assess, plan, and implement activities to address resource development and management. A lack of critical mass in smaller rural areas exacerbates issues found in all areas of the state. More specifically, rural aras of the US and Colorado face challenges due to marked differences in economic, educational, health and social opportunities relative to more urban areas. Colroado has some unique needs due to more sparse populations, a high natural amenity base (and share of public lands), a more transitory population and relatively low public service provision. People in rural areas tend to be older, poorer, more likely to be uninsured, and less educated than their urban counterparts. Communities require knowledge to evaluate their resource base, their economic and social service alternatives, and their futures.

**7. Assumptions made for the Program**

The competencies of CRD have been around for a long time and are still appropriate.
Program planning is not always a one-time process. What is developed will need constant monitoring and adjustment.
CSU and CE are experiencing financial and political stress that requires us to engage new and expanding audiences.
CE has the organizational capacity to facilitate team building, situation assessment ,and prioritize applied research needs in communities of Colorado.

**8. Ultimate goal(s) of this Program**

Colorado State University is in a strong position to assist with the economic development of Colorado's agricultural, rural and evolving industries. Our role will be to educate professionals for evolving industries with knowledge of modern business practices, researching technical and economic issues related to differentiated agricultural products in the ever-changing domestic and international market place, and by being actively involved with agricultural industry personnel and governmental agencies to assure that land managers and communities can evaluate a broad range of opportunities to enhance viability.

**9. Scope of Program**

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

## Inputs for the Program

**10. Expending formula funds or state-matching funds :** Yes

**11. Expending other then formula funds or state-matching funds :** Yes

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

| Year | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| 2007 | 9.0 | 0.0 | 4.0 | 0.0 |
| 2008 | 9.0 | 0.0 | 4.0 | 0.0 |
| 2009 | 9.0 | 0.0 | 4.0 | 0.0 |
| 2010 | 9.0 | 0.0 | 4.0 | 0.0 |
| 2011 | 9.0 | 0.0 | 4.0 | 0.0 |

## Outputs for the Program

**13. Activity (What will be done?)**

Internal training for CE personnel in community mobilization, facilitation, economic development.
Working with rural communities on a regional approach to small town tourism including making optimal use of environmental resoureces, respecting the socio-cultural authenticity of host communities while conserving their built and living cultural heritage and traditional values,and ensuring viable, long-term economic operations , including stable emp0loyment and income-earning opportunities.
Conduct basic and applied research in areas exploring the interface between agribusiness, rural development, and natural-resource-amenity-based opportunities.
Conduct workshops and other educational activities with community stakeholders.

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

| Extension | |
|---|---|
| **Direct Methods** | **Indirect Methods** |
| • Education Class<br>• Workshop<br>• Group Discussion<br>• One-on-One Intervention<br>• Other 1 (Tourism rallies) | • Public Service Announcement<br>• Newsletters<br>• Web sites |

**15. Description of targeted audience**

Community members, general public, consumers, community organizations.

**16. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

| | Direct Contacts Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---|---|---|---|---|
| Year | Target | Target | Target | Target |
| 2007 | 1500 | 3000 | 0 | 0 |
| 2008 | 1500 | 3000 | 0 | 0 |
| 2009 | 1500 | 3000 | 0 | 0 |
| 2010 | 1500 | 3000 | 0 | 0 |
| 2011 | 1500 | 3000 | 0 | 0 |

**17. (Standard Research Target) Number of Patents**

**Expected Patents**

2007 : 0 2008 : 0 2009 : 0 2010 : 0 2011 : 0

**18. Output measures**

**Output Target**

The number of training opportunities for CE staff

2007: 2 2008: 2 2009: 3 2010: 3 2011: 4

**Output Target**

Training opportunities for community members

2007: 5 2008: 5 2009: 7 2010: 7 2011: 10

**Output Target**

Tourism rallies held

2007: 1 2008: 2 2009: 2 2010: 3 2011: 3

**Output Target**

Technical publications related to economics, public policy, community development and related areas.

2007: 10 2008: 10 2009: 10 2010: 10 2011: 10

## Outcomes for the Program

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Target**

Number of staff increasing knowledge of sustainable community development principles, facilitation, and economic development strategies.

**Outcome Type:** Short

2007: 10 2008: 10 2009: 10 2010: 10 2011: 10

**Outcome Target**

Percent of community residents, businessses and leaders who increase their understanding of sustainable community development and tourism and economic development principles.

**Outcome Type:** Short

| 2007: | 25 | 2008: | 35 | 2009: | 45 | 2010: | 55 | 2011: | 65 |
|---|---|---|---|---|---|---|---|---|---|

**Outcome Target**

The number of communities which evaluate tourism potential and prioritize to target specific interests, increase action around trouism issues ,and identify valued community resources to maintain.

**Outcome Type:** Medium

| 2007: | 10 | 2008: | 10 | 2009: | 20 | 2010: | 20 | 2011: | 30 |
|---|---|---|---|---|---|---|---|---|---|

**Outcome Target**

The number of communities which experience increased economic gain from tourism, including increased tax revenues, tourism-related employment, and retention of community valued resources.

**Outcome Type:** Long

| 2007: | 5 | 2008: | 5 | 2009: | 7 | 2010: | 7 | 2011: | 10 |
|---|---|---|---|---|---|---|---|---|---|

**20. External factors which may affect outcomes**

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

**Description**

Individuals' and communities' ability to attend fee-for-service programs may be impacted by economic downturns. Extension's ability to provide programming and scholarships for these programs may be impacted if appropriations continue to decrease and staff is lost. Immigration reform may change the nature of the audience. Weather conditions may discourage tourism in some communities (severe drought, heavy snowfalls).

**21. Evaluation studies planned**

- After Only (post program)
- Before-After (before and after program)
- During (during program)
- Case Study

**Description**

Regular pre-post evaluations are used. Formative evaluations are often used during the program to adjust focus and direction. Case studies are used to clearly demonstrate impact.

**22. Data Collection Methods**

- Sampling
- Case Study
- Observation
- Tests

**Description**

Pre-post tests. Standard survey methods.

**1. Name of the Planned Program**

Natural Resources and Environment

**2. Program knowledge areas**

- 112 10% Watershed Protection and Management
- 132 10% Weather and Climate
- 123 10% Management and Sustainability of Forest Resources
- 111 20% Conservation and Efficient Use of Water
- 102 10% Soil, Plant, Water, Nutrient Relationships
- 101 10% Appraisal of Soil Resources
- 403 10% Waste Disposal, Recycling, and Reuse
- 121 10% Management of Range Resources
- 103 10% Management of Saline and Sodic Soils and Salinity

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

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

**5. Brief summary about Planned Program**

An increasing world population is placing greater demands on our natural resources. Public concern for a quality environment has increased as agriculture has become more complex and population pressures have increased. Natural resources must be conserved and their capacity maintained or improved in order to meet the needs of future generations. The long□term viability of agriculture and forestry production is tightly linked to proper use and protection of our soil, air and water resources. Impacts of urban horticulture on the environment are significant.Extension has active work teams in:
Sustainable landscapes
Environmental horticulture-Landscape Water Use
Managing agricultural and natural landscapes
Sustaining local agriculture and the environment

**6. Situation and priorities**

Development of management practices that are compatible with a high quality environment requires new methods of study that involve entire agroecosystems. Quantitative relationships between agriculture, natural resource use, and environmental quality must be defined. This will require a more thorough understanding of basic biological/ecological processes, as well as computer□aided systems management research. Continuing to use natural resources to produce agricultural, range, and forestry products requires new multiple use strategies which are realistic in terms of biological, economic, social and environmental constraints. Transport and fate of pesticides, fertilizers, and other agricultural chemicals, as well as threatened and endangered species, biodiversity, habitat, wetlands, and water are all issues of concern. Knowledge must be developed to understand and evaluate competitive land use impacts and interactions on agricultural, range, and forest lands. This research provides the basis for developing agricultural and forestry management systems that are more compatible with conservation and environmental goals.

**7. Assumptions made for the Program**

Colorado State is in the ideal geographic position to address irrigated agro-ecosystem level issues. Colorado has a wide diversity of water supply/management regimes that include ground water, diverse surface water management in five river systems, and various diversions of West Slope water. Faculty have an international reputation in agro-ecosystem modeling and soil carbon dynamics and associations with the NSF Long Term Ecological Research Short-Grass Prairie unit near Ault, the USDS-ARS Great Plains Systems Unit in Akron, a five-university dryland agriculture research team, the modeling group at the Natural Resources Ecology Laboratory on campus, atmospheric sciences research programs at CU and CSU, the US Geological Survey, USDA-NRCS, USDA-ERS, a strong set of dryland cropping extension agents, and the dryland crops industries. Colorado State has field research laboratories at Walsh, Rocky Ford, Ft. Collins, Cortez, Center, Orchard Mesa, Rogers Mesa, and Fruita capable of experimentation on cropping systems. State and grant funding will continue at current levels to provide facilities and support required to conduct an applied, field based research and outreach program.

**8. Ultimate goal(s) of this Program**

Conduct natural resources research to develop agricultural and forestry management systems that are compatible with

conservation and environmental goals and economically sustainable.
Study the effects of climate and climate variation on plant, animal and microbial ecosystems toallow an assessment of the impacts of global change on agricultural and natural ecosystems.
Develop and test technical, institutional, or social solutions to water quality and quantity problems in Colorado.
Develop technologies for managing agricultural and municipal wastes.
Provide educational programs for urbanites on horticultural practices and the environment resulting in less pollution and more efficient water use.
Sustain local agriculture while lessening adverse impacts on the environment.

**9. Scope of Program**

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

## Inputs for the Program

**10. Expending formula funds or state-matching funds :** Yes

**11. Expending other then formula funds or state-matching funds :** Yes

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

| Year | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| 2007 | 15.0 | 0.0 | 14.0 | 0.0 |
| 2008 | 15.0 | 0.0 | 14.0 | 0.0 |
| 2009 | 15.0 | 0.0 | 14.0 | 0.0 |
| 2010 | 15.0 | 0.0 | 14.0 | 0.0 |
| 2011 | 15.0 | 0.0 | 14.0 | 0.0 |

## Outputs for the Program

**13. Activity (What will be done?)**

Conduct workshops and educational classes for producers, landowners, and agency personnel.
Establish demonstration plots and field days to share research and outreach results.
Consult with individual producers and landowners to address local problems.
Conduct basic and applied research on environmental and natural resources issues.

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

| Extension | |
|---|---|
| Direct Methods | Indirect Methods |
| • Education Class<br>• Workshop<br>• Group Discussion<br>• One-on-One Intervention<br>• Demonstrations | • Public Service Announcement<br>• Newsletters<br>• Web sites<br>• Other 1 (Radio spots) |

| | |
|---|---|
| • Other 1 (Field Days) | |

**15. Description of targeted audience**

Individual agricultural producers, landowners, commodity groups, regulatory agencies, agribusinesses, and local, state, and federal land management agencies.

**16. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

| | Direct Contacts Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---|---|---|---|---|
| Year | Target | Target | Target | Target |
| 2007 | 500 | 5000 | 0 | 0 |
| 2008 | 500 | 5000 | 0 | 0 |
| 2009 | 500 | 5000 | 0 | 0 |
| 2010 | 500 | 5000 | 0 | 0 |
| 2011 | 500 | 5000 | 0 | 0 |

**17. (Standard Research Target) Number of Patents**

**Expected Patents**

2007 : 0 2008 : 0 2009 : 0 2010 : 0 2011 : 0

**18. Output measures**

**Output Target**

Number of attendees at workshops/trainings/field days.

2007: 500 2008: 500 2009: 500 2010: 500 2011: 500

**Output Target**

Amount of grant dollars garnered to support natural resources research and outreach.

2007: 25000 2008: 25000 2009: 25000 2010: 25000 2011: 25000

**Output Target**

Number of technical and refereed journal articles published.

2007: 25 2008: 25 2009: 25 2010: 25 2011: 25

## Outcomes for the Program

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Target**

Number of participants in workshops/trainings/field days indicating an increase in knowledge gained.

**Outcome Type:** Short

2007: 60 2008: 60 2009: 60 2010: 60 2011: 60

**Outcome Target**
Percent of participants indicating change in behavior/best practices adopted.

**Outcome Type:** Medium

| 2007: | 50 | 2008: | 50 | 2009: | 50 | 2010: | 50 | 2011: | 50 |
|---|---|---|---|---|---|---|---|---|---|

**Outcome Target**
Economic impact of the change in behavior reported.

**Outcome Type:** Long

| 2007: | 150000 | 2008: | 150000 | 2009: | 150000 | 2010: | 150000 | 2011: | 150000 |
|---|---|---|---|---|---|---|---|---|---|

**20. External factors which may affect outcomes**

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

**Description**
Local, state, and federal funding changes will impact ability to conduct programs. Significant changes in regulatory environment could dramatically alter the scope and goals of both research and extension programs. This is most notable in Colorado with respect to policies affecting use of public lands and both surface and ground water. Both water quantity and water quality are critical issues to the future of agriculture in the semi-arid west.

**21. Evaluation studies planned**

- After Only (post program)
- Before-After (before and after program)
- During (during program)
- Case Study

**Description**
Regular pre-post evaluations are used. Formative evaluations are often used during programs to adjust focus and direction. Case studies are used to clearly demonstrate impact.

**22. Data Collection Methods**

- Sampling
- Case Study
- Observation
- Tests

**Description**
Pre-post tests and standard survey methods.

**1. Name of the Planned Program**

Nutrition and Food Safety

**2. Program knowledge areas**

- 711 10% Ensure Food Products Free of Harmful Chemicals, Including Residu
- 701 20% Nutrient Composition of Food
- 712 20% Protect Food from Contamination by Pathogenic Microorganisms, Pa
- 805 10% Community Institutions, Health, and Social Services
- 703 40% Nutrition Education and Behavior

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

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

**5. Brief summary about Planned Program**

Cooperative Extension has active work teams in the following areas:
Food Safety Education including
Food Safety Training for Food Service Managers and Workers
Food Safety Education for Consumers, High Risk Audiences and Caregivers
Promoting Food Security for Limited Resource Audiences
Health Promotion/Chronic Disease Prevention
Obesity/Overweight Prevention/Strong Women, Strong Bones
Heart Disease
Diabetes Awareness, Prevention and Management
The AES research program in human nutrition focuses on basic research to understand the interactions between plant composition and human health, the interrelationships between nutrition, exercise, and human health, and the basic biochemistry of human nutrition. Food safety research emphasizes pre-harvest management of livestock to prevent transmission of human pathogens in livestock production and handling and post-harvest detection and management systems to prevent contamination of meat and plant products with human pathogens

**6. Situation and priorities**

Foodborne illness in the US is a major economic burden and cause of human suffering and death. Economic and social consequenses of foodborne illness are estimated to be over $3 billion each year, with lost productivity estimated at $30-40 billion. It is estimated that foodborne contaminants cause approximately 76 billion illnesses, 325,000 hospitalizations, and 5,000 deaths int he US each year. The risk of foodborne illness is especially important when hazardous food is served in group settings (eating establishments, child and assisted care facilities) and/or to high risk individuals (seniors, young children, pregnant women, immuno-compromised individuals).
Ten million Americans experience hunger throughout the year, 30% of those are children. In Colorado, 1 in 5 children are hungry or at risk of malnutrition. Also in Colorado, a high proportion of those at high risk for food insecurity are of Hipanic origin. Low-income single mothers with children are especially vulnerable to hunger and food insecurity. In 2000, 46.5% of these households were food-insecure. Research has documented the link between food insufficiency and poor health outcomes, particularly in children.
Since 1980, overweight and obesity have become an increasing problem in the US, causing the Surgeon General to declare obesity a national epicemic. The prevalence of overweight is increasing for children and adolescents. Currently 18.2 million people have diabetes and 1.3 million new cases are diagnosed each year. The number of adult Americans diagnosed with high blood pressure increased 30% between 1994 and 2002. Cardiovascular disease is the leading cause of death in Colorado (32% of all deaths). Osteoporosis is a major health issue for 55% of people over age 50.

**7. Assumptions made for the Program**

Given accurate knowledge and support, individuals at risk for food-borne illness, food insecurity, and major diseases will increase their understanding, change attitudes and behavoirs, and ultimately be less at risk, less hungry and healthier.

**8. Ultimate goal(s) of this Program**

Food Safety Education
Increase the proportion of consumers who follow key food safety practices.
Improve food employee behaviors and food preparation practices that relate directly to foodborne illnesses in retail food

establishments.
Increase the proportion of high risk consumers and their caregivers who follow key food safety practices.
Promoting Food Security
Individuals gain awareness, knowledge and skills to stretch their food resources while planning nutrient dense meals.
Individuals will use skills gained to reduce food cost, thus increasing food availability.
Individuals will use skills gained to make and/or select safe, nutritious, economical food at home and away from home.
Individuals experience eating nutritously on a limited budget, using resources appropriately.
Health Promotion/Chronic Disease Prevention
Increase the proportion of adults and youth who are at a healthy weight and reduce the proportion of adults and youth who are obese.
Increase the number to persons with diabetes who receive formal diabetes education.
Prevent new cases of diabetes through changes in diet.
Reduce the proportion of adults with high blood pressure and high total blood cholesterol.
Reduce the proportion of adults with osteoporosis
Food Safety Research
Pre-harvest management of livestock to prevent acquisition of human pathogens in livestock production and handling
Post-harvest detection and management systems to prevent contamination of meat products with human pathogens
Assessment of production systems and regulatory protocols for effective food safety.
Nutrition Research
Determine important relationships between diet and health
Evaluate the relationships between plant composition, food processing, and diet on bioavailability of nutrients and interactions with disease and obesity
Study the impact of diet and exercise on human health

**9. Scope of Program**

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

## Inputs for the Program

**10. Expending formula funds or state-matching funds :** Yes

**11. Expending other then formula funds or state-matching funds :** Yes

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

| Year | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| 2007 | 24.0 | 0.0 | 7.0 | 0.0 |
| 2008 | 24.0 | 0.0 | 7.0 | 0.0 |
| 2009 | 24.0 | 0.0 | 7.0 | 0.0 |
| 2010 | 24.0 | 0.0 | 7.0 | 0.0 |
| 2011 | 24.0 | 0.0 | 7.0 | 0.0 |

## Outputs for the Program

### 13. Activity (What will be done?)

Food Safety Education
Food Satety training for consumers, high risk audiences and their caregivers.(Eat Well for Less, La Cocina Saludable, Worksite Wellness, Safe Home Food Preparation and Preservation, Promotion at Farmers Markets.)
Food Satety Training for Food Service Managers and Workers (Food Safety Works, ServSafe, Food Safety for Food Bank Workers).
Promoting Food Security
Multi-lesson series programs-Eat Well for Less, La Cocina Saludable]
Single event porgrams targeting limited resource families
Newsletters-Senior Nutrition News
Health Promotion/Chronic Disease Prevention
Multi-lesson series - Dining with Diabetes, Small Changes Make a Big Difference, Strong Women-Strong Bones, Moving Toward a Healthier You, Healthy Heart, Smart-START for a Healthy Heart
Self-paced program - Self-Care for a Healthy Heart
Single lessons - Workable Wellness (worksite wellness).
Youth program- Food Friends-Making New Foods Fun for Kids, Eating Right Is Basic, Chef Combo's Fantastic Adventures in Tasing and Nutrition, Professor Popcorn
Research
Technical and extension publications
Development of new technologies for improving food safety
Development of recommendations on diet, exercise or other health related topics

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

| Extension | |
|---|---|
| **Direct Methods** | **Indirect Methods** |
| • Education Class<br>• Workshop<br>• Group Discussion<br>• Demonstrations | • Public Service Announcement<br>• Newsletters<br>• Web sites<br>• Other 1 (Multimedia kiosks) |

### 15. Description of targeted audience

Food Safety Education
Consumers, High Risk Audiences (pregnant, immuno-compromised, elderly).
Food Handlers and their managers at retail food establishments.
Producers and processors of plant and animal agricultural products.
Promoting Food Security
Limited-resource individuals and families at risk of being food insecure.
Agencies addressing food security (food banks, food pantries, food stamps, WIC, etc.).
Health Promotion/Chronic Disease Prevention
Individuals at risk for diabetes, heart disease, obesity(adults and youth)
Seniors at risk for osteoporosis.
Youth - nutrition focus

### 16. Standard output measures

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

| | Direct Contacts Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---|---|---|---|---|
| Year | Target | Target | Target | Target |
| 2007 | 3500 | 150000 | 250 | 1000 |
| 2008 | 3500 | 150000 | 250 | 1000 |
| 2009 | 3500 | 150000 | 250 | 1000 |
| 2010 | 3500 | 150000 | 250 | 1000 |
| 2011 | 3500 | 150000 | 250 | 1000 |

**17. (Standard Research Target) Number of Patents**

**Expected Patents**

2007 : 0 2008 : 0 2009 : 0 2010 : 0 2011 : 0

**18. Output measures**

**Output Target**

Number of trainings in Food Safety Education, Food Security, Health Promtion and Disease Prevention held.

2007: 25 2008: 25 2009: 25 2010: 25 2011: 25

**Output Target**

Amount of grant dollars received to support Nutrition, Health and Food Safety

2007: 25000 2008: 25000 2009: 25000 2010: 25000 2011: 25000

**Output Target**

Number of newsletters on Food Safety Education, Food Security, and Health Promotion and Disease Prevention distributed.

2007: 25000 2008: 25000 2009: 25000 2010: 25000 2011: 25000

**Output Target**

Technical publications on food safety and nutrition.

2007: 20 2008: 20 2009: 20 2010: 20 2011: 20

## Outcomes for the Program

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Target**

Percent of participants at trainings indicating an increase in knowledge gained

**Outcome Type:** Short

2007: 50 2008: 50 2009: 50 2010: 50 2011: 50

**Outcome Target**

Percent of participants reporting a change in attitude regarding the training topic

**Outcome Type:** Medium

| 2007: | 50 | 2008: | 50 | 2009: | 50 | 2010: | 50 | 2011: | 50 |
|---|---|---|---|---|---|---|---|---|---|

**Outcome Target**
Percent of participants indicating a change in behavior as a result of the training

**Outcome Type:** Short

| 2007: | 50 | 2008: | 50 | 2009: | 50 | 2010: | 50 | 2011: | 50 |
|---|---|---|---|---|---|---|---|---|---|

**Outcome Target**
Number of participants at the trainings

**Outcome Type:** Short

| 2007: | 3000 | 2008: | 3000 | 2009: | 3000 | 2010: | 3000 | 2011: | 3000 |
|---|---|---|---|---|---|---|---|---|---|

**20. External factors which may affect outcomes**

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

**Description**
Individuals' ability to attend fee-for-service programs may be impacted by economic downturns. Extension's ability to provide programming and scholarships for these programs may be impacted if appropriations continue to decrease and staff is lost. Immigration reform may change the nature of the audience.Research programs are dependent on funding from external agencies.

**21. Evaluation studies planned**

- After Only (post program)
- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)

**Description**
Regular pre-post evaluations are used. Formative evaluations are often used during the program to adjust focus and direction. Case studies are used to clearly demonstrate impact.

**22. Data Collection Methods**

- Sampling
- On-Site
- Case Study
- Observation
- Tests

**Description**
Pre-post tests. Standard survey methods.

**1. Name of the Planned Program**

Plant Production Systems

**2. Program knowledge areas**

- 201 10% Plant Genome, Genetics, and Genetic Mechanisms
- 203 10% Plant Biological Efficiency and Abiotic Stresses Affecting Plant
- 205 20% Plant Management Systems
- 215 10% Biological Control of Pests Affecting Plants
- 212 10% Pathogens and Nematodes Affecting Plants
- 216 10% Integrated Pest Management Systems
- 211 10% Insects, Mites, and Other Arthropods Affecting Plants
- 206 10% Basic Plant Biology
- 213 10% Weeds Affecting Plants

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

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

**5. Brief summary about Planned Program**

Plant biology linking basic science with applied science is important to bring the results of basic plant science toward a usable form for applied agricultural sciences. Molecular biology and genomics are opening many new pathways for crop plant improvement and pest management, which will enhance the economic development of agricultural regions, enhance human health through more nutritious and safer food products, and find fundamental solutions to societal issues through renewable and sustainable crop production and pest management. Successful applied crop science, environmental science, and pest management only occur through collaboration with scientists actively involved in fundamental plant and pest sciences.Cooperative Extension has active work teams in:
Pest Management, with a sub-team on Diagnostics and Pest Management
Plant Introduction and Invasive Species

**6. Situation and priorities**

Colorado State has a history of providing crop selection and testing in other agronomic crops and fruits and vegetables to support the development of these agricultural industries in Colorado. In 2004, wheat generated $161 million in commodity sales, dry beans $38 million, potatoes $192 million, and other agronomic crops and vegetable and fruit crops generated $776 million, in Colorado. The value of these industries to the Colorado economy through other related economic activity is at least double these combined amounts. Colorado expenditures on garden-related products, landscape and lawn service, and other related green industries (irrigation, botanical gardens, and outdoor equipment) have averaged 10 percent annual growth since 1993, resulting in $1.67 billion in direct sales, in 2002. (This generates an economic impact of $2.1 to $5.0 billion depending on the economic multiplier used.) The value of the Colorado golf industry alone is $1.2 billion. The landscape-related industries of Colorado employ nearly 34,000 positions (6 percent average annual growth) with a payroll of $825 million annually (18 percent average annual growth). Thirty percent of industry revenues are generated from out of state (domestic and international) sales.
A diverse and expanding pest complex requires enhanced management skills that often increase production costs. A conservative loss estimate of 5 to 10% due to plant pests could cost Colorado producers in urban and rural settings $50 to $100 million annually. There is a long-term need for a comprehensive, high quality, integrated pest management system encompassing the disciplines of entomology, plant pathology and weed science.
Fundamental plant biology linking basic science with applied science is important to bring the results of basic plant science toward a usable form for applied agricultural sciences. Molecular biology and genomics are opening many new pathways for crop plant improvement and pest management, which will enhance the economic development of agricultural regions, enhance human health through more nutritious and safer food products, and find fundamental solutions to societal issues through renewable and sustainable crop production and pest management.
Non-hybrid crop plants require public investment in genetic improvement to provide varieties of cultivars which improve yield, resist environmental and pest stresses, and serve the consuming public. Colorado State has a history of providing cultivar breeding for wheat, dry beans, and potatoes to serve the industries in climatic zones represented in Colorado.
Colorado is an urban and urbanizing state in which demographic evolution is changing the scope of “agriculture.” The landscape (green) industry of Colorado, and the nation, is large and growing and comprises a significant part of Colorado agriculture.

Management of weeds, insect pests and plant pathogens is one of the most costly inputs that clientele in agriculture, the green industry, and consuming households must finance every year in Colorado. A diverse and expanding pest complex requires enhanced management skills that often increase production costs.
The Colorado ecosystem is shared by agricultural producers, a rapidly growing human population, and wildlife. As competition grows for finite water, land, and air resources, and as agricultural and natural resource policies and international markets change, opportunities to maximize the economic value of agriculture in Colorado will change continuously. The complex relationships of ecosystem variables must be well understood to predict these opportunities.

**7. Assumptions made for the Program**

Successful applied crop science, environmental science, and pest management do not occur in the absence of scientists actively involved in fundamental plant and pest sciences.
Colorado State has created the Cancer Prevention Laboratory (CPL) imbedded among strong programs of plant breeding and crop production research to address interactions between crop composition and human health.
Professional agriculturalists and agribusiness people will require much more education in the relationships of ecosystem variables.

**8. Ultimate goal(s) of this Program**

PCProgram goals will emphasize the following areas:
Molecular biology and genomics of crop plants and their pests, mechanisms of biological resistance to pests, mechanisms of invasion of weed species, and understand the molecular and cellular foundations for crop improvement and crop pest management.
Combine the knowledge of human nutrition and plant genetics to extend crop selection, germplasm screening, and crop improvement with the objective to build greater amounts of compounds relevant to improved human health and disease prevention into these crops.
Research in plant selection and improvement, limited-irrigation landscape plant cultivation, and landscape policies, and outreach in landscape industry plant selection, cultivation management, and Master Gardener education and volunteer development.
Research in genetic determinants of host plant resistance, fundamental mechanisms of biological invasions, and ecology, bioinformatics, genomics, and population genetics of pests. Extension will include applied research and education relevant to emerging issues of Colorado's agricultural industries, including biosecurity, safe and effective pesticide use, and implementation of effective pest management strategies that do not rely on pesticides.
Evaluate new crop, range, and livestock systems in semi-arid environments including disciplinary and interdisciplinary work in crop and soil sciences, animal sciences, pest sciences, range science, wildlife biology and ecology, forest science, water sciences, economics, and landscape design and policy applicable to the state and region.
Disseminate findings through extension educational programs aimed at changing practices to control pests.
Proper diagnosis of plant problems, entomology related to plants and structures, weed control and recommendations of integrated pest management strategies.

**9. Scope of Program**

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

## Inputs for the Program

**10. Expending formula funds or state-matching funds :** Yes

**11. Expending other then formula funds or state-matching funds :** Yes

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

| Year | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| 2007 | 21.0 | 0.0 | 36.0 | 0.0 |
| 2008 | 21.0 | 0.0 | 36.0 | 0.0 |
| 2009 | 21.0 | 0.0 | 36.0 | 0.0 |
| 2010 | 21.0 | 0.0 | 36.0 | 0.0 |
| 2011 | 21.0 | 0.0 | 36.0 | 0.0 |

## Outputs for the Program

**13. Activity (What will be done?)**

Conduct basic and applied research in plant productions systems.
Workshops and educational classes for producers.
Utilize demonstration plots and field days to communicate program results.
Use individual counseling with producers and clientele on specific plant production problems

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

| Extension | |
|---|---|
| Direct Methods | Indirect Methods |
| • Education Class<br>• Workshop<br>• Group Discussion<br>• One-on-One Intervention<br>• Demonstrations<br>• Other 1 (Field Days) | • Public Service Announcement<br>• Newsletters<br>• Web sites<br>• Other 1 (Radio reports) |

**15. Description of targeted audience**

Individual agricultural producers, homeowners, agribusinesses, and commodity organizations.

**16. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

| | Direct Contacts Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---|---|---|---|---|
| Year | Target | Target | Target | Target |
| 2007 | 800 | 5000 | 0 | 0 |
| 2008 | 800 | 5000 | 0 | 0 |
| 2009 | 800 | 5000 | 0 | 0 |
| 2010 | 800 | 5000 | 0 | 0 |
| 2011 | 800 | 5000 | 0 | 0 |

**17. (Standard Research Target) Number of Patents**

**Expected Patents**

2007 : 0 2008 : 0 2009 : 0 2010 : 0 2011 : 0

**18. Output measures**

**Output Target**

Release of technologies adopted by growers such as crop cultivars, crop germplasm, or components of crop production systems.

2007: 2 2008: 2 2009: 2 2010: 2 2011: 2

**Output Target**

Number of attendees at workshops/trainings/field days.

2007: 600 2008: 600 2009: 600 2010: 600 2011: 600

**Output Target**

Amount of grant dollars garnered to support natural plant production systems research and outreach.

2007: 25000 2008: 25000 2009: 25000 2010: 25000 2011: 25000

**Output Target**

Technical publications in the topical area of plant production systems.

2007: 25 2008: 25 2009: 25 2010: 25 2011: 25

**Output Target**

Number of basic and applied research efforts in plant production systems.
Number of workshops, educational classes for producers
Number of demonstration plots and field days
Number of individual consultations

2007: 50 2008: 50 2009: 50 2010: 50 2011: 50

## Outcomes for the Program

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Target**

Percent of participants at workshops/trainings/field days indicating an increase in knowledge gained.

**Outcome Type:** Short

2007: 50 2008: 50 2009: 50 2010: 50 2011: 50

**Outcome Target**

Percent of participants indicating change in behavior/best practices adopted.

**Outcome Type:** Medium

2007: 50 2008: 50 2009: 50 2010: 50 2011: 50

**Outcome Target**

Economic impact of the change in behavior reported.

**Outcome Type:** Long

| 2007: | 150000 | 2008: | 150000 | 2009: | 150000 | 2010: | 150000 | 2011: | 150000 |
|---|---|---|---|---|---|---|---|---|---|

**Outcome Target**

Adoption of crop production technology as measured by agricultural statistics.

**Outcome Type:** Long

| 2007: | 1 | 2008: | 1 | 2009: | 1 | 2010: | 1 | 2011: | 1 |
|---|---|---|---|---|---|---|---|---|---|

**20. External factors which may affect outcomes**

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

**Description**

Public policies and weather and other natural diseases will affect the adoption of new crop production technologies. Most of the advances are multi-year activities and cumulative rather than episodic in nature.

**21. Evaluation studies planned**

- After Only (post program)
- Before-After (before and after program)
- During (during program)
- Case Study

**Description**

Regular pre-post evaluations are used. Formative evaluations are often used during the program to adjust focus and direction. Case studies are used to clearly demonstrate impact.

**22. Data Collection Methods**

- Sampling
- On-Site
- Case Study
- Observation
- Tests

**Description**

Pre-post tests. Standard survey methods.

**1. Name of the Planned Program**

Strong Families, Healthy Homes

**2. Program knowledge areas**

- 805 10% Community Institutions, Health, and Social Services
- 802 50% Human Development and Family Well-Being
- 801 20% Individual and Family Resource Management
- 723 10% Hazards to Human Health and Safety
- 804 10% Human Environmental Issues Concerning Apparel, Textiles, and Res

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

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

**5. Brief summary about Planned Program**

Extension has active work teams in the areas of:
Family Economic Stability - family financial management
Early Childhood and Out-of- School Age Care - training child care providers/case workers
Strengthening Families and Marriages - Agrability, raising secure children, strengthening marriages
Strengthening Youth Through Families - parenting programs for diverse family populations
Healthy Homes - radon education and abatement in rural communities

**6. Situation and priorities**

There is a diversity of problems facing Colroado's families and households including:
financial instability (increasing rates of bankruptcy, sluggish economy, loss of jobs)
increasing numbers of youth in daycare, after school care, and self care
increasing divorce and suicide rates
continued high levels of on-farm accidents resulting in serious injury and disability
lack of parenting skills or opportunities to strengthen them
exposure to indoor air pollutants resulting in long-term health issues

**7. Assumptions made for the Program**

Assumptions for this program include:
If given the opportunity to learn financial management skills, individuals will choose to practice those skills, resulting in increased financial stability
Training for day care and after school care providers will increase providers ability to assure a safe and educational environment, resulting in increased student learning and school readiness
Strenghtening marriages through educational programs in anger management, communication skills , and child rearing practices will reduce individual stress, improve individual and family communications, produce secure children, and, ultimately, reduce the divorce rate.
Given the opportunity to learn parenting skills, parents will parent more appropriately resulting in less stress and more well-adjusted children.
Providing indoor air quality education, especially as it related to radon, will allow individuals to choose methods to reduce exposure, resulting in less health related issues.

**8. Ultimate goal(s) of this Program**

Ultimate goals of this program are:
Increased knowledge and practice of basic financial management skills including saving for emergencies and retirement.
Improved quality of child and out-of-school-age care statewide, including remote and difficult to reach populations.
Improved quality of life, including inreasing effective communication and decreasing depression and suicide rates.
Decreases in family management problems, including reduced problem behaviors in youth and increased family bonding and attachment (increased family stability).
Increased number of homes tested and mitigated for for radon and other health hazards and increased documentation available to potential buyers of existing homes regarding "healthy home history."

**9. Scope of Program**

- In-State Extension
- Multistate Extension

## Inputs for the Program

**10. Expending formula funds or state-matching funds :** Yes

**11. Expending other then formula funds or state-matching funds :** Yes

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

| Year | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| 2007 | 20.0 | 0.0 | 0.0 | 0.0 |
| 2008 | 20.0 | 0.0 | 0.0 | 0.0 |
| 2009 | 20.0 | 0.0 | 0.0 | 0.0 |
| 2010 | 20.0 | 0.0 | 0.0 | 0.0 |
| 2011 | 20.0 | 0.0 | 0.0 | 0.0 |

## Outputs for the Program

**13. Activity (What will be done?)**

Educational activities include:
Adaption of curriculum, training for agents, educational programs on financial management for families.
Training (face-to-face and on-line) for care givers.
Training for couples, parents of young children and disabled farmers
Parenting classes for parents and train-the-trainer classes for individuals who work with parents
Training using EPA-based radon and carbon monoxide education for agents first, then the general public, builders, realtors, homeowner's associations, and home owners.

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

| Extension | |
|---|---|
| Direct Methods | Indirect Methods |
| • Education Class<br>• Workshop<br>• Group Discussion<br>• One-on-One Intervention<br>• Demonstrations | • Public Service Announcement<br>• Newsletters<br>• Web sites |

**15. Description of targeted audience**

Colordo families, including diverse and difficult to reach populations. Care givers in day care and out-of-school-age care locations. Parents of young children. Disabled farmers. Owners and potential owners of homes.

**16. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact methods**

| | Direct Contacts Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---|---|---|---|---|
| Year | Target | Target | Target | Target |
| 2007 | 1000 | 5000 | 0 | 0 |
| 2008 | 1500 | 6000 | 0 | 0 |
| 2009 | 2000 | 7000 | 0 | 0 |
| 2010 | 2000 | 8000 | 0 | 0 |
| 2011 | 2000 | 10000 | 0 | 0 |

**17. (Standard Research Target) Number of Patents**

**Expected Patents**

2007 : 0 2008 : 0 2009 : 0 2010 : 0 2011 : 0

**18. Output measures**

**Output Target**

Number of trainings held on indoor air quality issues.

2007: 10 2008: 15 2009: 20 2010: 25 2011: 20

**Output Target**

Number of parenting programs held.

2007: 15 2008: 20 2009: 20 2010: 25 2011: 25

**Output Target**

Agrability workshops held.

2007: 5 2008: 10 2009: 15 2010: 20 2011: 20

**Output Target**

Trainings held for couples/parents on communications skills and raising a secure child.

2007: 10 2008: 20 2009: 25 2010: 30 2011: 35

**Output Target**

Number of trainings held for care providers.

2007: 5 2008: 10 2009: 15 2010: 20 2011: 25

**Output Target**

Trainings held in family financial management.

2007: 25 2008: 30 2009: 35 2010: 40 2011: 45

## Outcomes for the Program

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Target**
Number of individuals trained

**Outcome Type:** Short

| 2007: | 1000 | 2008: | 1000 | 2009: | 1000 | 2010: | 1000 | 2011: | 1000 |
|---|---|---|---|---|---|---|---|---|---|

**Outcome Target**
Perent of attendees gaining knowledge in the subject matter

**Outcome Type:** Short

| 2007: | 70 | 2008: | 70 | 2009: | 70 | 2010: | 70 | 2011: | 70 |
|---|---|---|---|---|---|---|---|---|---|

**Outcome Target**
Percent of participants changing attitudes as a result of the training

**Outcome Type:** Medium

| 2007: | 60 | 2008: | 60 | 2009: | 60 | 2010: | 60 | 2011: | 60 |
|---|---|---|---|---|---|---|---|---|---|

**Outcome Target**
Percent of participants intending to change behavior as a result of the training.

**Outcome Type:** Long

| 2007: | 50 | 2008: | 50 | 2009: | 50 | 2010: | 50 | 2011: | 50 |
|---|---|---|---|---|---|---|---|---|---|

**20. External factors which may affect outcomes**

- Economy
- Appropriations changes
- Competing Programatic Challenges

**Description**
Individuals' ability to attend fee-for-service programs may be impacted by economic downturns. Extension's ability to provide programming and scholarships for these programs may be impacted if appropriations continue to decrease and staff is lost.

**21. Evaluation studies planned**

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

**Description**
Regular pre-post evaluations are used. Formative evaluations are often used during programs to adjust focus and direction. Case studies are used to clearly demonstrate impact.

**22. Data Collection Methods**

- Sampling
- On-Site
- Case Study
- Observation
- Tests

**Description**

Pre-post tests.  Standard survey methods.