

2007 Lincoln University of Missouri Combined Research and Extension Plan of Work

Brief Summary about Plan of Work

Missouri ranks second only to Texas in the number of farms. Of these 106,000 farms approximately 82,000 are small considered small farms. These traditional farms represent a way-of-life that Missourians and other rural citizens have taken for granted over much of the nations' history. However, prime farmland in Missouri, as well as in the remaining states, is being lost rapidly due to urban sprawl. This loss of farmland across the United States occurs at a rate of 50 acres every hour, which is one-half million acres per year. A major reason for loss of this farmland is because our rapidly increasing population results in cities expanding into areas of traditional farmland. During encroachment, farmland becomes more valuable and is purchased for commercial development. A major component of this modified land use is for housing developments. High prices of land become prohibitive for purchasing this land for agricultural production.

Incorporation of an integrated agricultural production system within a residential development would seem an alternative to complete loss of farmland and an ideal method for examining various agricultural practices at the rural/urban interface. This system, or center, would be as self-contained as possible and would be evaluated for mutual economic benefits between the housing residents and the farm owner/manager. Other potential areas that can be evaluated at this center include: impact on human health, the environment, distance from food production to consumption, and labor requirements.

This center will be the focal point for a highly integrated research and extension unit at Lincoln University. Research will be conducted at the center and the information transmitted to limited resource producers throughout the state of Missouri. This center will complement our extension urban youth and 4-H programs in Jefferson City, Kansas City, St. Louis and the Bootheel, because we can bring these youth to campus for summer camps (they will have free accommodations in our youth development camp). Youth will be exposed to agricultural practices at the center and will be provided the opportunity to assist the center operator. This will be a unique center in Missouri and it will be developed in cooperation with the University of Missouri. Individual research projects will continue. These projects will allow investigators to examine specific issues of concern that cannot be readily incorporated into the institute. Projects that will be supported for continuing studies in cooperative research will include animal science, plant science, human nutrition and environmental science.

Animal science

Ruminants:

The primary emphasis in animal science will continue to be with goat production systems, but will include grazing studies with sheep and cattle. These studies are highly integrated between research and extension and between Lincoln University and the University of Missouri. Ruminant research is currently very application oriented at Lincoln University and examines various herbal treatments for the impact on internal parasite load. The University of Missouri has no plans for expanding extension efforts into goat production and this will allow Lincoln University Missouri residents receive assistance without duplication of effort by the land-grant universities. It is planned that an investigator with training in pasture and forage production will be added with a split research and teaching component.

Aquaculture:

This is a relatively new research area at Lincoln University, and information from ongoing and future studies will be made available for use by extension personnel at Lincoln University and at the University of Missouri. There are no current plans at the UMC to conduct research in production aquaculture systems and we will continue to fill this niche. This program was initiated based upon strong producer support for initiating aquaculture production research for Missouri producers. Research is needed specific to the climate in Missouri because Missouri has wide climatic variation and is the number one aquaculture producing state in the North Central Region.

Plant Science

This program will be highly integrated with the Extension Small Farm Program. Studies will continue to examine profitable and value added products and the marketing of new crops and other plants with particular interest in the needs of underserved farmers with limited resources. Additionally, horticulture is a profitable enterprise on many small farm operations.

Environmental Science

Studies in environmental science will focus on the impacts of agriculture when it completely surrounds pristine areas such as state or national parks. These studies are needed to assist us in determining potential impacts of farming operations when they are adjacent to environmentally protected areas.

Human Nutrition

Basic, as well as applied, studies will continue in this area examining the causes and impacts of obesity and hypertension in minority populations. Efforts are currently underway to hire an additional person in food safety that will have a split research and extension appointment.

Programs without strong research counterparts

Extension efforts to improve the educational and economic opportunities for under-represented populations in Kansas City, St. Louis, Jefferson City and the Bootheel will continue. Expansion of programs in Kansas City will occur through acquisition of property and construction of a facility near the downtown area. Programs in all these areas will assist youth and elderly, as well as, entire communities that have underserved and under-represented populations.

Programs of this type include: 1) Family and Youth Development, 2) Community Development, and 3) Minority Health and Aging

Estimated number of professional FTEs/SYs to be budgeted for this plan.

| Year | Extension | | Research | |
|------|-----------|------|----------|------|
| | 1862 | 1890 | 1862 | 1890 |
| 2007 | 0.0 | 23.0 | 0.0 | 25.0 |
| 2008 | 0.0 | 23.0 | 0.0 | 25.0 |
| 2009 | 0.0 | 23.0 | 0.0 | 25.0 |
| 2010 | 0.0 | 23.0 | 0.0 | 25.0 |
| 2011 | 0.0 | 23.0 | 0.0 | 25.0 |

Merit Review Process

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

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

Brief explanation

Research proposals submitted by investigators for Evans-Allen funding are reviewed within each program area, then submitted to the Director. The director evaluates them on feasibility and that they follow the Plan-of-work and complement/integrate with the extension programs. Proposals are then submitted to scientists for evaluating scientific merit. Reviews of the scientists are returned to the research director. The names of reviewers are removed and the research director returns the comments to the investigator for their response. If the response is satisfactory and/or if satisfactory modifications are made to the proposal it is then submitted to CSREES. Programs within extension and research will be evaluated for overall direction, progress and cohesiveness by a panel that contains program leaders, directors and nonuniversity stakeholders. Youth and community programs will also solicit input from stakeholders located near the satellite offices maintained by the University in St. Louis, Kansas City and the Bootheel region.

Evaluation of Multis & Joint Activities

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

Multi-state programming -The Change Agent States project is a catalytic step in beginning the transformation of the Land Grant system. It is a consortium of land grant institutions in fourteen states bringing the needed technical skills and training to each of the member states. Through this multistate approach, the consortium is developing successful models and systemic change

strategies to support greater diversity and welcoming climates throughout the system.

Numerous joint activities with the University of Missouri include: coordination of agricultural research and extension needs as determined by stakeholder input as described in detail in a memorandum of understanding between the two universities. Lincoln University will have primary responsibility for goats and aquaculture. Plans are underway to develop nanotechnology capabilities to assist in programs such as animal science and environmental science. In this collaboration LU will provide salary support for research and teaching activities for two physics faculty and UMC will provide facilities and equipment for conducting the research projects.

Research, extension and teaching personnel that are implementing these programs at LU interact with UMC field staff for assistance with activities and disseminating information throughout the state. Information obtained at LU will be disseminated both electronically and in print to UMC staff. Community development, 4-H and Youth development components of our programs utilize the infrastructure provided by UMC for assistance.

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

Collaborative efforts with 4-H, Youth and community development allow Lincoln University to provide UMC greater access to minority and underserved populations in regions such as the bootheel, St. Louis and Kansas City. Lincoln University also benefits through infrastructure support that UMC provides.

One of the targets of the goat program will be with the hispanic populations in the state since one of the main products from the hispanics in the southern portions of Missouri is goats. Collaboration with UMC and Missouri State University will enhance our ability to target this population.

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

The primary outcomes anticipated by efforts at Lincoln University are to improve the quality of life and/or assist under-represented and under-served individuals live with a sustainable income in an environment of their choosing. This environment could be in urban regions, at the rural/urban interface, or in isolated rural areas.

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

These programs will result in greater integration of activities within LU and between LU and other Universities within Missouri. The MOU between Lincoln and UMC will also assist in sharing knowledge and activities to a greater degree and will allow LU to concentrate efforts on fewer research programs for meeting the needs of clientele throughout the state.

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
- 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 listed actions do not occur in each program. Most programs do not use all the methods listed above to seek stakeholder input. However, all programs use at least two of the above actions, and most programs use at least four of the above methods. In general, stakeholders are invited to events and provided with information using mail lists, newsletters, association publications, presentations at stakeholder meetings, workshops and personal interactions. New releases inform and invite the general public. Efforts are evaluated and the results are used to modify and/or redirect formats as needed.

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 External Focus Groups
- Needs Assessments
- Use Surveys

Brief explanation.

Targeted tools include a needs analysis, and surveys. Surveys are conducted at Lincoln University for selected programs. The University of Missouri also shares their statewide survey results database.

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

Brief explanation

The Information is collected from meetings open forums and survey instruments. Survey instrument data is collated in report form and shared among the researchers and stakeholder groups.

3. A statement of how the input will be considered

- Redirect Extension Programs
- Redirect Research Programs
- In the Staff Hiring Process
- To Set Priorities

Brief explanation.

Advisory groups with individuals targeted from specific populations of stakeholders will receive an invitation once each year to hear research/extension activities and they will be asked to make recommendations for the coming years priorities.

1. Name of the Planned Program

Animal Science

2. Program knowledge areas

- 302 Nutrient Utilization in Animals 13 %
- 301 Reproductive Performance of Animals 12 %
- 307 Animal Management Systems 25 %
- 311 Animal Diseases 12 %
- 313 Internal Parasites in Animals 13 %
- 303 Genetic Improvement of Animals 25 %

3. Program existence

- Intermediate (One to five years)

4. Program duration

- Long-Term (More than five years)

5. Brief summary about Planned Program

Lincoln University, Cooperative Research and Extension Animal Sciences Program (ASP) investigates economically important livestock to solve problems of limited resource farmers. Stakeholder input is based on local livestock associations (North Central Regional Aquaculture Center, Missouri Aquaculture Association, Missouri Sheep and Goat Producers, and Missouri Cattleman's Association), market trends and direct requests.

Small ruminant production will address parasite management (sheep and goats) with medicinal herbs as well as commercial dewormer and the FAMACHA deworming being adopted to help control internal parasites in sheep and goats. Workshops and programs will be completed on co-grazing sheep, goats and cattle to improve land use efficiency, artificial insemination in sheep, goats and cattle, shearing school, fitting school and herd and flock health programs. The need to increase profits from wool, mohair and angora fibers produced from sheep, goats, rabbits, llamas and alpacas is great. Educational programs are being delivered and are being expanded. A value-added fiber program helps small farmers with learning new technologies and marketing.

ASP is addressing ruminants with; parasite management (sheep and goats) with medicinal herbs (de-wormers), co-grazing systems (cattle, sheep and goats) to improve land use efficiency, biosensors (cattle) to facilitate artificial insemination and food-fish production with; nutrition (bluegill and crappie), genetics (sunfishes), production dynamics (sunfishes), pest management and fish health. Outcomes are to improve production efficiency and increase opportunities with new strategies regarding livestock production. These results are essential to enable sustainability of diversified production for small and limited resource farmers.

6. Situation and priorities

Missouri has 82,000 small farms. The state is experiencing a shift in its size of farms, with the intermediate size operations in decline. The heads of households in the majority of small farm families are employed outside the home. These families need alternative agricultural options to sustain their way of life. The prevailing climate and geology combined with geography provide unique opportunities and challenges to Missouri farmers. Missouri is the second largest cow-calf producer of in the United States and improved efficiency of production is needed to maintain this status. Missouri is the second fastest growing state in raising sheep and goat in the nation. The alternatives for small farmers include sheep and goats which are easy to handle and can browse and consume forbs, neither preferred by cattle. Sheep and goats are increasing in popularity and profitability. Missouri is the leading aquaculture production state in the Midwest. Aquaculture is the fastest growing segment of the US agricultural industry. Seafood is a major source of omega three fatty acids, which have a beneficial effect on coronary heart diseases in humans. Fishery harvests are in decline, yet demand for fishery products is increasing. There is a need for increased seafood production and aquaculture can provide an alternative supply for seafood products. Sunfishes, native to Missouri, are highly regarded as food fishes and have been identified as potential aquaculture taxa for the North Central region. However, there are critical factors limiting their economic and sustainable production. The nutritional requirements of sunfish need to be defined; fast-growing and pure cultivars need to be developed; production dynamics need to be improved; and health issues resolved.

7. Assumptions made for the Program

- Adequate administrative support
- Adequate personnel
- Adequate knowledge base
- Adequate facilities and equipment
- Adequate funding
- Adoption of techniques by targeted audience
- Partnerships

8. Ultimate goal(s) of this Program

To improve quality of life for limited resource farmers in Missouri through livestock and aquaculture production.

9. Scope of Program

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

Inputs for the Program

10. Expending formula funds or state-matching funds

- Yes

11. Expending other than formula funds or state-matching funds

- No

12. Expending amount of professional FTE/SYs to be budgeted for this Program

| Year | Extension | | Research | |
|------|-----------|------|----------|------|
| | 1862 | 1890 | 1862 | 1890 |
| 2007 | 0.0 | 1.0 | 0.0 | 4.5 |
| 2008 | 0.0 | 1.5 | 0.0 | 4.0 |
| 2009 | 0.0 | 1.5 | 0.0 | 4.0 |
| 2010 | 0.0 | 1.5 | 0.0 | 4.0 |
| 2011 | 0.0 | 1.5 | 0.0 | 4.0 |

Outputs for the Program

13. Activity (What will be done?)

- a. Conducting research utilizing herbs to control internal parasites in small ruminants.
- b. Practice the use of artificial insemination in large and small ruminants to improve the genetics of herds and flocks to reduce cost.
- c. Develop sunfish cultivars for distribution to the industry.
- d. Determine nutritional requirements of sunfishes.
- e. Develop optimal production dynamics for sunfishes.
- f. Provide aquaculture fish health services for stakeholders.

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

| Extension | |
|---|--|
| Direct Method | Indirect Methods |
| <ul style="list-style-type: none"> ● Workshop ● One-on-One Intervention ● Demonstrations ● Other 1 (Field Days) ● Other 2 (Undergraduate Research) | <ul style="list-style-type: none"> ● Newsletters ● TV Media Programs ● Web sites ● Other 1 (Festivals and Fairs) |

15. Description of targeted audience

Limited resources audiences

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 | 2000 | 80000 | 400 | 2000 |
| 2008 | 2100 | 80000 | 400 | 2000 |
| 2009 | 2200 | 80000 | 400 | 2000 |
| 2010 | 2300 | 80000 | 400 | 2000 |
| 2011 | 2400 | 80000 | 400 | 2000 |

17. (Standard Research Target) Number of Patents

| Expected Patents | |
|------------------|--------|
| Year | Target |
| 2007 | 0 |
| 2008 | 0 |
| 2009 | 0 |
| 2010 | 0 |
| 2011 | 0 |

18. Output measures

Output Text

| Year | Research Projects Completed* |
|------|---|
| | Aquaculture Small Ruminant Large Ruminant |
| 2007 | 1 1 |

| | |
|------|---|
| 2008 | 0 |
| | 0 |
| | 1 |
| 2009 | 0 |
| | 4 |
| | 1 |
| 2010 | 0 |
| | 0 |
| | 1 |
| 2011 | 1 |
| | 2 |
| | 1 |
| | 1 |

*Projects reported only in year of completion

Presentations

| Year | Aquaculture | Small Ruminant | Large Ruminant |
|------|-------------|----------------|----------------|
| 2007 | 4 | 2 | 0 |
| 2008 | 6 | 2 | 0 |
| 2009 | 6 | 2 | 0 |
| 2010 | 6 | 2 | 0 |
| 2011 | 6 | 2 | 0 |

Manuscripts

| Year | Aquaculture | Small Ruminant | Large Ruminant |
|------|-------------|----------------|----------------|
| 2007 | 3 | 1 | |

| | |
|--------------|----|
| | 0 |
| 2008 | 4 |
| | 1 |
| | 0 |
| 2009 | 4 |
| | 1 |
| | 0 |
| 2010 | 5 |
| | 1 |
| | 0 |
| 2011 | 5 |
| | 1 |
| | 0 |
| 2007 Target: | 12 |
| 2008 Target: | 14 |
| 2009 Target: | 18 |
| 2010 Target: | 16 |
| 2011 Target: | 18 |

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Text

Aquaculture- Define sunfish nutritional requirements. Develop a fast growing sunfish cultivar. Identify viable production systems for sunfishes. Make available a fish health protocol. Small Ruminants- Assess the use of herb cultivars for control of internal parasites. Investigate new cultivars of grasses and legumes for potential improvement of weight gains in lambs and kids. Large Ruminants- Develop biosensor for determining levels of lutenizing hormone (LH) in the blood.

Outcome Type: Short

- 2007 Target: 2053
- 2008 Target: 2557
- 2009 Target: 3064
- 2010 Target: 3575
- 2011 Target: 4085

Outcome Text

Transfer new technologies for sunfish, small and large ruminant production to farmers. Farmers will use learned technologies.

Outcome Type: Medium

- 2007 Target: 1010
- 2008 Target: 1215
- 2009 Target: 1420
- 2010 Target: 1530
- 2011 Target: 1640

Outcome Text

Farmersadopt new technologies for increased and sustainable production.

Outcome Type: Long

2007 Target: 1010

2008 Target: 1215

2009 Target: 1420

2010 Target: 1530

2011 Target: 1640

20. External factors which may affect outcomes

- Economy
- Public Policy changes
- Competing Programatic Challenges

Description

A major factor regarding the aquaculture program are energy costs for maintaining facilities at proper temperature, as well as water quality issues. For the Small ruminant program, it will be dependent upon the ability to find and acquire appropriately trained personnel and long-term demand for goat meat.

21. Evaluation studies planned

- After Only (post program)
- Case Study

Description

Many of these programs at the current time are still at the level of determining appropriate research methods. The economics of these will be determined and if the program appears to be economically feasible, then it will be transferred and evaluated under field conditions as case studies.

22. Data Collection Methods

- Sampling
- Unstructured
- Case Study

Description

Those producers receiving the updated information and incorporating it into the program will be evaluated for their perceptions including labor, economics and marketing.

1. Name of the Planned Program

Family and Youth Development

2. Program knowledge areas

- 802 Human Development and Family Well-Being 25 %
- 724 Healthy Lifestyle 5 %
- 901 Program and Project Design, and Statistics 4 %
- 806 Youth Development 45 %
- 803 Sociological and Technological Change Affecting Individuals, Families and Communities 5 %
- 903 Communication, Education, and Information Delivery 5 %
- 805 Community Institutions, Health, and Social Services 6 %
- 801 Individual and Family Resource Management 5 %

3. Program existence

- Mature (More than five years)

4. Program duration

- Long-Term (More than five years)

5. Brief summary about Planned Program

The needs of families today are complex and require many skills to become or maintain self-sufficiency. The focus of the programs and activities will promote positive human development. Activities will extend knowledge to participants and convey a sense of belonging, teach life skills, and provide opportunities for mastery, competence and independence. This work also includes a focus on the educational, social, health, and emotional development of program participants.

6. Situation and priorities

In the United States, more than one-third (37%) of youth live in low-income families. This means the parents of these children made less than 200% of the poverty guidelines established by the federal government. The statistics concerning children living in poverty are again rising after a 10-year period of decline (National Center for Children in Poverty, 2004).

According to The National Center for Children in Poverty (NCCP), minority children are more likely to live in poverty than those from the majority population. These minority children are also the group that leads the recent statistics showing increases of children in poverty. Low income families tend to have high mobility rates. High rates of mobility create instability and turmoil associated with issues such as the increasing educational achievement gap in low income and minority children.

Looking at The National Assessment of Educational Progress (NAEP), also known as "the Nation's Report Card," data, the Education Trust concluded that, "By the time (minority students) reach grade 12, if they do so at all, minority students are about four years behind other young people. Indeed, 17 year-old African American and Latino students have skills in English, mathematics and science similar to those of 13 year old white students." Another way to measure the achievement gap is to compare the highest level of educational attainment for various groups. Here too there are gaps at all levels. Hispanic and African-American high school students are more likely to drop out of high school in every state. Of these high school graduates, college matriculation rates for African-American and Hispanic high school students remain below those of white high school graduates – although they have risen in recent years. Furthermore, of those students enrolling in college, Hispanic and black young adults are only half as likely to earn a college degree as white students.

Findings in the NAEP primer suggest that the most successful policy initiatives recognize the critical role that parents and communities play in the care and education of young children. These efforts also encourage integration of existing programs, services, and funding streams into a flexible and comprehensive system of supports for children and families.

Difficulties in school typically result in fewer youth graduating which results in a cycle of poverty because about two-thirds of children, whose parents have no high school diploma, live in low income families.

Consistent with targeting requirements of the Older Americans Act (OAA), the Paula J. Carter Center on Aging places emphasis on services to persons with the greatest social and economic need, including members of racial and ethnic minority

groups. Among the OAA Title III service recipients, 21.8 percent were members of racial and ethnic minority groups.

The efforts of Lincoln University's extension programs are concentrated in areas of Kansas City, St. Louis and Southeast Missouri where poverty levels exceed 50%. Lincoln University provides services in and around the Jefferson City area. In Jefferson City, many of the families residing in public housing are from the large urban areas of Kansas City and St. Louis. About 50% of the parents in this housing have not graduated from high school (JCHA, 1999). These statistics reflect the critical educational needs of this audience as well as the opportunity to share life development skills.

In an effort to meet the needs of this diverse audience of low income children, families, and elders, various programs must be developed and implemented that offer a level of success that has measurable outcomes. The needs for this audience are complex and generally have not been met adequately by existing programs. New ways of "reaching, teaching and inclusion" for this audience must be developed and discovered. Traditional methods are not adequate.

Priorities of these programs are to: 1) develop leadership skills 2) improve the literacy rate of minority and under-represented groups, 3) and provide a learning environment for after school enrichment, including school homework assistance. Leadership development programs will provide guidance in volunteerism, sense of belonging, development of social skills and mentoring skills.

The special health, psychological and social needs of the minority and underserved older adults are only partially being met. As Missouri's population continues to age, it reflects the faces of many races and cultural lifestyles. The implications of these demographic changes for current barriers still exist that precludes entry into the healthcare system. Not only will these systems have to accommodate a vastly larger number of older persons in the new millennium, but, those whose needs are more diverse and more complex.

There is a lack of accessibility, adequate training and affordability that affect the already overworked healthcare system. An increased awareness of cultural needs, diversity, and disparity can serve as a benefit to the growing number of underserved. For Missouri to advance into a working multicultural system, all residents and providers of the State must have access to information to insure that health management occurs.

7. Assumptions made for the Program

- a) There is adequate financial support and human resources available
- b) Continued concentrations of efforts in 4 regions of the state, includes Central Missouri, Kansas City, St. Louis, and the Southeast region.
- c) The objectives of the program remain consistent with the University's Mission
- d) Additional personnel increases will result from increased success in obtaining extramural funding.
- e) the clientele served are motivated to make implement what they learn

8. Ultimate goal(s) of this Program

To decrease poverty, in the minority and under-represented population that have received our services. Ultimately, the decreased poverty should be no higher than the averages throughout the state of Missouri.

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. Expending amount of professional FTE/SYs to be budgeted for this Program

| Year | Extension | | Research | |
|------|-----------|-------|----------|------|
| | 1862 | 1890 | 1862 | 1890 |
| 2007 | 0.0 | 220.0 | 0.0 | 0.0 |
| 2008 | 0.0 | 22.0 | 0.0 | 0.0 |
| 2009 | 0.0 | 220.0 | 0.0 | 0.0 |
| 2010 | 0.0 | 22.0 | 0.0 | 0.0 |
| 2011 | 0.0 | 22.0 | 0.0 | 0.0 |

Outputs for the Program

13. Activity (What will be done?)

Design, implement and evaluate educational programs for youth-at-risk. Program implementation will include club member retention, workshops, camps and after school programs.

Examples of specific activities include:

-Mentoring Program that matches community volunteers who will spend time with interested youth. Delta Sigma Theta sorority and Phi Beta Sigma and Alpha Phi Alpha fraternities often assist with this program.

-ACT Preparation: Work with students to prepare for the English and Math portions of the ACT test.

-Fatherhood First Program: This includes youth and adults and these are meetings that address topics related to self-esteem, nutrition, fitness, computer skills, relationships and parenting.

-Afterschool Tutoring Program: Programs are to assist students K-8 with homework, tutoring, computer classes, reading and math labs, life skills, arts, and crafts and recreation. Collaboration with the National Book Bank provides donations of books to non-profit organizations.

-Fitness Program: LUCE currently offers the Division of Youth Service classes in their physical education component. The community also participates in exercising to increase their energy level and to improve their overall health.

-The Teen Talk Abstinence Program, offered in Charleston Junior High School, for girls to learn the advantages of remaining abstinent.

-Teen Drop In: This program has open enrollment for neighborhood youth and is to provide an after-school community safe haven. The teen drop in offers an array of opportunities for youth between the ages of 12 to 17. Activities and educational workshops include but will not limited to homework assistance, open-microphones to develop their skills in public speaking/poetry, teen talk to discuss youth community issues and concerns, and educational games as well as activities that teach to enhance their life skills. Offered through the school year.

-North Side after School Neighborhood Initiative: This is a partnership between Lincoln University Urban Impact Center of St. Louis, community volunteers and two St. Louis Public grade schools, Earl Nance Sr. Elementary and Baden Elementary. Our initiative is to provide a power-hour implementing homework assistance for youth after school, provide life skills activities that teach addressing communication skills, drug and alcohol prevention, conflict resolution etc, as well as health and nutrition via snacks and physical activity in the school gymnasiums. This program offers open enrollment to youth participants. This activity uses 10 community volunteers.

-Urban Garden Beautification Project collaborative effort with the St. Louis Neighborhood Stabilization Office and community leaders to continue transforming a weed infested vacant lot into a neighborhood asset that will assist in stabilizing the neighborhood and revitalize community. The current lot is located in Baden, called the Baden Triumph Garden. Plans are being implemented and resources are being sought for this location.

-Black History Programs in Charleston, Caruthersville, and Sikeston. Lincoln University staff and youth team up with the Suzanna Wesley Center, Caruthersville School District, and Gloryland Community Center. For youth (K-12) in the school districts.

-Health and Fitness Classes

-Health fair designed to educate youth on nutrition, fitness, and the dangers of alcohol, tobacco, and other drugs.
eat Activities

Field Day - a culmination of educational workshops on a variety of topics, talent show, and entertainment for all ages.

-Black History Program, an educational program on the accomplishments and struggles of African-Americans.

-Fall into Fall, a back-to-school rally to prepare students for the upcoming school year.

-HIV/AIDS/STD Awareness Day

-Summer Camp, a partnership with YMCA, Mission Missouri, Weed & Seed, and DAEOC to provide fitness and health, character development, arts and crafts, self-esteem building, recreation, and field trips for 5 weeks.

-Women's Wellness Conference

-Teen Talk/Young Scholars, a weekly program that allows teenagers to express themselves freely on different topics.

-Underserved minorities and other disadvantaged older adults 50 + in Cole Co. area will become more aware and knowledgeable about importance of adopting a healthy lifestyle.

-Participants will become proactive in seeking health information (increasing utilization of eHealth Medline Plus website).

-Participants will become more aware of ways to manage their personal health

-Youth will develop increased communication skills, receive feedback, certificates of award and recognition for their efforts.

-Provision of culturally specific parenting education classes.

-Family and community empowerment experiences to assist parents helping their children close the educational achievement gap.

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

| Extension | |
|---|---|
| Direct Method | Indirect Methods |
| <ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● Demonstrations | <ul style="list-style-type: none"> ● Newsletters ● TV Media Programs ● Web sites |

15. Description of targeted audience

Minority and other under-represented youth in urban St. Louis, Kansas City and selected locations in the bootheel region of the state (Primarily Sikeston, Lilbourn and Caruthersville). Minority and under-represented populations in Central Missouri, especially those living in housing developments.

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 | 0 | 0 | 460 | 0 |
| 2008 | 0 | 0 | 575 | 0 |
| 2009 | 0 | 0 | 700 | 0 |
| 2010 | 0 | 0 | 725 | 0 |
| 2011 | 0 | 0 | 725 | 0 |

17. (Standard Research Target) Number of Patents

| Expected Patents | |
|------------------|--------|
| Year | Target |
| 2007 | 0 |
| 2008 | 0 |
| 2009 | 0 |
| 2010 | 0 |
| 2011 | 0 |

18. Output measures

Output Text

Education classes, invited speeches, workshops, in-service education, consultations, media appearances, web sites, newsletters

2007 Target: 100
 2008 Target: 120
 2009 Target: 120
 2010 Target: 120
 2011 Target: 130

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Text

Short term: 1) Enhanced academic productivity, 2) Improved rate of community volunteerism 3) Development of leadership skills, 4) Increased knowledge and 5) increased life skills.

Outcome Type: Short

2007 Target: 150
 2008 Target: 300
 2009 Target: 300
 2010 Target: 300
 2011 Target: 300

Outcome Text

Medium term: 1) Completion of current grade and promotion to the next, 2) Increased graduation rates from high school, 3) Reduced probability of acts of crime, 4) Increased self-esteem, 4) Better social standards, and 5) Better life choices.

Outcome Type: Medium

2007 Target: 150
 2008 Target: 300
 2009 Target: 300
 2010 Target: 300
 2011 Target: 300

Outcome Text

Long term: 1) Improved education levels, 2) Increased standard of living, 3) improved quality of life.

Outcome Type: Long

2007 Target: 150

2008 Target: 300

2009 Target: 300

2010 Target: 300

2011 Target: 300

20. External factors which may affect outcomes

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

Description

Numerous external factors can have a profound influence on outcomes. These include factors such as long-term support of the programs, personnel available, public funding changes due to changes in priorities, etc.

21. Evaluation studies planned

- During (during program)

Description

Extension administrators, as well as, advisory groups will be used to monitor progress of the programs and make recommendations regarding any changes that need to be made.

22. Data Collection Methods

- Unstructured
- Observation

Description

Data will be collected by specialists that are providing the services. This will be primarily through observations, one-on-one interviews and sampling from those that are receiving out services.

1. Name of the Planned Program

Community and Leadership Development

2. Program knowledge areas

- 608 Community Resource Planning and Development 40 %
- 803 Sociological and Technological Change Affecting Individuals, Families and Communities 10 %
- 806 Youth Development 10 %
- 805 Community Institutions, Health, and Social Services 30 %
- 802 Human Development and Family Well-Being 10 %

3. Program existence

- New (One year or less)

4. Program duration

- Long-Term (More than five years)

5. Brief summary about Planned Program

The Center will conduct community and organizational-based workshops, meetings, trainings, curriculum implementation, assistance, organizational development, fund development, community and organizational planning, information exchange, etc, to communities and organizations that help improve the overall quality of life and standard of living for those communities and enhance the efficiency and effectiveness of those organizations. Our Center creates, applies and transfers multidisciplinary knowledge to help people understand community change and identify opportunities in a collaborative manner.

The targeted audiences will be all social groups in the community, with special emphasis placed on underserved and underrepresented populations. No limitation on gender, ethnic, religious diversity, or lifestyle choice. Also targeted among adults will be those who are currently serving in a leadership role or in an agency, organization, neighborhood, club, community, business or aspire to serve.

6. Situation and priorities

Priority I

Strengthening Leadership and Management Skills for Small Towns and Community Organizations

We emphasize leadership and management principles that can improve the efficiency of small towns and community organizations. The additional training our participants receive will assist them in becoming effective within their organizations, ultimately enhancing the quality of life and standard of living within the communities they serve.

Due to the rapid growth of small towns and community-based organizations the individuals that manage them and due to the numerous laws associated with managing these small towns, many of the individuals managing them increasingly find themselves confronted with growing pressure to demonstrate their skills in managing the resources of their organizations. The LUCCLD has developed a series of workshops and training sessions to help them administer better. Critical skills areas include: Leadership, Community Resource Planning, Negotiation Skills, Planning, Communication Skills, Youth Development, and General Community and Organizational Skills.

Priority II

Provide Leadership and Organizational Development Training for Small Towns and Communities in Missouri.

Many of our training sessions and workshops will be based on the cohort model, meaning that the same group of individuals will participate in a series of sessions from start to finish (two-nine sessions). Program sessions will focus on such topics as self-awareness, understanding and leading people, getting results, and thinking strategically.

Priority III General Community and Organizational Skill Building Leadership Program

Communities reap rewards when residents become involved, raise their awareness of issues, and improve their leadership skills. Building a community where people want to live, work and play has its long term rewards. In light of this the LUCCLD has launched efforts aimed at empowering citizens with information and skills to heighten awareness and deepen civic involvement. The goals of these workshops and training are to improve participant's skills in working with others, to increase citizen involvement in and of effective decision-making and effective ways to affect change.

Our sessions often focus on leadership skill development, laws, rules, and regulations that affect small towns and communities. Additionally, sessions will focus on the effects of educational processes, governmental administration, business and economic

development, public health and human services and how they interact with and for small town and community processes.

Priority IV

Preparing Small Town and Community Leaders to Work more Effectively with the Public

Small towns and community leaders are often unprepared for their roles in administration and management, especially when it comes to expending tax payer's money. The goals of this training are to assist individuals in dealing more effectively with problem employees, communicate with citizens and employees in a more professional manner.

Many small towns and community leaders find that their administrators, officers, supervisors and managers have not had any formal training in the responsibilities or expectations for these positions. Lack of skills results in the individual either replicating "what we've always done" or asking other supervisors, who also may not be trained, what to do.

Unprepared supervisors, officers, and managers can result in lost time and production due to grievances and poor employee/membership relations. While it is essential to improve the efficiency and effectiveness of frontline supervisors, few small towns and community organizations are large enough or have the internal resources to provide training.

Training and workshops in this area aims to better prepare supervisors and officers for their position and responsibilities. Workshop topics are Basic Leadership Skills, Work Planning and Goal Setting, Customer/ Resident Relations, Effective Communication Skills, Budgeting, Fund Accounting and Grant Administration, "Nuts and Bolts" of Personnel Management, Managing "Troubled" and "Problem" Employees, and Negotiations.

Priority V

Leadership Management Skills for Improved Efficiency and Human Relations

Many organizations and agencies are finding their managers/officers have not had formal training in how to manage organizations, other people and/or the public. As a result, there are often miss-steps and time lost as these individuals learn "on the job."

When officers or administrators in small towns or community organizations don't have the skills needed to manage projects, it costs the organization in efficiency and effectiveness - affecting profitability, membership and poor public relations. Many organizations don't have the internal resources to provide training in many of these needed areas of administration. They are constantly looking for affordable experts at the university to provide applicable skills in a format useful to the learner.

Priority VI

Training and Skills that Improves Small Town, Community and Organizational Efficiency and Effectiveness

Keeping up with thousands of laws and processes is not easy for the small town administrators in Missouri. The LUCCLD has developed training sessions and workshops in leadership and administrative management that help participants work more effectively with village, town, and city boards; communicate with citizens; and establish policies that use local resources wisely. The program also helps participants build a professional network for continued learning and support.

Hundreds of small town administrators in the state of Missouri are entrusted with managing the day-to-day affairs of their communities, from issuing permits and licenses, to handling local elections, to collecting taxes. These persons must comply with a variety of local and state laws and ordinances set forth by elected officials at all levels of government, as well as answer to their local constituents. They need training in how to manage their responsibilities and to keep up with constantly changing policies.

7. Assumptions made for the Program

1) Everyone is a leader, and citizens from all walks of life need to accept responsibility for problem solving, 2) Leadership is not innate, it can be learned, 3) A flexible dispersed leadership pattern is an element of community entrepreneurship (Flora and Green), 4) Healthy Communities generate leadership everywhere (Coalition for Healthier Cities and Communities), 5) Successful and sustainable communities enhance human and social capital by increased use of the skills, knowledge and ability of local people (NCRCRD), 6) Community leadership is one component of an effective community (National Civic League), 7) Effective communities have a unique way of understanding how the community educates itself in the community's business (Kettering Foundation), 8) Involving and working with people is important to accomplishing work that needs to be done, 9) An influence relationship is important among leaders and collaborators who intend real changes that reflect their mutual purposes, 10) Leadership development is a process, not a quality. Results come from combined efforts and commitment of all in the community and/or organization.

8. Ultimate goal(s) of this Program

Community goal attainment
Increased capacity to deal with future issues

9. Scope of Program

- In-State Extension

Inputs for the Program

10. Expending formula funds or state-matching funds

- Yes

11. Expending other than formula funds or state-matching funds

- No

12. Expending amount of professional FTE/SYs to be budgeted for this Program

| Year | Extension | | Research | |
|------|-----------|------|----------|------|
| | 1862 | 1890 | 1862 | 1890 |
| 2007 | 0.0 | 2.0 | 0.0 | 0.0 |
| 2008 | 0.0 | 2.0 | 0.0 | 0.0 |
| 2009 | 0.0 | 2.0 | 0.0 | 0.0 |
| 2010 | 0.0 | 2.0 | 0.0 | 0.0 |
| 2011 | 0.0 | 2.0 | 0.0 | 0.0 |

Outputs for the Program

13. Activity (What will be done?)

For strengthening leadership and management skills for small towns, communities, and organizations

Workshops and training sessions covering critical skill areas and topics such as: leadership, community resource planning, negotiation skills, planning, communication skills, self-awareness, understanding and leading people, getting results, and thinking strategically, basic leadership skills, work planning and goal setting, customer/resident relations, effective communication skills, budgeting, funding accounting and grant administrations, managing "troubled" and "problem" employees, and negotiations.

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

| Extension | |
|--|---|
| Direct Method | Indirect Methods |
| <ul style="list-style-type: none"> ● Group Discussion | <ul style="list-style-type: none"> ● Newsletters ● Web sites ● Other 1 (Word of mouth and announcements) |

15. Description of targeted audience

Small towns, community organizations and 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 | 50 | 100 | 30 | 60 |
| 2008 | 75 | 100 | 50 | 60 |
| 2009 | 100 | 100 | 70 | 70 |
| 2010 | 120 | 120 | 90 | 90 |
| 2011 | 130 | 130 | 100 | 100 |

17. (Standard Research Target) Number of Patents

| Expected Patents | |
|------------------|--------|
| Year | Target |
| 2007 | 0 |
| 2008 | 0 |
| 2009 | 0 |
| 2010 | 0 |
| 2011 | 0 |

18. Output measures

Output Text

- # # # of informational sessions
- # of workshops
- # of presentations
- # of participants
- Evaluation forms
- Anecdotal responses
- Changed behavior and procedures of participants and organizations

2007 Target: 75
 2008 Target: 75
 2009 Target: 75
 2010 Target: 75
 2011 Target: 75

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Text

- Development or update of plan
- Increased participation and diversity
- Awareness of need to develop or update plan
- Awareness of need for increased participation and diversity.

Outcome Type: Short

2007 Target: 50
2008 Target: 75
2009 Target: 75
2010 Target: 75
2011 Target: 75

Outcome Text

Increased partnerships and resources
Plan/project implementation
Local officials take actions that increase citizen participation.
Increased civic engagement in deliberating public issues
Increased knowledge, understanding & skills

Outcome Type: Medium

2007 Target: 50
2008 Target: 75
2009 Target: 75
2010 Target: 75
2011 Target: 75

Outcome Text

Evidence of community goal attainment
Increased capacity to deal with future issues
Change in community practice
Improved community fiscal and economic performance
Citizens of varying cultures increase their participation and engagement in local government and in the community
Sustained capacity for informed local decision making
Group or organizational sustainability

Outcome Type: Long

2007 Target: 50
2008 Target: 75
2009 Target: 75
2010 Target: 75
2011 Target: 75

20. External factors which may affect outcomes

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

Description

All these factors may affect our planned outcomes, directly, and indirectly.

21. Evaluation studies planned

- Retrospective (post program)

Description

Since the majority of our programming will come as the result of invitations from small towns and organizations for specific programming, behavioral modifications and anecdotal evidence will comprise the majority of our programming evaluations.

22. Data Collection Methods

- Sampling
- On-Site
- Unstructured
- Observation
- Other (Testimonials)

Description

On-site surveys will be through evaluation forms. In addition to the above methods, there will be program reviews.

1. Name of the Planned Program

Environmental Science

2. Program knowledge areas

- 215 Biological Control of Pests Affecting Plants 5 %
- 123 Management and Sustainability of Forest Resources 5 %
- 136 Conservation of Biological Diversity 10 %
- 216 Integrated Pest Management Systems 5 %
- 141 Air Resource Protection and Management 10 %
- 314 Toxic Chemicals, Poisonous Plants, Naturally Occurring Toxins, and Other Hazards Affecting Animals 10 %
- 102 Soil, Plant, Water, Nutrient Relationships 25 %
- 723 Hazards to Human Health and Safety 5 %
- 112 Watershed Protection and Management 20 %
- 403 Waste Disposal, Recycling, and Reuse 5 %

3. Program existence

- Intermediate (One to five years)

4. Program duration

- Long-Term (More than five years)

5. Brief summary about Planned Program

The Big Oak Tree State Park is one of the historical landmarks in the state of Missouri. The Park is completely surrounded by thousands of acres of agricultural farmlands, the Big Oak Lake, and the St James Bayou. Human activities in the surrounding land mass is believed to be impacting the health of the State Park. It is currently listed as a threatened ecosystem on the U.S. National Landmark list. The overall objective of this study is to carry out a comprehensive investigation of the interactions between the park and its surroundings as a model on the effect of human activities on a natural ecosystem. The specific objectives are: evaluate the interactions between native wetland and agricultural ecosystem and the role of soil in reducing non-point source pollution of agricultural chemicals; investigate the effect of gaseous emissions from agricultural operations on surrounding farms on the overall health of the Park; determine the historical and current impact of agricultural activities on the park's water quality; investigate the impact of human activities on the surrounding farmlands on the population and distribution of microorganisms in the Park; investigate the rate of occurrence of changes in the type and quantity of vegetation and relating it to activities going on in the surrounding environments; improve the recreational value of the park; create a geospatial digital database for the Park and the surrounding areas within the Lower Mississippi River watershed. To achieve the above objectives the following tasks will be carried out: characterize soil physiochemical and biological properties and investigate the interactions between the various properties and the contaminants; determine gas emission as affected by agricultural practices; develop management strategy for gas emission minimization; determine temporal and spatial variability of water quality in natural & artificial water systems; examine sediment cores collected from the park and other areas; analyze different types of microorganisms found in different parts of the Park and surroundings; carry out a laboratory based impact analysis of specific chemicals on microorganisms; carry out periodic estimates of the types and number of different vegetation, and blue green algae within the Park and surrounding environments; create a geospatial digital database for the region; develop appropriate management strategies to restore and ensure continued preservation of natural ecosystems; develop and apply biological based strategies for control of specific pests to improve recreational value of the park; provide research experiences for student; and conduct educational and informational workshops for stakeholders. Potential impacts of the study include: increased environmental awareness by stakeholders of the dangers posed by uncontrolled human activities on the destruction of shared heritage; direct changes in farming practices to reflect increased awareness; direct changes in public policy on the regulation of human activities; restoration and continued preservation of Park as a natural heritage; increased training of environment stewards & attractiveness of parks for recreational use.

6. Situation and priorities

In the United States, thousands of land areas are set aside and designated as state or national parks. This is to preserve their natural attributes for future generations. Agricultural farmlands, and other sites, where deliberate human activities that could impact natural settings are carried out, surround many of these parks. An understanding of the mechanics of the interactions

between parks and the surrounding environments, and the net value of these interactions to the parks is critical in the choice of management strategies to adopt in the preservation of the pristine nature of these parks. This study intends to analyze such possible interactions using the Big Oak Tree State Park and Surrounding Agricultural Farmlands/Lakes as a model.

The Big Oak Tree State Park is one of the historical landmarks in the state of Missouri. It is located in East Prairie in Mississippi County of Southeast Missouri and is about 1000-acre in size. It was acquired in 1937 as a product of an urgent campaign mounted by the local residents to "save some remnant of our natural heritage" from the aggressive logging that virtually wiped out the rest of the once "swamp forest" Bootheel area. Most of the money for the acquisition of the park came from donations and fund raising by local residents. The Big Oak Tree is thus, the last remaining piece of continuous hardwood bottomland forest that once covered the entire Bootheel area of Missouri. Other major habitats of the park include swamp forest and shrub forest. The Big Oak Tree State Park is generally referred to as the park of champions because of the presence of several trees that have the status of being state champions because of their size. It has a tree canopy averaging 120 feet with several trees more than 140 feet tall. Some of the wildlife that live in the park includes deer, opossum, mice, turtles, lizards and snakes. The park is also a great location for more than 140 bird species including the Mississippi kites and bald eagle. The Big Oak Tree State Park is completely surrounded by thousands of acres of agricultural farmlands, the Big Oak Lake, and the St James Bayou.

In spite of efforts to preserve the natural state of the Big Oak Tree State Park, it is currently listed as a threatened ecosystem on the U.S. National Landmark list (Vaughn 2006). Additionally, the status of the St. James Bayou and Big Oak Tree Lake in the park are listed as impaired in the Environmental Protection Agency's (EPA) "Assessment Data for the New Madrid-St. Johns Watershed (EPA, National Assessment Database 2006). For these reasons, a comprehensive environmental and ecological study of this watershed is required. The location of the park as an "island" in the midst of farmland makes it a unique study site to determine historical and current impacts of agricultural activities on a natural ecosystem. As a wetland or swamp area it is also an excellent site for water quality studies. The completion of this study will lead to a better understanding of the human- natural ecosystem interactions and provide a management strategy for minimizing human interventions, sustaining natural ecosystems, and improving quality of life.

List the Assumptions made for the Program

- (a) That the program is assured of continuous funding
- (b) That the program will enjoy continuous access to the Big Oak Tree State Park
- (c) That farmers will be motivated to change their management practices
- (d) That policy makers will be persuaded to enact appropriate legislation
- (e) That major changes occurring at the park are due to human activities and not natural disasters
- (f) That people will accept training opportunities offered to them by the program
- (g) That information supplied by the program will result in awareness and knowledge of environmental issues

7. Assumptions made for the Program

- (a) That the program is assured of continuous funding
- (b) That the program will enjoy continuous access to the Big Oak Tree State Park
- (c) That farmers will be motivated to change their management practices
- (d) That policy makers will be persuaded to enact appropriate legislation
- (e) That major changes occurring at the park are due to human activities and not natural disasters
- (f) That people will accept training opportunities offered to them by the program
- (g) That information supplied by the program will result in awareness and knowledge of environmental issues

8. Ultimate goal(s) of this Program

This study is carried out to:

- (a) Provide baseline data on which relationships between human activities and natural ecosystems could be analyzed, and comprehensive management strategies developed.
- (b) Train future caretakers of the environment
- (c) Raise awareness on major consequences of improper human activities on our cherished natural resources
- (d) Enhance recreational value of parks through development of appropriate management strategies
- (e) Advance causes for which ordinary citizens of East Prairie of Southeast Missouri sacrificed their time and hard earned pennies.
- (f) Improve environmental quality and sustainability

9. Scope of Program

- Integrated Research and Extension

Inputs for the Program

10. Expending formula funds or state-matching funds

- Yes

11. Expending other than formula funds or state-matching funds

- No

12. Expending amount of professional FTE/SYs to be budgeted for this Program

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

Outputs for the Program

13. Activity (What will be done?)

A. Geospatial Studies: The specific objective of the geospatial studies is to create a geospatial digital database for the Big Oak Tree Park and the surrounding areas within the Lower Mississippi River watershed. Such a product would provide the basis for natural resource inventory, environmental monitoring and modeling through the use of geographic information systems (GIS). The database will play a major role in designing field sampling strategies, plotting sample locations, conducting spatial analysis and modeling of analytical data.

The primary task of the geospatial team is to locate and assemble relevant geospatial data from the various state and federal agencies for the Big Oak Tree Park and surrounding areas. The database will consist of various layers including digital elevation models, land use/land cover, geology, soil, hydrology, wetlands, floodplains, agricultural statistics, remote sensing data (satellite and air photo), etc. The Missouri Spatial Data Information Service will be the primary data source. Other state agencies including the Missouri Department of Natural Resources, Missouri Department of Conservation, etc. will also be targeted for data. Federal agencies such as the USDA's Natural Resources Conservation Service, United States Geological Survey, Environmental Protection Agency are other potential data sources.

B. Soil Chemical Studies: The specific objective of the soil chemistry studies is to evaluate the interactions between native wetland and agricultural ecosystem and to determine soil's role of reducing non-point source pollution of agricultural chemicals and sustaining ecosystem. Non-point source pollution resulting from applications of fertilizers and pesticides in agricultural land is well known to affect water and air quality. Soil is a vital component in ecosystem buffering, attenuating, or degrading agricultural chemicals for safeguarding human and environment from contamination. Specific tasks to be executed by the soil chemistry team include:

- i) Characterize soil physiochemical and biological properties and establish soil baseline of agricultural chemicals within specified ecosystem;
- ii) Determine temporal and spatial variability of agricultural chemicals in soil in the area;
- iii) Investigate the interactions between soil and agricultural chemicals and identify soil conditions for maximum reduction of non-point source pollution;

- iv) Evaluate the chemical and biological processes of soil buffering or attenuating agricultural chemicals and determine the soil maximum loading capacity;
- v) Create a GIS-based model for predicting potential of agricultural chemicals in soil to water pollution and guiding agricultural management of fertilizer and pesticide application.

C. Air Quality Studies: The specific objective of the air quality studies is to investigate the effect of gaseous emissions from agricultural operations such as fertilizer application and commercial animal rearing on surrounding farms on the overall health of the Big Oak Tree State Park. Recent studies, including the US National Research Council report provide convincing evidence that changes in agricultural crop production and animal activities are increasing the emissions of trace gases (e.g., carbon dioxide, sulfur, nitrogen, hydrocarbon species, etc.) to the atmosphere. All of these emissions can perturb the environment with a host of beneficial and detrimental effects such as increased crop yields from nitrogen loading or decreased visibility from increased aerosol production. Gaseous deposition from both crop and animal operations contributes to eutrophication and acidification of some downwind ecosystems. Major tasks to be undertaken by the air quality team are:

- i) Analyses of gaseous chemical species being emitted by agricultural land and natural forest/swamp.
- ii) Determination of gas emission as affected by agricultural practices.
- iii) Impact of emitted gases on wild life and vegetation in the Big Oak Tree State Park as a downwind ecosystem.
- iv) Development of management strategy for minimizing greenhouse gas emission

D. Water Quality Studies: The overall objective of the water quality studies is to determine the historical and current impact of agricultural activities on the park’s water quality in terms of chemical and bacteriological characteristics. To accomplish this objective the team will partner with the Missouri State Park officials, the Missouri Department of Natural Resources and the Missouri Department of Conservation to carry out the following tasks:

- i) Determine the temporal and spatial variability of water quality in the natural and artificial water systems in the park in terms of bacterial species and numbers, nutrient concentrations, and presence of organics and metal contaminants.
- ii) Determine the historical record of possible water contaminants by examining sediment cores collected from the park and other areas within the watershed.
- iii) Determine the stability of potential nutrient pollutants through the assessment of major, minor, and trace elements in sediments.
- iv) Determine the possible impacts of non-point source pollution on aquatic species through tissue analysis for heavy metals.
- v) Use collected water quality data in computer modeling programs to project potential impacts of non-point source pollution on similar natural habitats.
- vi) Provide research experiences for students and to conduct educational and informational workshops for stakeholders and area communities on Water Quality Issues related to the watershed.

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

| Extension | |
|--|--|
| Direct Method | Indirect Methods |
| <ul style="list-style-type: none"> ● Workshop ● Demonstrations | <ul style="list-style-type: none"> ● Newsletters ● Web sites |

15. Description of targeted audience

- (a) Farmers
- (b) Engineers
- (c) Policy makers
- (d) Students
- (e) Community leaders
- (f) Local citizens
- (g) Extension workers
- (h) Scientists & other Researchers
- (i) Regulatory 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 | 15 | 40 | 5 | 10 |
| 2008 | 20 | 50 | 10 | 20 |
| 2009 | 25 | 60 | 15 | 30 |
| 2010 | 30 | 70 | 20 | 40 |
| 2011 | 35 | 80 | 25 | 50 |

17. (Standard Research Target) Number of Patents

| Expected Patents | |
|------------------|--------|
| Year | Target |
| 2007 | 0 |
| 2008 | 0 |
| 2009 | 0 |
| 2010 | 0 |
| 2011 | 0 |

18. Output measures**Output Text**

Short term output measures are: Abstracts (7), presentation (7), Training students (10) and Workshop (1)

Intermediate output measures are publications (7)

Long-term: Will be felt after five years

2007 Target: 25

2008 Target: 37

2009 Target: 42

2010 Target: 47

2011 Target: 52

Outcomes for the Program**19. Outcome measures****Outcome Text: Awareness created****Outcome Text**

Chemical and biological characterization of the ecosystems

Contribution to understanding of interactions between human practices and natural ecosystems

Enhanced stakeholders knowledge and understanding of environmental issues

Outcome Type: Short

2007 Target: 4
2008 Target: 4
2009 Target: 4
2010 Target: 4
2011 Target: 4

Outcome Text

Expected change in agricultural practices from farmers
Better management of agricultural and natural ecosystems complex.

Outcome Type: Medium

2007 Target: 3
2008 Target: 3
2009 Target: 3
2010 Target: 3
2011 Target: 3

Outcome Text

Environmental sustainability
Improved quality of life

Outcome Type: Long

2007 Target: 0
2008 Target: 0
2009 Target: 1
2010 Target: 1
2011 Target: 1

20. External factors which may affect outcomes

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

Description

Natural disasters: this will change the overall outlook of the results and will limit our access to the park and will restrict our ability to interpret collected data

Public policy change: currently, areas designated as state parks are protected from direct human activities like residential and commercial real estate. A change in public policy that removes this restriction will make the Big Oak Tree Park vulnerable to human activities. Thus, the project will automatically come to a halt.

Government Regulations: If a new government regulation removes access to the park for all categories of people, it will be impossible for this program to continue since most of the samples for the study are expected to come from the park, the focus of the study.

Appropriation changes: The funding for this program comes from legislative appropriation. Any changes in appropriation that removes this program as a funding priority could shut down this program since the existence of the program is dependent on funding.

21. Evaluation studies planned

- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- Comparisons between program participants (individuals,group,organizations) and non-participants

Description

Samples will be taken from the Big Oak Tree State Park and the surrounding environments periodically over a five-year duration. Biological, chemical, and microbiological analysis will be carried out on the samples. Results obtained from the Park will be statistically compared with those obtained from the surrounding environments. Both intra and inter-parametric interpretations will be given to obtained statistics. This will form the basis of recommendations for appropriate management strategies to be put in place.

22. Data Collection Methods

- Sampling
- Observation

Description

Soil, water, plants, and air samples will be collected from the different sites using standard methods. The collected samples will be analyzed using appropriate standard chemical, microbiological and other analytical methods. Results obtained will be recorded and organized into data.

1. Name of the Planned Program

Human Nutrition

2. Program knowledge areas

- 724 Healthy Lifestyle 25 %
- 702 Requirements and Function of Nutrients and Other Food Components 50 %
- 703 Nutrition Education and Behavior 25 %

3. Program existence

- Mature (More than five years)

4. Program duration

- Long-Term (More than five years)

5. Brief summary about Planned Program

Optimal nutrition is important to the health and well-being of all people. Previous studies have shown that diet is a factor in 6 of the 10 leading causes of death in the USA. Improved nutrition will increase quality of life and productivity, and reduce health care costs in populations throughout the nation. The Human Nutrition Research Unit at Lincoln University is continuing to focus their efforts on relationships between nutrition and health, and on establishing optimal nutrient requirements for diverse populations. Specific areas of focus include the role of diet and exercise on the development of obesity, hypertension and type 2 diabetes and their subsequent contribution to development of cardiovascular diseases. We also focus on education of public for prevention of these chronic diseases by life-style modification (healthy eating and increased physical activity). We also plan to study the biochemical and physiological basis for regulation of body weight and body fat distribution using a diet-induced obese animal model. While this research is relevant for all people, emphasis is primarily on specific subpopulations including African-Americans, low-income populations and other under represented groups.

6. Situation and priorities

Nutrition-related chronic diseases are common in the State of Missouri and in the United States. Poor nutrition contributes to five of ten leading causes of death (heart disease, cancer, stroke, type 2 diabetes and arteriosclerosis) costing the US economy an estimated \$250 billion annually. Nutrition research and education will improve the quality of the American diet and reduce health care costs.

The priorities of nutrition research will be finding the mechanism how obesity contributes to the development of cardiovascular disease and finding reliable biomarkers for diagnosis of cardiovascular disease. The priority of nutrition extension will be prevention of nutrition-related chronic disease through nutrition education for improvement of nutrition and increased physical activity.

7. Assumptions made for the Program

- 1) Funding will be secure throughout the course of the project.
- 2) Extramural funds can be obtained to assist in expanding efforts with this project.
- 3) Maintain adequate number of personnel with the appropriate skills to complete the work.

8. Ultimate goal(s) of this Program

Measurable improvements in public health by modifying dietary practice and lifestyle changes and reduction of health care costs for specific populations such as African-Americans, low-income and other under-represented groups..

9. Scope of Program

- Integrated Research and Extension

Inputs for the Program

10. Expending formula funds or state-matching funds

- Yes

11. Expending other than formula funds or state-matching funds

- Yes

12. Expending amount of professional FTE/SYs to be budgeted for this Program

| Year | Extension | | Research | |
|------|-----------|------|----------|------|
| | 1862 | 1890 | 1862 | 1890 |
| 2007 | 0.0 | 0.5 | 0.0 | 2.5 |
| 2008 | 0.0 | 0.5 | 0.0 | 2.5 |
| 2009 | 0.0 | 0.5 | 0.0 | 2.5 |
| 2010 | 0.0 | 0.5 | 0.0 | 2.5 |
| 2011 | 0.0 | 0.5 | 0.0 | 2.5 |

Outputs for the Program

13. Activity (What will be done?)

- 1) Perform experiments and publish results
- 2) Presentation of experimental results in scientific conference and seminars
- 3) Conduct workshops
- 4) Distribution of information of nutrition and physical activity to clientele

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

| Extension | |
|---|--|
| Direct Method | Indirect Methods |
| <ul style="list-style-type: none"> ● Workshop ● One-on-One Intervention | <ul style="list-style-type: none"> ● Web sites ● Other 1 (Nutrition education materials) |

15. Description of targeted audience

African-Americans, low-income families and other under represented groups in St. Louise, Kansas City, Bootheel and Jefferson City areas in the State of Missouri.

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 | 200 | 500 | 100 | 200 |
| 2008 | 200 | 500 | 100 | 200 |
| 2009 | 200 | 500 | 100 | 200 |
| 2010 | 200 | 500 | 100 | 200 |
| 2011 | 200 | 500 | 100 | 200 |

17. (Standard Research Target) Number of Patents

| Expected Patents | |
|------------------|--------|
| Year | Target |
| 2007 | 0 |
| 2008 | 0 |
| 2009 | 0 |
| 2010 | 0 |
| 2011 | 0 |

18. Output measures

Output Text

- 1) Number of publication
- 2) Number of presentation
- 3) Number of workshops
- 4) Number of contacts

2007: number of presentation: 2
 number of workshops: 6
 number of contacts (direct & indirect): 1,000

2008: Number of publication:1
 Number of presentation, workshops and contacts : Same as in 2007

2009: Same as in 2008

2010: Same as in 2008

2011: Same as in 2008

- 2007 Target: 1008
- 2008 Target: 1007
- 2009 Target: 1007
- 2010 Target: 1007
- 2011 Target: 1007

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Text

Increase knowledge of good nutrition measured by surveys pre- and post-nutrition education.

Increased awareness about relationship between nutrition and physical activity and chronic diseases measured by periodic surveys in research subjects and other clientele.

Increase nutrition knowledge and awareness of importance of nutrition for prevention of chronic diseases by 90% of participants in direct contacts and 70% of indirect contacts.

Outcome Type: Short

2007 Target: 700

2008 Target: 700

2009 Target: 700

2010 Target: 700

2011 Target: 700

Outcome Text

-Number of citations of publications by other scientists in scientific papers.

-Use of research results by nutrition extension and health care specialists.

-Improvement of eating behavior and physical activities.

-Decrease in percentage of overweight and obesity in research and extension participants.

Medium-term: 2007 - measurable weight reduction (1-5%) in overweight and obese subjects and clientele.

Utilization of research outcomes by the extension specialist (2-3 good nutrition guides).

measurable weight reduction (1-5%) in overweight and obese subjects and clientele

2008 - Utilization of research outcomes by the extension specialist (2-3 good nutrition guides).

2009 - Same as 2008.

2010 - Same as 2008 and number of citations of publications = 10

2011 - Same as 2008 and number of citations of publications = 15

Outcome Type: Medium

2007 Target: 0

2008 Target: 3

2009 Target: 3

2010 Target: 10

2011 Target: 15

Outcome Text

Measurable improvements in public health and reduction in health care costs for specific population such as African-Americans, low-income families and other under represented groups. Expect 80% positive response of those contacted.

Outcome Type: Long

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 80

20. External factors which may affect outcomes

- Economy
- Appropriations changes

Description

Planned research and extension activities are sole supported by USDA Evans-Allen Program. Therefore, appropriations changes will directly affect the planned activities. The changes in US economy may affect the living standard and opportunities for education of clientele and eventually influence the outcome of research and extension activities.

21. Evaluation studies planned

- Before-After (before and after program)
- Comparison between locales where the program operates and sites without program intervention

Description

Surveys will be conducted before and after each research and workshops to evaluate impact of research and extension activities.

22. Data Collection Methods

- Whole population
- On-Site

Description

Surveys will be conducted for subjects selected by random sampling or for whole population on site depending on the nature of survey and size of the population before and after each research and extension activities.

1. Name of the Planned Program

Plant Science

2. Program knowledge areas

- 102 Soil, Plant, Water, Nutrient Relationships 5 %
- 203 Plant Biological Efficiency and Abiotic Stresses Affecting Plants 10 %
- 216 Integrated Pest Management Systems 15 %
- 503 Quality Maintenance in Storing and Marketing Food Products 5 %
- 405 Drainage and Irrigation Systems and Facilities 5 %
- 604 Marketing and Distribution Practices 10 %
- 601 Economics of Agricultural Production and Farm Management 15 %
- 204 Plant Product Quality and Utility (Preharvest) 5 %
- 132 Weather and Climate 5 %
- 111 Conservation and Efficient Use of Water 25 %

3. Program existence

- Mature (More than five years)

4. Program duration

- Long-Term (More than five years)

5. Brief summary about Planned Program

The Small Farm Research and Extension program has the objectives of supporting the 1890 Mission through research on crop production problems, aimed at improving the economic and social wellbeing of underserved rural and urban residents with limited resources.

The program also emphasizes collaborative team effort in areas of fruits and vegetables crops as well as herbs and spices. It will continue to strive for the goal of reaching more stakeholders with quality innovative research that impacts their economic well-being.

6. Situation and priorities

Missouri has a large number of small Farms. Small Farms account for 75% of the total number of farms in the state. The 1988, almost eight out of every ten Missouri farms were classified as small (gross sales of less than 40,000 per farm). The program priorities over five year period will be:

To identify the needs and expectations of small farmers in Missouri. We will utilize information from small farms survey conducted in 2001.

To restructure the small family program in cooperative extension with an emphasis on the need of deserved small farmers.

To increase the capability for controlled environmental research at the University.

To increase the use of value added products and the marketing of new crops.

7. Assumptions made for the Program

The administration will provide the necessary resources to implement program objectives.

the objectives of the program are consistent with the University Mission

There will be continuity in the funding of the program objectives over the stated period of time.

The program will continue to have sustained and continued Stake Holder participation.

There will be stability in the administration, faculty and staff over the stated period.

8. Ultimate goal(s) of this Program

To improve the viability and profitability of small farms and the quality of life of people in rural and urban Missouri.

9. Scope of Program

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

Inputs for the Program

10. Expending formula funds or state-matching funds

- Yes

11. Expending other than formula funds or state-matching funds

- Yes

12. Expending amount of professional FTE/SYs to be budgeted for this Program

| Year | Extension | | Research | |
|------|-----------|------|----------|------|
| | 1862 | 1890 | 1862 | 1890 |
| 2007 | 0.0 | 3.5 | 0.0 | 2.0 |
| 2008 | 0.0 | 3.5 | 0.0 | 3.5 |
| 2009 | 0.0 | 4.5 | 0.0 | 4.0 |
| 2010 | 0.0 | 4.5 | 0.0 | 4.0 |
| 2011 | 0.0 | 4.5 | 0.0 | 4.0 |

Outputs for the Program

13. Activity (What will be done?)

- Workshops
- Organized instate conferences and meeting for small farmers
- Training and educational opportunities for small farmers
- Introduction and evaluation of new crops
- Improved cultural practices and crop management
- Abstracts and Publications
- Grants Approvals
- Publications in Referred Journals
- Research Bulletins Published

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

| Extension | |
|---|--|
| Direct Method | Indirect Methods |
| <ul style="list-style-type: none"> ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations | <ul style="list-style-type: none"> ● Public Service Announcement ● TV Media Programs |

15. Description of targeted audience

Low-Income, limited resources farmers and ranches and underserved population in rural and urban communities.

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 | 600 | 1800 | 100 | 300 |
| 2008 | 1000 | 3000 | 100 | 300 |
| 2009 | 1000 | 3000 | 100 | 300 |
| 2010 | 1000 | 3000 | 100 | 300 |
| 2011 | 1000 | 3000 | 100 | 300 |

17. (Standard Research Target) Number of Patents

| Expected Patents | |
|------------------|--------|
| Year | Target |
| 2007 | 0 |
| 2008 | 0 |
| 2009 | 0 |
| 2010 | 0 |
| 2011 | 0 |

18. Output measures

Output Text

- Publications
- Abstracts
- Refereed Journals
- Bulletins

Years 2007-2008 primarily abstracts and bulletins

Year 2009 transition year and years 2010-2011 primarily scientific manuscripts

- 2007 Target: 4
- 2008 Target: 6
- 2009 Target: 6
- 2010 Target: 6
- 2011 Target: 6

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Text

Develop educational programs to encourage minority youth to get involved in farming.

2007: Increase the number of minority farmers by 200.

Adoption of environmental sustainable crop production practices.

2008: Increase the number of farms adopting production practices by 150.

Outcome Type: Short

2007 Target: 200
2008 Target: 150
2009 Target: 150
2010 Target: 150
2011 Target: 150

Outcome Text

Improve small and minority farms income

2009: Increase the average small farm gross income by \$5, 000

Outcome Type: Medium

2007 Target: 0
2008 Target: 0
2009 Target: 5000
2010 Target: 5000
2011 Target: 5000

Outcome Text

Enhanced viability of rural communities.

Enhanced profitability of Small Farms.

2010: Increase Farm growth income by \$5, 000

2011: Increase Farm retention rate by 4, 250

Outcome Type: Long

2007 Target: 0
2008 Target: 0
2009 Target: 0
2010 Target: 5000
2011 Target: 4250

20. External factors which may affect outcomes

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

Description

Federal Government's agricultural policy

Federal Government's economic policy

Local and State Government's agricultural and economic policy

Stake Holders expectations

x National disasters

21. Evaluation studies planned

- After Only (post program)
- Retrospective (post program)

Description

The program will undergo annual evaluations and a comprehensive evaluation at the end of the five year period.

22. Data Collection Methods

- Sampling
- Mail
- On-Site
- Structured
- Observation
- Tests

Description

Send survey instrument to a random sample of the targeted population.