RETURN ON INVESTMENT

UNIVERSITY OF MISSOURI Extension

UNIVERSITY OF MISSOURI EXTENSION

Ray County 2014 Annual Report
## 2014 Programs of Distinction

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Dear County Commissioners and Friends of MU Extension:

Over the past year, with a theme of *Celebrating the Past and Building for the Future*, MU Extension marked a century of service to Missouri. While the celebrations have come to an end, the focus on building for the future is strong. The university’s commitment to the mission of bringing relevant, reliable and responsive education to improve lives and local economies is alive and well.

To maintain our position as a valued and trusted resource for Missourians, MU Extension continues to strengthen existing programs, build relationships and explore new opportunities to benefit Missourians. For example:

- In the area of agriculture, the Show-Me Select Heifer Replacement program continues to improve the breeding performance of heifers as it helps participants realize record prices for their efforts. Producers from 103 of Missouri’s 114 counties have enrolled heifers in the program. In a record-setting sale, 168 bred replacement heifers sold for an average of $3,033 at the Fruitland (Missouri) Livestock Auction.
- Strengthening communities through art, innovation and creativity, Extension’s Community Arts Program is piloting an initiative in Lexington to help the community enhance its image with art businesses and opportunities that reflect the talent of regional artists and benefit a nine-county tourism alliance. The Community Arts Program is also at work in the St. Louis area, overseeing the Saint Louis Storytelling Festival, which engages approximately 25,000 people each year.
- Knowing the value of dialogue with those it serves, MU Extension has made a concerted effort with the Mizzou Alumni Association to introduce MU Chancellor R. Bowen Loftin to extension programs, participants, key stakeholders and alumni from all corners of the state. These tour events, which will continue into 2015, are designed to foster understanding and support that lead to a stronger local extension effort across the state.

These are just a few examples of MU Extension’s focus on building for the future and continuing to making an impact in local communities.

I thank you for your support of MU Extension and our efforts in your community. I look forward to our continuing partnership and welcome your ideas for improving our partnership.

Sincerely,

Michael D. Ouart
AGRONOMY EDUCATION IN RAY COUNTY
MISSOURI CROP MANAGEMENT SYSTEMS
PRIVATE PESTICIDE APPLICATOR TRAINING
FORAGE PRODUCTION SYSTEMS

RAY COUNTY SOILS AND CROPS CONFERENCE

<table>
<thead>
<tr>
<th>Number of Ray County Learners</th>
<th>What Did They Learn?</th>
<th>What Action Did Participants Take or How Did They Benefit?</th>
<th>How Does This Work Make Ray County and Missouri Better?</th>
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</thead>
<tbody>
<tr>
<td>15</td>
<td>• How to manage weeds.</td>
<td>Most participants indicated they would:</td>
<td>Implementing crop management techniques that increase yield stability and overall yields</td>
</tr>
<tr>
<td></td>
<td>• What crop diseases to be looking for and how to manage them</td>
<td>• Reduce the weed seed bank and use residual herbicides.</td>
<td>directly results in higher profits for crop producers.</td>
</tr>
<tr>
<td></td>
<td>• How to use Ag weather tools.</td>
<td>• Use cyst nematode resistant soybeans.</td>
<td>Ray County’s economy strongly depends on agriculture.</td>
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<tr>
<td></td>
<td>• The benefits of using In-season nitrogen management</td>
<td>• Use weather tools when making decisions.</td>
<td>When crop producers are profitable they are able to employ more workers and often</td>
</tr>
<tr>
<td></td>
<td>• The use of UAVs in agriculture</td>
<td>• Increase in-season nitrogen</td>
<td>require more services from local farm companies and agencies, further increasing employment</td>
</tr>
<tr>
<td></td>
<td>• Information on financial assistance programs from local agriculture agencies.</td>
<td>• Certified Crop Advisor received 4 CEUs.</td>
<td>within the county and across the state. Increasing the stability of crop yields increases the</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>likelihood of a stable food supply.</td>
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RAY COUNTY CROP SCOUTING PROGRAM

<table>
<thead>
<tr>
<th>Number of Ray County Learners</th>
<th>What Did They Learn?</th>
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<tbody>
<tr>
<td>18</td>
<td>• Weekly corn and soybean pest found in the area.</td>
<td>• Several participants scouted their fields more frequently.</td>
<td>A quick update informing producers of what pests are in the area allows them to specifically</td>
</tr>
<tr>
<td></td>
<td>• Economic thresholds for crop pests</td>
<td>• Some participants made applications of insecticides after getting the report of economic</td>
<td>focus on certain pest when scouting. Equating the pest population to an economic injury level</td>
</tr>
<tr>
<td></td>
<td>• How to identify several crop diseases, insects, and weeds.</td>
<td>thresholds and scouting their fields</td>
<td>will then allow the producer to determine when treatment is justified. Trea</td>
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<tr>
<td></td>
<td>• The best management practices for controlling several crop pests</td>
<td>• Some producers stated they decided not to apply pesticides because they believed the pest</td>
<td>ting pests when necessary will help ensure higher yields, while not treating pest when</td>
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<tr>
<td></td>
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<td>population was below the economic threshold stated in the report.</td>
<td>pest are below economic thresholds will reduce unnecessary input cost. Thus the pro</td>
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<td></td>
<td></td>
<td></td>
<td>ducers will increase total profits. Also, not applying pesticides when pest numbers are</td>
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<td></td>
<td></td>
<td></td>
<td>low will reduce the amount of pesticides being put into the environment.</td>
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</tbody>
</table>
## Private Pesticide Applicator Training

<table>
<thead>
<tr>
<th>Number of Ray County Learners</th>
<th>Total Hours of Collective Workshop Participation in 2013</th>
<th>What Did They Learn?</th>
<th>What Action Did Participants Take or How Did They Benefit?</th>
<th>How Does This Work Make Ray County and Missouri Better?</th>
</tr>
</thead>
</table>
| 17                            | 51                                                     | Evaluation of the workshops showed that participants learned:  
  • The ability to safely apply pesticides  
  • The importance of crop scouting  
  • Where to find certain directions in a pesticide label.  
  • Economic Thresholds and economic injury levels.  
  • Non-chemical pest management strategies  
  • Pesticides impact on environment and surrounding water sources.  
  • Record-keeping requirements | • Participants obtained private pesticide applicator license.  
  • Half of participants stated they planned to correct their misuse of pesticides by:  
  - Reading labels  
  - Wearing personal protective equipment  
  - Being aware of surroundings  
  - Increasing safety  
  - Empty containers properly | Proper use of pesticides protects the pesticide applicator, surrounding people, the environment and water supply. Proper use of pesticides will help control agriculture pest while decreasing the chance of pesticide resistance. This in return will help the bottom line of producers while keeping and ensuring a safe and affordable food supply with a healthy environment. |

## Soil Testing

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| 107 soil test                 | Producers learned:  
  • What nutrients were in their soil  
  • Current soil pH levels  
  • Amount of fertilizer and lime needed to build soil nutrients and pH to ideal levels. | Producers benefit by knowing how much fertilizer and lime is required to bring nutrients and pH up to optimal levels, by increasing the likelihood of high crop yields.  
Producers also reduce the chance of over application of fertilizer, thus saving money. | Using correct fertilizer amounts will help ensure a productive crop which, in return, will help the local economy and ensure an affordable food supply.  
Applying the correct amount of fertilizer will reduce the amount of nutrient runoff into surrounding water systems and help protect our environment. |
### Number of Learners

Over 4500 commercial and home contacts in ten counties

### Topic

- On-site visits with Commercial Ag producers
- Working with Produce Auction Meetings for Commercial Ag producers
- Educating homeowners for their horticultural needs
- County Ag Updates and Pesticide Applicator Training

### What Did They Learn?

- Identification and control of plant diseases and insects
- Proper use of pesticides
- Introduction to Good Agricultural Practices and food safety
- Marketing options
- Starting a horticultural farming operation
- Landscaping for homeowners

### How Did Participants Benefit?

Commercial producers growing horticultural crops have great potential for profits. However, diseases and insects can act very quickly to wipe out a crop and produce significant losses. By timely intervention, these growers’ crops may be saved.

The proper use of pesticides is critical for both grower and consumer safety. Growers trained in this area learn to safely use these materials, leading to better health.

Commercial fruit and vegetable producers are coming under increasing pressure to conform to the standards of Good Agricultural Practices (GAPs). By offering training in GAPs, Extension helps these growers produce safer food. They are also made aware of the regulatory environment surrounding GAPs, and how to satisfy requirements in this area.

### How Does This Work Make My Assigned Area and Missouri Better?

Keeping the rural economy going means keeping families on the farm, and doing so profitably. Commercial horticultural production has some of the greatest potential for profits in modern agriculture. By keeping these farming enterprises going, and dealing with problems as they arise, the farmer is kept on the farm, and the trickle-down effect of his success is spread across the entire community as he purchases inputs for his farm and conducts everyday commerce with his friends and neighbors.

Producing a good and safe food supply is critical for our nation. Whether it is though the safe handling of pesticides or following Good Agricultural Practices, a farmer who produces high quality and safe food passes on a product that inspires confidence in the consumer. Food such as this is more nutritious, producing better health. This ultimately leads to decreased health care costs.

Homeowners who practice horticulture, whether it is producing food or planting ornamentals, increase the value of their homes. When this is practiced on a community-wide scale, the effect can be remarkable. Communities with poorly-developed landscaping are not as attractive as those where homeowners seek to beautify their properties. Collectively, these improvements lead to increased property values throughout the entire community.

Helping growers during the growing season is an important part of Horticulture Specialist Tim Baker’s responsibilities. Sometimes the problem can be corrected, but other times it cannot, such as the photos above. The tomato grower had used a brush killer on his land which eventually ended up in his pond. When he irrigated out of his pond, these greenhouse tomatoes took on bizarre shapes with distorted leaves. Since this was irrigation water, some of the chemical ended up in...
## Beef and Forage Production Education

**Livestock Specialist**

*Jim Humphrey*

<table>
<thead>
<tr>
<th>Number of Learners</th>
<th>Topic</th>
<th>What Did They Learn?</th>
<th>How Did Participants Benefit?</th>
<th>How Does This Work Make Our Counties and Missouri Better?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>450 plus Cattle and Forage Producers</strong></td>
<td>In total approximately 900 hours were spent in learning beef cattle production, forage production and utilization, nutrition management and ration balancing by area participants.</td>
<td>Strategies to optimize beef production and improve costs on their operations, including managing feedstuffs, pregnancy checking females, documenting individual animal performance throughout the entire production phase, including what determines value on each animal.</td>
<td>Beef and forage producers are better prepared to make informed decisions on their operations, regarding animal health, genetic selection, nutrition, as well as income and expenses that affect the bottom-line for their respective operations. Including reducing feed wastage and marketing low or non-productive animals in a more timely manner.</td>
<td>Many beef producers contacting me are looking for answers to questions specific to their operation. By taking a total quality management approach for each operation we can help producers get the information and resources they need in a timely manner to improve the bottom line for their operations.</td>
</tr>
<tr>
<td><strong>750 plus Youth participants</strong></td>
<td>In total approximately 889 hours were spent by area youths learning conservation, water cycles and good agricultural production practices.</td>
<td>Strategies area beef and forage producers are using to optimize their operations while minimizing soil and nutrient losses and other negative impacts on the environment.</td>
<td>By having a better understanding of the research-based information and good production practices producers utilize on their operations, youths will be better able to understand why they as producers themselves need to be good stewards of their land and resources.</td>
<td>With over 80,000 head of beef cattle in the area a viable agriculture economy has a positive impact on our area and plays a key role in our local, regional, state, national and world economies.</td>
</tr>
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Strategies area beef and forage producers are using to optimize their operations while minimizing soil and nutrient losses and other negative impacts on the environment.

Well-informed youths are better prepared to make good management decisions based on research-based results. Youths are our future and provide great opportunities for our area.
### Extension Agricultural Programs

**Education and Answers for Successful Farming**

<table>
<thead>
<tr>
<th>Number of Learners</th>
<th>Topics</th>
<th>What Did They Learn?</th>
<th>What Action Did They Take?</th>
<th>How Does This Work Make My Assigned Area and Missouri Better?</th>
</tr>
</thead>
</table>
| 176 farmers and landowners | • Ag Marketing and Market Risk Education  
• Farm Lease Education  
• Missouri Fence Law  
• Farm Bill Education | • Recent developments in agricultural markets that impact commodity prices and production decisions  
• How to establish a sound marketing plan based on fundamental marketing principles, risk tolerance, and market outlook  
• How to establish equitable leasing arrangements based on parties’ risk exposure and farm profitability  
• Current trends in leasing, including trends with crop share arrangements, cash rents, and flexible leasing provisions  
• The rights and obligations of neighbors in building and maintaining fences and boundaries  
• Steps to take to reduce legal, financial, and production risks associated with fence maintenance  
• New programs and changes in 2014 farm bill | • Farmers made production and marketing decisions based on un-biased information provided by University ag economists  
• Farmers developed marketing plans  
• Tenants and landowners reviewed lease provisions to ensure equity in their leases  
• Tenants and landowners communicated expectations related to farm maintenance, conservation, crop rotations, and lease terms  
• Tenants and landowners developed written lease agreements in place of former verbal leases  
• County residents reviewed the actual state laws pertaining to fences & boundaries  
• Farmers & landowners built and maintained numerous miles of fence in accordance with the law  
• Farmers & landowners updated yields and used the FAPRI tool to help determine whether to reallocate basis and determine which farm bill programs to enroll in. | • Marketing education increases and/or stabilizes farm incomes, which leads to a more stable rural/farm economy  
• Stability in the rural/farm economy creates job security for farm workers, ag suppliers, equipment dealers, and other supporting businesses  
• A robust and stable agricultural sector of the economy enhances the well-being of county and state residents by providing income, jobs, food, clothing, shelter, and energy  
• As a result of lease management education, farmers and landowners experience better relationships which leads to longer land tenure and greater income security for both parties  
• Lease education makes the lives of non-farmers and non-landowners better by encouraging productive and wise land use, which leads an abundant food supply and healthy environment.  
• Residents experience better relationships with their neighbors, which promotes a great sense of community and improves quality of life  
• Residents save money by avoiding costly litigation expenses |
## Stay Strong Stay Healthy

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<th>Number of Ray County Learners</th>
<th>What Did They Learn?</th>
<th>What Action Did They Take?</th>
<th>How Does This Work Make Ray County and Missouri Better?</th>
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<tr>
<td>29 seniors participated in the Stay Strong, Stay Healthy classes held in Richmond at the Ray County Health Department.</td>
<td>Over the 10 weeks of strength training program designed for middle-aged and older adults, participants learn exercises to improve their strength, flexibility and balance. At each session, a set of eight upper and lower body strengthening exercises are done along with warm-up and cool-down stretches. These exercises help participants to build muscle and increase bone density, and improves physical, emotional and mental health all together.</td>
<td>All 29 participants reported that they felt physically stronger after attending the class and they are more confident to lead a more active and independent life as a result of taking this class.</td>
<td>Participants will have improved strength, balance and flexibility, resulting in reduced risk for falls, better overall health and greater independence. These health benefits decrease the likelihood of a participant entering a nursing home, which costs an average of $51,465 per year in Missouri. The money saved benefits the community by keeping more discretionary income in circulation locally. It also keeps people actively, independently contributing to society longer.</td>
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**Family Nutrition Education Program**

**Reaching Low-Income Children and Families with Nutrition Education**

**Kathy Smith, Nutrition Program Associate**

<table>
<thead>
<tr>
<th>Number of Ray County Learners</th>
<th>School Districts Served</th>
<th>What Did They Learn?</th>
<th>How Participants Benefit?</th>
<th>How Does This Work Make Ray County and Missouri Better?</th>
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<tbody>
<tr>
<td>1844 participants received information on nutrition, food safety, and physical activity for lifelong health and fitness.</td>
<td>Reached youth in Ray County School Districts and other agencies.</td>
<td>Through Food Nutrition programs such as:  • Back Pack program  • Show-Me Nutrition education  • Show-Me Nutrition Displays  • Show-Me Nutrition Newsletters Participants in FNEP:  • Are more aware of nutrition  • Make healthier meal and snack choices  • Eat breakfast more often  • Are more willing to try new foods  • Are more physically active  • Read labels</td>
<td>Ninety-eight percent of the teachers reported one or more changes in students after FNEP.  • 90% are more aware of nutrition  • 83% improved hand washing  • 50% eat breakfast more often  • 67% make healthier meal and/or snack choices  • 65% increased physical activity</td>
<td>In 2014 the Family Nutrition Program (FNEP) brought $7,653,958.00 in Federal funds to the state of Missouri. These funds were used to provide nutrition education to $1,069,104 food stamp recipients and food stamp eligible citizens of Missouri. One thousand six hundred and twelve of these participants reside in Ray County. It also funds three full-time jobs with quality benefits plus expenses for making the programming available to qualified schools and agencies in the county.</td>
</tr>
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**SUCCESS STORY:**

Kathy Smith Richmond Sunrise Elementary August 21, 2014

This was my first year for teaching nutrition classes at Sunrise Elementary in Ray County. At the end of 2nd grade classes, one of the teachers overheard her students making comments about their school lunch choices. They were using information we discussed in class to compare their lunch choices to find the healthiest option. She heard the students say that they selected the healthiest lunch plate because it offered whole grain products, low-fat protein, dark colored vegetables (which were more nutrient-dense than lighter colored vegetables), and low-fat or fat-free milk (important in building strong bones and teeth). This is knowledge that they can even apply when making snack choices at home!

Nutrition Program Associate, Kathy Smith, reviews previous lesson information with a group of elementary students where they learned about eating a variety of foods to grow and be healthy, the importance of physical activity and how to keep foods safe so they don't make you sick.
**Focus on Kids**
- **6 Sessions**
- 28 Ray County contacts
- 6 contacts from surrounding counties

**What Did They Learn?**
These parents of children ages 18 and younger attending the Focus on Kids class for divorcing parents overwhelmingly reported they were more knowledgeable about the effect of divorce on children and that the class provided them with tools to reduce their children’s stress and enhance their co-parenting together.

**What Action Did They Take?**
The participants reported the following:
- 100% plan to avoid arguing/fighting with their children’s other parent in front of the children
- 86% plan to avoid questioning their children about their other parent’s finances or relationships.
- 100% plan to avoid saying negative things about their children’s other parent in front of them.
- 88% agreed that the class should be required of all divorcing parents who have children.

**How Does This Work To Make Caldwell and Davies Counties and Missouri Better?**
When you support the Focus on Kids program the county and state benefit as parents are better able to meet the social and emotional needs of their children, reconfigured households are more stable, and both the children and parents have action solutions for reducing stress and building upon strengths.

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**Healthy Relationship and Marriage Education**
- **2 Sessions**
- 25 participants from Ray County and surrounding counties

**This training is geared specifically for child welfare professionals with which provides information and strategies to strengthen couple and family relationships. The participants learned strategies and tools to help their clients in seven areas:**
1. Caring for one’s self
2. Choosing to have a committed relationship
3. Knowledge of partners and self
4. Care for partner and self
5. Sharing meaningful time together
6. Managing conflict
7. Connections between family, peers and community

**At the time of the follow up, six of the 17 respondents had already used the program and information with their clients. When asked why the program was useful, they said the following:**
- “The clients benefit from the handouts and the discussions following.”
- “The tools and knowledge gained about the importance of positive thoughts and communication and how it relates to family function and family history.”
- “I find the tools helpful in engaging my people.”

**When you support Healthy Relationship and Marriage Education, child welfare professionals learn strategies to help strengthen couple and family relationships which will help meet the safety, permanency, and well-being needs of vulnerable children in the child welfare system which benefits other community members by decreasing the number of children in foster care placements and increases the stability of at-risk families in the community.”**

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**Human Environmental Sciences:**
**Human Development and Family Studies**
Strengthening relationships and wellness of individuals, families and communities.

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**Human Development and Family Studies Specialist**
Jessica Trussell

**Human Development and Family Studies Specialist**
Mike Beetsma, Children's Division Supervisor, participates in an exercise to show how stressors can overwhelm families.
RAY COUNTY 4-H
A community of youth building life skills, engaging in science and connecting to their community.

NANCY COLEMAN
4-H YOUTH DEVELOPMENT SPECIALIST
Serving Ray County in the Northwest Region

<table>
<thead>
<tr>
<th>Number of Ray County Learners</th>
<th>What Did They Learn?</th>
<th>How Participants Benefit?</th>
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<tbody>
<tr>
<td>A community of 247 4-H members building life skills, engaging in science and connecting to community. Members are supported by 173 trained youth and adult volunteers.</td>
<td>Eight Ray County 4-H clubs offer long-term educational experiences in which members learn life skills such as decision making, public speaking and working with others. Members learn by doing under the guidance of adult volunteers, who teach projects ranging from aerospace and arts to veterinary science and sport fishing. Clubs also involve children and teens in community service, camping and educational trips.</td>
<td>Missouri 4-H Members are twice more likely to have been on a college campus than their non-4-H peers. MU is by far the campus most frequently visited and 4-H is the second most reported reason to be on the MU Campus (Lerner, 2008). MU Extension 4-H connects 8,500 young people age 8 to 18 to University of Missouri campuses. Being on a campus is a predictor of youth going on to higher education (Hoover, 2006).</td>
<td>Youth who earn their bachelor’s degree, increase their annual earnings by $2.4 million over their lifetime (NACUBO, 2012). If 70% of the Ray County members participating in 4-H events on the MU Campus go onto earning their Bachelors, 4-H would help young people earn $30.95 million more of lifetime earnings. Missouri 4-H volunteers responding to a survey report they contribute on average 100 hours per year. Valuing their time at $21 per hour, based on average Missouri incomes, the contribution of Ray County 4-H volunteers was worth more than $363,000 in 2014! These adults serve as mentors for our youth, which is priceless. 4-H project work and related educational experiences help youth explore interests in citizenship, communications and leadership. 4-H youth report three times more opportunities than their non-4-H peers to engage in meaningfully community leadership roles.</td>
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EMBRYOLOGY
HATCHING CHICKS IN THE CLASSROOM SCIENCE PROJECT

<table>
<thead>
<tr>
<th>MU Conference Office</th>
<th>Continuing Medical Education</th>
<th>Fire and Rescue Institute (FRTI)</th>
<th>Law Enforcement Training Institute (LETI)</th>
<th>Nursing Outreach</th>
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</thead>
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<tr>
<td>641 Students and 23 Teachers</td>
<td>640 hours of classroom learning in 23 classrooms in Ray County.</td>
<td>Through the 4-H Embryology Program youth are learning about science and respect for life through direct experience with living things, their life cycles and their habitats. Pre-incubated eggs are delivered to the school where they hatch about four days later. During this time, students have the opportunity to learn the scientific process of embryology including: incubation, preparing a brooder, hatching, identifying parts of an egg and development of chicks in the egg. While students care for the eggs and chicks, they learn leadership, responsibility, sharing, decision-making, critical thinking and teamwork.</td>
<td>Children learn by listening, observing, experimenting and applying their knowledge gained from the 4-H Embryology Program to real-world situations. Children of all ages develop personal confidence and leadership abilities through hands-on experiences in Hatching Chicks Project activities. As Ray County students continue on their learning journey, they have increased knowledge and skills in: - Nutrition - Food Production - Food Safety and Production</td>
<td>Missouri is seeking to be a national and international leader in life sciences. The 4-H school enrichment Embryology Project helps students at an early age begin to develop an understanding of science as a technology for supporting and contributing to as an adult to Missouri's economy in life sciences industry. 4-H science programs reach more than 5 million youth with hands-on learning experiences; these experiences are supported by more than a half-million dedicated adult volunteers who are placing 4-H youth on a path towards successful careers. 4-H will address our nation’s critical challenge of developing a long-term solution for improving science literacy and aptitude by preparing 1 million new young people to excel in science, engineering and technology.</td>
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Missouri is seeking to be a national and international leader in life sciences. The 4-H school enrichment Embryology Project helps students at an early age begin to develop an understanding of science as a technology for supporting and contributing to as an adult to Missouri’s economy in life sciences industry. 4-H science programs reach more than 5 million youth with hands-on learning experiences; these experiences are supported by more than a half-million dedicated adult volunteers who are placing 4-H youth on a path towards successful careers. 4-H will address our nation’s critical challenge of developing a long-term solution for improving science literacy and aptitude by preparing 1 million new young people to excel in science, engineering and technology.
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<td>• Provides high-quality, professional, full-service meeting management for a variety of noncredit educational programs, such as conferences, workshops, seminars and symposia.</td>
<td>• Provides rural primary-care physicians with access to education as necessary for them to meet state licensure requirements, learn specialty medicine and for health education.</td>
<td>• Provides comprehensive continuing professional education and training to Missouri's fire-service and emergency response personnel.</td>
<td>• brings state-of-the-art, certified, professional training to law enforcement officers as well as continuing professional education to a wide spectrum of other criminal justice and public safety practitioners.</td>
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<tr>
<td>• Participants attended conferences for teacher education in math, science and writing; agricultural lending; plant science; and therapeutic recreation.</td>
<td>• Distance learning via the Missouri Telehealth Network provides access to weekly grand rounds from various School of Medicine departments.</td>
<td>• The institute has a direct effect on the well-being and protection of Missouri's 24,000 firefighters and the 5.9 million citizens they serve.</td>
<td>• Established in 1948, the institute has been the state’s recognized leader for more than 60 years in providing vital training and education services for Missouri’s 20,000 in-service and 3,000 police recruits annually.</td>
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</tr>
<tr>
<td>• For more information, visit muconf.missouri.edu.</td>
<td>• Ray County had one learner</td>
<td>• Prepares firefighters for medical emergencies, hazardous materials response and disaster preparedness and mitigation.</td>
<td>• For more information, visit leti.missouri.edu.</td>
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<tr>
<td>Ray County had sixty-seven learners</td>
<td></td>
<td>• For more information, see mufrti.org</td>
<td>• Ray County had one learner.</td>
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<td></td>
<td></td>
<td>Ray County had fifty-one learners</td>
<td></td>
<td>• Ray county had one learner.</td>
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<tr>
<td>Ray County Extension Council Members</td>
<td>Ray County Commissioners</td>
<td>Extension Faculty and Staff Based in Ray County</td>
<td>Additional Faculty and Staff Serving Ray County</td>
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<tr>
<td>Shelia Oyler</td>
<td>Robert King, Presiding Commissioner</td>
<td>Nancy Coleman</td>
<td>Karma Metzgar</td>
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<tr>
<td>Chair and Regional Council Representative</td>
<td>Allen Dale, Eastern Commissioner</td>
<td>4-H Youth Specialist and Co-County Program Director</td>
<td>NW Regional Director</td>
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<tr>
<td>Ronnie Russell</td>
<td>Mike Twyman, Western Commissioner</td>
<td>Wyatt Miller</td>
<td>St. Joseph, Mo</td>
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<tr>
<td>Vice Chair</td>
<td></td>
<td>Agronomy Specialist and Co-County Program Director</td>
<td>Jill Knadler</td>
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<tr>
<td>Stacey Cox</td>
<td></td>
<td></td>
<td>Regional Office Manager</td>
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<tr>
<td>Secretary</td>
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<td>St. Joseph, Mo</td>
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<tr>
<td>Shanon Keighley</td>
<td></td>
<td>Elizabeth McGraw Office Manager</td>
<td>Tim Baker</td>
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<tr>
<td>Treasurer</td>
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<td></td>
<td>Horticulture Specialist</td>
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<tr>
<td>District I</td>
<td></td>
<td>Sandy Burns</td>
<td>Daviess County</td>
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<tr>
<td>Shelia Oyler</td>
<td></td>
<td>Office Manager (Interim)</td>
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<tr>
<td>James Wollard</td>
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<tr>
<td>District II</td>
<td></td>
<td>Kathy Smith</td>
<td></td>
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<tr>
<td>Shanon Keighley</td>
<td></td>
<td>Nutrition Program Education Associate</td>
<td></td>
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<tr>
<td>Simon Estes</td>
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<td>District III</td>
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<tr>
<td>Angelica Lopez</td>
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<td>Jon Williams</td>
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<td>District IV:</td>
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<tr>
<td>Jodi Stewart</td>
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<tr>
<td>Ron Russell</td>
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<td>District V</td>
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<tr>
<td>Janell Wilson</td>
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<tr>
<td>Brett Siemens</td>
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<td>Appointed:</td>
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<tr>
<td>**County Court</td>
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<tr>
<td>Allen Dale</td>
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<tr>
<td>**City of Richmond</td>
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<td>**Farm Bureau</td>
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<tr>
<td>Stacey Cox</td>
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<td>**City of Richmond</td>
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<td>**Farm Bureau</td>
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<tr>
<td>Stacey Cox</td>
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</tbody>
</table>

**Ray County Extension Center**

1015 W. ROYLE STREET
P. O. BOX 204
RICHMOND MO  64085
816-776-6961—Phone
816-776-6962---Fax
rayco@missouri.edu

**Extension**

RAY COUNTY EXTENSION CENTER
1015 W. ROYLE STREET
P. O. BOX 204
RICHMOND MO  64085
816-776-6961—Phone
816-776-6962---Fax
rayco@missouri.edu

**Appointed:**

**County Court**
- Allen Dale

**City of Richmond**
- Stacey Cox

**Farm Bureau**
- Shelia Oyler

**Additional Faculty and Staff Serving Ray County**

- Karma Metzgar
  - NW Regional Director
  - St. Joseph, Mo

- Jill Knadler
  - Regional Office Manager
  - St. Joseph, Mo

- Tim Baker
  - Horticulture Specialist
  - Daviess County

- Shanshan Chen
  - Nutrition and Health Education Specialist
  - Lafayette County

- James J.W. Crawford
  - Natural Resource Engineer
  - Atchison County

- Jim Humphrey
  - Livestock Specialist
  - Andrew County

- Beverly Maltsberger
  - Community Development Specialist
  - Buchanan County

- Connie Neal
  - Housing and Environmental Design Specialist
  - Grundy County

- Trish Savage
  - Family Financial Education Specialist
  - Atchison County

- Jessica Trussell
  - Human Development Specialist
  - Linn County

- Whitney Wiegel
  - Agriculture Business Specialist
  - Lafayette County

- Penny Crawford
  - Extension FNP Program Manager

- Constance Mowrer
# Impact on Ray County, Missouri

## The County at a Glance
- **Population:** 23,039

## UM Students from the County in 2014
- 104 students
  - 40 - MU
  - 54 - UMKC
  - 9 - Missouri S&T
  - 1 - UMSL
  - 74 - Undergraduates
  - 30 - Graduates
  - 78 - Full-time students
  - 26 - Part-time students

## UM Alumni Residing in the County in 2014
- 452 alumni
  - 239 - MU
  - 185 - UMKC
  - 23 - Missouri S&T
  - 5 - UMSL
  - 180 Selected School Alumni
    - 5 - Medicine
    - 18 - Nursing
    - 12 - Health Professions
    - 9 - Dentistry
    - 13 - Pharmacy
    - 1 - Optometry
    - 5 - Veterinary Medicine
    - 60 - Agriculture
    - 41 - Engineering
    - 16 - Law

## UM Employees and Retirees Residing in the County in 2014
- 13 people employed by UM
  - 3 - MU
  - 10 - UMKC
- 4 UM Retirees and Beneficiaries

## UM Services Received in the County in 2014
- 108 patients seen at UM Health Care, with $120,506 of uncompensated care.
- 67 patients seen at the UMKC School of Dentistry with an average of $123 per patient in uncompensated care.
- 7,269 contacts with MU Extension through MU Extension events held in district counties.

## UM Alumni Teaching K-12 in the County in 2014
- 36 teachers
- 13% of all county teachers
- 4 principals and administrators
- 24% of all county principals and administrators

## UM Footprint in the County
Ray County MU Extension Center

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*Office of University Relations*
309 University Hall • Columbia, MO 65211 • 573-882-2726
www.umsystem.edu/ums/ur/

2/6/2015
Impact on Ray County, Missouri

UM Research Expenditures Funded by Federal and Private Sources

- Between FY2008 and FY2013, UM brought in more than $1.1 billion in federal and private research funds.

Economic Development Highlights

- With $3.2 billion in total revenues in 2014, UM would have been the 16th largest publicly held Missouri-headquartered company in the state in 2013.
- With almost 32,000 employees in the state, UM was Missouri’s 2nd largest employer in 2013.
- In 2012, UM’s $165.2 million in federal research expenditures represented 94.3% of these expenditures at Missouri public universities.
- In 2014, UM’s $31.0 million in National Science Foundation (NSF) awards represented 91% of all NSF awards made to Missouri public universities.
- UM earned $10.8 million in licensing income in 2014.
- UM received 176 new invention disclosures in 2014.
- 4 startups were created around UM technologies in 2014.
- UM was issued 16 U.S. patents and filed 83 new U.S. patent applications in 2014.

Electronic Services to the State in 2014

- The Missouri Research & Education Network (MOREnet) provided internet connectivity and technical services to members that include:
  - 61 higher education institutions with more than 238,000 students.
  - 517 K-12 schools serving more than 846,000 students.
  - 132 public libraries connecting 335 library buildings that serve 5.3 million Missourians.
  - Serving the State Office of Administration, several municipalities and various other eligible organizations.
- MOREnet returned over $15 million in telecommunications expenditures to companies doing business in Missouri.

Financial Aid Provided to UM Students in 2014

- $888.2 million provided to 58,553 total students
  - $444.9 million (28,087 students) - MU
  - $202.2 million (11,887 students) - UMKC
  - $102.2 million (6,819 students) - Missouri S&T
  - $138.9 million (11,740 students) - UMSL

Impact on Education

- UM enrolled 44.8% of first-time undergraduates attending four-year public institutions in 2013.
- UM awarded 50.4% of the 1,210 doctoral degrees earned in Missouri in 2012.
- UM awarded 41.8% of the 1,890 first professional degrees earned in Missouri in 2012.
- UM awarded 31.6% of the 30,793 bachelor’s or higher degrees awarded by Missouri’s four-year public institutions in 2012.

Supporting the University of Missouri is an investment in the future of Missouri.

The university advances Missouri citizens and communities through its mission of teaching, research, public service, and economic development across our four campuses and University of Missouri Extension.
Dear Friends of University of Missouri Extension,

The University of Missouri Extension is a unique partnership between the university and local government. In Ray County, we are proud of this important tie that has enabled us to work together to improve the lives of the citizens of Ray County. This annual report is a glimpse of program highlights that occurred in 2014.

We look forward to continuing to help Ray County citizens as they “Live and Learn”.

Shelia Oyler   Stacey Cox   Nancy Coleman
Extension Council Chair   Extension Council Secretary   County Program Director

2014 Financial Summary of the Ray County Extension Council

Funding from county, state and federal monies makes University Extension unique. State/federal funds are used for specialist salaries, orientation, in-service costs & postage. Ray County funds support local office costs.

<table>
<thead>
<tr>
<th>EXPENDITURES</th>
<th>RAY COUNTY COURT FUNDS (1)</th>
<th>RAY COUNTY COURT FUNDS (1)</th>
<th>RAY COUNTY EXTENSION FUNDS (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Actual Dollars</td>
<td>In-Kind Dollars</td>
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<td>INCOME</td>
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<tr>
<td>Ray County Appropriation</td>
<td>$23,092.80</td>
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<td>Ray County Extension</td>
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<td>$2,636.76</td>
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<tr>
<td>EXPENSES</td>
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<tr>
<td>Secretarial Wages, Benefits</td>
<td>$23,092.80</td>
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<td>$306.69</td>
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<tr>
<td>and Employer Taxes</td>
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<tr>
<td>Travel for Program Delivery</td>
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<td>Misc.</td>
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<td>34.82</td>
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<tr>
<td>TOTALS</td>
<td>$23,092.80</td>
<td>$11,143.19</td>
<td>$6,500.13</td>
</tr>
</tbody>
</table>

| TOTALS OF:                          |                             |                             |                                 |
| (1) COUNTY COURT FUNDS              |                             |                             |                                 |
| (2) EXTENSION FUNDS                 |                             |                             |                                 |
| GRAND TOTAL OF COURT & EXTENSION FUNDS | $34,235.99                | $6,500.13                   |                                 |

Ray County Extension is a service that is made possible by partnerships between the Ray County Extension Council, the Ray County Commission, and the University of Missouri. Without the support of local county appropriations, MU Extension would be unable to secure the total support, so we really appreciate the continued support the Ray County Commission has seen fit to provide MU Extension in Ray County.