



University  
of Missouri  
Extension

Crawford  
County  
2016  
Annual  
Report

WE ARE WORKING IN OUR COMMUNITIES TO  
MAKE A DIFFERENCE.

UNIVERSITY OF MISSOURI  
 Extension

Live. And Learn.

Equal Opportunity/ADA Institution

### Mission

*Our distinct land-grant mission is to improve lives, communities and economies by producing relevant, reliable and responsive educational strategies that enhance access to the resources and research of the University of Missouri.*

Dear Members of the County Commission and Crawford County Citizens,

This year was the 102nd year of Extension. We are pleased to highlight programs of distinction in 2016. Thank you for your support which has made it possible for University of Missouri Extension to provide educational programs for the citizens of Crawford County. University of Missouri Extension provides research-based resources and programs to address high-priority issues, and is a direct link to the four campuses of the University of Missouri System. In 2016, more than one million Missourians statewide turned to University of Missouri Extension for help in improving their farms, businesses, families and communities.

The success of University of Missouri Extension in Crawford County depends upon the dedication and support of members of the County Extension Council, the Crawford County Commission and all the volunteers who assist with our programs. The council assists staff with planning and implementing programs by communicating the interests and concerns of local citizens. We partner in the state to maximize and apply our resources where the greatest impact can be made.

The Crawford County Extension faculty, staff, and county extension council members look forward to a continued team effort in 2017 to better our communities and our lives.

Dana Richter  
Chair, 2016

Sarah Woods  
Secretary

Pat Snodgrass  
County Program Director

#### 2016 Crawford County Council

The county council is the link between University of Missouri Extension and the people of the state. Established and directed by Missouri state law, the council assists the staff in educational program development and implementation, personnel and fiscal management and membership. County councils are comprised of elected and appointed members who serve two-year terms. The Crawford County council members and the districts they represent are:

#### Elected:

- Dana Richter, chair
- Bob Baker
- Jim Smith
- Sarah Woods, secretary
- David Dunn
- Jennifer Gebhart
- Bill Boever
- Jacque Bottom
- Greg Kimberlin
- Jolene Gibbs, treasurer
- Rosemary Campbell
- Lisa Turnbough
- Mike Bottom

#### Appointed:

- Barry West, Farm Bureau, vice chair
- Kenny Killeen, Board of Commission
- Norma Bretz, City of Cuba

#### 2016 Crawford County Budget

##### Revenues:

County Commission	38,124.00
Short Course	4,533.00
University Postage Reimb	2,991.85
Bank Balance Carry-over/Reserves	<u>7,247.70</u>
	52,896.55

##### Expenditures:

Salaries/Wages/Benefits	34,250.99
Postage	570.14
Supplies	1,215.79
Telephone	1,771.96
Repair/Capital Purchase	1,154.34
Resale/Educ. Services	1,589.34
Travel	8,592.05
Other	<u>711.56</u>
	49,856.17

#### State and Regional Council Member

Mike Bottom

#### State Fair Farm Family

Randy and Myra Harmon

#### Leaders Honor Roll

Norma Bretz  
Becky Simpson

#### Crawford County Faculty and Staff

Pat Snodgrass  
County Program Director  
*Housing and Environmental Design Specialist*

Karen Branstetter  
4-H Youth Specialist  
(Vacancy)  
*Agronomy Specialist*

Christa Spindler  
*Food Nutrition Education Program Associate*

Presha Earney  
*Administrative Assistant*

Linda Mullen  
*Administrative Assistant*

Also serving Crawford County:  
Ted Cunningham  
*Livestock Specialist*

Sarah Hultine-Massengale  
*Community Development Specialist*

Keith Strassner  
*Business Development Specialist*

Rachel Hopkins  
*Ag Business Specialist*

Chantae Alfred  
*Family Financial Education Specialist*

Kathi Mecham  
*Horticulture Specialist*  
(Vacancy)  
*Human Development Specialist*

Tayo Bojuwon  
*Nutrition and Health Education Specialist*

Charlie Ellis  
*Natural Resource Engineer*



#### Crawford County Extension

302 Water Street, P.O. Box 190 Steelville MO 65565  
573-775-2135 573-775-5363 FAX

<http://extension.missouri.edu/crawford>

## In Memory of our Extension Friends and Colleagues

Marie M. Maerli

April 16, 1917 – February 14, 2016

Prairie 4-H club Leader

Prairie Extension Homemakers Club Member and Club President

Crawford County Extension Homemakers Council and Council President

Crawford County Fair/Home Economics Department Chairman

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Ada Ruth Maxfield

September 18, 1917–February 22, 2016

Oak Hill 4-H Club Project Leader

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Doris Greig

June 8, 1933–June 2, 2016

Family and Consumer Economics Extension Specialist

Crawford County Fair Home Economics Department Judge

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Alma Jean Brown

June 29, 1925–September 14, 2016

4-H Project Leader

Town and Country Extension Homemakers Club Member

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Marie McDole Gormley

June 5, 1924–October 28, 2016

Dear friend of Extension

Golden Echoes Senior Center Leader/Partner

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January 5, 2017

Dear County Commissioners and Friends of MU Extension:

The past year was a busy one for University of Missouri Extension. As a long-time extension professional and newcomer to Missouri, I have found the support from people like you to be remarkable. Missouri is a special place with a promising future.

Through the efforts of faculty, staff and amazing volunteers, MU Extension connects millions of Missourians with knowledge they put into action in their daily lives. Using a range of learning experiences, we reach people of all ages and backgrounds, in every corner of the state.

In response to direct input received from local councils and the unique nature of each county, extension programs vary slightly across the state. This strength of local flexibility and public engagement enables county-based Mizzou faculty to provide local learning experiences that improve lives and community vitality. For example:

- MU Extension business specialists helped local Missouri businesses achieve sales increases of \$186 million while creating or retaining 7,766 jobs.
- Helping assure access to health care in local communities, MU Nursing Outreach made it possible for 2,094 nurses keep their skills up to date.
- Our 4-H youth development specialists and other extension team members worked with volunteers and community leaders to reach 269,000 youths ages 5 to 18 across the state.
- Anticipating the needs of Missouri's aging farm population, extension faculty developed workshops that target estate planning, succession and retirement planning specific to farmers.

These are just a few examples of how Mizzou's commitment to extension and engagement benefitted Missourians this past year.

In the interest of better serving Missourians, we are conducting a statewide needs assessment. It will include extensive input from local communities and stakeholders. It will result in stronger alignment between extension programs and local needs.

I encourage you to read the attached annual report from your county office to gain an understanding of how MU Extension has worked this past year to serve your community.

Your support of MU Extension and our efforts in your community is greatly appreciated. As always, I welcome your input on how the University of Missouri can better serve the people.

Sincerely,



Marshall Stewart, Ed.D.  
Vice Chancellor for Extension

## Vice Chancellor For Extension



Marshall Stewart MU Vice Chancellor-Extension and Engagement, held a Listen and Learn Tour across the state of Missouri. One of his tour stops was in Crawford County at the Wurdack Farm Research Center where he visited with local legislators, council members and producers.

## Meet the Candidates Night

A large crowd, including many state and local candidates participated in the Meet the Candidates Night. The event was co-sponsored by the Crawford County Farm Bureau and the Crawford County Extension Council. Barry West, President of the Crawford County Farm Bureau emceed the event. Candidates responded to questions from the audience and shared why they are asking voters to support them in the upcoming elections. Participants became educated on candidate's views on critical issues. More informed citizens tend to vote in elections. Engaging the public in issues and elections is important in the democratic process benefitting Crawford County Missouri.



## Extension Impacts Four Generations

The Stewart Family of Jakes Prairie, in the northern part of Crawford County is a long-standing family of four generations. They have, and are part of Extension's proud work and legacy in Crawford County. From Oran and Eva Stewart to Parker Stewart, this family, like many in Crawford County are what Extension is about; enhancing family life for all. Here is what Parker Stewart, a 4-H'er said about her mom on Mother's Day: "My mom, Amber Stewart, (former 4-H'er) is the best mom ever, as my mom sees my grades she gets happy. We both showed livestock when we were young. I love my mom, she is one in one million."

## State Fair Farm Family



*The Harmon Family, Randy, Myra, Devan, Ethan and Abigail of Salem were among the families honored during the Missouri Farm Family Day, Aug. 15 at the Missouri State Fair.*

The Harmon family was selected as the Crawford County Missouri Farm Family by the Crawford County Extension Council and local Farm Bureau.

The event showcases the impact Missouri Farm Families have on the economy and heritage of our state. “These families are involved in agriculture activities in their communities, and are active participants in local outreach and extension,” said Missouri State Fair Director Mark Wolfe. “As the showcase for Missouri agriculture, the Missouri State Fair is most certainly the appropriate place to celebrate these families.”

## State Rookie of the Year Clerical Award



*Dana Richter, Crawford County Extension Council Chairman presented the award to Mrs. Mullen on behalf of University of Missouri Extension.*

Linda Mullen, Crawford County Extension Bookkeeper/Administrative Assistant was honored with the Rookie of the Year clerical award among all Extension support staff in the state.

Employed since 2014, Linda manages the Quick-Books Accounting/Fiscal records and assist with programming and client needs in the Crawford County Extension office.

## Missouri Century Farms

Agriculture in Crawford County and the long-standing tradition of the family farm was celebrated during the annual Crawford County Extension Council Banquet. The Crawford County Extension Council and the state of Missouri bestowed the Century Farm status to a Crawford County farm family. To date, 43 farms in Crawford County have received the designation as Century Farms.



*Scott Perkins and his daughter accepted two Missouri Century Award signs and certificates for his family's farms dating back to 1862 and 1912. Making this presentation is State Representative Jason Chipman and Presiding Commissioner Leo Sanders.*

## Extension Leaders Honor Roll



*Norma Bretz of Cuba received the Extension Leaders Honor Roll from State Representative Jason Chipman and Presiding Commissioner Leo Sanders.*



*Becky Simpson of Steelville received the Extension Leaders Honor Roll from State Representative Jason Chipman and Presiding Commissioner Leo Sanders.*

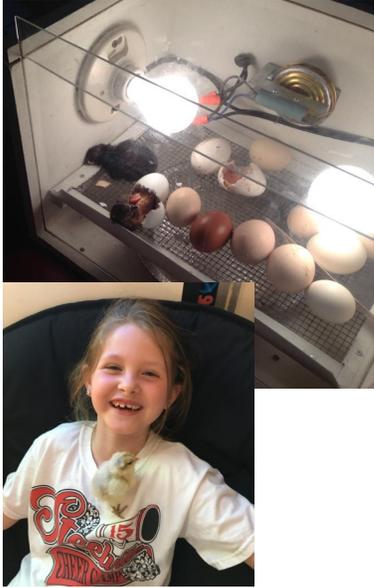


# Crawford County 4-H

A community of youths building life skills, engaging in science and contributing to their community.



*Karen Branstetter  
4-H/Youth Specialist*

Number of Crawford County Learners	What Did Participants Learn?	How Participants Benefit	How Does This Work Make Crawford County and Missouri Better?
<p>217 4-H members</p> <p>83 youth in school enrichment programs</p> <p>119 trained 4-H volunteers</p> <p>34 youth volunteers</p> <p>235 participants in Farm and Home Safety Day</p> <p>One of every five Missourians between the ages of 5 and 18 participated in a Missouri 4-H program in 2016.</p>	<p>Learning by doing is the 4-H motto. In Crawford County, youth are provided the opportunity to practice leadership, citizenship, responsibility, team work, public speaking, record keeping, community service and other life skills under the guidance of trained adult volunteers through the 10 Crawford County 4-H Clubs.</p> <p>4-H Youth also participate in a variety of regional and state educational experiences which further develops a member's learning opportunities.</p> <p>Forty-two Crawford County youth participated in 4-H camp at Camp Clover Point. They learned important life skills in a safe, structured environment. These valuable skills of working together, communication, and teamwork were acquired while making new friends and gaining self-confidence.</p>	<p>Missouri 4-H is growing future scientists. Young people in 4-H are three times more likely to be interested and pursue science-based careers than their non-4-H peers. Our nation needs young people prepared to live and work in a world that no one can imagine—jobs that do not yet exist, using technology that has not been invested, solving problems that have not yet been identified.</p> <p>There were 451 Crawford County science related projects this past year.</p> <p>Studies show that youth in 4-H programs are 70 percent more likely to attend college and increase their earning potential by \$2.01 million dollars over their lifetime. If just one-third of our club members completed a bachelor's degree, this would create approximately \$14 billion of earning potential.</p>	<p>4-H Youth are equipped with the knowledge, skills, attitudes and health for the 21st century workforce. Missouri 4-H members spend more of their leisure time than peers engaged in projects of interest anchored in science (Khan, 1989). 4-H members are three times more likely to go into science related careers than similar peers (Lerner and Lerner, 2008).</p> <p>Young people in 4-H are engaged in twice as many leadership roles as their non 4-H peers. This provides them with the experience in problem solving to step up and lead in a complex changing world. There were numerous leadership and community service projects in the Crawford County communities.</p> <p>Communities also reap long-term benefits by supporting 4-H programs. Youth engaged in the program are 60 percent more likely to vote than their non-engaged peers. In addition, 4-H youth are more likely to volunteer and contribute to their communities than youth participating in other youth programs.</p>
 <p><i>4-H campers doing the fish farm challenge as part of their environmental appreciation activities at 4-H Camp.</i></p>	 <p><i>Hatching Chicks in the Classroom</i></p>	 <p><i>State 4-H Teen Conference participants for 2016.</i></p>	

# Housing and Environmental Design Programs

Pat Snodgrass  
County Program Director  
Housing and Environmental  
Design Specialist



Programs	What Did Participants Learn?	How Participants Benefit	How Does This Work Make Crawford County and Missouri Better?
<b>Indoor Air Quality and Reducing Mold</b>	<p>More than 134 people received valuable information on mold and housing structures in Crawford County and 36 other counties.</p>	<p>Mold and mildew are serious health concerns for occupants of a structure that has been flooded. Participants learn how to protect themselves from mold with proper safety equipment. Participants learned how to protect housing investment.</p>	<p>With the community housing stock improved upon and properly maintained, citizens are healthier, less mobile and there is a greater quality of life. We all live in a house.</p>
<b>Home Energy Education</b>	<p>Techniques and products that are easy to use were provided as well as the information weather stripping, energy-efficient window treatments, efficient lighting and solar energy.</p>	<p>Forty participants in Crawford County will save energy resources and money by installing and using the energy kits (valued at \$50) they received in these programs. The participants have a greater comfort level and are saving energy dollars.</p>	<p>Energy conservation measures add value to homes and save money in both summer and winter. There is less dependence on fuel and lower electric bills. There is also less dependence on organizations to help pay bills for low-income families.</p>
<b>Household Hazardous Waste Jeopardy/Farm and Home Safety Day</b>	<p>Two hundred, thirty-five high school freshmen and 30 volunteers attended this event from the 3 Crawford County schools. They also learned about everyday hazardous products, recycling and how to be an environmentally conscious consumer.</p>	<p>Protecting ground water will lead to less contamination. In all sessions, students indicated they will read labels on hazardous products they use and dispose of them properly. They indicated they will use proper protection when adding gasoline, a known carcinogen, to the lawn mower.</p>	<p>Crawford County and the Ozarks boast of the safest and most abundant water supply in the world. Protection of natural resources improves and protects the environment, enhances tourism and protects our well-being.</p>
<b>Flood Recovery and Multi-Agency Relief Center</b>   <b>Healthy Homes Partnership</b>	<p>Homeowners learned of recommended practices for flooded home environments due to the summer flooding in Crawford County and across the region. Personal and home safety, ventilation and moisture control, mold remediation and other Extension resources were shared with those affected by the flood. At the Multi-Agency Relief Centers, Extension Communications filmed videos of Pat Snodgrass talking about the use and importance of a moisture meter and restoration of flooded homes.</p>	<p>The participants remained safe and healthy themselves by following Extension recommendations when entering flooded home environments. Flooded home environments were dried out properly and restored by eliminating mold issues in the future.</p>	<p>The housing investments families have made is saved and restored in Crawford County and across Missouri. Families avoid health issues including allergies and asthma when recommended practices are used in flooded home environments</p>

*This is the view out the front door of the Extension Center, across the flooded Yadkin Creek to the County Court House.*



Programs	What Did Participants Learn?	How Participants Benefit	How Does This Work Make Crawford County and Missouri Better?
<p><b>Cuba Safety Day</b></p>  <p><b>Women in Agriculture Event</b></p>	<p>Two hundred forty children, grades five and six participated in a Safety Day event. The event was organized by Faye Howard, former Crawford County Extension Council member. Extension presented the Poison Look-A-Likes program.</p> <p>Over 245 people attended the Women in Agriculture Event at White Mule Winery in Rosebud. Crawford County citizens participated in this event.</p> <p>The women learned of agri-businesses in our area, of extension programs, resources and Healthy Homes information and of other agencies and their resources to help them in their daily lives.</p> <p><i>University of Mo Extension Faculty and Staff with Extension resources at the Women in Agriculture event.</i></p>	<p>The children learned the phone number of the poison control center. They did not know it prior to the program. In every class, the children could not tell the difference between the poison and the candy or sweet drink.</p> <p>The motivational speakers encouraged rural women to seek and enhance partnerships and try something new to add financial stability to their operations.</p>	<p>The information learned in this program could quicken emergency response and save the life of a child in the event of a poisoning. There could be less accidents in Crawford County regarding poisonings.</p> <p>Women networking together will enhance community development and the agri-businesses will add to the local economy. Women will take advantage of the resources and wealth of information to help people, businesses and communities develop skills, solve problems and build a better future.</p>
<p><b>Environmental Quality Programs/Healthy Homes/Landlord Tenant Issues/Housing</b></p>	<p>Eight programs reached audiences in Crawford County to a total of 131 people. In addition, consultations on housing issues were conducted.</p>	<p>Participants gained new knowledge of healthy homes issues, water and environmental quality, recycling and “green” living. Some of those attending indicated they would begin a recycling program. Over 48 percent indicated they would test their rural water supply. Over 75 percent said they had mold in their homes and learned what to do about it.</p>	<p>Recycling adds jobs to our economy and there is less waste for the landfill. Participants learning and adopting environmentally friendly practices in support of “greener” lifestyles is important for today and our future.</p>





# Marketing Extension

Pat Snodgrass  
County Program Director  
Housing and Environmental  
Design Specialist



Programs	What Did They Learn?	How Participants Benefit	How Does This Work Make Crawford County and Missouri Better?
<p><b>Crawford County Human Services Coalition</b></p>	<p>Agencies and organizations serving Crawford County meet on a monthly basis to address unmet needs in the county and issues of concern. Extension is a part of that effort.</p>	<p>Once issues are identified, partnership address these with education and collaboration. Poverty, drug use and abuse, need for community garden, transportation and health have all been addressed by this coalition.</p>	<p>Organization and partnering to address issues and unmet needs help those in Crawford County who need them.</p>
<p><b>Crawford County Fair</b></p>	<p>Crawford County Extension, faculty, staff and county council members are an integral part of the success of the Crawford county Fair.</p>	<p>Home Economics department and the 4-H department including the 4-H/FFA Livestock Show and FFA Sale benefit from Extension resources, leadership and participation to insure a quality event for exhibitors and those attending.</p>	<p>The Crawford County Fair is a successful event that adds to the economic and tourism base in the county.</p>
<p><b>Media Efforts</b></p>	<p>Regular radio and cable TV programs broadcast twice monthly with KTUI radio and Fidelity Communications to educate on subject matter and inform of upcoming programs. In addition 7 radio programs were conducted by phone for KFBD, Waynesville, Mo.</p>	<p>The public is informed of upcoming extension programs and educated on such topics as energy education, recycling, household hazardous waste, lighting and holiday safety, housing and home maintenance, health issues, and mold and indoor air quality.</p>	<p>The visibility of extension is greater participation in programs. This results in a safer, cleaner home environment for families. Families become aware of extension resources, programs and events and become knowledgeable of extension's impact on their community.</p>
<p><b>Crawford and Dent County Extension Council</b></p>	<p>The Crawford and Dent County Council members and their families enjoyed a wagon tour of Wurdack Farm Research Center in Cook Station and a family picnic.</p> <p style="text-align: center;"><i>Wurdack Wagon Tour — Crawford and Dent County Extension Council</i></p>	<p>Participants learned of on going research efforts at the research center and collaborated with a joint county council.</p> 	<p>Producers seeing the research and demonstration first-hand will become more successful in their own operations increasing efficiency and profits. Council members also become greater advocates for extension programs and share research efforts of University of Missouri</p>
<p><b>Advisory Boards</b></p>	<p>Extension is a part of many organizations and boards including the Crawford County Fair Board, Crawford County Farm Bureau Board, Soil and Water Boards, Wurdack Advisory Board and Steelville Telephone Exchange.</p>	<p>Partnerships work and the community as a whole benefits by the various strengths and resources brought to the table by each person or organization.</p>	<p>Leadership development, community planning and implementation and extension resources better the community and Missouri in positive ways.</p>



# Family Nutrition Education Program

Reaching low-income children and families with nutrition education



Christa Spindler  
Nutrition Program Associate

Who are the Learners?	What School District/Agencies are Served?	What Did Participants Learn?	What Action Did They Take?	How Does This Make Crawford County and Missouri Better?
<p>Family Nutrition Education Program (FNEP) provides information on nutrition, food safety, and physical activity for lifelong health and fitness. In Crawford County, 4,193 contacts were made, 2,647 youth and 1,546 adults participated in FNEP.</p>	<p>Programming occurred in the following schools and agencies:</p> <ul style="list-style-type: none"> <li>• Cuba Elementary and Middle School</li> <li>• Bourbon Elementary, Middle and High School</li> <li>• Steelville Elementary and High School</li> <li>• Crawford County Head Start</li> <li>• Cuba Food Pantry</li> <li>• Steelville Food Pantry</li> <li>• Bourbon Ecumenical Group—Bourbon Food Pantry</li> <li>• Golden Echoes</li> <li>• Ozark Regional Library</li> <li>• Pathways</li> </ul>	<p>Nutrition Program Associate Christa Spindler goes into schools and interacts with community members to help them make healthier choices and build healthy habits.</p> <p>Activities include cooking, taste-testing healthy foods and practicing skills that lead to good health.</p> <p>Adults learned about nutrition, safe food preparation and food safety, physical activity and food resource management.</p>	<p>Participants in FNP become more aware of nutrition, make healthier meal and snack choices, eat breakfast more often, are more willing to try new foods, increase their physical activity and in general make healthier food choices. Those who practice healthy eating and activity behaviors are more likely to enjoy a high quality of life as an adult and into old age.</p> <p>I was taking a walk at the local park when I saw two ladies I recognized from the senior center. One of them told me that after taking my classes Eat Smart, Live Strong over the summer they had been trying to eat healthier and exercise. One of the tips from that curriculum for getting more exercise was to walk with a friend and that was what they were doing that day!</p>	<p>The Family Nutrition Education Program provides nutrition education to the residents of Crawford County with an emphasis on reaching food stamp recipients and food stamp eligible citizens.</p> <p>Participants in FNEP in Crawford County who practice healthy eating and activity behaviors are more likely to enjoy a high quality of life as an adult and into old age. A healthy labor force is critical to attracting and keeping jobs in Missouri. In addition, this important programming effort serves to reduce health care costs over the participant's lifetime, saving taxpayers money in reduced public health care benefits and insurance premiums.</p> <p>One student recently told me that he was sold on the idea of eating healthier foods. He said that on our first class, when we talked about eating according to MyPlate, he figured he would give it a try because he hadn't been feeling well. He said he had been eating a lot of what he termed "junk food" and had not been following the five food groups. He said he started eating according to MyPlate the same day of the first class and a few weeks later he was feeling so much better he couldn't believe it! He said he would continue to eat healthier foods because it had made a huge improvement in his life.</p>

# Agronomy Programs

Teaching programs in crop and forage production, plant pathology, entomology, weed science and soils

Programs	What Did Participants Learn?	How Participants Benefit	How Does This Work Make Crawford County and Missouri Better?
<p><b>Forage Production Management Systems</b></p> <ul style="list-style-type: none"> <li>• Grazing Schools</li> <li>• Forage and Beef Conference</li> </ul> <p><b>Plant Protection</b></p> <ul style="list-style-type: none"> <li>• Private Pesticide Applicator Training</li> <li>• Pasture Weed and Brush Control</li> <li>• Weed ID</li> </ul> <p><b>Nutrient Management Planning</b></p> <p><b>Crop Management</b></p> <p><b>Proper Soil Testing and Understanding the Soil Test Report</b> — 155 soil tests in Crawford County were completed at the Soil Test Lab and reviewed by Agronomy Specialists</p> <p><b>Pest Management</b></p> <p><b>Farm Visits</b></p>	<p>Choosing and applying fertilizers in an efficient and environmentally sound manner.</p> <ul style="list-style-type: none"> <li>• Proper soil testing and interpreting soil test reports</li> <li>• Weed control research to improve management decisions</li> <li>• Weed, insect, and disease pests that potentially can attack crops and to utilize our pest monitoring program</li> <li>• Pesticide safety</li> <li>• Management of forage production systems</li> </ul>	<p>Improving pesticide application techniques and reducing use through techniques such as Integrated Pest Management and organic methods, increases short and long-term health and quality of life benefits to the applicator, neighbors and consumers of agricultural products.</p> <p>Wurdack Farms Research Center provides the latest research to help producers remain competitive and provide an economic driver for east central Missouri.</p>	<p>Agronomic education improves quality of life for the learner, but also indirectly for those in the community.</p> <p>As world population continues to increase, the need for food production continues to grow. It is critical to continue to increase crop yields while maintaining the competitiveness to increase food production in an environmentally responsible manner.</p>
 <p style="text-align: center;"><i>Wurdack Research Center Field Day</i></p>			 <p style="text-align: center;"><i>Grazing School participants learning to use grazing sticks and no-till drill at Wurdack Farms.</i></p>



Number of Learners in 2016	What Did Participants Learn?	How Participants Benefit	How Does This Work Make Crawford County and Missouri Better?
<ul style="list-style-type: none"> <li>◆ 345 Direct Contact participants through programming (participants are actively engaged in the learning process) i.e., Farm Lease, Quicken for Farmers</li> <li>◆ 9 Individual Contacts i.e., e-mails, phone calls, walk-ins</li> <li>◆ 15 Indirect Contacts (information distributed) i.e., meetings and other special assignments</li> </ul>	<p>Participants who engaged in agriculture business programming learned about cash and crop share leases, pertinent items to be included in a lease, record keeping, current trends in agriculture markets and livestock risk protection.</p>	<p>Participants who gained knowledge on farm business management topics may benefit in the following ways:</p> <ul style="list-style-type: none"> <li>◆ Greater knowledge of farm leases and key points need to be included in a lease. This enables better landlord/tenant relationships, potentially <b>saving money in litigation fees</b> if there are disputes between parties.</li> <li>◆ Knowledge of record keeping gives farmers greater confidence to keep better records and generate financial reports. Good records translates to <b>better decision making and increased profitability</b>. Additionally, <b>tax accounting becomes easier and saves on accountant fees</b>.</li> <li>◆ Agriculture lenders are able to assist their clients make informed decisions derived from the decision tools, budgets and other resources. This benefits their producers by a <b>better understanding of enterprise budgets and cash flow</b> affecting families' and businesses' financial health.</li> </ul>	<p>Farm Business Management programs encourage improved business practices by producers which translates to higher profitability. When <b>farmer's are profitable, they will reinvest in their operation</b>, which in turn <b>supports local communities and businesses and thus helps to sustain Missouri's rural economies</b>. In Crawford County, the agriculture, forestry and related industries have sales that top \$177 million and provide 1611 jobs in the county.</p>
 <p><i>Rachel Hopkins and Fannie Lea at the Forage and Beef Conference.</i></p>			



Programs	What Did They Learn?	How Participants Benefit	How Does This Work Make Crawford County Better?
<p><b>Hospitality and Customer Service Training</b></p>	<p>On May 11, members of the Naturally Meramec Consortium participated in a Customer Service and Hospitality training workshop to update and improve their interactions with customers and visitors at their tourism businesses. Participants were from Crawford, Phelps, Gasconade and Pulaski Counties. Participants discussed typical visitor questions, and practiced responding to customer requests during a demonstration session.</p>	<p>Participants updated their own customer services skills and learned about tourism resources in the region. Participants reported because of the workshop they were planning to improve their customer service training for new employees, have a new outlook for dealing with a dissatisfied customer, and do more follow-up evaluation of staff training needs.</p>	<p>Tourism plays a significant role in the economy our region, providing jobs and sales revenue annually. Increasing employees' customer service skills and knowledge of local attractions can help improve the visitor experience, and draw tourists back for future visits.</p>
<p><b>Retail Farm to Market School</b></p>	<p>On March 28th MU Extension and sustainable Ozarks Partnership hosted a Retail Farm Market training. This in-depth training program on produce handling, produce quality, produce merchandising, customer service, sanitation and tax and liability issues was presented to help advise anyone that handles, processes or merchandises fresh market produce.</p>	<p>Mike and Jacque Bottom of Cuba participated in the training as growers. They were provided with knowledge and skills for responding to customer needs. They benefitted from Extension resources and networking opportunities with other growers.</p>	<p>Consumers want to buy local and this helps support the local economy.</p> 
<p><b>MU Extension Compost Education Project</b></p>	<p>Train the Trainer Workshop Nov 17, 2016 with 18 participants from Crawford, Maries, Phelps, Dent, Gasconade, Pulaski and Osage County. The goal of the program was to provide an overview of composting benefits and techniques to help the participants understand best practices to teach to others. The participants also created hands-on composting demonstrations that can be used in schools, farmers' markets and other educational sites. Participants reported that by participating in the workshop, their understanding of composting increased from a 3.06 before to 4.3 after. Ninety-four percent reported a willingness to compost food and yard waste after attending the workshop.</p>	<p>Composting education sites were installed at a variety of community, school and organizational gardens including Cuba Pathways in Crawford County.</p> <ul style="list-style-type: none"> <li>• Nine respondents reported increasing the amount they composted after participating in the program (average 3.4 pounds per week before the training, and after the training, average of 7.8 pounds weekly).</li> <li>• 44% of all respondents have participated in further training or requested additional resources to continue learning more about composting.</li> <li>• 44% also have built or purchased a composter for their home.</li> <li>• 78% have encouraged friends or family to start composting.</li> <li>• 39% of respondents have taught a composting workshop or given a composting demonstration.</li> </ul>	<p>The goal of the MU Extension Compost Education Program includes increasing knowledge and skill for composting and reuse of products in the garden, resulting in a reduction of food waste, yard waste, newspaper and cardboard in the waste stream.</p>  <p><i>Participants in the Train the Trainer workshop on November 17 built soda bottle composters to demonstrate the composting process to students and other program audiences.</i></p>

# Business Development Program (BDP)

Pablo Arroyo  
Business Development Specialist



Program Workshop, Number of Learners	County Participation	What Did Participants Learn?	How Participants Benefit	How Does This Make Crawford County and Missouri Better?
<p>Across the entire state MU Extension business counselors provided start-up and management counseling, coaching, training and other assistance to 17,552 individuals and companies.</p> <p>Counseling and coaching address just about any business topic.</p> <p>Training events included:</p> <ul style="list-style-type: none"> <li>• Starting A Business</li> <li>• The Basics of Writing a Business Plan</li> <li>• Financial Management</li> <li>• Intro &amp; Advanced QuickBooks</li> <li>• Doing Business with the Government</li> <li>• Marketing</li> <li>• Strategic Planning</li> <li>• Balanced Scorecards</li> <li>• Supervision 101</li> <li>• International Trade</li> </ul>	<p>Seven Crawford County residents and businesses received counseling or coaching</p> <p>Forty-two Crawford County residents and businesses attended training events</p>	<p>Businesses participating in counseling, coaching or training learned:</p> <ul style="list-style-type: none"> <li>• How to start a business</li> <li>• How to develop a business plan</li> <li>• How to understand, analyze and use financial statements to make fact based business decisions</li> <li>• How to more effectively lead and manage their employees</li> <li>• How to use QuickBooks</li> <li>• How to apply for financing</li> <li>• The conditions &amp; demographics in their market area</li> </ul> <p>Other resources available to assist businesses such as the Small Business &amp; Technology Development Centers, Missouri Procurement Technical Assistance Centers, International Trade Center, Trade Adjustment Assistance Center</p>	<p>As a result of assistance provided by the MU Extension Business Development program businesses in Maries County during FY2015 generated the following economic impact:</p> <ul style="list-style-type: none"> <li>• Started 2 new businesses</li> <li>• Created 2 new jobs</li> <li>• Retained 2 jobs</li> <li>• Crawford County businesses netted \$200,000 sales increase and acquired assets of \$270,000</li> </ul>	<p>As entrepreneurs and innovators, Missouri's small businesses are becoming a more diverse group that continues to make the state's economy productive. There are approximately 500,000 small businesses in Missouri. Nearly 98 percent of all businesses with employees are categorized as small. In assisting these small businesses, MU Extension contributes to the county and state's economic development through growth in jobs, sales, technology development and commercialization.</p> <p>Across the state of Missouri, the total impact for all businesses assisted by the MO Business Development Program was:</p> <ul style="list-style-type: none"> <li>• 219 new businesses</li> <li>• 2,057 new jobs</li> <li>• 1,590 jobs retained</li> <li>• \$174,934,851 in increased sales</li> <li>• \$438,777,708 in government contracts</li> <li>• \$110,460,065 in loans and investments in business</li> <li>• \$15,995,900 in export awards</li> <li>• \$538,084 in research grants awarded</li> <li>• 3,572 clients/companies receiving business counseling or coaching</li> <li>• 13980 business training/conference attendees</li> </ul>

# Agriculture: Livestock Production and Management

Ted Cunningham  
Livestock Specialist



Programs	What Did Participants Learn?	How Participants Benefit	How Does This Work Make Crawford County and Missouri Better?
<p><b>Management Intensive Grazing Schools</b></p> <p><b>Veterinary Feed Directive Education and Programming (VFD)</b></p> <p><b>Freeze Branding Workshop</b></p> <p><b>Forage and Beef Conference</b></p>	<p>Over 90 participants improved forage and livestock management skills, in regional grazing schools held in East Central Missouri.</p> <p>Over 160 producers from 7 counties and 3 trainings learned that as of January 2017, the use of feed-grade and water-soluble antibiotics will only be permitted through a VFD. Also, producers learned of changes in label claims of these antibiotics will take place. Producers learned that a VFD must be written by a veterinarian and be based on a valid client-patient relationship.</p> <p>This event provides “hands-on” instruction for livestock producers who wish to permanently identify their livestock with freeze brands. Attendees learned all aspects of the process of freeze branding as well as information about Missouri Brand Law.</p> <p>Over 200 producers learned improved Forage and livestock management skills.</p>	<p>Participants benefit by improving on farm management of their forage resource, extending the grazing season, improving forage quality, and decreasing input costs.</p> <p>Producers benefitted by learning that the key to negotiating the new VFD rules will be ensuring they have a good working relationship with a veterinarian, which will ultimately enable them to provide the best care and health management for their livestock.</p> <p>Based on evaluation results, 12 out of 16 attendees indicated they planned to incorporate freeze branding in the management of their livestock. And of the 12 who planned to freeze brand 12 indicated they would freeze brand as a theft deterrent.</p> <p>Improved management of livestock operations and forage resource.</p>	<p>Forage production is the key ingredient to Crawford County’s agricultural industry. Employment of skills learned in these schools improves production and profits for county livestock producers, and conserves soil and water for future generations.</p> <p>Crawford County has a fairly high incidence of Anaplasmosis. Feed grade antibiotics containing chlortetracycline are the main line of defense against this disease. This educational training should allow producers to seamlessly continue to utilize these antibiotics to limit death in their livestock, ultimately improving livestock profitability.</p> <p>Freeze branding provides a permanent ID that improves record keeping resulting in improved herd management for Missouri beef herds. Additionally, freeze branding deters theft, decreasing losses to Missouri producers as well as law enforcement and judicial system costs.</p> <p>Enhanced profitability, sustainability and quality of life for livestock producers and forage growers.</p>
	<p><i>Brent Booker and George Barnitz discuss information presented at the Forage and Beef Conference.</i></p>		

Programs	What Did Participants Learn?	How Participants Benefit	How Does This Work Make Crawford County and Missouri Better?
<p><b>MU Wurdack Research Center Field Days</b></p>	<p>Over 700 FFA and Vocational Agriculture students learned about various segments of the Agricultural industry, rural safety and health issues, career opportunities and technologies related to agriculture.</p> <p>Approximately 75 producers learned about opportunities utilize cover crops for soil health, a smother crop for fescue renovation, and livestock grazing. Additionally producers learned about the Veterinary Feed Directive, timber stand improvement, and silvopasture.</p>	<p>Youth participants benefit from having a better understanding of the various aspects of agriculture and science, as well as an increased awareness of rural safety issues.</p> <p>Agriculture producers benefit from adapting management techniques demonstrated at the Research Center and from research derived from the MU farms and centers across the state.</p>	<p>Increased awareness of agriculture and it's multitude of opportunities for the next generation of agricultural leaders and producers, as well as consumers.</p> <p>Enhanced profitability, sustainability and quality of life for livestock producers and forage growers, as well as timber managers.</p>
<p><b>Show-Me-Select Replacement Heifer Program</b></p>	<p>Improved replacement heifer development practices and methods to increase reproductive efficiency.</p>	<p>Participants utilize improved reproductive management strategies such as reproductive tract scoring, pelvic measuring, artificial insemination and proper health management to improve heifer development</p>	<p>Improves the quality of the Missouri beef herd. Adds value to Missouri beef enterprises through improved genetics and management.</p>



*Ted Cunningham, Extension Livestock Specialist talks about horse safety at the Crawford County Farm and Home Safety Day.*

# Horticulture

  
*Kathi Mecham*  
*Horticulture Specialist*

Horticulture Soil Tests	What Did They Learn	How Participants Benefit	How Does This Work Make Crawford County and Missouri Better?
<p>13 Lawn or garden soil test results were reviewed by Horticulture specialist, Kathi Mecham.</p>	<p>Those submitting soil test samples learned</p> <ul style="list-style-type: none"> <li>• Soil type, fertility and organic matter status of land areas tested</li> <li>• Nutrient levels to apply to lawn and garden area</li> </ul>	<p>Those submitting soil tests benefited economically by avoiding over-application of expensive fertilizer materials and avoided reduction of crop and garden productivity/quality due to under application of fertilizers. The environment was benefited by reduction of excess fertilizer runoff into surface and ground water.</p>	<p>Proper fertilizer use by home gardeners increases environmental quality of the county and the state. Watershed and groundwater issues are critical local, statewide, and national issues in scope and effect. Local soil conservation and fertilizer use impacts state river and stream quality, ultimately affecting Gulf ocean waters.</p>

## National 4-H Week



*Dana Richter, 4-H club Leader and Extension Council Chairman coordinated an exhibit to promote Extension and National 4-H Week. The Steelville Arts Council co-sponsored the exhibit at the Evans House showcasing the club, county and state fair exhibits made by Crawford County 4-H'ers. 4-H dates back to the early 1930's in Crawford County.*

## State 4-H/FFA Livestock Winner



**3rd Overall Champion  
Market Animal**

*Dustin Daehn—Crossbred  
3rd Overall Champion Market  
Animal*

# Continuing Education/University of Missouri

Working to improve our communities.

## MU Conference Office

The MU Conference Office provides high-quality, professional, full-service meeting management for a variety of noncredit educational programs, such as conferences, workshops, seminars and symposia. Whether a meeting is hosted on campus, in out-state Missouri or anywhere in the world, the office's professional staff provides assistance to create the best learning environment for participants. **Fifty-four Crawford County citizens received these services.**

## LETI—Law Enforcement Training Institute

The MU Extension Law Enforcement Training Institute (LETI) 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. 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 17,000 in-service and police recruits annually. **Seven law enforcement officers from Crawford County received training from University of Missouri in 2016.**

## FRTI—Fire and Rescue Training Institute



MU Extension's Fire and Rescue Training Institute (FRTI) is charged with providing comprehensive continuing professional education and training to Missouri's fire-service and emergency response personnel. The institute has a direct effect on the well-being and protection of Missouri's 20,000 firefighters and the 5.6 million citizens they serve. In addition to preparing them to fight fires, courses prepare firefighters for medical emergencies, hazardous materials response and disaster preparedness and mitigation. **Sixty-five firefighters from Crawford County received training in 2016 from University of Missouri.**

## Nursing Outreach

The Nursing Outreach program provides continuing education and professional education to nursing practitioners. **One Crawford County nurse received this training from University of Missouri in 2016.**





## Crawford County, Missouri

### The County at a Glance



Population: 24,680

- *UM Students:* 75
- *UM Alumni:* 433
- *UM Employees:* 53
- *UM Salary & Retirement Income:* \$1,580,600
- *UM State Tax Revenue:* \$51,520
- *UM Federal Tax Revenue:* \$237,459

### UM Students from the County in 2016

- 75 students
  - 17 - MU
  - 39 - Missouri S&T
  - 19 - UMSL
  - 66 - Undergraduates
  - 9 - Graduates
  - 58 - Full-time students
  - 17 - Part-time students

### UM Employees and Retirees Residing in the County in 2016

- 53 people employed by UM
  - 9 - MU
  - 38 - Missouri S&T
  - 5 - UM Health Care
  - 1 - UM System
- 17 UM Retirees and Beneficiaries

### UM Alumni Residing in the County in 2016

- 433 alumni
  - 199 - MU
  - 12 - UMKC
  - 112 - Missouri S&T
  - 110 - UMSL
- 129 Selected School Alumni
  - 4 - Medicine
  - 13 - Nursing
  - 6 - Health Professions
  - 2 - Dentistry
  - 1 - Pharmacy
  - 1 - Optometry
  - 6 - Veterinary Medicine
  - 32 - Agriculture
  - 58 - Engineering
  - 6 - Law

### UM Alumni Teaching K-12 in the County in 2016

- 43 teachers
- 17% of all county teachers
- 2 principals and administrators
- 15% of all county principals and administrators

### UM Services Received in the County in 2016

- 231 patients seen at UM Health Care, with \$133,526 of uncompensated care.
- 4 patients seen at the UMSL Center for Eye Care with an average of \$52 per patient in uncompensated care.
- 13,659 contacts with MU Extension through MU Extension events held in district counties.

### UM Construction Projects involving Vendors located in the County in 2016

- 1 vendor involved with 1 project, for \$25.

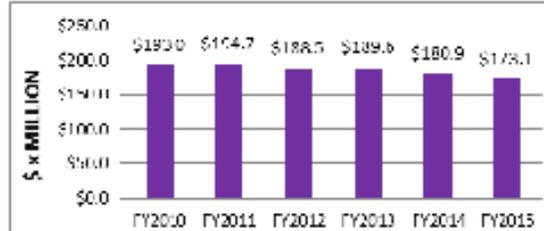
### UM Footprint in the County

Wurdack Farm, Crawford County MU Extension Center



## Crawford County, Missouri

### UM Research Expenditures Funded by Federal and Private Sources



- Between FY2010 and FY2015, UM brought in more than \$1.1 billion in federal and private research funds.

### Economic Development Highlights

- With \$3.2 billion in total revenue, UM would have been the 14<sup>th</sup> largest publicly held Missouri-headquartered company in the state in 2016.
- With approximately 32,000 employees in the state, UM was Missouri's 2<sup>nd</sup> largest employer in 2016.
- In 2014, UM's \$147.7 million in federal research expenditures represented 94.5% of these expenditures at Missouri public universities.
- In 2015, UM's \$34.9 million in National Science Foundation (NSF) awards represented 84% of all NSF awards made to Missouri public universities.
- UM earned \$16.4 million in licensing income in 2016.
- UM received 184 new invention disclosures in 2016.
- 3 startups were created around UM technologies in 2016.
- UM was issued 39 U.S. patents and filed 63 new U.S. patent applications in 2016.

### Electronic Services to the State in 2016

- The Missouri Research & Education Network (MOREnet) provided internet connectivity and technical services to members that include:
  - 59 higher education institutions with more than 238,000 students.
  - 521 K-12 schools serving more than 838,000 students and 75,000 faculty.
  - 121 public libraries connecting 322 library buildings that serve 5.32 million Missourians.
  - Serving the State Office of Administration, several municipalities and various other eligible organizations.
- MOREnet procured over \$20 million worth of telecommunications services from companies doing business in Missouri.

### Financial Aid Provided to UM Students in 2016

- \$916.7 million provided to 58,251 total students
  - \$476.3 million (28,288 students) - MU
  - \$193.7 million (11,144 students) - UMKC
  - \$114.1 million (7,722 students) - Missouri S&T
  - \$132.6 million (11,097 students) - UMSL

### Education Highlights

- UM enrolled 44.8% of first-time undergraduates attending four-year public institutions in Fall 2014.
- UM awarded 43.2% of the 1,480 Research/Scholarship Doctor's degrees earned in Missouri in 2013-2014.
- UM awarded 25.7% of the 3,252 Professional Practice Doctor's degrees earned in Missouri in 2013-2014.
- UM awarded 55.1% of the 31,016 bachelor's or higher degrees awarded by Missouri's four-year public institutions in Academic Year 2013-2014.

*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.*

*Prepared in December 2016, based on the best available data.*

*Data Sources include: Missouri Office of Administration • UM IR • Office of Social and Economic Data Analysis (OSED) • Center for Applied Research and Environmental Systems (CARES) • MU • UMKC • Missouri S&T • UMSL • UM System • UM Health Care • MU Extension • US Census Bureau • US Dept of Health and Human Services • National Science Foundation*