Dear County Commissioners and Friends of MU Extension:

Each year, University of Missouri Extension carries out the University of Missouri’s land-grant mission — bringing the university’s knowledge and research to all Missourians. For more than a century, we have been the “front door” to higher education in Missouri — helping to improve lives and create vibrant, resilient communities.

MU Extension is known as a valued and trusted resource for Missourians, touching the lives of nearly 2.3 million citizens. Our presence in all 114 Missouri counties, coupled with our network of councils, enables us to listen to the needs of communities, and respond with programming that addresses those needs. From our well-known programs in agriculture, nutrition and health, 4-H, and small business development, to lesser known continuing education programs for professionals such as fire and law enforcement training, nursing and medical continuing education and labor education, MU Extension makes a difference with programs that are in demand. The following are examples of program impact.

- **MU Extension’s Business Development Program** helps Missouri entrepreneurs succeed in private enterprise and promotes statewide economic growth. In the past fiscal year, this program helped businesses increase sales by more than $157 million, secure loans and equity of nearly $100 million, create 1,832 jobs, and retain an additional 1,436 jobs. The program also helped to launch 213 new businesses in our state.

- **Alianza**, a joint initiative of MU Extension and the Institute for Human Development at the University of Missouri – Kansas City, provides intercultural training to the growing segment of Latino farmers, and pairs them with the knowledge and services they need to help Missouri meet its agricultural needs.

- **4-H Youth Futures: College Within Reach**, is designed to help high school youths who are not encouraged to attend college realize the benefits of a college degree. Studies show that an individual’s lifetime earning potential increases by an average of $2.3 million with a bachelor’s degree. This program makes a difference for many young people.

- **Strengthening communities through art, innovation and creativity is the focus of MU Extension’s Community Arts Program.** The program’s 2015 St. Louis Storytelling Festival, which brought curriculum to life for 12,000 local school children, shows how extension adds value to communities through engagement with MU.

These examples are a small representation of the many ways MU Extension works to enrich lives, businesses and communities to strengthen Missouri. I encourage you to read the attached annual report to view the impact made in your county. On behalf of MU Extension, thank you for your support and partnership with us to better serve your community.

Sincerely,

Thomas A. Henderson
Interim Vice Provost and Director
Every Missouri county has an Extension Council comprised of elected and appointed citizens who guide local educational programming.

Council members are partners in the educational process, from needs assessment through program implementation and evaluation of outcomes.

Extension Council members...
- Work with regional faculty to determine educational programs for the county
- Manage finances of local extension operations
- Provide personnel to carry out Extension activities
- Elect and organize the local Extension Council

Greetings,

Looking back over the past year, there have been numerous times in the midst of our work when it was appropriate to just reflect on how fortunate we are to have the opportunities provided by the County’s University of Missouri Extension Center. We have thriving programs and a great facility thanks to the support of volunteers from across the County who dedicate their valuable time and energy.

We are also thankful to the Boone County Commission for being supportive and understanding the public value of our mission to educate and serve.

The stated mission of MU Extension can be summarized in three words - “improve Missourian’s lives.” As you read this year’s Annual Report you’ll see the scope and impacts of these efforts. The Extension Council understands that today’s challenges demand that our mission be dynamic - supporting new initiatives in the areas of youth development, entrepreneurial skills, agriculture, nutrition, business development, community leadership, home gardening, food preservation, technology and natural resources.

We are always interested in your suggestions to help us adapt our programs to better serve your needs. We invite your input and hope to hear from you soon.

Cheryl Brown, Chair
Boone County MU Extension Council

2015 Boone County Extension Council

Cheryl Brown, chair ............................................................ Hallsville
Al Buchanan, vice chair .................................................... Columbia
Dan Downing, secretary .................................................... Hartsburg
Nancy Franklin, treasurer ................................................ Hallsville
John Sam Williamson.................................................. Farm Bureau Representative, Columbia
Becky Bohlmeier ............................................................ Columbia
Caitlyn Bednarek .............................................................. Columbia
Cheri Bullard ................................................................. Ashland
Bill Cantin ................................................................. Columbia
Johnna Dudley ............................................................. Columbia
Julie Fleming ................................................................. Rocheport
Brandon Glascock ....................................................... Hartsburg
Maggie Jeffery .............................................................. Columbia
Joyce Kemner ............................................................. Sturgeon
Tony Martin ................................................................. Rocheport
Roger Morrison ............................................................ Columbia
Nancy Nelson ............................................................... Centralia
David Nolke ................................................................. Rocheport
H.C. Russell ................................................................. Clark
Jacob Sloan .................................................................... Rocheport
Janet Snow .................................................................... Columbia
Janet Thompson ......................................................... Boone County Commission Representative
Christine Vaughn......................................................... 4-H Senior Council Liaison
Education

Boone County 4-H Grows Future Leaders

Thirteen 4-H Clubs across Boone County offer educational experiences that teach essential life skills including leadership, public speaking and service to others. The local program is strong with 613 members currently.

Through the guidance of parents and certified adult volunteers, members gain knowledge and skills in over 50 wide-ranging project areas including robotics, photography, archery, sewing and woodworking. For young people with an interest in caring for pets, horses or livestock, 4-H is the premier youth organization offering expertise and support.

According to a recent national study of positive youth development conducted by Tufts University, young people who participate in 4-H programs are:

- 300% more likely to contribute to their communities
- 300% less likely to engage in risk behaviors
- 76% more likely to make better grades
- 70% more likely to go onto college
- 40% more likely to pursue science or engineering careers

Boone County 4-H highlights for 2015 included:

- Local 4-H members entered 958 youth arts exhibits at the Boone County Fair with 155 exhibits judged and selected for the Missouri State Fair.
- 100 youth participated in State and National 4-H events.
- 44 Boone County members participated in statewide competitions for the Missouri 4-H Shooting Sports.

4-H Camp!

The 4-H Camp program is planned and conducted by the MU Extension Youth Development staff with over 100 youth and teens participating at Clover Point Camp at the Lake of the Ozarks.

Campers learn important team building and leadership skills while enjoying traditional favorites such as swimming, archery, crafts, canoeing, singing and the evening campfire.

We are thankful for the ongoing support of the Boone County 4-H Foundation for sponsoring the camp scholarship program that assists members to attend.
Food Nutrition Program Reaches Youth

University of Missouri Extension's Family Nutrition Program (FNP) reached 2,762 participants directly and 47,275 indirectly with nutrition education in Boone County during 2015, a significant percentage of which were low income. FNP provides information on nutrition, food safety, and physical activity for lifelong health and fitness by working with qualifying schools, community groups and agencies.

Youth from pre-school to 8th grade learned through kid-friendly, hands-on lessons and activities. Activities include opportunities for taste-testing healthy foods and practicing skills that lead to good health. Education for adults also includes nutrition, food safety, and physical activity as well as food resource management.

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. A healthy labor force is critical to attracting and keeping jobs in Missouri. In addition, this important programming effort serves to reduce healthcare costs over the participant’s lifetime, saving taxpayers money in reduced public healthcare benefits and insurance premiums.

Success Stories

The supervisor, Sean Ross, at the Central Missouri Food Pantry, appreciates the presence of University of Missouri Extension at the Food Pantry. He assures that when we have nutrition information, recipes and food tasting, clients choose more produce and they are willing to try new vegetables such as chayote and other squashes.

At Cedar Ridge, in a 1st grade classroom, one boy crossed his arms when he was presented with a tasting of Golden Raisins and pronounced that he did not like them. The participants are reminded that I only bring foods that will help their bodies to be healthy, and that they have to try the tasting, but don’t have to finish the tasting. The boy hesitantly ate the raisins, then smiled and ate the rest of them. Nearly every participant could answer how fruits help our bodies after the lesson.
**Education**

Extraordinary Growing Season for Missouri Producers

The 2015 growing season was an extraordinary one for Missouri producers. As many of the coffee shop Missouri historians have stated throughout my life, “In Missouri, we are never more than 2 weeks away from a flood, and we are never more than 2 weeks away from a drought”. This could not have been any clearer than the weather patterns of 2015. Record wet conditions from May through July transitioned into drought in September and October followed by the wettest November and December on record.

May is climatologically Missouri’s wettest month, and 2015 was no exception with 2.53 inches above normal. Weather conditions continued to limit fieldwork activity and planting statewide through the wettest May-June period in two decades. The May through July average statewide rainfall was 22.59 inches and ranked as the wettest May through July period on record for Missouri.

The Drought Monitor map for October 27th showed abnormally dry conditions were impacting much of the state and moderate drought was covering much of northeastern and central Missouri. Fall pasture growth continued to struggle due to the dry conditions and would burden livestock producers in finding sufficient hay supplies to meet nutritional demands for their cattle as winter approached. However, the dry conditions provided ample opportunities for crop dry-down and harvest followed by yet another wet period to finish the year.

The Farm Service Agency reported 2.3 million acres of prevented planting for corn occurred in 2015 through the Mississippi Delta states and 2.17 million acres of soybean. Missouri ranked the highest of all states at 0.5 million acres of corn and 1 million of soybean.

Master Naturalists Volunteer to Protect our Natural Resources

Upon completion of the three-month training program, Boone’s Lick Chapter Master Naturalists contribute a minimum of 40 hours of public service in natural resource conservation. During the past year, members assisted with plant and animal surveys, natural community restoration, native plant demonstration gardens, outdoor classroom programs and interpretive guide opportunities. In 2015, volunteers reported 5,275 hours. In terms of service outside the chapter this year, the Boone’s Lick members provided the equivalent labor of two full time people working to improve and conserve the natural resources of Boone County and the state of Missouri.

A highlight of this year was Chris Egbert (Class of 2009) being interviewed during US Fish and Wildlife Service National Volunteer Week about his seven years of volunteer work for the Columbia Fish & Wildlife Conservation Office. Check out his interview to learn more about his motivation for volunteering and his current volunteer work on the Pallid Sturgeon Population Assessment Project at https://www.flickr.com/photos/eddiesfisheriesfws/16930707527. The project focuses on the endangered pallid sturgeon and a series of native Missouri River species studying habitat and populations.
Letitia "Tish" Johnson, community development specialist from Boone County, coordinated the pilot of the International Community Leadership Development (ICLD) program, a collaboration with University of the Western Cape, South Africa. The new program focused on increasing the skills and resources of committed community members so that their efforts have greater impact.

Five South Africans and six Missourians learned about ethics, project management, and transformational leadership through 32 hours of classroom training, reflective assignments and a two-week practicum exchange in the other's country. During the practicum exchange participants visited nonprofit organizations and community projects to gain insights into common community issues and how they can be addressed. The South Africans visited central Missouri in late July/early August, and the Missourians traveled to Cape Town, South Africa in October.

Program participants included school teachers, small business owners, a youth minister, farmers, a writer, and non-profit organization workers. Three Missouri participants were Extension Council members, from Cass, Polk, and Daviess Counties. Several participants chose one or two bigger initiatives for final projects, such as replicating the MU Family Impact Center (Columbia) in Cape Town; while others chose several smaller activities, such as connecting schools and children in Missouri and South Africa.

At the conclusion of the practicum experience, each participant developed a plan and presented how he/she will integrate what they learned in the home community. Initial feedback indicates that participants gained a deeper understanding of community engagement to bring about change and gained concrete new ideas to apply at home. As this is a pilot and a new approach to leadership development, a rigorous and comprehensive evaluation was conducted to assess all elements and aspects; the report is expected to be completed in January 2016.

Based on the evaluation, MU Extension and UWC plan to make improvements to the program and offer it again. We are working on securing funding for the next collaborative program, which will hopefully occur in 2017.
UAV Education Continues to be a Focus

When people hear the word drone some may look to the sky and question. Are they the next target for a missile strike? Are the police watching them? Is what they do in their back yard going to show up on the web? Rarely do you hear nice things about drones, yet they can be used for good.

How does one change public perception? Referring to the technology in any way should help. The Federal Aviation Administration (FAA) calls them Unmanned Aircraft Systems, or UAS. The other terminology being utilized is UAV, or Unmanned Aerial Vehicle. Though “drone” has now become the common terminology for this technology.

An educational effort on the use of UAV technology in agriculture continues to be a programmatic focus. In 2015, a total of 320 producers, agricultural professionals and FFA students have been reached in Boone County.

The focus of this education program was on the potential use of UAV technology in agriculture. The current regulations for utilizing UAVs were discussed. Potential uses of UAV technology were covered including crop scouting for nitrogen deficiencies or disease detection through aerial photography, as well as monitoring beef cattle. Current technology collecting aerial photography through autonomous flight control has been the current focus. Today producers can get started utilizing UAVs with an investment of $1,500.

Participants gained an overall understanding of how emerging technologies such as UAVs could be utilized today and in the future. With this knowledge, producers will be able to make better decisions in adopting and utilizing this technology in the future.

Specifically, for Boone County producers, the economic impact from past work on detecting nitrogen stress in corn production could be as much as $15.00 per acre.
Outreach

Missouri Livestock Symposium

The Missouri Livestock Symposium is an annual educational program and trade show that attracts participants from throughout Missouri and beyond. It is recognized nationally as an outstanding program that targets agricultural producers and landowners. Public funding helps support the Symposium, whose objectives are to provide educational opportunities for livestock producers and landowners representing all species of livestock, forages and renewable resources and to promote the adoption of best management practices that are economically and environmentally beneficial.

The agricultural producer benefits from this program by being able to better manage their livestock and financial resources. Financially successful producers provide a basis for successful communities. Missourians benefit by keeping farm and ranch families in rural communities and improving natural resource stewardship.

A Day at the Farm

Third through sixth grade youth learners from the Columbia Public Schools went to Red Top Farms this year and learned a variety of issues from genetically modified organisms (GMO) and how they save on using pesticides, preventing soil erosion and increase food production with fewer acres, to what cows eat, how silage and age is made and why it is fed to cows; where their meat and milk is from and why kids need to care.

Outreach programs like these make Boone County and Missouri better by connecting the local farms to youth, that have no direct contact with people involved in agriculture. When youth are taught where their food is raised and why certain practices are used, this not only helps future agriculture production because of a better informed generation (on ag policy), but also since only a very low percentage of our population is involved in production agriculture, non-agriculture people are making many decisions based on emotion rather than science.

Many of the 158 youth participating in this program said before the program they did not have a good understanding of agriculture, but after the program they had a much better idea of where their food came from, how it was produced and how hard farmers worked to keep the food supply safe. Many youth said they would go home with the information they learned and tell their parents, siblings and friends about the farm visit and what they saw and learned that day.

Post-Session Evaluations of the Symposium:

- 82 percent of participating producers indicated that they had an increased level of understanding on the principles provided in the sections of beef cattle, horse, sheep, meat goats, forages and stock dogs.
- On average, 87.5 percent of responding participants indicated they will adopt technologies presented in their respective sessions.
- “Interesting speakers and able to reach a group that without the Symposium we would not be able to meet.”
- “Great event highlighting livestock production and ag.”
Expertise

Supporting Boone County Businesses

As entrepreneurs and innovators, small businesses are becoming a more diverse group that continues to make the economy more productive. Across the state, approximately 500,000 small businesses account for 98 percent of all businesses with employees.

During 2015, MU Extension served 13,980 Boone County residents and their companies. Consultations included information and training to successfully start, run and expand businesses. The resulting increased business activity creates jobs, increases consumer demand, promotes economic development and generates tax revenue for the public’s welfare.

Note that the business programs offered in Boone County range from basic to advanced and include:

- Exploring Entrepreneurship: a monthly program that introduces future entrepreneurs to the challenges of starting a business.

- Understanding Financial Statements: demystifies how to read as well as understand and use the information found in the balance sheet and income statement.

- Building an Investor Ready Technology Company: helps entrepreneurs who understand technology but do not understand financing to successfully compete for private funding.

- Fast Trac for Displaced Workers: provides training on how to start a business to individuals who have lost their jobs due to a plant closing.

2015 Impact
MU Extension Small Business Services in Boone County

- 289 new jobs
- 8 jobs retained
- $3,409,715 in increased sales
- $3,043,499 awarded in government contracts
- 17 new businesses started
- $110,460,065 in business loans and investments
- 3,572 clients and companies received business counseling
- 671 business training attendees and conference participants

From 2012 through 2015, the Missouri Small Business & Technology Development Centers and Missouri Procurement Technical Assistance Centers assisted clients in creating over $2.5 billion in economic impact.
Expertise

Home Horticulture in Boone County

The Missouri Master Gardeners, Heart of Missouri Chapter, hosted this year’s 20th Anniversary State Master Gardener Conference titled “2015 Harvest in the Heartland” where 198 members from around the state participated. Many exciting tours, advanced trainings, classes, and speakers were offered at this conference. The featured speaker was Dr. Leo Sharaskin who spoke on organic growing, earth friendly living and natural beekeeping.

Participants learned:

- Disease identification and management
- How a plant develops and grows
- Plant identification – what species and varieties identification and suitability for the environment
- Basics of plant health care, including soils, pruning, irrigation and fertilization
- Pest identification and management
- Proper use of pesticides

The ability to care for and enjoy your living space has both physical and psychological benefits for people who garden. The participants as a result of our efforts were able to maintain and improve their gardens and landscapes in a more timely fashion and in a more environmentally friendly way. With the rain and drought periods of 2015, they were better able to manage the various stresses that were experienced and, in many cases, able to preserve their landscaping.

Through activities such as the Heart of Missouri Master Gardener Learning Garden, workshops, speaker’s bureaus, garden show booths and demonstration projects the Master Gardeners program provides gardening information to thousands of Missourians each year.

Through this program, citizens in Boone County have increased community pride. More Missourians will lead more active, fulfilled lives and will have improved mental and physical health, both through exercise and fresh vegetables and fruits to supplement their diet.
## Faculty & Staff

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
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<tbody>
<tr>
<td>Kent Shannon</td>
<td>County Program Director, Natural Resource Engineering Specialist</td>
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<tr>
<td>Letitia Johnson</td>
<td>Community Development Specialist</td>
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<tr>
<td>Christine Mosbrucker</td>
<td>4-H Youth Development Specialist</td>
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<tr>
<td>Emily Kerley</td>
<td>4-H Youth Program Assistant</td>
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<tr>
<td>Megan Samson</td>
<td>Nutrition and Health Education Specialist</td>
</tr>
<tr>
<td>Sandra Zapata</td>
<td>Nutrition Program Assistant</td>
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<tr>
<td>Vikki Fencl</td>
<td>Office Manager</td>
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## Boone County MU Extension

### 2015 Financial Summary

#### Income
- County Commission Appropriation: $93,000
- Fundraising Support: $488
- **Total Income**: $93,488

#### Expenses
- Salaries, wages, benefits: $41,013
- Travel: $8,400
- Telephone service: $3,075
- Publishing & Printing: $1,100
- Supplies/services: $7,000
- Utilities: $6,000
- Contract services: $9,500
- Insurance: $2,400
- Miscellaneous: $500
- Repairs/maintenance: $3,500
- Furniture/equipment: $2,000
- Capital Repairs/Improvement: $9,000
- **Total Expenses**: $93,488

Web access makes hundreds of fact sheets available on topics of interest to individuals and organizations in the community.