



Boone County 2017 Annual Report

Using science-based knowledge to engage people to understand change, solve problems and make informed decisions.



UNIVERSITY OF MISSOURI
M Extension
Live. And Learn.

December 4, 2017

Dear Boone County Commissioners and Friends of MU Extension:

For much of the past year, MU Extension was focused on a long-overdue assessment of statewide needs and a deep look at how we respond to these needs with programs and resources.

We crisscrossed the state to gather input from 42 community conversations with 1,200 people and reviewed analysis and recommendations from a range of external experts. As a result, MU Extension is working on a variety of changes in the interest of providing better university engagement with your communities.

We are steadfast in our resolve to help local communities and the state meet grand challenges associated with economic opportunity, educational excellence and healthy futures. These challenges reflect what Missourians from every corner of the state told us they were most concerned about.

As you read your county's annual MU Extension report, I believe you will be pleased to see the results that have been accomplished through county-based University of Missouri faculty. These faculty members work in response to input received from local extension councils.

At the state level, local MU Extension efforts really add up. Though we have long known extension funds were leveraged, an independent review revealed that MU Extension created more than \$945 million dollars of public value from the \$80 million it received from federal, state, county, grant and contract partners. A public value ratio exceeding 11:1 even surprised us.

As we go about implementing changes based on the recently completed needs assessment and review of our organization, I am confident that our ability to create value at the local level will be even greater.

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

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

Sincerely,



Marshall Stewart, Ed.D.
Vice Chancellor for Extension and Engagement

ch

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...

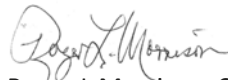
- ✦ Work with regional faculty to determine educational programs for the county.
- ✦ Manage finances of local extension operations.
- ✦ Provide personnel to carry out Extension activities.
- ✦ Elect and organize the local Extension Council.

Hello,

Thank you for your interest in extension work in Boone County. Boone County is unique in the state due to its strong agriculture industry, close proximity to the facilities and research of the University of Missouri and level of diversity of its population. These factors are prominent in the development and execution of our county extension programming. In the pages of our 2017 Annual Report, you will learn about some of these programs and how they may impact the lives of a great majority of our constituents.

County extension programs began over 100 years ago by two acts passed by the US Congress. The Hatch Act, written by Missouri congressman, William Hatch, provided federal funds to establish experiment stations associated with each Land-Grant University across the nation. The purpose of these stations and their staff was to study problems plaguing major industries. The Smith-Lever Act established the Cooperative Extension Service to disseminate the results of that research to the citizens most likely to use it to improve the products, profits and communities at a personal and local level. Initially, there was to be no cost to the business or individual in receiving this valuable new information. While today's research is conducted, gathered, analyzed and reported in far different ways than at the beginning of the 20th Century, extension programming at the county level is still striving to provide usable cutting-edge information to the citizens that need it most at little or no cost.

This report will give you an idea how the Extension staff of Boone County has accomplished that goal in 2017. We are always interested in suggestions for improvement and new program ideas. We invite your thoughts.



Roger L Morrison, Chair
Boone County MU Extension Council

2017 Boone County Extension Council

Roger Morrison, chair	Columbia
David Nolke, vice chair	Rocheport
Janet Snow, secretary	Columbia
Nancy Franklin, treasurer	Hallsville
Marcia Beckett	Columbia
Becky Bohlmeyer	Columbia
Cheri Bullard	Ashland
Cindy Downing	Hartsburg
Dan Downing	Hartsburg
Maggie Jeffery	Columbia
Nancy Nelson	Centralia
Kristi Perry	Columbia
H.C. Russell	Clark
Tommy Sallee	City Representative, Columbia
Darryl Smith	Columbia
Andrew Stanton	Centralia
Austin Stanton	Centralia
Jake Taylor	Ashland
Kathy Thiessen	4-H Senior Council Liaison, Hallsville
Janet Thompson	Boone County Commission Representative
Katherine Vanskike	Columbia
Christine Vaughn	Sturgeon
John Sam Williamson	Farm Bureau Representative, Columbia

Human and Environmental Sciences

Boone County 4-H Grows Future Leaders

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 meaningful community leadership roles. This interest in leadership and community service, along with 4-H members' 70% greater likelihood to go to college, is growing leaders today and for tomorrow.

Missouri 4-H volunteers responding to a survey, report they contribute on average 100 hours per year. Valuing their time at \$19.00 per hour, based on average Missouri incomes, the contribution of Boone County 4-H volunteers was worth more than \$429,400.00 in 2017. More importantly, these adults serve as mentors for our youth helping them transition into healthy adulthood, priceless.

The 4-H Study of Positive Youth Development, an ongoing longitudinal study which began in 2002, discovered some measurable differences between 4-H members and their non-4-H peers.

Compared to non-4-H Youth, 4-H Youth are:

- ◆ 41% less likely to engage in risky behaviors
- ◆ 70% more likely to participate in science, engineering or computer technology programs
- ◆ 40% more likely to pursue science, engineering or computer technology courses or careers
- ◆ 70% more likely to go on to college
- ◆ 20% more likely to graduate from college
- ◆ 25% more likely to positively contribute to their families and communities

4-H Youth are equipped with the knowledge, skills, attitudes and health for the 21st century workforce. Missouri 4-H members spend almost nine times more of their leisure time than peers engaged in projects anchored in science. As a result, 4-H members are three times more likely to go into science related careers than similar peers (Lerner and Lerner, 2008). Fostering career development is the fact that Missouri 4-H members are connected to college campuses and faculty. MU Extension 4-H connects 8,500 young people to University of Missouri campuses. Being on campus is a predictor of youth going onto higher education (Hoover, 2006).

Youth who earn their bachelor's degree, increase annual earnings by \$2 million over their lifetime (NACUBO, 2012). If 50% of the Boone County members participating in 4-H events on the MU Campus go onto earning their Bachelors, 4-H would help young people earn \$524 million more of lifetime earnings.

Missouri 4-H members, however, also learn to use these talents to engage in their communities. Young people in 4-H are engaged in twice as many leadership roles than their non-4-H peers. This provides them with the experience in problem-solving to step up and lead in a complex, changing world. In Boone County 505 youth were engaged in leadership and service experiences in their communities.



4-H is Growing Leaders!

Number of Boone County Learners:

- ◆ 505 4-H Members
- ◆ 216 Trained Volunteers

Boone County 4-H Attendance:

- ◆ Achievement Day: 8
- ◆ 4-H Summer Campers: 77
- ◆ Camp Counselors: 17
- ◆ Fashion Revue: 3

Regional, State, & National 4-H Attendance:

- ◆ Hippology/Horse Bowl: 10
- ◆ K-9 Camp: 2
- ◆ MO Legislative Academy: 1
- ◆ State Shooting Sports Team: 1
- ◆ Poultry Day: 7
- ◆ Show Me Wares: 2
- ◆ State Congress: 12
- ◆ State Fair Demonstrations: 2
- ◆ State Fashion Revue: 3
- ◆ State Horse Judging: 3
- ◆ State Livestock Judging: 11
- ◆ State Meat Judging: 1
- ◆ State Shooting Sports: 30
- ◆ State Sport Fishing: 1
- ◆ Teen Conference: 9
- ◆ Youth Civic Leaders Summit: 10

Human and Environmental Sciences

4-H Youth Futures Mentoring Program

The 4-H Youth Futures program is designed to help make college and career readiness an achievable goal for vulnerable first generation college youth. This is a mentoring program providing college preparation through local mentoring by providing mentors that guide and motivate young people to navigate the steps of attending, remaining in, and graduating from college. This is accomplished with help from local professionals willing to come and share with the students about their college or career experiences.

The first step taught is to have a plan. It is important to prepare for the years to come and have a plan for how they are going to attain their goals. Regardless of what they plan to major in or the career path they are interested in, they need a plan, setting attainable goals that they can use as a guide along this life long journey.

Once a plan is made, they are introduced to a variety of resources. They start with resources about different learning styles and how they influence the way they understand information and solve problems. Then they learn about budgeting and why a budget is so important in life. They travel to a few college campuses for site visits and an opportunity to talk with counselors/advisors about the college and programs offered there. It's one thing to do the research about a college through brochures and websites, but it's quite another to get a firsthand view of a campus and sit and talk with students, faculty, and offices such as financial aid and admissions to get answers to important questions.

Finally, the students set career goals. They identify what is important to them and begin setting educational and personal goals that will help them achieve their career goal. Then, the students are introduced to various sources that will help them get started on their chosen career path, such as college.

In 2017, nineteen students from Douglass High School participated in the 4-H Youth Futures pilot program.

4-H YOUTH FUTURES
COLLEGE WITHIN REACH



Robotics & Drone Education Reaches Douglass High School Students

Students from Douglass High were educated on robotics and drone technologies through the 4-H Youth Futures program on October 5 and 19, respectively. Through a hands-on engineering design, high school students explored the science behind robotics and drones and how they are being utilized to solve real world problems.



The students gained an overall understanding of how robotic and drone technologies are utilized today and in the future. With this knowledge, high school students will be able to explore STEM related careers in the future.

As an example of economic impact of these technologies, the Association for Unmanned Vehicle Systems International (AUVSI), a group representing drone researchers and manufacturers, estimates in the first three years of the integration of drones into the airspace, the economic impact will surpass \$13.6 billion as new companies and completely new industries form to market the technology.

Human and Environmental Sciences

Food Nutrition Program Reaches Youth

University of Missouri Extension's Family Nutrition Program (FNP) reached 3,016 participants directly and 2,665 indirectly, totaling 11,936 collective workshop hours, with nutrition education in Boone County during 2017 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. Nutrition Program Associates (NPA's) go into schools and other grant eligible locations and interact with community members to help them make healthier choices and build healthy habits. They see the difference the program makes in people's lives.



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.

The Family Nutrition Program (FNP) brought \$9,681,129 in Federal funds to the state of Missouri. These funds were used to provide nutrition education to 838,295 Supplemental Nutrition Assistance Program recipients and food stamp eligible citizens of Missouri. There were 3,831,270 educational contacts. This year we had 3,064,781 indirect educational contacts (people reached through newsletters, health fairs, food pantries, and the Show Me Nutrition help line), 5,681 of these participants reside in Boone County.

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:

- ✦ At Shepard Boulevard Elementary, one of the teachers shared with me that one of her students asked his mom to buy the vegetables and fruits I brought for the food tasting so he can bring them to school for snacks instead of fruit snacks. He brought cucumbers, sugar snap peas, and kiwi to school which we had tried as a taste test in class but he added celery as he said "I tried it before and I love it so I decided to add it to my vegetable list".
- ✦ "At Adrian's parent teacher conferences last week, his mom said she was very impressed with the nutritional information he was bringing home each Wednesday. That day he asked his mom to buy white milk at the store instead of chocolate milk. When she asked him why he wanted "white milk" he said that chocolate milk and strawberry milk has too much sugar and he wanted to drink milk without sugar in it. She said she was more than happy to buy "white milk" for him. She told me that she was so proud of her son because he was willing to drink regular milk, which he had not wanted to do at home. Without seeing and hearing about the sugar in chocolate and strawberry milk in Ms. Zapata's nutrition class in my 1st grade classroom, Adrian might not have been as adventurous and trying a healthier dairy alternative".
- ✦ At Fairview, Mrs. Bickel, one of the kindergarten teachers, approached me and told me that her daughter is in my second grade class. She said that she was at the supermarket looking for applesauce and her daughter gave her a nutrition lesson. Her daughter said "according to Ms. Zapata when we buy canned fruit we will ensure it says packed in 100% juice, no light or heavy syrup. We do not need extra sugar in our diet".



Human and Environmental Sciences

Policy, System, and Environmental (PSE) Strategies for Healthy Communities

Policy, System, and Environmental (PSE) strategies in an effort to improve health might include improving operations, increasing health standards, changing menu variety or quality, changing food purchasing behavior, or improving display of food. At Hallsville High School in Boone County, Mu Extension has coordinated with the Athletics Department to increase access to healthy food concession items through the **Eat Smart Play Hard program**. The school commits to making five healthy food additions to their menu for an affordable and comparable price to its unhealthy alternatives. For the 2017-2018 school year, the Hallsville Indians chose to add:

- ◆ whole fruit,
- ◆ vegetables with low-fat ranch dip,
- ◆ pre-packaged nuts,
- ◆ low-fat string cheese,
- ◆ and 100% fruit juice.

While the school still offers typical concession stand items that tend to be high-calorie and high-sugar foods, the school more heavily promotes the healthier options through an eye-catching A-frame sign, fruit baskets promptly displaying whole fruit and pre-packaged nuts, an additional healthy menu dry-erase board posting, and a large water cooler displayed in front of the concessions all provided by MU Extension.



Before



After



The three concession stands located at Hallsville High School serve students, families, and visitors for both high school and middle school athletic events potentially reaching 1,358 students and their families. A popular healthy item and top-seller is the freshly-sliced apple with reduced-sugar caramel dip, which is served in a container that typically holds nacho chips and cheese. What a neat and exciting visual of the transformation to choosing a healthy option instead of its unhealthy counterpart.



“Increase access to healthy foods”

Working with local grocery stores to increase access to healthy food is also an important PSE effort by MU Extension. Through the multi-faceted program, **Stock Healthy Shop Healthy**, the stores gain local support and the community gains increased knowledge and understanding of nutrition. Partnering with the Columbia/Boone County Public Health and Human Services, three Boone County stores participate in this health intervention:

- ◆ Los Tres Hermanos in Columbia, MO
- ◆ Pierpont Store in Pierpont, MO
- ◆ World Harvest International in Columbia, MO

The program includes promoting the store through many avenues including nutrition classes hosted at the store that showcase a healthy food item and provide taste tests of healthy recipes. In coordination with Los Tres Hermanos, the nutrition class in May 2017 was about getting protein from beans and how to incorporate them more into a weekly diet. Through such efforts across all three stores, we have reached 55 community members who after participating in the program saw an increase in knowledge, skills, or understanding of nutrition as well as the healthy options offered by their local grocery store.



Human and Environmental Sciences

How to Get an “A” in Retirement

A total of 299 participants learned **How to Get an “A” in Retirement in 2017** through a popular online University of Missouri extension course with that title. Of those learners, 105 were residents of Boone County. The course combines research and best practices from both personal financial planning and positive psychology to help people take positive steps to increase their wellbeing in retirement (and in the years leading to retirement.) One hundred percent of this county’s participants recommend the course to you and say it was worth their time, energy and fees. 100% of participants would consider taking another Extension online course, similar to this one, on a different topic. Over 98% have taken positive steps for retirement planning. Participants identified retirement goals they are excited about and feel less stressed about retirement.

When you support retirement planning education for Missouri residents, people replace worry with action solutions like having more adequate emergency funds and investments for retirement, which serves to reduce financial stress and increase productivity. There is a substantial cost to employers of financially distracted workers.

How to Get an “A” in Retirement will be expanded in 2018 to more counties and participants. This website gives details and registration information <https://extension2.missouri.edu/programs/how-to-get-an-a-in-retirement>.



Participant Quotes

- ✦ "This is a **polished and professional** course based on years of research and experience."
- ✦ "I have really been pushing folks to sign up for this course as it really is a **'one stop shop' for all things retirement.**"
- ✦ "I liked the **positive psychology** the best... I think of courses about retirement as financial courses. This one was so much more."
- ✦ "Taking this course and going over what I've been learning with him (my spouse) has **brought us both a greater sense of calm.**"
- ✦ "I find the positive psychology aspect of this class to be very valuable... In addition to being financially sound, I want to be **happy and healthy in retirement**, too, and this is helping."

Replace worry
with action
solutions

“Hope for the best” is not a retirement plan. Replace worry with action solutions that positively impact



Agriculture and Environment

Training Offered for Drone Operators

In 2017, two opportunities were developed to provide training for those with little or no experience in drone technologies. These opportunities included a workshop for GIS professionals at the annual Missouri GIS Conference on February 20, 2017 and a training for University of Missouri Extension regional specialists held at the University of Missouri South Farm on June 7 and 8, 2017.

Both trainings were designed for participants with little to no experience in UAS technology, who are interested exploring practical applications of drones as relates to GIS and agriculture. Following a lecture on drone technology, protocols and regulations, a demo flight of a popular UAS platform was conducted. This was followed up with hands-on flying of a drone by participants. The training was completed with a classroom hands-on exercise introducing flight planning and processing UAS imagery.

In total, 35 were trained with four of the participants being from Boone County.



Spray Nozzle Technology Highlights Private Pesticide Applicator Training



Synthetic auxin herbicide application presents a challenge. Dicamba and 2,4-D are synthetic auxin herbicides. Despite the efficacy of these herbicides, off-target injury to other crops remains a problem for Missouri agriculture. In 2017, crop damage from Dicamba grew to more than 325,000 of the state's 6 million acres of soybean. Damage to residential yards and smaller acreages of peaches, watermelons, tomatoes, grapes, pumpkins, and certified organic vegetables was also reported.

Despite challenges, there is strong demand for synthetic auxin herbicides due to their high rate of success. It is imperative they are applied according to label and properly managed to mitigate off-target injury.

The Private Pesticide Applicator Training (PPAT) program certifies and recertifies producers in proper handling and application of restricted use pesticides. In 2017, there were 144 farmers who attended this program and 43 were certifying for the first time where they learned proper pest identification, economic thresholds and economic injury levels. Producers learned of the need for emergency planning procedures and the environmental ramification of improper application. One highlight from the training in 2017 was the focus on spray nozzle technology and the importance of proper nozzle selection when applying synthetic auxin herbicides.

Agriculture and Environment

On-Farm Research Provides a Tool for Producers to Fine-Tune Management

The Missouri Strip Trial Program is a grower-focused program designed to help Missouri farmers and crop advisors compare on-farm management decisions and practices in a low-cost, low-risk setting. Farmers utilize their own precision agriculture equipment to conduct on-farm research in their own crop fields.



Participating farmers work with a local county-based agriculture specialist from the University of Missouri Extension to guide the planning, implementation and methodology used for the trial. This extra guidance and assistance helps ensure growers receive a reliable, statically valid and unbiased evaluation of a particular practice, method or idea.

When coupled with in-season aerial imagery collected with drone technology and GPS referenced yield monitor data, trials will allow farmers to evaluate two or three agronomic treatments through carefully managed, side-by-side comparisons.

In Boone County, two on-farm strip trials were initiated in 2017 evaluating the effectiveness of cover crops in a corn-soybean rotation. One of these trials where corn followed a cover crop corn yields averaged 15 bushels/acre less. Even though negative effects are sometimes the result of a trial, this is also of benefit to producers in making changes in their operation.

Another trial implemented in the region focused on evaluating the seed treatment ILeVO to mitigate soybean sudden death syndrome (SDS) and soybean cyst nematode (SCN). Of these trials, a soybean yield advantage of 2.8 bushels per acre of ILeVO treated seed compared to no seed treatment was realized. This in-turn has a positive economic impact to the farmer of \$15.00 per acre. This trial addresses the emphasis area of “improving soybean management practices through research and demonstration” through the Missouri Soybean Merchandising Council.

This program is made possible by support from the Missouri Corn and Soybean Merchandising Councils, their checkoff and University of Missouri Extension.

Home Horticulture and Environment

Home horticulture and environment is a focused program that provides research based horticulture information for gardeners and homeowners, recapping the benefits of maintaining healthy turf, ornamental, or fruit and vegetable plantings. Dissemination of high quality, unbiased, research-based horticultural information to a broad spectrum of Missourians allows the state’s citizens to reap the benefits of improved gardening success

Advice provided on pest identification, prevention or control, can lead to:

- ◆ More judicious use of pesticides
- ◆ Less harm to the environment
- ◆ An economic savings with reduced cost or enhanced protection of a product of value.

Soil test recommendations, if followed, can lead to:

- ◆ Better plant growth, thus better return on dollars spent.
- ◆ Less harm to the environment from fertilizer runoff and soil erosion.



Unbiased, research-based information on selecting, planting, and maintaining fruit, vegetable and ornamental species around the home. Information on effective and environmentally responsible pest management strategies around the garden and home. From soil test results, information on correct fertilizer amounts and types as well as application timing and methods. Suggestions to improve overall soil health.

There is a growing awareness both among the general public and health professionals of the importance of plants to the physical and psychological well-being of people. In addition to aesthetically improving the environment around the home, planting of turf, trees, shrubs, perennials and flowers reduces energy costs, provides exercise and a sense of accomplishment and adds value to the home.

Fresh fruits and vegetables produced in home gardens are a healthy supplement to the diets of many Missourians. Gardening also fulfills a need on the part of people several generations removed from the farm to work with the soil.

Agriculture and Environment

Livestock Education



Show-Me-Quality Assurance

The Show Me Quality Assurance (SMQA) Program emphasizes good management practices in the handling and use of animal health products, and encourages producers to review their approach to their herds' health programs. By completing this program, 4-H and FFA youth demonstrate their commitment to animal production. This program is a requirement for all youth who exhibit livestock. Youth livestock exhibitors represent to people who are not well acquainted with agriculture where their food originates. In some cases, providing the only contact the public has with agriculture through the fair setting. In 2017, 145 youth completed the program in Central Missouri.

Producers Gain Knowledge through Grazing Education

Through the Mid-Missouri Grazing Conference and a Regional Management Intensive Grazing School, producers continue to gain knowledge to further improve grazing management in their livestock operations. A total of 151 participated in these events and of those 17 were from Boone County.

Participants of the grazing conference learned the benefits of raising sheep and cattle together, how to manage sheep and cattle together in an extensive grazing system, production economics and the importance of economically important traits (ERT).

Management intensive grazing schools are designed to teach producers the art and science of management intensive grazing with a hands-on approach. This two-day intensive workshop provided opportunities for in-depth discussions, field exercises, and reference materials which cover both livestock and agronomic topics related to grazing.

Participants of grazing programs benefit by improving on-farm management of their forage resources, extending the grazing season, improving forage quality, and decreasing input costs. Forage production is key to Boone County's agricultural industry. Skills learned in these schools improve production and profits for county livestock producers.



Beef Cattle Artificial Insemination School



University of Missouri Extension in Howard County and Select Sires hosted a beef artificial insemination school on April 7-8, 2017. The school was held at the MU Beef Research and Teaching Farm in Columbia. Nine beef producers participated in the school.

Materials presented showed participants why they should be motivated to effect change in their beef herds, giving them economic motivation to implement an AI program. Participants were provided the opportunity to learn through hands-on exploration the following: palpation, identification of reproductive tract parts and functions, heat detection, and insemination techniques.

The potential exists to have a \$150,000 or more additional economic impact per year if the class participants continue to utilize AI in their beef herds.

Pearls of Production

Women in Agriculture is a program designed to provide a leadership and hands-on training opportunity for women involved in livestock production in Missouri. The program is designed to reach women who are playing larger roles and making key decisions in livestock production on the farm.

In 2017, 33 women participated in the program on November 3 and 4, 2017 in Callaway and Boone County. Participants learned about relevant topics to female agriculturists from female presenters in the agriculture industry. Topics with hands-on activities included beef cattle production, forage production and chainsaw safety and operation. Feedback such as "women offer a unique perspective on agriculture and through programs like this conference we can learn and share new ideas on raising livestock that can mutually benefit"; "wealth of information"; "safe, non-stressful environment to understand and practice hands-on techniques"; "well worth the time"; "best women in ag conference I have ever attended"; and "we can come together to impact our industry", were reported.



Agriculture and Environment

Weather - Drought or Flood

Weather patterns were a major factor in production agriculture for the 2017 growing season. A droughty 2016 fall, with minimal winter precipitation allowed planting activities to start in early April. An estimated 67% of corn acreage was planted. Significant rainfall events in late April broke the drought by producing 9.5 inches of rain, which was the wettest in 123 years of climate records. Some areas of Missouri received 4-10 inches of rainfall in a 2-day period. Many streams overflowed and thousands of acres of land were under water. The combined effect of precipitation in April resulted in the wettest spring (Mar-Apr-May) in more than 40 years and the 4th wettest spring on record for Missouri. By the end of May, most of the corn was planted and over 54% of soybeans were in the ground.

The summer was characterized as highly variable statewide. There were areas received over 25-inches during the summer period (Jun-Aug) while other areas of the state recorded less than 6-inches. For central Missouri, we appeared to have an unprecedented third year in a row of receiving timely rainfall for above average yields. A somewhat favorable fall weather pattern allowed for timely harvests. Once again, temporary bunkers and grain tubes were necessary to handle the overflowing bins.

Japanese Beetle Population Explosion



Japanese beetles continued to create havoc for both homeowners and some production agriculture fields. This is the 9th year of increasing populations. A whole new group of homeowners and orchards were inundated with the pesky pest. State entomologist predict that a 10 to 15 year increase in a new pest before environmental, disease or predator emerges to create a new balance in the population. If that holds true for central Missouri, we are more than half way there.

Soil Sampling Helps Crops

In 2017 there were over 135 Boone County agricultural producers contacts to provide information and/or resources to manage the forage production, crop management systems and watershed management situations that were being encountered in their production efforts in forage and row crops. There were 197 home horticulture clients served. Additionally, University of Missouri soil test reports were provided on 630 producer soil samples.



Agriculture and Environment

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. The curricula includes workshops led by nationally-known speakers in the areas of horses, beef, sheep, stock dogs, meat goats, forages, around the home, small poultry production and farm continuation planning. Based on post-session (retrospective) evaluations:

- ◆ 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.
- ◆ 3,425 collective hours of workshop participation

Public funding helps support the Missouri Livestock Symposium with objectives 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 producer benefits from this program by being better able to manage their livestock and their financial resources. Financially successful producers provide a basis for successful communities. Missourians benefit by keeping farm and ranch families in rural communities and improved natural resource stewardship.



Above: Over 80 agriculturally-related businesses, commodity groups, and organizations displayed their products for area producers to see in the trade show.

2017 Symposium Feedback

- ◆ "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."
- ◆ "Draws a diverse crowd."
- ◆ "Good attendance, with people that have a need for our product."

Right: Saturday workshop participants engaged in one of the 48 individual sessions.



Agriculture and Environment

Heart of Missouri Master Gardeners

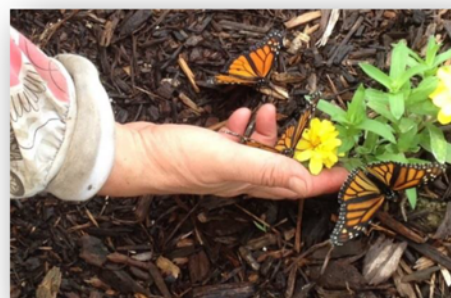


After completing a thirteen session training program featuring seminars, field trips and hands-on learning conducted by MU Extension, the Master Gardener program graduates agree to volunteer a minimum of 30 hours for community projects and educational events. In 2017, the local Heart of Missouri Chapter logged 1,652 volunteer hours reaching over 2,300 Boone County citizens.



The Heart of Missouri Master Gardeners continued their volunteer efforts at Jefferson Farm and Gardens (JFG). In July, a Butterfly Festival provided free tours of the Native Butterfly House, one of only two native butterfly houses in the state of Missouri, engaging all ages and highlighting the important role that butterflies play in our ecosystem, and how those visiting could attract and support butterflies in their home gardens. Varieties of fun activities were also offered each weekend of July for kids' participation. The total number of attendees for the four weekends of the Festival was 2,180.

The JFG Butterfly Festival opening weekend was a great success. We had approximately 600 people attend over Saturday and Sunday. Front page coverage with photo by the Tribune and a write-up in the Columbia Missourian, with an additional interview by KOMU, put this event on the map.



Missouri Master Naturalists - Boone's Lick Chapter



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, speakers bureau presentations, outdoor classroom programs, and interpretive guide opportunities. In 2017, the chapter logged 5,578 volunteer hours, a continued increase over the previous year.



A highlight of 2017 was the recognition of Suzanne Wright from the class of 2005. During the May meeting of the Columbian Chapter of the National Society of the Daughters of the American Revolution, Suzanne was recognized with a DAR Community Service Award. This was primarily in recognition of her work on the Boone's Lick Master Naturalist Chapter Training Committee, and the contribution that she has made to the more than 5,000 hours of volunteer work completed each year by the chapter.

The chapter continues to look for new volunteer opportunities. One of those opportunities was helping at Jefferson Farm and Gardens through events such as a field trip of 40 fifth grade students on May 12th. The students were introduced to "catch and release" fishing in the stocked lake at the farm. Master Naturalists helped to setup the fishing equipment and taught the students basic fishing skills (baiting hooks, casting, and releasing fish).



Business and Community Development

Youth Civic Leaders Summit

160 youth from 24 Missouri counties participated in the 2017 Missouri Youth Civic Leaders Summit, “More Than MAGIC!” The annual event was held at Windermere Conference Center (near Camdenton), March 3 - 5, 2017.

Engaging youth in community leadership is a key component of MU Extension’s community development program, as well as 4-H. Faculty and staff from both programs, collaborate on producing the YCLS event in partnership with Missouri Community Betterment.

Boone County Community Development Specialist Tish Johnson serves on the planning committee for YCLS; in 2017, she worked with a colleague to revise and facilitate the team planning process, and she taught a break-out session on youth impacting community issues.



Boone County Community Development Specialist Tish Johnson serves on the planning committee for YCLS; in 2017, she worked with a colleague to revise and facilitate the team planning process, and she taught a break-out session on youth impacting community issues.

YCLS featured three keynote speakers this year. Bill Cordes led participants to see “you only get out what you put in,” and challenged attendees to lead with courage. Dr. Jim Spain, Vice Provost for Undergraduate Studies and eLearning at MU, led attendees in identifying their strengths, and drawing inspiration from famous Missourians and their contributions. Josh Sundquist, Paralympian, cancer survivor and motivational speaker, challenged attendees to confront life adversity with humor and adaptability, and to reach for lifelong goals with a “magical” spirit of passion and persistence.



YCLS is always packed with activities designed to build skills, grow confidence, and guide youth towards positively impacting Missouri communities. Summiteers attended workshops on leadership, service-learning, civic education, and civic engagement. They completed on-site service projects, contributing volunteer time valued at over \$5,000. Participants strengthened teamwork and stretched their personal limits at the EDGE Challenge Course. Teams presented group skits at an evening talent showcase hosted by collegiate 4-H members. Students also learned about other leadership activities at an opportunity fair, and cast votes in a mock election of legislative bills currently under debate by the Missouri General Assembly. On

Sunday, youth and adult teams planned community action projects and took first steps to apply for mini-seed grant funding to implement their ideas in 2017.

At the end of the weekend, one student said, “It really came together – speakers, action planning, activities – all shared the same message. It was magical!”

Mizzou Leadership Academy

MLA is a one-day, campus wide leadership conference held each fall for students who aspire to be leaders.

The 2017 program included a mock community issue forum, facilitated by Johanna Adams, state community development specialist, and Tish Johnson, Boone County Extension.

Issue forums are a structured way of exploring different perspectives of an issue; the focus is on gaining an understanding, not debate and taking sides. At MLA, students discussed their hopes for, and concerns about, higher education.

Community Development

All About Planning

One of the key programs offered by MU Extension community development faculty is planning. Call it strategic planning, comprehensive planning, long-term planning....the names and details of the process vary, but the point is always the same — how do we get where we want to be?

One process is called Strategic Doing, which “enables people to form action-oriented collaborations quickly, move them toward measurable outcomes, and make adjustments along the way. It yields replicable, scalable, and sustainable collaborations based on simple rules” (Purdue Agile Strategy Lab). In 2017, the Missouri Organic Association participated in a Strategic Doing meeting. The process allowed them to quickly assess their status and prioritize decision points, plotting the way forward while keeping up with commitments.

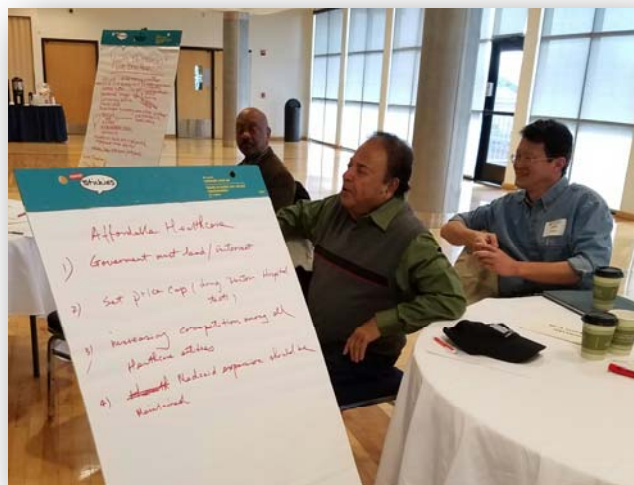
Sometimes a long-term, more in-depth planning process is requested. In late summer 2017, the MU School of Social work undertook a comprehensive planning process facilitated by two MU Extension community development specialists., Steve Jeanetta (state specialist) and Tish Johnson (regional specialist). The process will take several months, including focus groups with all stakeholder groups, a survey of online students, and faculty retreats for collective action.

Extension community development specialists are sometimes called on to facilitate processes within or on behalf of MU Extension, such as Community Conversations held around the state in 2017. These conversations gathered essential information from Missourians that is being used to chart our collective future, both in terms of how we work, and our programming. It’s about being and staying relevant, while maximizing the use of limited resources. Look for some strategic “adjustments” to Extension starting in mid-2018.

Diversity, Inclusion, and Cultural Competency

It’s no secret that Missouri, including MU-Columbia, continue to struggle with issues related to the differences — real or perceived — between groups of people. Two MU Extension community development regional faculty, Tish Johnson (Boone Co) and Kathy Macomber (Barton Co) sought to increase their tools and skills in order to aid organizations and communities in working through these issues.

In 2017, Barton and Johnson participated in two trainings — first with Iowa State University Extension, then with Washington State University Extension — to complete the process of bringing a cultural competency program, Navigating Difference, to MU Extension. In addition, they developed “Learning Out Loud,” an adaption of the Working Out Loud process developed by author John Stepper. After being accepted into the National eXtension Initiative’s “Issue Corps for Diversity and Inclusion,” they attended a two-day “Designathon” to develop the program and meet with key resource people. The two companion programs are being implemented in 2018.



Faculty at Lincoln University engage in a “Community Conversation” about issues facing Missouri communities, and about the partnership between MU and LU.

Business Development

Supporting Boone County Businesses

As Entrepreneur's 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% of all businesses with employees are categorized as small businesses. In assisting owners and managers of those businesses, MU Extension contributes to a county's economic development through growth in jobs, sales, innovation, technology development, and commercialization. Training and business counseling result in businesses making better financial and management decisions leading to stronger businesses and a stable business community.

During 2017, MU Extension served 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.

2017 Impact of MU Extension Small Business Services in Boone County

- ✦ 76 new jobs
- ✦ 39 jobs retained
- ✦ \$3,674,601 in increased sales
- ✦ 7 new businesses started
- ✦ \$2,034,323 in business loans and capitalization
- ✦ \$350,000 in acquired assets
- ✦ 228 clients and companies received business counseling
- ✦ 673 training attendees and conference participants

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

Procurement Technical Assistance Center



Midway USA leadership team meeting outside following a PTAC session.

Procurement Technical Assistance Center (PTAC) assist businesses - including small, disadvantaged and women owned firms - in obtaining federal, state, and local government contracts. Missouri PTAC specialists have years of experience helping identify opportunities and understanding the contracting process so small businesses can take advantage of government sales dollars. Overall, the total impact for all businesses assisted by the PTAC amounted to \$6,971,104 in government contracts of the statewide PTAC awards of \$403,359,341.

Faculty and Staff

Boone County MU Extension Funding

Funding is a three-way partnership of federal, state, and county governments. Federal and state money, through the University of Missouri, pays for faculty salaries, benefits, training costs and part of the equipment used in the local office. Boone County appropriations provide for operational expenses as noted below.

Operational Revenue	2016	2017
County Appropriations	\$84,000	\$75,000
Fundraising Support	\$2,409	\$4,290
Center Operations	\$ -	\$4,000
Depreciation Fund	\$ -	\$3,300
Total Revenue	\$86,409	\$86,590

Operational Expenses

Salaries, wages, benefits	\$43,699	\$44,680
Travel	\$6,960	\$6,960
Telephone service	\$3,050	\$3,340
Advertising	\$ -	\$300
Supplies/Services	\$6,250	\$5,100
Utilities	\$6,000	\$4,700
Contract Services	\$8,200	\$7,100
Insurance	\$2,500	\$2,560
Miscellaneous	\$250	\$150
Repairs/Maintenance	\$3,000	\$2,500
Programming/Marketing	\$500	\$500
Furniture/Equipment	\$2,000	\$1,400
Depreciation Fund	\$ -	\$3,300
Facilities/Infrastructure/Grounds	\$4,000	\$4,000
Total Expenses	\$86,409	\$86,590

Kent Shannon

County Program Director
Natural Resource Engineering Specialist

Brooke Jameson

4-H Youth Development Specialist

Megan Samson

Nutrition and Health Education Specialist

Letitia Johnson

Community Development Specialist

Tevin Uthlaut

4-H Youth Program Associate

Sandra Zapata

Nutrition Program Assistant

Vikki Fencil

Office Manager



**University of Missouri Extension Center
Boone County Office**

**1012 N Highway UU
Columbia MO 65203**

Phone: 573-445-9792

Fax: 573-445-9807

Email: BooneCo@missouri.edu

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

extension.missouri.edu/boone