



UNIVERSITY OF MISSOURI EXTENSION

Callaway County

2024

Annual Report

**SERVE
MISSOURI.
DELIVER
MIZZOU.**

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Extension
University of Missouri

an equal opportunity/ADA institution



Office of Extension
and Engagement
University of Missouri

Vice Chancellor's Office

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December 2024

Dear county commissioners, elected leaders and friends of MU Extension and Engagement,

As we reflect on the past year, I want to express my deep gratitude for your support of MU Extension and for your partnership in enhancing the lives of Missourians.

Your support for MU Extension fuels Missouri's agriculture, strengthens families, prepares our youth and promotes the health, well-being and vitality of our communities. Over the past year, our programs have focused on addressing key needs throughout the state:

- **Expanding access to 4-H:** To make 4-H more accessible, we've introduced more in-school and after-school clubs, reducing barriers and creating opportunities for young Missourians to develop essential skills and leadership abilities.
- **Supporting agriculture and land stewardship:** We're addressing critical issues such as succession planning for family farms, rural mental health, agricultural business management and land stewardship. These initiatives are helping Missouri's farmers plan for the future and preserve the health of our land for future generations.
- **Advancing health initiatives:** Our team of community health field specialists, covering every region of the state, works directly with local leaders to assess health needs and bring UM System resources and expertise to these communities, supporting healthier lives and stronger communities.
- **Promoting economic development:** MU Extension is helping to create economic opportunities by working with individuals, supporting businesses in their growth and collaborating with communities to enhance local vibrancy. Through these efforts, we help bring new jobs, skills and possibilities to Missourians across the state.
- **Providing essential training:** Our continuing education programs prepare Missouri's firefighters and health care workers to meet the demands of their roles with the latest skills and knowledge, ensuring they are well-prepared to serve our communities.

As you read through this annual report, I hope you feel as proud as I do of the accomplishments we've achieved together. The dedication and professionalism of MU Extension's faculty and staff are inspiring, and I am grateful to work alongside them—and each of you—as we make Missouri a stronger, healthier and more vibrant place. Thank you for your continued support and partnership. Together, we are serving Missouri by delivering the University *for* Missouri.

Warm regards,

Chad Higgins, PhD
Vice Chancellor, MU Extension and Engagement
Chief Engagement Officer, UM System

Who we are

Faculty and staff



Home Office Callaway County

Chrisee Brandl
Field Specialist in Livestock
Kathy Deeken, MA
Field Specialist in Nutrition and Health
Dawn Fox
County Office Support Staff
Shannon Walton
Youth Program Associate II

Serving Callaway County

Elizabeth Anderson
Extension Engagement Specialist
Dhruba Dhakal, PhD
Field Specialist in Horticulture
Sean Eberle
4-H Youth Development Educator
Christina Edholm
Field Specialist in Human Development
Charles Ellis
Field Specialist in Agricultural Systems
Technology
Rusty Lee
Field Specialist in Agronomy
Brian Schweiss
State Ext. Specialist, Sustainable Forestry
Heather Warren
Nutrition Program Associate

Council members

Jennifer DeLashmutt, Chairman
Rev. Paul Klepees, Vice-chairman
Jennifer Books, Secretary
Gary Jungermann, Co-Treasurer
Richard Vaughn – Co-Treasurer
Danielle Hecktor
Carson Humphreys
Hadley Linnenbringer
Kayla Metcalf Smith
Miranda Zumbuhl-Howard
Bryli DeLashmutt
Case Rimert
Kaitlynn Murphy
Jordan Walton



County commissioners

Gary Jungermann
Presiding Commissioner
Randall Kleindienst
Eastern District Commissioner
Roger Fisher
Western District Commissioner

Budget and more

Appropriations budget

Income

County Appropriations	62,000
Total Income	62,000

Expenses

Salaries/Benefits	60,804
Travel	564
Rent/Equipment Lease	2,413
Office Supplies/Service	535
Insurance	1,834
Total Expenses	66,150

Return on investment

University System	100,000
University Endowment	71,693
Donations	3,145
Investment Income	7,413
Program Revenue	6,589

Callaway County partners

A special thanks to the following partners who helped make 2024 a success for MU Extension.

- Callaway Youth Expo for the use of their buildings and property for the 4-H/FFA exhibits, demonstrations and showmanship.
- North Callaway School District for the use of their facilities during the Callaway Youth Expo.
- Callaway Electric Cooperative for use of their Community Room for the Annual Dinner.
- Legends Rec-Plex for use of their facilities during 4-H Summer Day Camp.
- Callaway County Health Department for use of their meeting room through-out the year.
- Callaway Chamber of Commerce for their Junior Leadership 4-H Spin Club.

MU Extension is a unique funding partnership.

Extension funding is a three-way partnership of federal, state and county government. Federal and state money, through the University of Missouri system, pay professional staff salaries, training costs, computers and communication equipment. County funds support the local office, secretarial and youth assistant salaries, staff mileage and council expenses.

The Callaway County Extension Council, faculty and staff would like to express our appreciation to the Callaway County Commissioners for their continued support of extension programs.



Local Support

Did you know you can donate directly to Callaway County Extension with a gift to be used immediately or as an endowment contribution for long term efforts. Monies put into the endowment are left forever to earn interest with the county office benefiting each year. You can also direct your donation to a specific program such as 4-H or Master Gardeners.

Callaway County



University of Missouri System
COLUMBIA | KANSAS CITY | ROLLA | ST. LOUIS

UM System Footprint in the county in 2023



FY23 county students

- 362 students**
- 257 Undergraduates
 - 105 Graduate and professional students
 - 250 Full-time students
 - 112 Part-time students
 - 64 Pell grant recipients (aid year 2023)



County employees and retirees

- 794 people employed by UM**
- 346 Campuses
 - 430 MU Health Care
 - 18 UM System
- 274 UM retirees and beneficiaries
UM salary and retirement income: \$48.1 million
UM state tax revenue: \$1.5 million
UM federal tax revenue: \$7.2 million



County alumni

- Selected school alumni**
- 34 Medicine
 - 108 Nursing
 - 218 Health Professions
 - 7 Dentistry
 - 14 Pharmacy
 - 4 Optometry
 - 33 Veterinary Medicine
 - 431 Agriculture
 - 298 Engineering
 - 58 Law

Alumni teaching K-12

- 122 teachers
- 26.6% of all district teachers
- 8 principals and administrators
- 29.6% of all district principals and administrators



County breakdown

MU
• 306 students • 1,915 alumni • 344 employees
UMKC
• 23 students • 67 alumni • 1 employee
Missouri S&T
• 28 students • 173 alumni • 0 employees
UMSL
• 5 students • 66 alumni • 1 employee



Construction projects

- \$2.8 million remitted to 7 county vendors, for 19 projects



County properties and offices

Midwest Claypan/McRedie, Tucker Prairie
MU Extension in: Callaway County



County population: 44,517



County services provided

Health care (FY23)

- 22,318 in-state patients seen at MU Health Care, with \$9.2 million of uncompensated care
- 11 in-state patients seen at UMKC School of Dentistry with a statewide average of \$43.61 per patient in uncompensated care
- MU Health Care's Missouri Telehealth Network recorded 12,029 visits to 7,336 patients having ZIP codes associated with the county

Extension (2023)

- 3,467 Total educational contacts from MU Extension to residents of the county, including:
- 113 contacts related to productive farming, better gardening, and managing natural resources
- 1,946 contacts related to healthy eating and aging, strengthening families, personal finance, or youth development
- 1,235 contacts related to starting businesses, developing community leaders, or renewing the local economy

Callaway County



University of Missouri System
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UM System Statewide Footprint

Economic and Community Development Highlights

- In FY23, Business Development Specialists worked with small businesses and entrepreneurs statewide to create or retain 98,527 jobs.

For every dollar invested from 2019 to 2021, the MU Extension Business Development Program has returned \$133 in economic impact for its clients by increasing sales more than \$1.6 billion. For a total impact of \$3.1 billion, the program has generated more than 37,000 jobs and attracted nearly \$451 million in capital investments and \$1.5 billion in government contracts.



- Between FY18 and FY23, UM System brought Missouri more than \$1.58 billion in federal and private research funds, funded primarily from outside the state, but spent within the state.



In FY23, UM System was issued 33 patents and filed 61 new U.S. patent applications.

- In FY23, the UM System awarded 805 design and construction project contracts throughout Missouri, for a total investment of \$279.2 million in the state.



In FY23, to improve access to medical and health related services, MU Health Care's Missouri Telehealth Network's Show-Me ECHO program provided 18,381 hrs of case-based instruction to 2,938 learners located in 112 of 114 Missouri counties and the city of St. Louis.

Education and Training Provided



40,542 police, fire fighters, and medical professionals attending continuing education (2023)



Agriculture and natural resource programs served 369,077 farmers and related businesses (2023)

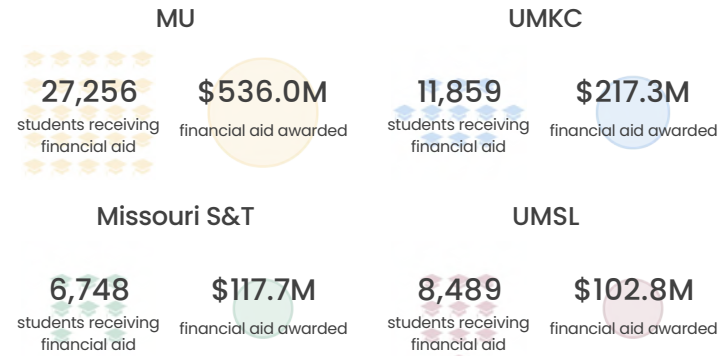


210,577 youth and stakeholder educational contacts in 4-H clubs, schools, camps and other programs (2023)

Education Highlights

FY23 Financial Aid Awards

In FY23, 67.3% of the UM System's 80,702 students received financial aid totaling \$973.7 million



- UM System's MOREnet (Missouri Research and Education Network) provides internet connectivity, access, support and training to 58 higher education institutions (230,000 students), 485 K-12 school districts (832,000 students) and 132 public libraries (serving nearly 3 million Missourians) in 2022.
- UM System awarded 50.5% of the 32,098 Bachelor's or higher degrees awarded by Missouri four-year public institutions in 2022-23.
 - UM System awarded 36.6% of the 1,935 research doctorates and 26.9% of the 3,593 professional doctorates awarded by Missouri public and not-for-profit private institutions in 2022-23.
 - In FY23, UM System's \$37.9 million in National Science Foundation (NSF) grants represented 88.3% of all NSF grants made to Missouri public colleges and universities.
 - In 2023, over 10,900 Missourians accessed mobroadband.org, part of the UM System Broadband Initiative which helped the statewide build-out of high-speed internet infrastructure. MU Extension also supported residents in making individual challenges to the FCC that resulted in \$810,000 in additional funding for the state of Missouri.

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

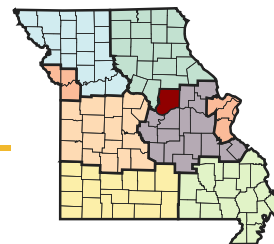
The university advances Missouri citizens and communities through its mission of teaching, research, public service, and economic development across our four campuses and University of Missouri Extension.

Prepared in December 2023, based on the best available and most recent data. Data Sources include: Missouri Office of Administration • UM IR • MU Institute for Public Policy • Center for Applied Research and Engagement 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



Missouri Grand Challenges: Local Solutions

CALLAWAY COUNTY



Knowing Missouri's Needs

MU Extension asked Missourians to share the greatest challenges they and their communities face.

We heard that feedback and made big changes in the way we work with council and local partners to improve lives. Locally, a network of county engagement and subject matter specialists now share MU's knowledge, research and engagement, targeting programs, information and assistance in:

- agriculture and environment
- youth and family
- business and community
- health and safety

For each grand challenge, MU Extension and Engagement targets a specific gain by 2023:



Economic opportunity

Increase MU Extension and Engagement's economic impact to the State of Missouri from \$1 billion to \$1.5 billion overall, and from \$88 billion to \$100 billion in agriculture, the top economic sector



Educational access and excellence

Increase participation in postsecondary education from 66% to 70%



Health and well-being

Improve Missouri's health ranking from 40th to 35th in the nation

Knowing Local Challenges



CHALLENGE 1: Economic Opportunity: Labor Market

Average Earnings per Job

Average earnings per job can reflect the type of economy, skill of employees, and availability of jobs and workers in an area. Average earnings is calculated by dividing total full-time and part-time employment by total earnings. Earnings is the sum of three components of personal income--wages and salaries, supplements to wages and salaries, and proprietors' income. Full-time and part-time jobs are counted at equal weight. Both employment for wages and salaries and proprietors employment are included, but the employment of unpaid family workers and volunteers is not included. Average earnings per job is a measure of the wages paid at jobs in the county not the earnings of people who live in the county. The dollar figures shown are not adjusted for inflation.

2022 Average Earnings (\$)

\$51,923

Callaway



Missouri

\$62,528 🤖

Data Source: US Department of Commerce, [US Bureau of Economic Analysis Regional Economic Accounts](#). 2007-2022.

Labor Force Participation

The labor force participation rate is a measure of an economy's active workforce and includes people who are employed and those seeking employment. According to the 2015 – 2019 American Community Survey, of the 36,425 persons of working age in the report area, 59.71% are included in the labor force. This rate falls short of the Missouri labor force participation rate of 62.90%.

Labor Force Participation Rate

59.71%

Callaway

Missouri

62.9%

Data Source: US Census Bureau, [American Community Survey](#). 2018-22.



CHALLENGE 2: Educational Access and Excellence: *Early Childhood Education*

Access to Early Childhood Education

Head Start is an early childhood education program for at-risk children through age 5. Families utilizing Head Start have better success meeting developmental goals and achieving economic stability. In 2018, there were 2 Head Start programs in the report area, or 8.57 per 10,000 population. Access to head start is lower in this area than in the state.

Head Start Programs, Rate (Per 10,000 Children Under Age 5)

8.57

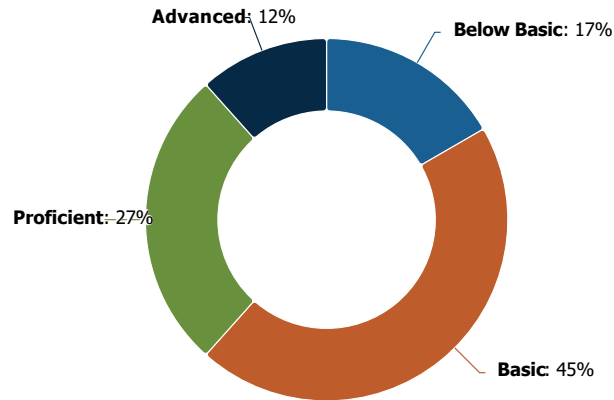
Callaway

Missouri 13.13

Data Source: US Department of Health & Human Services, [HRSA - Administration for Children and Families](#). 2024.

English Language Arts Proficiency

Starting in the 4th grade, public schools emphasize proficiency in reading and reading comprehension. The ability to comprehend becomes the foundation to find and process information in later years and it is important to prevent children from falling behind. Of the 347.00 fourth graders tested in 2018, the known total number of students who had a basic level of English Language Arts was 151.00. The number tested as below basic was 56.00, basic was 151.00, proficient was 90.00, and advanced was 39.00.



Data Source: [Missouri Department of Elementary & Secondary Education](#). 2022.



CHALLENGE 3: Healthy Futures: *Access to Care*

Mental Health Care Providers

Mental health is a critical public health issue worldwide. Access to mental health services is a challenge across Missouri, which ranks 46 out of 51 states in provider access. In the trio there are approximately 93 credentialed professionals providing mental health care to serve the area's 44,283 residents. The patient-provider ratio in the report area is 476 to 1, which means there is 1 provider for every 476 persons. The ratio of persons to providers in the report area is higher than the state average of 347:1, which means there are fewer providers per person in this area.

Ratio (Population to Providers)

476:1

Callaway

Missouri 347:1

Data Source: Centers for Medicare and Medicaid Services, [CMS - National Plan and Provider Enumeration System \(NPPES\)](#). November 2024.

Primary Care Providers

Older adults make up a historically large percentage of the U.S. population and meeting the healthcare needs of an aging population can be challenging. In the report area, there are approximately 17 primary care physicians (MDs and DOs) to serve the area's 7,849 residents over the age of 65. The patient-provider ratio in the report area is 462:1, which means there is 1 provider for every 462 older adults. The ratio of adults to providers in the report area is higher than the state average of 250:1, which means there are fewer providers per person in this area.

Rate per 100,000 Seniors

216.60

Callaway

Missouri 399.40

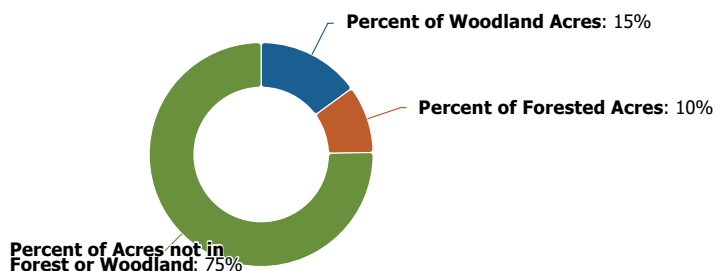
Data Source: US Department of Health & Human Services, Health Resources and Services Administration, [HRSA - Area Health Resource File](#). 2021.



CHALLENGE 4: Agricultural Growth & Stewardship: *Resource Management*

Forested, Woodland & Non-forested Acres

Sustainable management of forests and woodlands and harvesting of mature trees support the state's \$10.3 billion forest products industries. Forests have a closed canopy (>80% cover) permitting little light to penetrate to the ground below. They consist of several overlapping layers of trees, with a mid-story and understory comprising a variety of shade-tolerant shrubs and a sparse layer of soft-stemmed plants. Woodlands have a more open canopy (30-80% cover), and their sparse, woody mid-story allows more sunlight to reach the ground. This light permits the growth of a dense ground cover containing a variety of wildflowers, grasses and sedges. Fire plays a large role in maintaining woodland habitats.

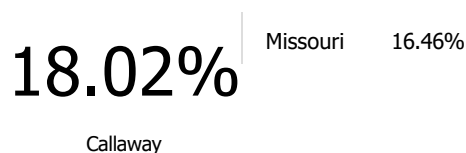


Data Source: Multi-Resolution Land Characteristics Consortium, [National Land Cover Database](#).

Rotational Grazing

A planned rotational grazing system allows time for vegetation to rest and recover before being grazed again. In 2017, nearly 16,000 Missouri farms reported practicing rotational or management-intensive grazing. With 11 million acres of row crops and nearly 2 million grazing livestock animals (mainly cattle), Missouri is well suited to capitalize on the grazing potential of cover crops. In addition to generating more income, grazing cover crops can have a positive impact on soil health. Manure, hoof action and the root responses that grazing elicits stimulate soil biological activity and lead to healthier soil and healthier crops.

Percent of Operations Utilizing Rotational Grazing



Data Source: US Department of Agriculture, National Agricultural Statistics Service, [Census of Agriculture](#). 2022.



MU EXTENSION **Serves MISSOURI and Delivers MIZZOU** through credible statewide programs **Missouri 4-H for ages 8 – 18**



Community clubs are organized by volunteer club leaders and teams of recognized volunteers. Members attend club meetings, elect officers, enroll in projects and plan learning and community service activities. Some clubs opt to be single-project clubs, where all members focus on the same project.



4-H In-school clubs meet during the school day. Members participate in projects that supplement their existing lessons. Clubs may meet for short periods or span the full 4-H program year. Members can elect officers and plan learning activities with options of public speaking, community service and links to career readiness.



4-H Natural Resources programs employ hands-on activities in climate science, environmental sustainability, renewable energy, sportfishing and wildlife conservation. The **Shooting Sports program**, which teaches marksmanship, safe firearm use, hunting and archery principles, is a prime illustration of how 4-H programs promote holistic youth development and responsible citizenship. Supported by caring adult leaders, these programs offer opportunities to cultivate life skills, self-worth and conservation ethics.



Legend



Agricultural Growth
& Stewardship



Economic
Opportunity



Educational
Access &
Excellence



Health
& Well-Being



MU EXTENSION **Serves MISSOURI and Delivers MIZZOU** through credible statewide programs

Missouri 4-H for ages 8 – 18

748 **COMMUNITY CLUBS** meet usually on nights or weekends throughout the year and are found in every type of community throughout Missouri. These 4-H Clubs are for youth ages 5 to 18 and usually have a monthly club meeting run by club officers to handle club decisions. Separate meetings are usually held for each project and are led by a project leader.

Members aged 5 to 7 are Clover Kids build self-confidence while having fun and learning to get along with others. They explore different topic areas together in a safe environment. In many instances, Clover Kids are just a section of a bigger community club.

4-H Independent/Individual members are youth that live some distance from a 4-H club, who have conflicts with school, work, etc., or have a highly specialized interest.



245 **SPIN (special interest) CLUBS** allow youth ages 5 to 18 with common interests or hobbies to meet as a club and share and learn more about their special interest. Whatever their passion is, youth can gain knowledge and enhance their skills through a positive group experience. A 4-H SPIN club can be started with a minimum of one adult volunteer and five young people with an interest in a particular topic. The SPIN club model provides increased flexibility in when and how long groups meet.

YOUTH ENROLLED: 7,397

82 **4-H AFTERSCHOOL CLUBS** 4-H Afterschool is a national initiative that provides extraordinary learning opportunities to school-age youth in urban, suburban and rural communities. 4-H Afterschool is designed to combine the resources of 4-H and the University of Missouri Extension with schools and community-based organizations that provide after-school programs that address community needs. These 4-H Clubs meet afterschool, and the time they meet varies from several weeks to a full 4-H program year. Youth often focus on one subject, such as robotics or photography. Age requirement: grades K-12 or equivalent.



YOUTH ENROLLED: 645



33 **4-H IN SCHOOL CLUBS** meet during school hours. A teacher or school administrator will work with a 4-H county specialist to implement 4-H programming during a specified time. These clubs usually focus on one topic at a time and can meet for a short time, or for the entire school year. Age requirement: grades K-12 or equivalent.

YOUTH ENROLLED: 811

91 **SCHOOL ENRICHMENT CLUBS** These 4-H experiences happen during school hours and are usually based around one topic, such as embryology.

YOUTH PARTICIPANTS: 29,596



1,199 MISSOURI 4-H CLUBS #OPPORTUNITY4ALL

NOTE: Youth can participate in more than one delivery mode.

4-H'ers are...

2X more likely to feel positive about their wellbeing

YOUTH ENROLLED: 15,567

4-H alumni are...

3X more likely to participate in community service

2X more likely to have the goal of being a leader

2X more likely to report living life with intentionality and purpose



Missouri 4-H. (2023). *Annual report: 2022-2023*. Missouri 4-H. <https://www.missouri4h.org/reports/2023-2024>



Economic Opportunity



Educational Access & Excellence



Health & Well-Being

Callaway County

Shannon Walton – Youth Program Associate II

Missouri 4-H

Local Impact

4-H Youth Development 4-H Clubs

A total of 283 youth participated in Callaway County 4-H community clubs. 2 clubs were given charters, an in-school club was chartered at Fulton Middle School and a spin club was chartered in partnership with The Callaway Chamber and their Junior Leadership Callaway Class. Members of 4-H learn by doing under the guidance of adult volunteers, who teach diverse projects ranging from animal and plant sciences and robotics to food and sewing. Participants enhance problem-solving abilities and build self-confidence. Callaway has 6 active 4-H clubs, including the Hatton 4-H Club, Kingdom Crusaders, Mighty Moganers, New Bloomfield Cruisers, Rising Sun 4-H Club, and Williamsburg Pioneers, each providing unique opportunities for youth development.

Grants received in 2024

- ❖ FCS Financial Shaping Rural Missouri Grant \$500
- ❖ United Way for 2025 \$2500
- ❖ Grain Belt Express Community Grant \$500
- ❖ Community Garden Grant - purchased gardening supplies for Fulton Middle School Agriculture Class

4-H Accomplishments

- Held a 2-week day camp for youth
- Took embryology programming into area schools
- Had youth participate in competitions at the state level
- Held our first ever Clover Kids day at CYE

Pictured are youth
engaging in 4- H youth events
throughout the year



Callaway County

Missouri 4-H

Profiles and Stories

A community of 1059 youth learned life skills, contributed to their community, and participated in college and career readiness programs. Findings from our elevation study reveals that Missouri 4-H do the following:

Missouri 4-Hers:

- 97% said they are willing to follow rules even when no one is watching
- 91% are comfortable working in groups
- 95% help others reach their goals
- 99% said they show respect for other's ideas
- 97% said they like to do new things
- 97% said they learn from their mistakes
- 98% are willing to work on something difficult
- 89% think about their choices affecting others
- 98% treat others how they want to be treated
- 95% look for ways to involve all members of the group
- 93% like to learn about people who are different from them
- 75% are comfortable being a leader
- 91% are willing to try something they might get wrong

Top Skills Developed from being in 4-H:

1. Leadership
2. Building relationships/ Meeting new people
3. Project Skills
4. Willing to try new things
5. Public speaking/ presentation skills
6. Sportsmanship/ Handle Competition

What youth enjoy most about 4-H :

- Exhibiting at fairs
- Participating in Projects
- Going to camp
- Community Service
- Participating in Contests

Career Readiness

- 75% said 4-H helped me decide what I will do after high school.
- 96% said 4-H has given me skills that will be helpful after high school.
- 86% said I know what I want to do after high school

4-H has prepared youth for the work –place. Youth must be prepared to live and work in a world we cannot completely envision- competing for jobs that do not yet exist, using technologies that have not yet been invented to solve problems that have yet to be identified. 4-H is the only youth development program with direct access to technological advances in agriculture, life sciences, engineering, learning technologies and social sciences from the university system. This brings relevant science content and hand-on learning that helps youth thrive (Arnold, Bourdeau, & Nott, 2012)





MU EXTENSION **Serves MISSOURI and Delivers MIZZOU** through credible statewide programs **Agriculture and Environment**



The Missouri Show-Me-Select Replacement Heifer Program

strives to enhance beef herd reproductive efficiency, boost farm income and establish dependable sources of quality replacement cows in Missouri. The program brings in the power of animal genomics through an enhanced DNA-option, Show-Me-PLUS.



Since its inception more than **900 FARMS** have enrolled, with an estimated statewide impact of **\$200 MILLION.**



Missouri Grazing Schools teach management-intensive grazing by dividing large fields into smaller paddocks and systematically rotating livestock among them. Producers who attend the grazing schools learn how to reduce costs through improved livestock grazing and pasture management while getting insights into fencing, watering systems and grazing system design.

The annual impact of management-intensive grazing is estimated to be **\$125 MILLION** per year in Missouri.



The Missouri Integrated Pest Management Program (IPM), funded by USDA grants, has been an important extension program for more than 30 years. Mizzou IPM distributes articles, pest monitoring data and publications on how to improve the application of integrated pest management strategies and systems in crops. In addition, the new Soybean Growth Monitoring Report is released through IPM every two weeks during the growing season.

The MU Soil Testing Program delivers research-based nutrient and lime recommendations to more than **32,500** customers annually.

Legend



Agricultural Growth
& Stewardship



Economic
Opportunity



Educational
Access &
Excellence



Health
& Well-Being

Callaway County

Chrisee Brandl – Livestock Specialist

Agriculture and Environment

Local Impact

Pixels and Pearls of Production – This is a hands-on educational opportunity for women in agriculture. The Pixels session was held via Zoom on topics including estate planning, backyard layers, enhancing value added meat marketing, and beekeeping. The keynote presentation was given by a Professor at the University of Arkansas, Janeal Yancey, who writes about the meat industry from the view as a mom and producer. The Pearls session was held in person at MU Beef Research and Teaching Farm in Columbia, MO. Topics included genetics, forage and pasture, backyard layers, and farm headaches. Youth were able to participate in the Pearls session by interacting hands-on with Missouri agriculture products. They made their own lunch and gained knowledge about the agriculture industry. The program for 2024 had approximately 61 participants. Callaway County had 1 participant.



Show-Me-Select (SMS) Heifer Replacement Program –

The SMS program showed increased adoption rate by farmers in Missouri of management practices that offer potential to improve long term reproductive efficiency of their herds resulting in profitability. The 2024 SMS sale for the Central Region was held in Vienna, MO. Chrisee Brandl is the Regional Coordinator for the Central Region. Chrisee completed 12 farm visits to gather pre-breeding, breeding, pregnancy data along with tagging heifers before the sale. There were 7 consignors that sold 43 heifers at the sale. The sale average was \$3,036. Heifers that were bred artificial insemination averaged \$3,173 and heifers that were bred natural service averaged \$2,946. Consignors included; 1 from Cole County.

Grassland Partnership – This partnership is an USDA-NRCS funded program being led by the University of Tennessee and Extension service partners across nine states, including MU Extension. The partnership invited producers with grazing livestock to enroll in the program and implement specific grasslands management practices on their farms. These practices are known to improve grasslands productivity and provide environmental benefits including greenhouse gas reductions, that may offer an alternative source of income through developing carbon and environmental benefit markets. Chrisee Brandl is an agent for this partnership. Chrisee enrolled one producer that will implement native warm season grasses, amending soil with biochar, and planting legumes. This is a five-year project. Chrisee and Rusty Lee offered an event for producers to learn more about the program prior to enrollment closing. 11 participants attended the event.



Chrisee Brandl presented on the topic of extending the grazing season for livestock producers at various events. She reached approximately 725 youth and 50 producers on this topic.

Callaway County

Agriculture and Environment

Local Impact

Private Pesticide Applicator Training

Number of Callaway County Learners

Twenty Callaway County citizens participated in the Private Pesticide Applicator training facilitated by Rusty Lee, Field Specialist in Agronomy. This 2.5 hour program gave a collective learning total of 50 education hours.

What Did They Learn?

Upon completion of the training, participants were able to:

1. Recognize the need to correctly identify pest organism prior to choosing a pest management strategy.
2. Understand the concept of economic thresholds and economic injury levels when making pest management decisions.
3. Possess a basic understanding of biological control and other non-chemical methods of pest management.
4. Better understand the format and information provided on each pesticide label.
5. Recognize the importance of using label information in all phases of application.
6. Understand the importance of having a Material Safety Data Sheet, and other materials available when applying pesticides.

7. Understand the need for proper selection and use of protective clothing and safety equipment.
8. Understand the importance of the "Restricted Use Pesticide (RUP) designation for certain pesticides
9. Consider environmental impacts when selecting a pesticide for use.
10. Consider impact of pesticides on water sources when applying a pesticide.
11. Understand the need and procedure to develop an emergency plan (fire, storm, flood, other) with local emergency officials.

How Does This Work Make Callaway County and Missouri Better?

Enables farmers to meet the legal requirements mandated by the Environmental Protection Agency and the Missouri Department of Agriculture's Bureau for Pesticide Control on the safe and proper use of agricultural pesticides on their farmlands, including restricted-use pesticides (RUPs).

This enables farmers to meet society's demands for lessening agriculture's environmental impact.

Callaway County

Agriculture and Environment

Local Impact

Agriculture Lender Seminar

Mary Sobba

Seventy-two lenders from 20 Missouri counties and Illinois attended an ag lender seminar in Mexico. Lenders learned about crop and livestock outlook, agriculture policy, rental rates & land values, MU budgets, wind and solar leasing, input costs and enterprise budgets, Missouri farm business management summary and Missouri Agricultural and Small Business Development Authority (MASBDA) programs.

By attending University of Missouri's Agricultural Lenders' seminars, lenders gain knowledge to help their clients make better decisions based on objective education and resources. More information and better decisions benefit their portfolio of producers, landowners, and agribusinesses through enhanced understanding of enterprise budgets, market expectations, and other decision influencing factors affecting families' and businesses' financial health. Lenders in attendance manage farm loans totaling \$155,250,000.

Callaway – 4 participants



Callaway County

Agriculture and Environment

Local Impact

Extension Tax Schools

University of Missouri Extension ag economics department and ag business specialists worked together to coordinate one summer and three fall tax schools. The summer school was in person and live online. Fall schools were in Columbia and Springfield and one online school. The schools were designed for those who prepare taxes including enrolled agents, tax preparers, CPAs, individuals, and attorneys.

The training included updates on legislation, rulings and cases, individual taxpayer issues, agricultural and natural resources topics, ethics, trusts and estates, agriculture and natural resource tax issues, business tax issues, business entity tax issues, IRS issues, related party issues, real estate rental activity issues, limited liability company issues, and international tax issues. The schools were approved for 8 and 16 hours of continuing education credit by the IRS, Missouri Bar and for CFP continuing education. Total continuing education hours reported to IRS for the schools was 3,776 hours.

The teaching teams included CPAs, a former IRS stakeholder liaison, an IRS certified retired ag economics professor, an attorney, a certified financial planner, Missouri Department of Revenue and extension ag business specialists.

The evaluations had many positive comments and helpful suggestions. Planning is underway to offer trainings in 2025. Local county residents benefit when local tax preparers have the opportunity to gain knowledge, which benefits their clients and communities. The tax schools are a program of the ag business and policy program of MU Extension, coordinated by Mary Sobba with help from a team of ag business specialists throughout the state.

The resources for the schools included the IRS, the National Income Tax Workbook from the Land Grant University Tax Education Foundation, and materials written by the instructors.

The 2024 school attendance totaled three hundred fifty people. The participants were from throughout Missouri.

Callaway – 2 participants



Callaway County

Agriculture and Environment

Using Ultrasound to Evaluate Carcass Traits

Objective: "To provide objective and quantitative carcass data through ultrasound on livestock for the purpose of genetic improvement for carcass traits."

Real-time ultrasound uses high frequency sound waves to "see inside" while the animal is still alive. This technology allows for a fast and objective prediction of the carcass composition of the market animal.

Carcass traits are moderately heritable and are a good indicator of lean and fat in live animals. Ultrasound allows county fairs to have a carcass class without having to harvest the animals.

Benefits of using real-time ultrasound includes:

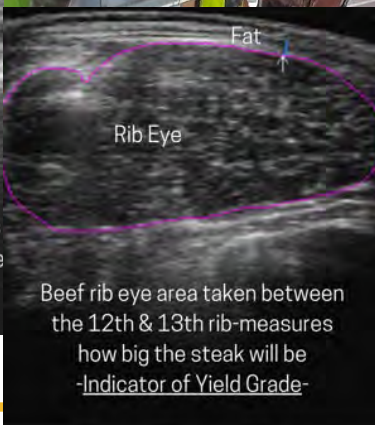
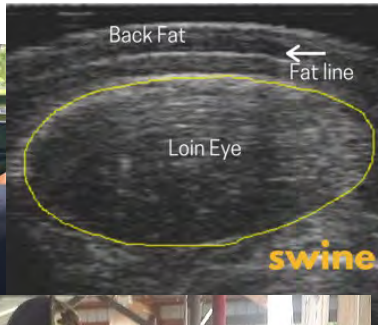
- ❖ Objective prediction of carcass lean (muscle) and fat in live animals
- ❖ Objective measure of percent intramuscular fat (marbling) on live cattle
- ❖ Eliminates the expense and time required by progeny testing for carcass merit



"Think of the animal as a Christmas present. The fancy wrapping and pretty bows is the 'show' or how good they look. The real present is the meat we eat inside. Ultrasound allows us to see inside at the gift without unwrapping the present."

2024 Ultrasound by the Numbers

- ❖ Over **5,700** miles traveled
- ❖ **273** head of cattle scanned
- ❖ **568** pigs scanned
- ❖ **164** head of sheep scanned
- ❖ **83** head of goats scanned
- ❖ Fat-free lean gain has improved from **0.31** kilograms per day to **0.375** kilograms per day in swine
- ❖ Loin eye area has increased from **8.0** to **8.3** square inches in swine
- ❖ Back fat has decreased from **0.9** to **0.79** inches in swine



Heather Conrow
Livestock Specialist
State 4-H Animal Science Educator

Callaway County

Genetic Lockbox

Ge • net • ics (/jə'nediks/) the science of genes and how traits are passed on from one generation to the next.

Objectives: "Obtain a basic understanding of genetics. Distinguish genotype and phenotype. Define dominant and recessive alleles and how they are represented."

Genetic Lockboxes are an innovative and interactive means to educate the public about genetics. Participants exercise communication techniques as they work together to solve the puzzles. The puzzles are designed to make participants think through and apply problem-solving skills to genetic concepts. Participants will struggle, make mistakes, and rely on teammates.

Through a partnership with Ellis Fischel Cancer Center, the Genetic Lockbox has gone statewide with **64 boxes** located across the state. Teachers, 4-H volunteers, FFA advisors, Boy and Girl Scout leaders, etc. can reserve box(s) free of charge. It comes with all the puzzles, hint cards, answer sheets, and a 25-page Facilitator's Guide.

Agriculture and Environment



*Crack the codes to open the locks to get the *prize* in the box.*

*Prize not included

Fun Facts

- ❖ If all DNA strands in all the cells of **ONE** person were stretched out, it would reach to the sun and back more than **600** times
- ❖ Scientists can never clone a dinosaur because DNA has a half-life of **521** years
- ❖ Humans are **80%** genetically similar to cows
- ❖ Bone marrow transplant patients end up with **2** different DNA profiles
- ❖ All humans receive **3** feet of DNA from Dad and **3** feet from Mom
- ❖ Heart, eye, and brain cells never replicate; therefore, they can never be replaced if damaged
- ❖ Less than **2%** of our DNA codes for proteins - the rest is called "junk DNA," but is still useful
- ❖ A mouse uses more DNA from its father than its mother
- ❖ Almost all tortoiseshell cats are female, only **ONE** in **3,000** calico cats is male



Learn More



Heather Conrow
Livestock Specialist
State 4-H Animal Science Educator

Callaway County

Agriculture and Environment

Pixels & Pearls of Production

Objective: "To provide a leadership and hands-on training opportunity for women in Missouri involved in livestock production."

Women in agriculture have long played a pivotal role, particularly in the management and care of livestock. Their contributions are often undervalued, yet their expertise and knowledge are indispensable to the sustainability and productivity of agricultural systems worldwide.

Women in agriculture not only tend to the daily needs of livestock, ensuring their health and well-being, but also bring innovation and resilience to farming practices. Their involvement is crucial in advancing food security, enhancing biodiversity, and fostering sustainable development.

By empowering women through access to resources, education, and equal opportunities, we can bolster the agricultural sector, leading to a more equitable and prosperous future for all.



Program Outcomes & Impacts

Participants increased their knowledge on the following topics with the percent increase following:

- ❖ Beef genetics on the farm: **107%**
- ❖ Backyard laying hen management: **55%**
- ❖ Forages and pasture management: **73%**
- ❖ Farm headaches: **52%**



Heather Conrow
Livestock Specialist
State 4-H Animal Science Educator



MU EXTENSION **Serves MISSOURI and Delivers MIZZOU** through credible statewide programs **Business and Community**

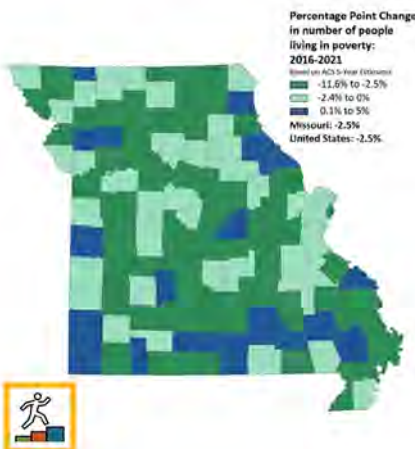
Missouri Small Business Development Centers (SBDC) provide professional training and customized one-on-one counseling to small businesses across the state. **In 2024, this took the form of 135 clients counseled, 172 training event attendees, and ten new businesses started.**

Working with the Missouri SBDC helps business owners make confident decisions. **In Callaway County this resulted in \$4,011 sales increase and \$706,790 in capitalization in FY2024.**



Missourians from all walks of life celebrated the **2024 Missouri Good Neighbor Week**, Sept. 28 to Oct. 4, by completing and reporting neighboring acts and nominating others as the most engaged neighbors in their counties.

In 2024, the goal was to document 20,000 acts of neighboring. That goal was surpassed with **31,129** Missourians being positively affected during **MISSOURI GOOD NEIGHBOR WEEK**.



The **Missouri Economy Indicators (MEI)** series explores business, industry and workforce topics that affect Missouri's economy. The data is shared through newsletters and on social media. MU Extension faculty and staff receive talking points and collateral to share with local stakeholders.

In 2022, MEI published 15 issues, and MEI online resources were accessed MORE THAN 5,000 TIMES.
Two out of five MEI newsletter recipients reported using the information to help guide policy or decision-making in their work.

Legend



Agricultural Growth
& Stewardship



Economic
Opportunity



Educational
Access &
Excellence



Health
& Well-Being

Callaway County

Business and Community

Local Impact



The Connecting Entrepreneurial Communities (CEC) Conference took place in Fulton on September 17-19, and we welcomed 122 people for the event. In 2024, the conference focused on youth entrepreneurship, networking and relationship building, removing barriers, and technology and innovation. Attendees had 30 educational breakout sessions to choose from, along with keynote sessions featuring local and national speakers as well as representatives from the University.

Jackie Spainhower, MPA

Field Specialist in Community Development

What an unforgettable experience at the 2024 Connecting Entrepreneurial Communities (CEC) Conference in Fulton! A huge thank you to our incredible attendees, inspiring speakers, generous local sponsors, and the wonderful people of Fulton for making this year's event such a success!

Special shout out to our amazing hosts, Callaway Chamber of Commerce & Visitors Center, for their hospitality and support. We highly recommend Tamara Tateosian, IOM, Brianna Kliethermes, and the rest of the team as fantastic partners to work with!

A big thanks also to our 2024 State Sponsors! Your support helps us ensure the CEC Conference is accessible for rural communities across Missouri.



The conference focused on youth entrepreneurship, networking and relationship building, removing barriers, and technology and innovation.



Callaway County

Business and Community

Profiles and Stories

"As the Brick District President as well as a business owner, I felt an incredible honor for the conference to pick our community. This has truly enriched Fulton as well as myself in so many ways." – Garry Vaught, President of the [@brickdistrict Brick District](#) and owner of [@beksrestaurant](#)

"This was my first experience with the CEC conference. It was empowering to meet people from all over the country who want to see small businesses in rural communities succeed. The challenges small business owners face are many. Seeing that recognized and having a resource like the CEC conference was so encouraging. I really want to attend next year!" — Brooke Bartlett, Owner of [@gopogourmetpopcorn](#)



"To see and hear from so many powerful entrepreneurs right here in one place was an honor. I walked in to volunteer but I walked away empowered and inspired." — Lauren Jungermann, Owner of Lauren Jungermann Agency LLC, American Family Insurance

"Volunteering at the Connecting Entrepreneurial Communities Conference was a good chance to help, meet people, and show off our amazing community." – Russel Sing, Owner of Expressive Inks LLC and Fulton Fire Chief



MU EXTENSION **Serves MISSOURI and Delivers MIZZOU** through credible statewide programs **Health and Human Sciences**



Mental Health First Aid equips people to recognize and respond to signs of mental illness and substance use challenges.

Youth Mental Health First Aid is primarily designed for adults who regularly interact with young people (ages 12-17) facing mental health or addition challenges while the adult version focuses on adults aged 18 and older. Participants learn how to offer initial assistance and guide individuals toward the care they need.

In Missouri, approximately 1 MILLION ADULTS and 72,000 ADOLESCENTS suffer from MENTAL HEALTH ISSUES.*

*Missouri Department of Mental Health 2020 Status Report



Building Strong Families

Studies show that people with strong family bonds tend to have lower stress levels. Building Strong Families helps families deal with disagreements, manage stress and show their love for one another.



Policy, systems, and environmental (PSE) changes encourage residents to improve community health by making healthy choices easier and more accessible. Residents design strategies around local needs, assets, and interests.

HELPING HANDS FOOD PANTRY leaders decided pantry clients needed access to healthier foods. Review of food procurement and display practices led to a new policy allocating **\$1,000** of pantry discretionary spending for **LOW-FAT DAIRY OR FRESH PRODUCE.**

Legend



Agricultural Growth
& Stewardship



Economic
Opportunity



Educational
Access &
Excellence



Health
& Well-Being

Callaway County

Health and Human Sciences

Local Impact

Matter of Balance

In Callaway County, about 33.41% of households have adults who are 65 or older. It's important for older adults to stay active to keep their health strong, stay independent, and avoid falls. Kathy Deeken offered A Matter of Balance in Callaway. This class helped older adults learn exercises to build strength, balance, and confidence. Kathy also taught ways to lower the risk of falls and make everyday activities easier, supporting those adults' ability to maintain independence in their own homes. .

Cooking Matters

The Supplemental Nutrition Assistance Program (SNAP) assists 8.49% of households in Callaway County. SNAP funds help support nutrition education for Callaway residents. Kathy conducted two Cooking Matters series in Callaway County, reaching over 50 adults through education, cooking demonstrations, and hands-on cooking. They learned new budget-friendly recipes, nutrition label-reading skills, MyPlate, and how to make healthier everyday food choices. Attendees reported feeling 33% more confident about cooking healthy meals for their family on a budget. They also look at the Nutrition Facts on food labels 66% more often.



Highlights

As a new Extension faculty member, Kathy attended various events and also took the opportunity to get to know Callaway County by delivering the following one-time presentations, using these as an opportunity for conversation and feedback on needs:

This Is MU Extension
Keep Your Keys
Maintaining Your Balance

Callaway County

Health and Human Sciences

Profiles and Stories

Matter of Balance

All Matter of Balance participants improved in at least one area of measurement, based on pre- and post-surveys and fitness assessments. All Matter of Balance participants also planned to keep exercising and felt more confident about preventing falls; one participant said she “added a shower grab bar, rearranged furniture, and became more cautious when getting in and out of bed.” It is estimated that these participants will save an estimated \$938 annually in medical costs.

Cooking Matters

After taking Cooking Matters, families say they cook more meals at home and make them healthier and cheaper, even after 6 months. One person stated she “never knew” that liquid and solid measuring cups were different. Another said she had never had a tomato before, and a third said she wanted “to try some healthy things to make for my son.” Plus, annual diet-related health problems cost about \$300 per person. By helping people eat better in Cooking Matters, we could save \$300 per person each year, which adds up to \$15,000 for these families.



Callaway County

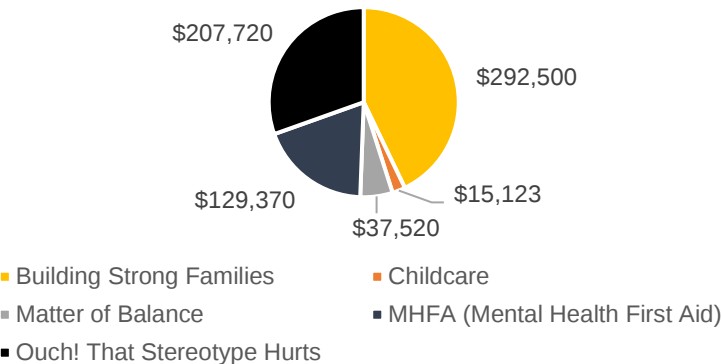
Health and Human Sciences

Local Impact

In 2024, a single Building Strong Families session helped a father reconnect with his teenage son after months of conflict. This is just one of the 3,257 lives impacted across Missouri through programs addressing mental health, youth resilience, and family communication, generating an economic impact of over \$682,232. From Saline County youth learning resilience at summer camp to Boone County families strengthening self-esteem, these programs create lasting positive change in Missouri communities. By fostering mental wellness, strengthening families, and empowering youth, these programs create long-term benefits for Missouri communities. Continued support ensures these efforts grow, transforming even more lives in the year ahead.



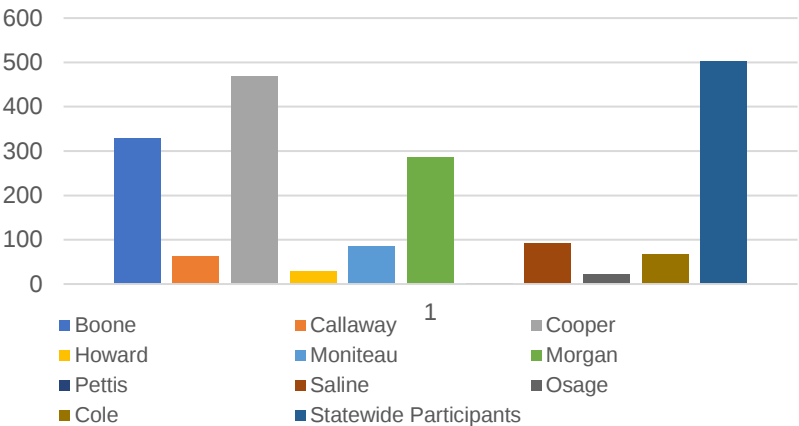
Economic Impact by Program 2024



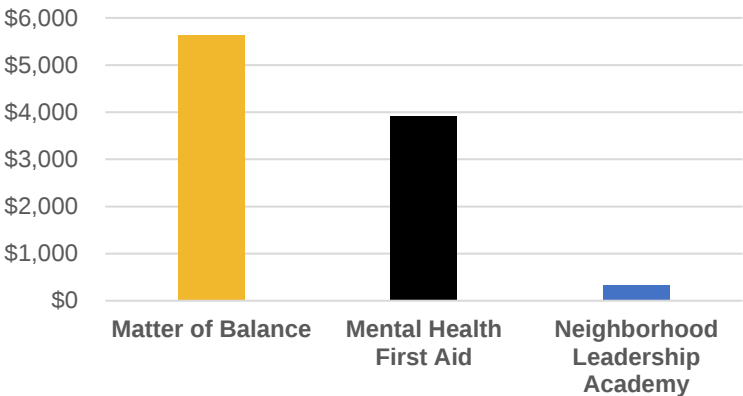
58%

of ag community members accessing teletherapy in 2024 were from Boone, Cooper, Howard, Moniteau, and Morgan counties. Free One-On-One Counseling Build coping skills with confidential counseling from a trusted source who knows ag.
573-882-4677

Participants By County 2024



Economic Impact Callaway



Callaway County

Health and Human Sciences

Profiles and Stories

Supporting Families Through Education: Building Strong Families

Tina Edholm delivered the **Building Strong Families** program to **564 participants** statewide, focusing on improving parenting skills. A memorable activity used paper dolls to explore how life experiences, such as bullying or neglect, can harm a child's self-esteem. Participants brainstormed ways to repair self-esteem, such as giving praise and setting achievable goals, symbolized by taping the doll back together.

"This program taught me how to communicate with my teenage son. For the first time in months, we had a calm and meaningful conversation. – *anonymous Building Strong Families Howard County 2024*



"I didn't know I had so many good things about me. This activity made me feel proud of myself."
–third-grader YMCA, Kids and Self-Esteem 2024

Empowering Youth Through Resilience

Across Missouri, **713 youth** developed leadership and life skills through programs like Heit's Point Summer Camp and YMCA activities. A camp counselor noted, *"The kids learned how to work together and express their emotions constructively. It's amazing to see their growth."* These programs not only teach valuable skills but also foster resilience and teamwork, preparing youth for future success.



Promoting Mental Wellness

By equipping 190 participants with skills to recognize and respond to mental health crises, **Mental Health First Aid (MHFA)** strengthened workplaces and community support systems across Missouri. One participant shared, *"This training gave me the confidence to help someone in need."* These efforts created a ripple effect of resilience and well-being, with an estimated economic impact of **\$32,300**, fostering healthier, more connected communities.

"This training gave me the tools to support a colleague during a mental health emergency. I feel more confident in my ability to help."
– anonymous MHFA participant, Callaway County, 2024



**A MATTER OF
BALANCE**

MANAGING CONCERNS ABOUT FALLS

"I didn't realize how much fear of falling was holding me back. Now, I feel ready to enjoy activities I used to avoid."

– anonymous participant, MOB 2024

For older adults, maintaining independence is life-changing. Through A Matter of Balance, participants gained practical tools to reduce fall risks, build strength, and improve confidence. This program not only enhances quality of life but also generates an estimated economic impact of **\$37,520** by reducing fall-related medical costs

Callaway County

Health and Human Sciences

Local Impact

2024 SNAP-Ed Annual Report for Callaway County

The Supplemental Nutrition Assistance Program Education (SNAP-Education or SNAP-Ed) brought \$11,145,237 in federal funds to Missouri. The funds support engagement with 74,864 Supplemental Nutrition Assistance Program (SNAP) recipients and eligible citizens of Missouri who learned about being active and healthy eating on a budget. This year we had 1,164,143 indirect educational contacts through newsletters, health fairs, food pantries, and the Show Me Nutrition helpline. There were 4,821 direct and indirect contacts were made in Callaway County.

Participants in SNAP-Ed learn the importance of making healthier meals and snack choices, eating breakfast more often, are more willing to try new foods, increase their physical activity, and make healthier food choices. Those who practice healthy eating and are physically active are more likely to contribute to a healthy labor force and enjoy a high quality of life throughout the lifespan.

This vital programming effort also reduces healthcare costs over the participant's lifetime, saving taxpayer money in reduced public healthcare benefits and insurance premiums.

Nutrition Program Associate who served Callaway County in 2024



Callaway County

Health and Human Sciences

Local Impact



Heather Warren

One of several success stories thanks to Heather's hard work and dedication.

Fulton Community Supervision Center participates in Getting Healthy Through Gardening classes every year, spring through fall. We grow a lot of vegetables and this year I have one participant that loves being involved in the gardening but she has a distaste for vegetables. She has asked me to bring her recipes that "hide" the flavor of vegetables so that she can work more of them into her meals. We do a recipe with every lesson, and incorporate the vegetables that are harvested from the garden. Every week I try to convince her to just try it, and every week she has a really hard time getting on board with it. A few weeks ago we did a smoothie recipe that had 2 cups of spinach, it also had fruit and fruit juice. Because of the fruit, she tried it, and liked it! She was amazed that the green liquid she was drinking had so much spinach in it and she couldn't taste it! The next week we made farmers market salsa and again, tried it and liked it! Her whole mindset around vegetables has now changed, and she's open to incorporating more healthy foods into her meals, and can't wait to go home and share her new recipes with family.

