

Summary

Extension PUBLICATIONS, PRESENTATIONS & PRODUCTS: • 21 national, regional and statewide invited presentations • 156 in-state Extension presentations • 8 Extension handbooks and iBooks • 52 Extension technical publications a. 22 Peer-Reviewed (2019 to Present) b. 30 Prior to Peer-Review System (2018 and Prior) • 47 Extension content pieces (formerly ‘Timely Information’) • 51 Abstracts • 3 Creative works • 6 Conference proceedings • 11 Concept demonstration projects • 20 Field Days • 23 In-service trainings • 3 Online courses • 7 Refereed articles in Extension education journals • 2 Social media pages • 111 Popular press articles ○ 59 for Alabama Cattleman ○ 52 Other Lay Publications • 19 Radio/media interviews • 19 Videos • 24 Webinars • 6 Budget tools GRANTS: All grants funded are integrated Extension/research projects; See ‘Research’	Research PUBLICATIONS, PRESENTATIONS & PRODUCTS: • Publications: 40 • Invited presentations/lectures: 9 • Abstracts: 70 • Proceedings: 22 AWARDS: • 6 awards based on candidate’s research program • 15 by graduate students advised by Mullenix INTEGRATED EXTENSION/RESEARCH GRANTS: Extramural: \$3.63 million Intramural: \$337,456 Total - \$3.97 million (\$1.2 million as lead PI)
Administration Department Head and Professor – Animal Sciences, August 2024 – Present Animal Science and Forages Program Team Coordinator – 2022-2024 Graduate Program Officer – Animal Sciences, 2021-2022	Teaching Graduate Students (Level 2 awarded – June 2017) COMPLETED: 3 Ph.D. students, 6 M.S. students as major advisor; M.S. students as major advisor; 29 students as member CURRENT: 1 Ph.D. student, 3 M.S., and 1 M.Ag. as major advisor; 6 students as member GUEST LECTURES: Invited to guest lecture in 11 courses over time at AU Service University Service a. Department 1. Search Committees: 8 2. Departmental Committees: 4 b. College/Extension 3. Search Committees: 12 4. Advisory/Planning Committees: 2 5. Faculty Advisor: 2 organizations Professional Service: 1. President – American Society of Animal Science Southern Section 2. Board Member – American Forage and Grassland Council, Alabama Beef Cattle Improvement Association 3. Beef/Forage Planning Committees for Animal Science and Forage Professional Organizations

Mary Kimberly Mullenix, Ph.D.
Professor and Department Head – Animal Sciences – Auburn University
Curriculum Vitae

a. Allocation of time and effort (last 3 years)

Year	Administration	Teaching	Research	Extension/Outreach	Service
2024	95	0	0	0	5
2023	10	0	20	70	0
2022	0	0	20	70	10

b. Honors and awards (26):

2023

American Society of Animal Science Armstrong Leadership Award – Inaugural award winner from ASAS for leadership and service within the professional society

Search for Excellence in Sustainable Agriculture - National Winner. Bermudagrass Hay Growers Summit. M.K. Stanford, G.L. Thompson, M.L. Marks, S.L. Dillard and M.K. Mullenix. National Association of County Agricultural Agents.

2022

Outstanding Papers in Forage and Grazinglands. Forage accumulation and nutritive value of bermudagrass and alfalfa-bermudagrass mixtures when harvested as baleage.

<https://doi.org/10.1002/csc2.20222>. Crop Science Society of America – C6 Section.

Communications Award – Southern Region Award Winner for Extension Publication. Preconditioning Practices for Beef Calves in Alabama. S.M. Justice*, M.K. Mullenix, D.A. Tigue, W.K. Kelley, and S.P. Rodning. National Association of County Agricultural Agents.

2021

Auburn University College of Agriculture Dean's Award for Grantsmanship – 2021

Auburn University Excellence in Outreach Award – Honorable Mention

First Place - Website/Online Program. Alfalfa in the South Online Series. Silva, L.S.*, G.L. Thompson, M.K. Mullenix, S.L. Dillard, K. Kesheimer, and D. Russell. Alabama Association of County Agricultural Agents and Specialists.

2020

2020 American Forage and Grassland Council Merit Award

2020 American Farm Bureau Federation Excellence in Agriculture Competition – State Winner for Alabama

2020 American Society of Animal Science Southern Section Outstanding Young Animal Scientist Award – Education

Alabama Association of County Agricultural Agents and Specialists Extension Education Poster Award – First Place – Dillard, S.L., K. Mullenix, K. Stanford, G. Thompson, J. Elmore, and K. Palmer. 2020. A hands-on workshop to increase forage management practices in Alabama.

Alabama Association of County Agricultural Agents and Specialists Extension Education Poster Award – Second Place - Thompson, G.L. and M.K. Mullenix. 2020. Peer-to-peer learning groups and their impact on adoption and change in knowledge of best management practices for Alabama beef producers.

Alabama Association of County Agricultural Agents and Specialists Extension Education Poster Award – Third Place - Marks, M.L.*, K. Mullenix, L. Jacobs, G. Thompson, P. Vining, J. Elmore, A. Tigue, K. Mason, K. Stanford, D. Miller, D. McWilliams, and K. Kelley. 2020. Reaching new and beginning cattle farmers through the delivery of the Alabama Beef Systems Short Course.

2019

Alabama Farmers Federation Award for Excellence in Production Agriculture and Forestry Research

Auburn University College of Agriculture Project Team Award. Department of Animal Sciences Beef-Forage Interface Team (Mullenix, Dillard, and Muntifering).

National Winner. Best Bound Book Award. Alabama Beef Handbook. National Association of County Agricultural Agents.

Southern Region Finalist. Best Extension Fact Sheet. W.K. Kelley, M.K. Mullenix, and P.W. Brown – The Economic Impact of a New 300-Head Cow-Calf Operation in Alabama – National Association of County Agricultural Agents

Southern Region Finalist. Best Website. Alabama Forage Focus Program. Dillard, S.L., M.K. Mullenix, M.K. Stanford, M.L. Marks, M.K. Dixon, K.M. Mason, D.A. Tigue, K.A. Palmer. National Association of County Agricultural Agents.

2018

2018 Achievement Award. Alabama Association of County Agents and Specialists.

Professional Excellence Award – 1st Place Extension Education Poster. Alabama Association of County Agents and Specialists.

2017

Alabama Beef Cattle Improvement Association Outstanding Extension Educator Award

2016

Auburn University College of Agriculture Excellence in Extension and Outreach Award – Junior Faculty

Best Learning Module Award. Beef Basics Online Course. Alabama Association of County Agents and Specialists.

Best Extension Newsletter Award. Alabama Beef Systems Extension Program E-Update. Alabama Association of County Agents and Specialists.

2015

Alabama Farmers Federation Excellence in Agriculture Competition, Second Runner Up

2013

UF/IFAS Dr. Fred Hull Award of Excellence for Outstanding Research Contributions in Agronomy

Honors and awards – Mullenix students (15):

- Justice, Maggie. 2023. American Society of Animal Science – Young Scholar Award. Selected as national award winner for invited presentation at 2023 Annual Meeting.
- Justice, Maggie. 2023. Auburn University Top Ten Outstanding Doctoral Student Award. Selected as one of ten doctoral students' campus wide. Auburn University Graduate School.
- Zessin, Peyton. 2023. Alabama Beef Cattle Improvement Foundation. Graduate Scholar Award. April 2023.
- Zessin, Peyton. 2022. American Society of Animal Science Southern Section – Undergraduate Research Paper Competition. Third Place.
- Justice, Maggie. 2022. American Society of Animal Science Southern Section – Doctoral Student Research Paper Competition – Three Minute Thesis Competition. Third Place.
- Justice, Maggie. 2022. Alabama Beef Cattle Improvement Foundation. Graduate Scholar Award. April 2022.
- Justice, Maggie. 2022. Elected as American Society of Animal Science Southern Section – Graduate Student Director. 2 yr term.
- Jacobs, J. Luke. 2021. American Society of Animal Science Southern Section – Three Minute Thesis Masters of Science Competition – Third Place.
- Mason, Katie. 2020. American Forage and Grassland Council Emerging Scholar Competition – Third Place.
- Mason, Katie. 2020. Top Ten Outstanding Doctoral Student Award, Auburn University Graduate School.
- Mason, Katie. 2018. Top Ten Outstanding Masters of Science Student Award, Auburn University Graduate School.

- Hargaden, Mekenzie. 2017. International Stockmen's Education Foundation Livestock Scholarship. 2017. (One of ten participants selected internationally).
- Bivens, Katie. 2016. Top Ten Outstanding Masters of Science Student Award, Auburn University Graduate School.
- Mason, Katie. 2015. Alabama Beef Cattle Improvement Association Graduate Scholar Award.
- Bivens, Katie. 2014. Alabama Cooperative Extension System Extension Assistantship Award

SCHOLARLY CONTRIBUTIONS

A. Teaching

a. Courses taught for each semester of the past three years.

N/A

b. Graduate students for whom Mullenix was major professor whose work has been completed

Student	Committee Position	Degree Awarded	Graduation Date	Current Position
S. Maggie Justice	Major Professor	Ph.D.	Summer 2023	Assistant Professor/Beef Extension Specialist, University of Arkansas Division of Agriculture
J. Luke Jacobs	Major Professor	M.S. (thesis)	Spring 2021	PhD Candidate, Clemson University, Department of Animal and Veterinary Sciences
M. Landon Marks	Major Professor	Ph.D.	Summer 2020	Alabama Cooperative Extension System Regional Extension Agent
Katie M. Mason	Major Professor	Ph.D. and M.S. (thesis)	Summer 2020; Summer 2017	Assistant Professor/Beef Extension Specialist, University of Tennessee - Knoxville
Caroline Chappell	Major Professor	M.S. (thesis)	Fall 2019	Jackson County (FL) Soil and Water Conservation District Supervisor
Erin Forte	Major Professor	M.S. (thesis)	Spring 2017	Consulting nutritionist, Denkavit USA-Grober Nutrition, LLC
Mekenzie Hargaden	Major Professor	M.S. (thesis)	Spring 2017	Farmer Relations Manager, The Dairy Alliance
Katie Bivens Carrier	Major Professor	M.S. (thesis)	Spring 2016	Instructor, Animal Sciences, Dawson Community College
Samantha Sechler	Major Professor	M.S. (thesis)	Spring 2016	Feed retailer service technician, Berea, OH

c. Graduate students for whom Mullenix was a committee member whose work has been completed

Student	Committee Position	Degree Awarded	Institution	Graduation Date
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Madison Coursen	Member	M.S., Animal Sciences	Auburn	2023
Elli Zorn	Member	M.S., Animal Sciences	Auburn	2023
Karen Hiltbrand	Member	M.S., Animal Sciences	Auburn	2023
Micayla West	Member	M.S., Animal Sciences	Auburn	2022
Russell Carrell	Member	Ph.D., Animal Sciences	Auburn	2022
Stephanie Philpot	Member	Ph.D., Poultry Science	Auburn	2022
Justin Burt	Member	Ph.D., Animal Sciences	UGA	2022
Alex Tigie	Member	Ph.D., Animal Sciences	Auburn	2022
Bethany Simons	Member	M.Ag., Crop, Soil and Environmental Sciences	Auburn	2022
Hunter Smith	Member	M.S, Animal Sciences	Auburn	2021
Madison Cole	Member	M.S., Animal Sciences	Auburn	2021
Sara Smelser	Member	M. Ag., Crop, Soil and Environmental Sciences	Auburn	2021
Serena Thompson	Member	M.S., Animal Sciences	Auburn	2021
Frank Abrahamsen	Member	Ph.D., Animal Sciences	Tuskegee	2020
Kaylyn Groce	Member	M.S., Animal Sciences	UGA	2020
Raphael Baggett	Member	Ph.D., Crop Science	Alabama A&M	2019
Sarah Shoup	Member	M.S., Animal Sciences	Auburn	2019
Taylor Hendricks	Member	Ph.D., Animal Sciences	UGA	2019
Sarah Dickinson Moorey	Member	M.S., Animal Sciences	Auburn	2019
Megan Griffin	Member	M.S., Animal Sciences	Auburn	2019
Phillip Gunter	Member	Ph.D., Animal Sciences	Auburn	2018
Oksana Singh	Member	M. Ag., Animal Sciences	Auburn	2018
Taylor Gwynn	Member	M. Ag., Animal Sciences	Auburn	2018
Derek Griffing	Member	Ph.D., Animal Sciences	Auburn	2017
Stephanie Turner	Member	M.S., Animal Sciences	Auburn	2017
Colton Christjohn	Member	M.S., Animal Sciences	Auburn	2017
Lauren Mahler	Member	M.S., Animal Sciences	Auburn	2016
Morgan Hollingshead	Member	M.S., Animal Sciences	Auburn	2015
Carla Weissend	Member	M.S., Animal Sciences	Auburn	2015

d. Graduate students on whose committee Mullenix is currently serving as major advisor

Student	Committee Role	Degree	Program Start Date
Michael Agar	Major Professor	M.S. (thesis)	Spring 2021
Ashlyn Hurst	Major Professor (Co-Advised)	M.S. (thesis)	Fall 2023
Anna Grace Underwood	Major Professor	M.Ag	Summer 2023
Micayla West	Major Professor (Co-Advised)	Ph.D.	Spring 2023
Peyton Zessin	Major Professor	M.S. (thesis)	Spring 2023

e. Graduate students for whom Mullenix is currently serving as a committee member

Student	Committee Role	Degree	Program Start Date
Sofia Serrano	Member	M.S. (thesis)	Fall 2023
Lauren St. Andrew	Member	M.S. (thesis)	Spring 2023
Macy Rockwell	Member	M.S. (thesis)	Spring 2023
Brooke Stefancik	Member	Ph.D. (UGA)	Fall 2022
Mason Henson	Member	Ph.D.	Fall 2022
Abbigail Hines	Member	Ph.D.	Fall 2021

f. Post-Doctoral Fellows

Name	Time in Program	Current Position
Jose Pereira Neto Diogenes	January 2023 - Present	Post-Doctoral Fellow, Auburn University
Caroline Vasco	September 2021 – October 2022	Assistant Professor, Equine Science, Midway University
Liliane Severino Da Silva	March 2020 – September 2021	Assistant Professor/Extension Forage Specialist, Clemson University

g. Courses and curricula developed

ANSC 7960 Forage-Animal Interactions (1 credit hour), Fall 2018

1. Lead instructor for course to teach beef-forage graduate students how to read and interpret information from peer-reviewed manuscripts

h. Grants received related to teaching

None

i. Publications related to teaching

None

j. Other contributions to teaching

Guest Lecturer – Agricultural Courses

**Provide one to three guest lectures for the following courses based on periodic request:*

ANSC 3000 Herd Health Management (3 credit hours)

ANSC 3400 Animal Nutrition (3 credit hours)

ANSC 3800 Careers in Animal Sciences (1 credit hour)

ANSC 4000 Modern Livestock Systems (4 credit hours)

ANSC 6010 Stocker Production (4 credit hours)

ANSC 7970 Elevating Beef Sustainability through Innovative Science, Professional Leadership Development, Design Thinking, Scholarly Experiential Research and Learning (3 credit hours)

CSES 1000 – Basic Crop Science (4 credit hours)

CSES 5500 – Forage Production and Utilization (4 credit hours)

VMED 9320 – Clinical Nutrition (3 credit hours)

Guest Lecturer – Non-Agricultural Courses

GEOL 4970/7930/8900 Geohealth – 30 minute lecture, Lecture Topic: Mineral Nutrition, Beef Cattle and Extension. April 7, 2023.

HIST 3970 Special Topics – 50 minute lecture, Lecture Topic: Beef Cattle Systems, Climate, and Carbon. April 14, 2022.

Departmental Seminars

University of Georgia Department of Animal Sciences. Departmental Seminar. 1 hr lecture. Integrating research and Extension in beef-forage systems. Virtual Delivery - Zoom. April 19, 2022.

k. Statement of candidate's teaching philosophy and self-evaluation in terms of stated values

Land grant universities are charged with the unique opportunity to provide teaching, research, and Extension in the state where they are located. Teaching is a key priority as part of this charge. Development and delivery of an effective teaching program provides the foundation for Auburn University. Although I do not have a formal teaching appointment, I have had the opportunity to provide guest lectures at both the undergraduate and graduate level. I am also actively involved in the mentoring of graduate students. My teaching philosophy has largely been shaped by my experiences and mentors throughout my undergraduate and graduate programs. An effective teaching program has open communication with students and facilitates an active learning environment. I believe that students should be taught hands-on principles and techniques that will enable them to successfully compete in an increasingly competitive job market. During classroom presentations, I encourage students to provide active feedback and discussion using scenario-based examples. This type of learning environment encourages problem solving, a skill that is needed by agriculture graduates to solve on-farm problems for clientele.

Not only are science-based learning experiences important for the development of successful agriculture graduates, but facilitating the development of soft skills such as communication, decision making, and leadership are important, especially at the graduate level. I actively involve my graduate students in my Extension programming efforts, which helps provide them with a sense of ownership and independence that can later be transferred into on-the-job readiness. These experiences generate great value beyond honing professional development skills. It brings me great joy to watch my graduate students learn more about work-life balance, organizational citizenship, scholarship and working as part of a team. I believe it is a primary responsibility that we develop and maintain well-rounded educational programs that ensure students reach their maximum potential while preparing them for their future endeavors.

My Extension and research responsibilities allow me to travel across the state and interact with a variety of audiences. Many of the farmers I come into contact with have children who are students at Auburn University. The primary desire of these parents is that their children receive the best education while attending our institution. I take great pride in being an employee and representative of Auburn University, and I strive to serve as a connection point for our stakeholders to the Department of Animal Sciences. It is important that we recruit, welcome and

support our stakeholders and their children who are an integral part of our Auburn family. Relationship building with our stakeholders creates connections to our teaching program through direct and indirect benefits. As an Auburn alumni, I understand and appreciate the value of one-on-one interactions with Auburn faculty and staff at Extension events. Through our Extension and teaching missions, I hope to create a learning environment that fosters connectivity from our stakeholders, to students, and among our faculty in the Department of Animal Sciences.

B. Research/Creative Work

a. Books

None

b. Article-length publications (distinguished by type)

Note: Cases where the first author was a graduate student or post-doctoral fellow of Mullenix are indicated by an asterisk. Author chronology is reflective of project contributions where the lead project investigator, post-doctoral fellows or graduate students are listed within the first several positions on the author list, respectively, followed by additional project investigators in order of decreasing level of project involvement.

Articles in refereed journals (43)

- 1) Justice, S.M.*, **M.K. Mullenix**, D.A. Tigue, M.F. Elmore, S.L. Dillard, W.B. Smith, M. Runge, and W.K. Kelley. 2024. Assessment of weaning and backgrounding management practices utilized by Alabama beef cattle producers. *Applied Animal Science*. Accepted Jan. 2024.
- 2) Baxter, L.L., J.C. Burt, **M.K. Mullenix**, S.L. Payne, K.R. Reagin, K.M. Mason, C.G. Prevatt, and J.J. Tucker. 2023. Understanding the agronomic impacts of defoliation strategies in “Bulldog 805” alfalfa + “Tifton 85” bermudagrass mixed stands. *Grassland Research*. 2, 251-259. <https://doi.org/10.1002/glr2.12062>.
- 3) Zorn, V.E., T.D. Brandebourg, **M.K. Mullenix**, A.D. Belk, K.B. Ale, F.W. Abrahamsen, N.K. Gurung, and J.T. Sawyer. 2023. Influence of hempseed meal on fresh goat meat characteristics stored in vacuum packaging. *Animals*. 13:2628. <https://doi.org/10.3390/ani13162628>.
- 4) Thompson, S.J., J.C. Koebernick, L.S. Silva, **M.K. Mullenix**, C. Heaton, R.C. Carrell, and S.L. Dillard. 2023. Forage mass and nutritive value of grain- and forage-type soybean cultivars managed under different row spacings and clipping heights. *Agronomy*. 13:487. <https://doi.org/10.3390/agronomy13020487>.
- 5) Vasco, A.C.C.M.*, L.S. Silva, J.C. Burt, K. Mason, **M.K. Mullenix**, C. Prevatt, and J.J. Tucker. 2023. Agronomic and structural responses of stockpiled alfalfa-bermudagrass mixtures. *Crop, Forage and Turfgrass Management*. <https://doi.org/10.1002/cft2.20223>.
- 6) Burt, J.C., L.L. Baxter, C.G. Prevatt, **M.K. Mullenix**, R. Lawton Stewart, and J.J. Tucker. 2023. Improving bermudagrass in the Southeastern United States with alfalfa as an alternative nitrogen source in grazing systems. *Grassland Research*. 1:4. <https://doi.org/10.1002/glr2.12038>.
- 7) **Mullenix, M.K.**, R.L. Stewart Jr., J.L. Jacobs, and D.L. Davis. 2022. Invited Review: Using whole cottonseed and cotton harvest residue in southeastern US beef cattle diets: Quality, intake and changes in feed characteristics. *Applied Animal Science*. 38:447-455. <https://doi.org/10.15232/aas.2022-02301>.

- 8) Jacobs, J.L.*, D.B. Davis, **M.K. Mullenix**, J.C. Koebernick, S.M. Justice, S.L. Dillard, R.B. Muntifering, and R.L. Stewart, Jr. 2022. Cottonseed characteristics related to beef cattle consumption: Protein degradability, digestibility and gossypol content. *Applied Animal Science*. 38:409-416. <https://doi.org/10.15232/aas.2022-02304>.
- 9) Jacobs, J.L*., **M.K. Mullenix**, J.C. Koebernick, S.L. Dillard, S.M. Justice, D.A. Tigue, S.P. Rodning, and R.B. Muntifering. 2022. Cotton gin byproduct: Effects on feed intake, quality, and safety for use in diets of gestating beef cows. *Applied Animal Science*. 38:402-408. <https://doi.org/10.15232/aas.2022-02288>. *Note: *Designated as Editor's Choice and feature article for issue*
- 10) Silva, L.S.* , L.E. Sollenberger, **M.K. Mullenix**, M.M. Kohmann, J.C.B. Dubeux, and M.L. Silveira. 2022. Soil carbon and nitrogen stocks in nitrogen-fertilized grass and legume-grass forage systems. *Nutrient Cycling in Agroecosystems*. 122:105-117. <https://doi.org/10.1007/s10705-021-10188-9>.
- 11) Burt, J.J, L. Baxter, R.L Stewart, C.G. Prevatt, **M.K. Mullenix**, and J.J. Tucker. 2022. Improving bermudagrass in the southeastern US with alfalfa as an alternative nitrogen source in grazing systems. *Grassland Research*. 1:280-289. <https://doi.org/10.1002/glr2.12038>.
- 12) Chappell, C.N.*, M.L. Marks, K.M. Mason, L.S. Silva, J.L. Jacobs, **M.K. Mullenix**, S.L. Dillard, and R.B. Muntifering. 2022. Forage production and persistence characteristics of grazed native warm-season grass mixtures with or without nitrogen fertilizer. *Grassland Research*. 1:157-165. <https://doi.org/10.1002/glr2.12028>.
- 13) Shoup, S.L., R.B. Muntifering, **M.K. Mullenix**, L.S. Silva, and S.L. Dillard. In situ ruminal digestion, fermentation parameters, and forage nutritive value of cool-season baleage ensiled under contrasting inoculant strategies. *Animals*. 2022. 12:2929.
- 14) Silva, L.S.* , **M.K. Mullenix**, C.G. Prevatt and J.J. Tucker. 2021. Perception on adoption of alfalfa plantings by forage-livestock producers in the southern US. *Applied Animal Science*. 37:665-669. <https://doi.org/10.3390/ani12212929>.
- 15) Abrahamsen, F.W., N. Gurung, W. Abdela, G. Reddy, and **M.K. Mullenix**. 2021. Effects of varying levels of hempseed meal supplementation on animal performance, rumen fermentation, and blood metabolites of growing meat goats. *Applied Animal Science*. 37:681-688. <https://doi.org/10.15232/aas.2021-02153>.
- 16) Smith, H.R., B.S. Wilborn, A.G. Parnell, T.M Reyes, M.P. Wagoner, L.E. Yoder, E. Blythe, D.R. Mulvaney, S.P. Rodning, **M.K. Mullenix**, T. Bonner and J.T. Sawyer. 2021. Impact of packaging film and beef trimmings on ground beef shelf life. *Foods* 10:1923. <https://doi.org/10.3390/foods10081923>.
- 17) Gunter, P.A., **M.K. Mullenix**, L.C. Burdette, and R.B. Muntifering. 2021. Evaluation of nitrogen-delivery methods for stocker cattle grazing annual ryegrass. *Translational Animal Science*. 5:2. <https://doi.org/10.1093/tas/txab048>.
- 18) Hendricks, T.J., J.J. Tucker, D.W. Hancock, **M.K. Mullenix**, L.L. Baxter, R.L. Stewart, Jr., J.R. Segers, J.K. Bernard. 2020. Forage accumulation and nutritive value of bermudagrass and alfalfa-bermudagrass mixtures when harvested for baleage. *Crop Sci*. <https://doi.org/10.1002/csc2.20222>.
- 19) Griffin, M., R.B. Muntifering, **M.K. Mullenix**, D.W. Held, and S.L. Dillard. 2020. Evaluation of plant growth-promoting rhizobacteria on stockpiled bermudagrass. *Crop, Forage, and Turfgrass Management*. <https://doi.org/10.1002/cft2.20028>.
- 20) Panhans, M.H.*, K.M. Mason*, **M.K. Mullenix**, C.G. Prevatt, S.J. Moisa, R.B. Muntifering. 2019. Cow-calf performance, forage utilization, and economics of warm-season

annual baleage in beef cattle winter feeding systems. Trans. Anim. Sci. 4:1.
<https://doi.org/10.1093/tas/txz171>.

- 21) Gunter, P.A., **M.K. Mullenix**, L.C. Burdette, and R.B. Muntifering. 2019. Nitrogen delivery method and monensin effects on productivity, nutritive value, and botanical composition of grazed annual ryegrass pasture. Crop Sci. 59:2249-2257. <https://doi.org/10.1093/cropsci/2019.02.0099>.
- 22) Mason, K.M.*, **M.K. Mullenix**, J.J. Tucker, R.B. Muntifering, J.S. Angle, and J. Yeager. 2019. Overseeding Eastern gamagrass with cool-season annual grasses or grass-legume mixtures. Crop Sci. 59:2264-2270. <https://doi.org/10.1093/cropsci/2019.02.0099>.
- 23) **Mullenix, M.K.** and F.M. Rouquette, Jr. 2018. Review: Cool-season annual grasses or grass-clover management options for extending the fall-winter-early spring grazing season for beef cattle. The Prof. Anim. Scientist. 34:231-239. <https://doi.org/10.15232/pas.2017-01714>.
*Note: Designated as Editor's Choice and feature article for issue
- 24) Forte, E.M*, **M.K. Mullenix**, J.J. Tucker, J.B. Elmore, and W.G. Bergen. 2018. Conserved forage-based systems for backgrounding weaned beef calves. Transl. Anim. Sci. <https://doi.org/10.1093/tas/txy063>.
- 25) Griffing, D.A., L.A. Kriese-Anderson, **M.K. Mullenix**, L. Wang, and C.L. Bratcher. 2018. A study of consumer handling behaviors during transport from retail to residence utilizing an electronic questionnaire. Meat and Muscle Biology. 2:162-167.
<https://doi.org/10.22175/mmb2017.12.0058>.
- 26) Dillard, S.L, D.W. Hancock, K. Soder, D. Harmon, **M.K. Mullenix**, and P.A. Beck. 2018. Symposia: Annual forages: Animal performance and environmental efficiency of cool- and warm-season annual grazing systems. J. Anim. Sci. <https://doi.org/10.1093/jas/sky025>.
- 27) Tucker, J.J., **M.K. Mullenix**, S.F. Enloe, and P.L. Burch. 2018. Residual herbicide effect on interseeded annual clover in southern forage systems. Weed Technol. <https://doi.org/10.1017/wet.2018.20>.
- 28) Bivens, K.R*, **M.K. Mullenix**, J.J. Tucker, B.E. Gamble, and R.B. Muntifering. 2017. Stockpiled Tifton 85 bermudagrass for stocker cattle. J. Anim. Sci. 95:4413-4420.
<https://doi.org/10.2527/jas2017.1579>.
- 29) Sechler, S.R.*, **M.K. Mullenix**, C.M. Holland, and R.B. Muntifering. 2017. Fiber digestion kinetics and protein degradation characteristics of stockpiled Tifton 85 bermudagrass. J. Anim. Sci. 95:3922-3931. <https://doi.org/10.2527/jas.2017.1600>.
- 30) McKee, Robert W., J.J. Tucker, **M.K. Mullenix**, C.G. Prevatt, and E. van Santen. 2017. Grazing evaluation of annual and perennial cool season forage systems for stocker production in the lower transition zone. Crop, Forage, and Turfgrass Management. <https://doi.org/10.2134/cftm2016.06.0048>.
- 31) Wallau, M.O., L.E. Sollenberger, J.M.B. Vendramini, C.A.M. Gomide, **M.K. Mullenix**, and K.H. Quesenberry. 2016. Performance of limpograss breeding lines under various grazing management strategies. Crop Sci. 56:3345-3353. <https://doi.org/10.2135/cropsci2016.05.0330>.
- 32) **Mullenix, M. K.** L. E. Sollenberger, M. O. Wallau, A. R. Blount, J. M. B. Vendramini, M. L. Silveira, and M. O. Wallau. 2016. Herbage accumulation, nutritive value, and persistence responses of rhizoma peanut cultivars and germplasm to grazing management. Crop Sci. 56:907-915. <https://doi.org/10.2135/cropsci2015.08.0507>.
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- 47) Marks, M.L.*, **M.K. Mullenix**, M.K. Stanford, and L.A. Kriese-Anderson. 2018. Late planting of early- vs. late-maturing annual ryegrass in Northern Alabama. Abstracts, ASAS Southern Section Annual Meeting, Feb. 3 – 6, 2018. Fort Worth, TX.
- 48) Hargaden, M.S.*, **M.K. Mullenix**, R.B. Muntifering, R.W. Peacock, and S.J. Moisa. 2018. Evaluation of warm-season annual baleage in a cow-calf production system. Abstracts, ASAS Southern Section Annual Meeting. Feb. 3 – 6, 2018. Fort Worth, TX.
- 49) Griffin, M.E., **M.K. Mullenix**, L.D. Roth, J.B. Elmore, K.M. Mason, and L.C. Burdette. 2018. Time of wrapping and the use of fermentation enhancers on forage preservation characteristics of annual ryegrass baleage. Abstracts, ASAS Southern Section Annual Meeting. Feb. 3 – 6, 2018. Fort Worth, TX.
- 50) **Mullenix, M.K.**, L.D. Roth, J.B. Elmore, and M.E. Griffin. 2018. Evaluation of fermentation enhancers on forage preservation characteristics in annual ryegrass baleage in Alabama. American Forage and Grassland Council Annual Meeting. Jan. 14-17, 2018. Louisville, KY.

- 51) Mason, K.M.*, **M.K. Mullenix**, J.J. Tucker, J.S. Angle, R.B. Muntifering, and J. Yeager. 2018. Overseeding Eastern gamagrass: An alternative forage system for the Black Belt Region. American Forage and Grassland Council Annual Meeting. Jan. 14 – 17, 2018. Louisville, KY.
- 52) Bennett, K.M.*, **M.K. Mullenix**, J.J. Tucker, R.B. Muntifering, S. Angle and J. Yeager. 2017. Overseeding Eastern gamagrass with cool-season grasses or grass-legume mixtures: A two-year summary. ASA-CSSA-SSSA Annual Meeting. Oct 21-25, 2017. Tampa, FL.
- 53) Gunter, P.A., R.W. Peacock, R.B. Muntifering, and **M.K. Mullenix**. 2017. Evaluation of nitrogen delivery methods for stocker cattle grazing annual ryegrass. Abstracts, ASAS Southern Section Annual Meeting. Feb. 5-7, 2017. Franklin, TN.
- 54) Forte, E.M.*, **M.K. Mullenix**, W. Bergen, and D. Fields. 2017. Pre-conditioning beef calves with high-moisture forages or co-product feeds. Abstracts, ASAS Southern Section Annual meeting, Feb. 5-7, 2017. Franklin, TN.
- 55) Tucker, J.J., **M.K. Mullenix**, S.F. Enloe, and P.L. Burch. 2017. Residual herbicide effect on interseeded annual clovers in southern forage systems. Proceedings of the American Forage and Grassland Council Annual Meeting. Jan. 22- 25, 2017. Roanoke, VA.
- 56) Turner, S.B., E.L. Wagner, B.M. Wassel, R.B. Muntifering, and **M.K. Mullenix**. 2017. Changes in in vitro fermentative capacity of equine feces due to alteration of forage diet. Equine Science Society Symposium. May 30 - June 2, 2017. Minneapolis, MN.
- 57) Bivens, K. R. *, **M.K. Mullenix**, J. M. Johnson, B. E. Gamble, and R. B. Muntifering. 2016. Stocker cattle performance from grazed stockpiled ‘Tifton 85’ bermudagrass. Abstracts, ASAS Southern Section Annual Meeting. Feb. 6-9, 2016. San Antonio, TX.
- 58) Sechler, S. R. *, C. M. Holland, C. J. Weissend, **M.K. Mullenix**, and R. B. Muntifering. 2015. *In vitro* digestion kinetics of NDF from stockpiled Tifton 85 bermudagrass as influenced by N fertilization. ASAS Annual Meeting. Orlando, FL. J. Anim. Sci. 93 (Suppl. S3): 283.
- 59) **Mullenix, M.K.**, K. B. Marchant, A. C. Pereira, B. E. Gamble, and R. B. Muntifering. 2014. An 8-year review of stocker cattle research in the Gulf Coast Region of Alabama. Proceedings of the 2014 Auburn University Beef Cattle Conference. June 6-7, 2014. Auburn, AL.
- 60) Dillard, S. L., **M.K. Mullenix**, J. C. Lin, B. E. Gamble, and R. B. Muntifering. 2014. Evaluation of wheat and triticale forage for stocker production in the Gulf Coast region. Abstracts, ASAS Southern Section Annual Meeting. Feb. 1-4, 2014. Dallas, TX.
- 61) **Mullenix, M.K.**, L. E. Sollenberger, A. R. Blount, M. O. Wallau, J. M. B. Vendramini, M. L. Silveira. 2013. Effects of grazing management strategies on sward responses of rhizoma peanut genotypes. ASA-CSSA-SSSA International Annual Meeting. Nov. 3-6, 2013. Tampa, FL
- 62) **Mullenix, M.K.**, L. E. Sollenberger, A. R. Blount, M.S. Castillo, J.M.B. Vendramini, and M. L. Silveira. 2013. Establishment and spread of rhizoma peanut genotypes strip-planted in bahiagrass swards. ASA-CSSA-SSSA International Annual Meeting. Nov. 3-6, 2013. Tampa, FL.
- 63) Wallau, M. W., L. E. Sollenberger, K. H. Quesenberry, J. M. B. Vendramini, **M.K. Mullenix**. 2013. Evaluation of limpograss (*Hermarthria altissima*) breeding lines for use in Florida forage-livestock systems. ASA-CSSA-SSSA International Annual Meeting. Nov. 3-6, 2013. Tampa, FL.

- 64) **Mullenix, M.K.**, L. E. Sollenberger, D. L. Rowland, J. M. B. Vendramini, A. R. Blount, M. L. Silveira, A. Vaccarro. 2013. Sward responses of rhizoma peanut cultivars under a range of grazing management strategies. American Society of Animal Science Southern Section Meeting, Feb 4, 2013. Orlando, FL.
- 65) **Mullenix, M.K.**, L. E. Sollenberger, A. R. Blount, M. S. Castillo, J. M. B. Vendramini, and M. L. Silveira. 2013. Growth habit of rhizoma peanut cultivars affects establishment and spread when strip-planted in bahiagrass sods. AFGC Emerging Scientist Competition, January 6, 2013. Covington, KY.
- 66) **Mullenix, M.K.**, L. E. Sollenberger, A. R. Blount, M. S. Castillo, J. M. B. Vendramini, and M. L. Silveira. 2012. Growth habit of rhizoma peanut cultivars affects establishment and spread when strip-planted in bahiagrass sods. ASA-CSSA-SSSA Annual Meeting. Oct 20-24, 2012. Cincinnati, OH.
- 67) **Cline, M.K.**, J. C. Lin, B. Gamble, C. R. Kerth and R. B. Muntifering. 2010. Beef cattle performance, forage productivity and quality from mixed small grain/ryegrass pasture. J. Anim. Sci. 88 (Suppl. 3): 9.
- 68) **Cline, M.K.**, E. J. Bungenstab, J. L. Holliman, A. C. Pereira, S. L. Dillard, and R. B. Muntifering. 2009. Productivity and nutritive quality of tall fescue spring growth as influenced by fertilizer source, application schedule and harvest frequency. J. Anim. Sci. 87(Suppl. 3):15.
- 69) **Cline, M.K.**, J. C. Lin, K. Nadarajah, M. Volk, R. B. Muntifering, S. Bassin, and J. Fuhrer. 2008. Ozone and nitrogen deposition effects on nutritive quality of a species-rich subalpine grassland. J. Anim. Sci. 86 (E-Suppl. 2):225.
- 70) **Cline, M.K.** 2008. Ozone and nitrogen deposition effects on nutritive quality of a species-rich subalpine grassland. 22nd National Conference for Undergraduate Research Abstracts. Salisbury, MD.

c. Papers or lectures

Abstracts of Invited Research Presentations

***Note:** First author represents presenter.

International

1. **Mullenix, M.K.** 2023. Farmer experiences with alfalfa in the southern USA. Sub thematic Session - International Grassland Congress, Covington, KY. May 16, 2023.
2. Tucker, J.J., J.C. Burt, L. Silva, **K. Mullenix**, C. Prevatt, L.L. Baxter, R.L. Stewart, Jr. 2022. Integrated systems for alfalfa harvest management. World Alfalfa Congress. November 15, 2022. San Diego, CA.
3. **Mullenix, M.K.** 2018. Challenges faced by beef producers to managing pastures and strategies for addressing these challenges. 2nd International Conference on Forages. May 21 – 23, 2018. Federal University of Lavras, Lavras, Minas Gerais, Brazil.

National

1. J.J. Tucker, **M.K. Mullenix**, C.G. Prevatt, J. Dubeux, E. Rios, K.B. Mason, and K. Groce. 2020. Mixing Things Up with Alfalfa in the South: Alfalfa Forage System Management Strategies and Decision Tools for Forage-Livestock Producers in the Southeast. Workshop Series. Proceedings of the 76th American Forage and Grassland Council. Greenville, SC. **Note: Symposium – all authors presented in symposium.*

2. **Mullenix, M.K.** and J.A. Jennings. 2019. Forage Systems for the South – Options to Extend the Grazing Season. 2019 National Cattlemen’s Beef Association Annual Convention and Trade Show. New Orleans, LA. January 30, 2019.
3. **Mullenix, M.K.** 2017. Annual forages as part of profitable beef production systems. Proceedings of the American Forage and Grassland Council Annual Meeting. Jan. 22-25, 2017. Roanoke, VA.
4. Dillard, S.L., D.W. Hancock, D.D. Harmon, **M.K Mullenix**, P.A. Beck, and K.J. Soder. 2017. Annual forages: Influence on animal performance and water/nutrient management. American Society of Animal Science Annual Meeting. July 8 – 12, 2017. Baltimore, MD.

Regional

1. **Mullenix, M.K.** and R.L. Stewart, Jr. 2021. Cotton byproduct use in southeastern beef cattle diets: Quality, intake, and changes in feed characteristics. Kunkle Symposium at the American Society of Animal Science Southern Section Meeting. July 13 – 17, 2021. Louisville, KY.
2. **Mullenix, M.K.**, and F.M Rouquette. 2017. Cool-season annual grasses and grass-legume mix options and management for extending the fall grazing season. SERA 041 Symposium: Forage Systems to Extend the Grazing Season in the Southeastern US. Abstracts, ASAS Southern Section Annual Meeting. Feb. 5-7, 2017. Franklin, TN.

d. Exhibitions

None

e. Performances

None

f. Patents and inventions

None

g. Other research/creative contributions

None

h. Grants and contracts

Grants, Gifts, and Contracts Received (\$3.97 million total; \$1.2 million as lead/institutional PI)

1. Smith, W.B. and **M.K. Mullenix**. 2023. Genome-wide expression of crude fat concentrations of whole cottonseed with a view toward animal nutrition. Cotton Inc. \$20,010.
2. Smith, W.B., A.M. Silva, **M.K. Mullenix**, S.L. Dillard, and J. Pereira. 2023. Evaluating byproduct feedstuffs utilized in Alabama to optimize their application in beef cattle production. Alabama Cattlemen’s Association State Beef Checkoff Program. \$10,000.
3. West, M.H., S.M. Justice, W.B. Smith and **M.K. Mullenix**. 2023. Understanding the digestion of warm-season grass-legume mixtures. Alabama Cattlemen’s Association State Beef Checkoff Program. \$10,000.
4. Sawyer, J.S., S.P. Rodning, A. Belk, C. Armstrong, and **M.K. Mullenix**. 2023. Effect of implants on growing steers and heifers during grazing. Zoetis Veterinary Medicine Research. Total: \$322,711.31.

5. Dillard, S.L., A. Sanz, W.B. Smith, **M.K. Mullenix**, D. Held, A. Rabinowitz, R. Nave, Z. Noel, and W.K. Kelley. 2023. A systems approach to perennial forage management using biofertilization. USDA NIFA AFRI Foundational Program – Plant Health and Production. Total: \$745,560.
6. Smith, W.B., S.L. Dillard, **M.K. Mullenix**, T. Callaway, and J. Muir. 2023. Reducing the environmental impact of beef production through the use of naturally occurring secondary plant metabolites in southeastern forage systems. USDA Southern SARE Research and Education Grant. Total: \$384,000.
7. Dillard, S.L., C. Vasco, **M.K. Mullenix**, W.B. Smith, J. Dubeux, and M. Wolfe. 2023. Grazing diversified cover crops as an alternative to improve land-use efficiency and sustainability in the Southeast. USDA Southern SARE Research and Education Grant. Total: \$380,000.
8. **Mullenix, M.K.**, S.L. Dillard, L.S. Silva, J.J. Tucker, L.L. Baxter, J. Dubeux, and C. Prevatt. 2022. Legumes in the South Booklet. The Forage and Grassland Foundation. \$10,000.
9. Tucker, J.J., **M.K. Mullenix**, C.G. Prevatt, L.S. Silva, S.L. Dillard, T. Callaway, L.L. Baxter. 2022. Alfalfa nutrient preservation, utilization and cycling in sustainable southeastern livestock systems. USDA NIFA Alfalfa and Forage Research Program. Total: \$732,018. Auburn Subcontract: \$249,361.
10. **Mullenix, M.K.**, S.P. Rodning, J.T. Sawyer and S.L. Dillard. 2021. The effect of Rumensin or Bovatec feeding sequence on stocker cattle growth performance, health, and grazing efficiency. Contract. Elanco Animal Health. \$140,000.
11. **Mullenix, M.K.**, J. Elmore, L. Silva, and L. Dillard. 2021. Overseeding bahiagrass pastures to extend the grazing season and improve sustainability in forage systems. \$10,000. Alabama Cattlemen's Association State Checkoff Research Grant Program.
12. **Mullenix, K.**, L. Silva, L. Dillard, M. Agar, J. Elmore, K. Palmer and K. Kelley. 2021. Forage production and quality of stockpiled bahiagrass pastures managed under contrasting strategies. \$10,000. Alabama Cattlemen's Association State Checkoff Research Grant Program.
13. Justice, S.M.*, **M.K. Mullenix**, D.A. Tigue, M. Runge, K. Kelley. 2021. Evaluation of weaning and backgrounding management practices utilized by Alabama cattle producers. \$10,000. Alabama Cattlemen's Association State Checkoff Research Grant Program.
14. Dillard, S.L., **M.K. Mullenix**, L.S. Silva, D. Russell, R. Prasad, S. Rodning, and J. Sawyer, and M. Elmore. 2021. Master Your Business: An online certificate course for forage and livestock farmers. USDA NIFA Southern Risk Management Education Center. \$49,779.
15. Dillard, S.L., **M.K. Mullenix**, L.S. Silva, M. Runge, K. Kelley. 2021. Development of a forage establishment and management curriculum for extension agents and mentor farmers. \$77,469. USDA Southern SARE. \$77,469.
16. **Mullenix, M.K.**, S.P. Rodning, M. Chamorro, J.T. Sawyer, S.L. Dillard, S.J. Moisa, L.S. da Silva, M.F. Elmore, M. Runge, and W.K. Kelley. 2020. Extended effects of sequential weaning and backgrounding management in southeastern US beef calves on performance, health and immunological responses through the feedyard. Alabama Agricultural Experiment Station Award for Interdisciplinary Research. \$149,702.
17. **Mullenix, M.K.** and J. Koebernick. 2020. Cotton Byproduct Assessment for Updating Beef Cattle Feeding Recommendations. Alabama Cotton Commission. \$10,000.

18. Sawyer, J., **M.K. Mullenix**, and S.P. Rodning. 2020. Efficacy of growth-promoting implants in Bos indicus-based cattle. Zoetis Inc. \$246,419.
19. Sawyer, J., **M.K. Mullenix**, and S.P. Rodning. 2020. Safety of growth-promoting implants in Bos indicus-based cattle. Zoetis Inc. \$71,482.
20. Tucker, J.J. and **M.K. Mullenix**. 2020. Alfalfa-bermudagrass management guide and additional educational resources. National Alfalfa and Forage Alliance Checkoff Program. \$20,500.
21. Dillard, L., **M.K. Mullenix**, P. Dyce, S.P. Rodning, M. Runge, K. Kelley, and R. Carrell. 2020. Mitigation of tall fescue toxicosis in replacement heifers by limit-grazing cool-season annuals. AAES Production Agriculture Research Program. \$49,980.
22. Dillard, S.L., **Mullenix, M.K.**, K. Kesheimer, D. Russell, S.P. Rodning, A.V. Gamble, R. Prasad, K. Stanford, M. Runge, and K. Kelley. Development of an online 'Forage Basics' course for livestock and forage producers. Award Amount: \$49,608.
23. Mulvaney, D., W. Bergen, T. Brandebourg, L. Dillard, P. Dyce, **K. Mullenix**, and R. Muntifering. 2020. A sustainable, efficient, profitable beef production future. USDA NIFA National Needs Fellowship Program. \$246,000.
24. Tucker, J.J., **M.K. Mullenix**, and C.G. Prevatt. 2019. Alfalfa forage system management strategies and social concepts for expanding the integration of alfalfa into Southern forage-livestock operations. USDA NIFA Alfalfa Forage Research and Forage Seed Program. Total: \$499,812.88 (Auburn Subcontract: \$204,042) – 2 year project
25. Poore, M.P., S. Ingram, R.L. Stewart Jr., J. Lemkuhler, **M.K. Mullenix**, G. Pent, and J. Andrae. 2019. Effectively using permanent and temporary electric fence technology: Adviser training to support producers implementing adaptive grazing management. USDA Southern SARE Professional Development Grant Program. Total: \$80,000 (Auburn Subcontract: \$8,420).
26. **Mullenix, M.K.** and J. Koebernick. 2019. Cottonseed assessment for improvement of beef cattle feed recommendations. Alabama Cotton Commission. Total: \$7,500.
27. Russell, D. and **M.K. Mullenix**. 2019. Controlling weeds without killing clover: Is it possible? Alabama Cattlemen's Association State Checkoff Program. Total: \$10,000.
28. Tigue, D.A. *, **M.K. Mullenix**, and S.P. Rodning. 2019. Evaluation of various diets for economically backgrounding fall-born calves and impacts on transportation stress and feedyard performance. Alabama Cattlemen's Association State Checkoff Program. Total: \$10,000.
29. Moisa, S.J., **M.K. Mullenix**, S.P. Rodning, and S.L. Dillard. 2019. A nutritional and genetic approach to dampen the negative effects on endophyte-infected tall fescue on beef calf performance. Alabama Cattlemen's Association State Checkoff Program. Total: \$10,000.
30. **Mullenix, M.K.**, S.P. Rodning, L.A. Kriese-Anderson, S.L. Dillard, B. Goodrich, W.K. Kelley, M. Runge, M. Elmore, and R. Prasad. 2018. Development of beef cattle quick reference tools in Alabama. USDA Southern Risk Management Education Center. \$46,963.
31. Dillard, S.L., **M.K. Mullenix**, B. Goodrich and C.M. Holland. 2018. Development of an Alabama Grazing School for Management of Production Risks Associated with Pasture-Based Livestock Systems. USDA Southern Risk Management Education Center. \$4,919.
32. **Mullenix, M.K.** and P.W. Dyce. 2018. Alternative warm-season forage systems for improving replacement heifer development in Alabama. AAES Production Agriculture Research Funding program. \$47,774.

33. **Mullenix, M.K.**, S.P. Rodning, and L.A. Kriese-Anderson. 2017. Beef Cattle Pocket Guide and Reference Update. Alabama Cattlemen's Association State Checkoff. \$10,000.
34. Tucker, J.J., **M.K. Mullenix**, C.G. Prevatt, E. Rios, and J.B. Dubeux. 2017. Development of grazing recommendations and on-farm decision tools for managing alfalfa-grass mixtures in the southeastern US. USDA NIFA Alfalfa and Forage Research Program Grant. \$250,000. Auburn Subcontract: \$75,189.
35. **Mullenix, M.K.** and L. Roth. 2017. Evaluation of baleage preservation techniques in the Southeast. Provimi North America. \$10,000.
36. **Mullenix, M. K.** 2016. Evaluating stored forage waste in high-moisture forage systems. Alabama Cattlemen's Association State Checkoff Program. \$10,000.
37. **Mullenix, M. K.**, J. Elmore, E. Brantley, B. Ortiz, D. Fields, E. Jolley, D. Chembezi, V. Lane, and G. Thompson. 2016. The Systems 360° Initiative: Curriculum development and delivery of land management educational tools for Alabama cattle producers. USDA Southern SARE Professional Development Grant. \$74,298.
38. Karisch, B.B., C. Rutherford, **M.K. Mullenix**, and U. Karki. 2016. Grass-fed beef in the Southeast: from Seed to Plate. USDA Southern SARE Professional Development Grant. \$78,201 (Subcontract: \$5,000).
39. **Mullenix, M. K.** 2016. Beef Systems Basics Extension Handbook and Online Course. Alabama Cattlemen's Association State Checkoff. \$3,500.
40. **Mullenix, M. K.** 2016. Tennessee Valley Research and Extension Center Field Day. Alabama Cattlemen's Association State Checkoff. \$1,500.
41. **Mullenix, M. K.** 2015. Alabama Ecology of Grazing Land Systems Short Course. USDA- Alabama Natural Resources Conservation Service. Contract. \$39,746.
42. **Mullenix, M. K.**, C. Bratcher, and R. Muntifering. 2015. Alabama Agricultural Experiment Station Equipment Grant. \$32,795.
43. **Mullenix, M. K.**, J.M. Johnson, and J.B. Elmore. 2015. Using high-moisture stored forages for backgrounding beef calves. Alabama Cattlemen's Association State Checkoff Program. \$12,000.
44. Johnson, J.M. and **M.K. Mullenix**. 2015. Focus on Hay Quality: an Initiative to Improve Awareness of Forage Quality and Testing in Alabama. Alabama Cattlemen's Association State Checkoff Program: \$20,000
45. Lamb, G. C., C. Lacy, N. DiLorenzo, L. Stewart, D. Mayo, **K. Mullenix**, J. Elmore, B. Beer, and J. Dubeux. 2014. Increasing the scope and diversity of mobile applications for Southeast cattle and forage producers through the Southeast Cattle Advisor. Southeastern Risk Management Center. \$49,800 (Subcontract: \$2,890).
46. **Mullenix, M. K.** 2014. Deep South Stocker Conference Sponsorship. Alabama Cattlemen's Association State Checkoff Program. \$2,000.
47. **Mullenix, M. K.** 2014. Wiregrass Research and Extension Center Beef-Forage Field Day. Alabama Cattlemen's Association State Checkoff Program. \$1,500.
48. **Mullenix, M. K.** and J. M. Johnson. 2014. Stockpiled Tifton 85 bermudagrass followed by grazed winter cover crops as part of a stocker production system for South Alabama. 2014 AAES Hatch/Multistate Young Investigator Award. \$40,000.
49. Johnson, J. M. and **M. K. Mullenix**. 2014. Evaluating establishment and use of native warm-season grasses to extend the grazing season in Alabama by developing a winter annual/native warm-season perennial grass forage system. AAES Hatch/Multistate Young Investigator Award. \$50,000.

50. **Mullenix, M. K.**, L. E. Sollenberger, A. R. Blount, J. M. B. Vendramini, and M. L. Silveira. 2011. Strategies for Increasing Rhizoma Peanut Contribution to Productivity and Ecosystem Services of Low-Input Pasture Systems. USDA Graduate Student Southern SARE Grant. Total funded: \$9,978.00.

Grants Not Funded:

1. Smith, W.B., **M.K. Mullenix**, S.L. Dillard, H. Jordan, C. Parker, and J. Elmore. 2023. Alabama's double harvest: Transforming peanut vines into premium cattle feed. Alabama Peanut Producers Commission. \$17,000.
2. Silva, L.S., J.J. Tucker, **M.K. Mullenix**, S. Duckett, P. Fontes, L. Stewart, M. Hersom, A. Thayer, M. Aguerre, M. Burns, M. Fischer, N. Smith. 2023. Growing your own feed: Expanding alfalfa use and improving beef cattle development in the Southeast. USDA NIFA Alfalfa Seed and Alfalfa Forage Systems Program. \$817,368. Auburn Subcontract: \$55,805.40.
3. Dubeux, J., C. Mackowiak, R. Seepaul, I. Small, I. Esquivel, S.P. Moraes, M. Wallau, H. Singh, C. Zhao, C. Fraisse, A. Albertin, S. George, N. DiLorenzo, R. Easterly, S. Hundemer, J. Loizzo, W. Weng, **K. Mullenix**, L. Dillard, A. Coffin, K. Pisarello, O. Pisani, Y. Liu, D. Geller, P. Dwivedi, L. Ngatia, F. Abrahamsen, J. Quansah, S. Punnuri. 2023. Conservation Hub for the Economic Empowerment of Rural Stakeholders – CHEERS. USDA NIFA SAS Program. \$10,000,000. Auburn Subcontract: \$541,474.64.
4. Silva, L.S., K. Kirk, J.J. Tucker, M.S. Castillo, **M.K. Mullenix**, S.L. Dillard, D. Russell, M. Wallau, and V. Niyigena. 2023. Development of a forage-livestock systems management curriculum for Extension educators in the Southeast. 2023 Southern SARE Professional Development Program. \$86,000.
5. Dillard, S.L., D. Held, A. Sanz, Z. Noel, **K. Mullenix**, B. Guertal, A. Rabinowitz, G. Bates, R. Nave, L. Silva, K. Kelley. 2021. A system approach to perennial forage management using biofertilization. USDA NIFA AFRI Foundational Knowledge of Agricultural Production Systems Program. \$697,000.
6. **Mullenix, M.K.**, S.P. Rodning, D.A. Tigue, M.F. Elmore, S.L. Dillard, J.T. Sawyer, M. Justice, N. Gurung, F. Abrahamsen, and C. Prevatt. 2021. Post-weaning beef management practices for limited-resource farmers: assessment of producer adoption opportunities and impacts on beef supply chain sustainability. USDA Southern SARE. \$355,000.
7. **Mullenix, M.K.**, S.P. Rodning, S.L. Dillard, J. Sawyer, M. Burns, W.K. Kelley, M. Runge, J. Carroll, R. Broadway, B. Bolt, B. Nelson, and N. Gurung. 2019. Systems-level management approaches for optimizing profit and improving resource efficiency in southeastern cow-calf operations. USDA NIFA AFRI IDEAS Program. Total: \$988,378.
8. **Mullenix, M.K.** S.J. Moisa, M. Elmore, G. Pate. 2018. Alabama Grown Preconditioning Center. Alabama Wheat and Feed Grain Producers. \$90,000.
9. Tucker, J.J. and **M.K. Mullenix**. 2019. Expanding utilization, management, and awareness of Alfalfa in the South: Extending grazing potential through fall stockpiling of alfalfa-bermudagrass. National Alfalfa Forage Alliance Checkoff Program. Total: \$74,000.
10. Moisa, S.J., R.B. Muntifering, **M.K. Mullenix**, S.P. Rodning, G. Richburg, and G. Alfaro. 2019. Pre-conditioning beef calves with rumen-protected methionine: immune and oxidative stress responses on neutrophils. AAES Seed Grant Program. Total: \$34,910.63.

11. **M.K. Mullenix**, S.L. Dillard, and L.W. Greene. 2018. Forage mineral profile mapping for Alabama. Westway Feed Products, LLC. \$32,000. Submitted May 15, 2018.
12. Dillard, S.L., A. Gamble, K. Balkcom, R. Prasad, and **K. Mullenix**. 2018. Impact of cover crop grazing on soil health in Alabama cropping systems. USDA Natural Resources Conservation Service – Alabama. Proposed Contract. \$200,227. Submitted May 18, 2018.
13. Dubeux, J., L. Sollenberger, N. DiLorenzo, C. Mackowiak, D. Wright, M. Wallau, C. Prevatt, D. Mayo, **K. Mullenix**, and L. Dillard. 2018. Optimizing species composition and defoliation management of cover crops to enhance adoption and ecosystem services of integrated crop-livestock systems. USDA Southern SARE Research and Education Grant Pre-Proposal. \$300,000. Submitted June 1, 2018.
14. Rivera, D., R. Lemus, and **K. Mullenix**. 2018. Evaluation of grazing potential and recovery of alfalfa incorporated into bahiagrass pastures under two grazing management programs. USDA Southern SARE Research and Education Grant Pre-Proposal. \$299,000. Submitted June 1, 2018.
15. Tucker, J.J., **M.K. Mullenix**, and C.G. Prevatt. 2016. Strategic use of alfalfa-bermudagrass mixtures for improving regional cow-calf forage system sustainability through research-on farm collaboratives. USDA Southern SARE Research and Education Grant. Total Award Request: \$250,000.
16. Bennett, K. and **M. K. Mullenix**. 2016. Use of native warm-season grasses overseeded with cool-season forages for extending the grazing season in the Alabama Black Belt region. USDA Southern SARE Graduate Student Grant. Total Award Request: \$8,476.
17. Missaoui, A., B. Anderson, J. Tucker, **M. K. Mullenix**, W.F. Anderson, A.L. Jacobson, and W. Hudson. 2016. Evaluation of integrated pest-management approaches for mitigating bermudagrass stem maggot pressure in the Deep South. USDA NIFA Crop Protection and Pest Management Competitive Grants Program. Total Award Request: \$325,000.
18. Boyd, C. E., L. Chiba, **M. K. Mullenix**. 2015. Identifying sustainability indicators for intensified livestock industries. World Wildlife Fund for Nature. \$40,000.
19. **Mullenix, M. K.**, J. Segers, C. Prevatt, L. Stewart, N. DiLorenzo. 2015. Nutritional strategies for decreasing risk in southeastern cow-calf operations. Southern Risk Management and Education Center. \$26,794.
20. DiLorenzo, N., C. Lamb, L. Stewart, D. Mayo, B. Beer, **K. Mullenix**, J. Dubeux, C. Prevatt, J. Johnson, J. Elmore, L. Vlake. 2015. Building the capacity for the next generation of livestock and forage producers. Southern Risk Management Education Center. \$49,518.
21. Johnson, J. M, and **M. K. Mullenix**. 2015. Pasture PRO: An experiential learning program for enhancing ecosystem services and sustainability of Alabama grazing lands. Auburn University Competitive Outreach Scholarships Grants Program. \$24,564.
22. Keyser, P., G. Bates, R. Nave, T. Mulliniks, K. Lewis, A. Griffith, C. Lituma, R. Kallenbach, B. Tracy, R. Smith, S. Schaeffer, P. Beck, B. Rushing, R. Lemus, J. Jennings, J. Andrae, D. Hancock, M. Castillo, M. Poore, J. Fike, **K. Mullenix**. 2015. USDA NRCS RCPP Grant. Total Request: \$9.8 million. Proposed Auburn Subaward: \$310,220. Accepted for full proposal. Grant was downsized and Auburn removed from proposal at this stage.
23. Dubeux, J. C., L.E. Sollenberger, J.M.B. Vendramini, N. DiLorenzo, C. Mackowiak, C. Prevatt, D. Mayo, E. Jennings, **K. Mullenix** and L. Stewart. 2014. Replacing Nitrogen

Fertilizer with Legumes to Reduce Input Costs and Increase Ecosystem Services in Southeastern Pasture-Livestock Systems. USDA Southern SARE Research and Education Grant. \$187,000.

Grants Pending

Smith, W.B., **M.K. Mullenix**, and S.L. Dillard. A multi-faceted approach to methane reduction and environmental sustainability of forage-based beef cattle operations. USDA NRCS Conservation Innovation Grant. \$1,285,977.

Donations and In-Kind Services

1. Henry County Gin. Headland, AL. Baled gin byproduct for beef cattle feeding study at Auburn University (\$500 value).
2. Dorhmann Enterprises. Hay preservative applicator. EV Smith Research Center Beef Unit. (\$2,500 value).
3. Barenbrug Seed Company. Cool-season annual grasses and legumes donated to the Wiregrass Research and Extension Center for overseeding bahiagrass study. (\$500 value).
4. Archer Daniels Midland Nutrition. AMP-T Free-Choice Cattle Mineral. 2 tons (\$1,600 value x 2 years = \$3,200). Donated to Wiregrass Research and Extension Center for beef cattle grazing trial.
5. Alabama Catfish Feed Mill, LLC. 16% Cattle Pellet. Donated \$1,750 worth of feed to the Black Belt Research and Extension Center (Marion Junction, AL) for winter feeding demonstration.
6. Archer Daniels Midland Nutrition. EndoFighter Complete Cattle Mineral. 2 tons (\$1,600 value). Tennessee Valley Research and Extension Center, Belle Mina, AL.
7. Ragan and Massey Seed, Inc. – Cool-season annual seed for Wiregrass Research and Extension Center and Black Belt Research and Extension Center – 2 year evaluation, \$2,500 payment for services in kind.
8. Wax Seed Company – Marshall ryegrass donation for Wiregrass Research and Extension Center – 2 year evaluation, \$300 payment for services in kind.
9. Kelly Ag Services – Florida 401 rye donation for Wiregrass Research and Extension Center – 2 year evaluation, \$1500 payment for services in kind.

Description of candidates scholarly program

My research program has a strong applied focus on the plant-animal interface in grazed ecosystems and least-cost supplementation approaches for beef cattle producers in Alabama. Well managed forage systems provide the foundation for productive soils, clean waterways, high-quality forage production, and improved year-round animal performance (i.e., health, reproduction, and animal product per unit input). A ‘one size fits all beef operations’ approach for educators and farmers is not appropriate because of the diverse eco-regions in the state that influence soil types, forage adaptation, water resources, climate variability, and economic considerations. Alabama has both temperate and sub-tropical regions, which influence climate responses and forage adaptation. Plant production and persistence in these systems is also driven by soil type, ranging from alkaline, poorly drained clays to sandy loams, which creates a unique mix of production environments and challenges for livestock producers within the state. My research efforts focus on defining region-specific nutritional management strategies that can be

shared among local, state, and federal partners to improve production, profitability, and environmental sustainability in beef systems. I work with animal scientists, agronomists, soil scientists, and economists to address the following research priority areas:

- 1) Using perennial grasses or cool-season annual grasses and legumes to extend the grazing season (in stockpiling systems for perennial grasses and as grazed cover crops or overseeded into perennial grass pastures for cool-season forages)
- 2) Strategic feed supplementation approaches for cow-calf and post-weaning management systems based on forage nutritive value dynamics
- 3) Harvest management, storage, and animal performance from conserved forages (primarily baleage and hay)

These applied research projects are informed by a feedback loop from Extension agents, producers, and research collaborators. Project outcomes provide direct on-farm management recommendations that are widely applicable to producers in the Southeast. Continuation of integrated research and Extension efforts with universities and private industry within the region will help facilitate future collaborations and broaden the impact of these programming efforts. The impact of my research program has been recognized on a regional, national, and international scale, and is closely aligned with my Extension programming efforts. Key accomplishments include:

- Four of my graduate students have received Top 10 Outstanding Graduate Student Awards from the Auburn University Graduate School.
- My most recent Ph.D. student (graduating in August 2023) was recognized as the American Society of Animal Science Young Scholar – a national award given to emerging scientists in the field of Animal Science.
- A 100% job placement rate of graduate students from my research program in agriculture industry, academia, and governmental positions.
- Invitations to speak at regional, national, and international conferences on beef cattle and forage systems management in warm-climate regions.
- Recognition from animal science, forage and commodity group professional organizations for research excellence.
- Contributions to invited review papers in journals on beef-forage research.
- Continuity in funding from year-to-year to support research endeavors through a variety of grants, contracts, commodity group funds and gifts to my program.
- Expansion of my research program to include post-doctoral fellows, who contribute widely to the animal science and forage disciplines through grants, publications, and program leadership.

C. Outreach

a. Commentary

1. Description:

Beef cattle operations are one of the largest livestock industries in Alabama, second only to poultry. It was estimated that there were 1.3 million head of beef cattle and calves in the state at the beginning of 2020 with a value of over \$2 billion. Improved forage and nutritional management strategies are needed among stakeholders to optimize land utilization, improve animal production and economic returns in these operations. I have led an effort to put together a science-based team for ensuring that our producers reach their full potential while enhancing

their natural resources. This multi-disciplinary team is called the “Alabama Beef Systems Extension Program”, which is part of the Sustainable Livestock Systems Plan of Work with the Alabama Cooperative Extension System.

The primary goals of the Alabama Beef Systems Extension Program are to:

- To provide educational programs on improved forage-based nutritional management strategies to livestock-forage operations in Alabama;
- To improve local and regional soil, water, plant, and ecosystem resources through awareness and practice changes related to beef cattle management systems.

The above objectives fit into a larger, overarching Animal Science and Forages Program Priority Team strategic plan where our team strives to improve the livelihood of forage and livestock farmers through direct education on best management practices, communication, and relationship building with stakeholders. This provides benefits to Alabama communities through stewardship of animal, land, and water resources, and improved food security.

Through efforts dedicated to this program, I have developed strong relationships with Extension specialists (both within the state, region and nationally), Animal Science and Forage Regional Extension Agents, and County Extension Coordinators. We work as a multi-state, multi-disciplinary team to develop programmatic priority areas and outputs that address real-world problems. I work closely with state commodity groups (Alabama Farmers Federation and the Alabama Cattlemen’s Association), federal agencies (USDA Natural Resources Conservation Service), the Alabama Department of Agriculture and Industries (Animal Health Division), and private industry (numerous collaborators including Cargill Animal Nutrition, America’s Alfalfa, Archer Daniels Midland Nutrition, Elanco, and Zoetis). Consistent communication with these clientele groups improves my development, delivery, and evaluation of program impacts. These groups continue to provide crucial funding that leads to extramural funding for my research and Extension efforts. They also provide the needed insight for development of effective, impactful research projects that reach from the farm to the consumer.

2. Mission: My program’s mission is to: 1) enhance on-farm management practices for beef cattle operations through improved forage-systems strategies; and 2) provide basic and advanced training through novel educational tools; and 3) develop applied research projects to solve problems encountered through clientele interaction.

3. Scholarship: Within the Alabama Beef Systems Extension Program, I create and deliver educational content to clientele (Extension agents and stakeholders) through scholarly outputs. These products include, but are not limited to, publications, presentations, event development, organization and delivery, applied demonstration projects, print and web-based educational tools that address plant-animal management strategies. These tools are also used to conduct in-service agent trainings as new technologies arise. My goal is to continue the development and refinement of educational support materials that can be used by the ACES Animal Science and Forage Team can use to enhance programs across the state. These programmatic resources may also serve as an educational model for other applicable programs within the region. I plan to continue to provide program leadership in the area of improved forage-based beef cattle management systems to our team. As the generational dynamic of our Extension team shifts, I

anticipate increased emphasis on in-service training for our agents, and one-on-one consultation to improve our ability to address real-time questions and issues from beef cattle producers.

4. Impact: Selected program impacts are listed below for the Alabama Beef Systems Extension Program:

Educational Resources: Both online and in-print resources were created on sustainable livestock management practices for use by internal and external stakeholders to address on-farm livestock-forage management questions. This includes online course work, digital publications, website content updates and additions, webinars, videos, and social media resources. On average, there are 11,650 contacts reached annually through website visits, online course participation, video views, and average social media post reach from the Alabama Beef Systems Extension Program. Curriculum developed through this program is either shared by the candidate or a member of the Animal Science and Forages Extension Team in an average of 85 meetings per year within the state. Livestock programs, educational resources, and events are highlighted on the beef page within the Alabama Extension website (www.alabamabeefsystems.com) and linked to social media for promotion. There has been increased interaction on our Facebook page since the onset of the COVID-19 pandemic (26% increase in likes/followers since 2020).

Programs for New and Beginning Farmers: An introductory level-based educational program was developed for stakeholders interested in learning more about the basics of beef cattle management systems in Alabama. The Beef Systems Short Course was designed to 1) introduce concepts related to best management practices in beef operations to producers and 2) to create awareness among producers about educational services offered through the Alabama Cooperative Extension System. Since the program began in fall 2019, 276 participants have enrolled in the course across the state, representing 55,634 acres and 29,318 head of cattle reached by this program. Eight topics were taught over a four-night time period (2 topics per meeting; 45 mins each). Topics included: Forages; Nutrition; Herd Health; Reproduction; Animal Identification, Genetics, and Records; Environmental Stewardship; Economics; Meat Science. A post-program survey was conducted to evaluate 1) potential change in knowledge regarding beef cattle management practices and 2) awareness of Extension resources. The majority of participants were part-time farmers (52%). Overall, producers were highly satisfied with the program with an overall rating of 4.7 out of 5 (Likert-type scale) across program topics, and 75% indicated they planned to adopt one or more of the management practices discussed in their operation within the next 12 months. Top management practices producers planned to implement included: 1) improved forage management (soil/forage testing and grazing management such as rotational stocking), 2) establishing a calving season, 3) record keeping, and 4) proper identification of livestock.

A notable outcome of this program is that 48% of participants reported that this was their first time attending and Extension program, demonstrating the reach of this program to new and beginning clientele. Total estimated economic impact of the program is \$728,528 (based on estimated savings reported per operation).

Self-Paced Online Learning: An extensive online course on the basics of beef cattle management was released in January 2016. There have been 2,055 students enrolled in the

course since this time with a 22% completion rate. Enrollment is voluntary, and the course generates a certificate of completion at the end for 8 hours of training credit in beef management.

Beef Basics: <https://www.aces.edu/blog/topics/beef/beef-basics-online-course/>

b. Activities and Products:

Major program accomplishments include:

- a. Developing a highly visible beef cattle Extension program in the Southeast through in-person and web-based programming efforts;
- b. Presence and visibility of this program on a national level, as demonstrated by invited presentations and publication outputs;
- c. Providing forage and nutrition assistance to cattle producers in cow-calf and stocker operations, as illustrated by my programming at the state, regional, and national levels;
- d. Innovative development and delivery of research-based resources that include face-to-face, print, and web-based sources including a beef Extension webpage, a comprehensive online beef management course and iBook, and the coordination of in-state and regional webinar series for training agents and producers;
- e. Providing project leadership, contributions and content expertise for multiple national Extension publications on forage management systems in the Southeast US;
- f. Authoring or contributing to statewide, regional or national Extension books/guides (n = 8), ACES ANR publications (n = 22 peer-reviewed since 2019), content pieces (n = 47) and popular press articles (n = 111);
- g. Publishing Extension educational methodology and experiences in peer-reviewed refereed journals (n = 7 publications);
- h. Intentional and defined goals for supporting Extension agents through the development of their scholarly content, and engaging Extension agents in professional development, as noted through peer-reviewed publications, abstracts, and presentations at regional and national professional development meetings with members of the Animal Science and Forages Extension Team (n = 32 of 51 Extension abstracts authored with Extension agent collaborators);
- i. Commitment to diversity through educational strategy and the creation of educational products for various learning styles, background and prior experiences in agriculture.

Instructional Activities: Educational programs, 30 minutes to 3 hour duration

Mullenix is the developer and presenter of the following educational programs. Typical duration for each program ranges from thirty minutes to three hours.

National, regional, and statewide invited presentations: 21

- **Mullenix, M.K.** 2023. The Case for Whole Cottonseed in Beef Cattle Rations. Cotton Inc. Beef Advisory Committee. Zoom. June 29, 2023.
- **Mullenix, M.K.** 2023. Legumes in Southeast Forage Systems. Georgia Cattlemen's Association Annual Convention and Tradeshow. Columbus, GA. March 9, 2023.
- **Mullenix, M.K.** 2023. Cattle Herd Health: Herd Nutrition Management. 2023 North Florida Beef Conference. Marianna, FL. February 8, 2023. Participants = 120.

- **Mullenix, M.K.** 2023. Considerations for Forage Selection and Management with Changing Weather Conditions. Mid-South Stocker Conference. Bowling Green, KY. February 22, 2023. Participants = 85.
- **Mullenix, M.K.** 2022. Alfalfa in the South Workshop. Management for Alfalfa in Bermudagrass Systems. Laurens County, South Carolina. May 5, 2022. Participants = 117.
- **Mullenix M.K.** 2022. Cotton Byproducts and the Cow Herd. Tishomingo County Cattlemen's Association. Iuka, MS. March 10, 2022. Participants = 42.
- **Mullenix, M.K.** 2022. Winter Nutrition for the Cow Herd. Beef Commodity Barn at the Sunbelt Ag Expo, Moultrie, GA. October 19, 2022. Participants = 39.
- **Mullenix, M.K.** 2020. Supplementation and Management Strategies for Stocker Cattle. North Carolina Cattlemen's Association Annual Convention and Tradeshow. February 28, 2020. Participants = 55.
- **Mullenix, M.K.** 2019. Forage Management Practices and Mineral Availability. Tennessee Forage and Grassland Council Annual Meeting. Jackson, TN. March 5, 2019.
- **Mullenix, M.K.** 2019. Rhizoma Peanut: Current Use and Factors Influencing Adoption in Alabama. North Florida Research and Extension Center. Quincy, FL. May 30, 2019.
- **Mullenix, M.K.** and S.L. Dillard. 2019. Hay Quality – Can You Test or Should You Guess? Sunbelt Ag Expo, Moultrie, GA. October 15 and 16, 2019.
- **Mullenix, M.K.** 2018. Improving animal performance with alfalfa. Alfalfa in the South Workshops. University of Georgia Extension. May 8-10, 2018. Tifton, GA.
- **Mullenix, M.K.** 2018. Stored forage – hay vs. baleage: Balancing costs and performance. UF/IFAS North Florida Beef Conference. February 14, 2018. Marianna, FL.
- **Mullenix, M.K.** 2017. Growing forages for grassfed beef production. Grassfed Beef Conference. Mississippi State University Extension Service. Dec. 7-8, 2017. Purvis, MS.
- **Mullenix, M.K.** 2016. Forages, grazing management, and supplementation – making it work. UF Beef Cattle Short Course. May 4- 6, 2016. Gainesville, FL.
- **Mullenix, M.K.** 2015. Forage decision-making in beef cattle production systems. UGA Tifton Beef Cattle Short Course. March 3, 2015. Tifton, GA. Participants = 127.
- **Mullenix, M.K.** 2015. Forage management and storage for enhanced production. American Angus Association Boot Camp. Marianna, FL. September 21, 2015. Participants = 44.
- **Mullenix, M.K.** 2015. Cool-season annual forage systems for beef cattle. 2015 Sunbelt Agricultural Expo. Moultrie, GA. October 20, 2015. Participants = 34.
- **Mullenix, M.K.** 2014. Forage management strategies for southeastern stocker producers. Deep South Stocker Conference. August 8, 2014. Mississippi State University, Meridian, MS. Participants = 38.
- **Mullenix, M.K.** 2014. Sweet Home Alabama: Perennial peanut has moved on. 14th Annual Perennial Peanut Producer's Association Field Day. June 6, 2014. University of Florida North Florida Research and Education Center, Quincy, FL. Participants = 110.
- **Mullenix, M.K.** 2014. Management strategies for enhancing beef cow-calf nutrition in Alabama. 23rd Annual Alabama Conference for Food Animal Veterinarians. Feb 7, 2014. Alabama 4-H Conference Center, Columbiana, AL. Participants = 40.

Total Presentations from 2014 to 2023: 160

1. Preconditioning Feeder Calves: Steps to Maintain Calf Performance Before and After Weaning. K. Mullenix and S.M. Justice. Alabama Farmers Federation Beef and Forage Summit. Montgomery, AL. January 27, 2023.
2. What Are My Forage Options? Alabama Farmers Federation Beef and Forage Summit. Montgomery, AL. January 27, 2023.
3. Management Options to Enhance Productivity and Sustainability. Bermudagrass Hay Growers Summit. February 14, 2023. Albertville, AL.
4. Beef Cattle and Use of Baleage in Cow-Calf Systems. Wiregrass Research and Extension Center Baleage Workshop. Headland, AL. March 31, 2023.
5. Interactive Management Systems Decisions. Alabama Beef Cattle Improvement Association Annual Meeting. Montgomery, AL. April 1, 2023.
6. Weaning Methods for Beef Calves. Sand Mountain Beef and Forage Field Day. Crossville, AL. April 25, 2023.
7. Yes, We Can Grow Alfalfa in the South. Alfalfa in the South Workshop. Elkmont, AL. April 26, 2023.
8. Alfalfa in the South Demonstration Program. Elkmont, AL. April 26, 2023.
9. Minerals Fact or Fiction. EV Smith Beef and Forage Field Day. Shorter, AL. May 5, 2023.
10. Nutrition to Support Artificial Insemination Success. Select Sires Artificial Insemination School. Auburn University Beef Teaching Unit. Auburn, AL. May 10, 2023.
11. Boots on the Ground. RLM Cattle. Cusseta, AL. September 15, 2023.
12. Alabama Grazing Academy. Coffee County Extension Office. New Brockton, AL. September 22, 2023.
13. Tennessee Valley Beef and Forage Field Day. Tennessee Valley Research and Extension Center, Belle Mina, AL. September 24, 2023.
14. Cotton Byproducts Meeting. Morgan County Extension Office. Hartselle, AL. November 7, 2023.
15. Beef Nutrition. 2022 Alabama Master Cattle Producers Training Program. January 22, 2022. Troy, Alabama.
16. Bull and Heifer Development. Alabama Farmers Federation Commodity Organizational Meeting. Montgomery, AL. February 8, 2022.
17. Cotton Byproducts and the Cow Herd. Alabama Food Animal Veterinarians Conference. February 11, 2022.
18. Baleage Nutrition. Wiregrass Research and Extension Center Beef-Forage Field Day. Headland, AL. March 17, 2022.
19. How Legumes Work in Forage Systems. Tennessee Valley Research and Extension Center Beef-Forage Field Day. April 26, 2022.
20. Auburn Animal Sciences – Beef and Forage Research Highlights. 2021. Alabama Farmers Federation Commodity Organizational Meeting. Montgomery, AL. February 2, 2021. Participants = 83.
21. Baleage Feeding Considerations. Wiregrass Research and Extension Center Baleage Field Day. Headland, AL. April 15, 2021. Participants – 15.
22. Using Cotton Gin and Peanut Byproducts for Backgrounding Beef Calf Diets. Wiregrass Research and Extension Center Beef-Forage Field Day. Headland, AL. March 25, 2021. Participants = 38.

23. Gossypol Concentration and Availability in Whole Cottonseed from Cotton Varieties in the Southeast. Alabama Cotton Commission Research Update. Zoom. Participants = 21. February 7, 2021.
24. Strategies for Improving Beef Cattle Producer Focus on Forage Management Practices to Reduce Feed Supplementation Inputs. Southern Beef Cattle and Forages Working Group Meeting. May 15, 2021. Destin, FL. Participants = 12.
25. Winter Annuals and Supplementation for the Cow Herd. Lee County Beef-Forage Field Day. July 30, 2021. Auburn University Beef Teaching Unit, Auburn, AL.
26. Cotton Byproducts and Supplemental Feeding for the Cow Herd. Cherokee County Cotton Gin, Centre, AL. August 31, 2021.
27. Stocking Rate and Grazing Arithmetic. Alabama Grazing Academy. Banks, AL. Sept. 9, 2021.
28. Forage-Livestock Hot Topics and Research Update. ALFA Commodity Organizational Meeting – Hay and Forage Committee. February 3, 2020. Participants = 51.
29. Preconditioning Systems and Management Practices for Beef Calves. 2020 Alabama Cattlemen’s Association Annual Convention. Montgomery, AL. February 15, 2020. Participants = 73.
30. Bermudagrass Hayfield End-of Season Management. Bermudagrass Hay Growers Summit. Cullman County Agriplex Facility. February 18, 2020. Participants = 16.
31. Cottonseed Assessment for Improvement of Beef Cattle Feed Recommendations. March 19, 2020. Zoom Virtual Meeting. Participants = 30.
32. Conserved Forage and Supplemental Feeding Strategies for Beef Operations in Alabama. March 13, 2020. Alabama Food Animal Veterinarians Conference. Auburn College of Veterinary Medicine, Auburn, AL.
33. Nutrition Programs for A.I. Success. Alabama Beef Cattle Improvement Association Artificial Insemination School. March 14, 2020. Program cancelled due to COVID-19 pandemic.
34. Managing the Last Harvest of the Season. June 5, 2020. Online Zoom Presentation. Participants = 15.
35. Alfalfa in the South Roundtable Discussion. May 6, 2020. Online Zoom Presentation. Participants = 43.
36. Beef-Forage Nutrition Outlook and Hot Topics. Alabama Farmers Federation Commodity Organizational Meeting. February 5, 2019. Montgomery, AL. Participants = 115.
37. Systems 360 Tennessee Valley Group – Backgrounding Demonstration Project Review. February 22, 2019. Belle Mina, AL. Participants = 26.
38. Getting the Most Out of My Hay Quality. Alabama Cattlemen’s Association Annual Convention and Trade Show. February 15, 2019. Birmingham, AL. Participants = 54.
39. Improving Your Hay Use Efficiency. Montgomery County Extension Beef Breakfast Meeting. March 1, 2019. Montgomery, AL. Participants = 16.
40. Beef-Forage Nutrition Hot Topics. West Alabama Cow-Calf Shortcourse. March 8, 2019. Black Belt Research and Extension Center, Marion Junction, AL. Participants = 30.
41. Lee County Hay Field Day – Getting the Most Out of My Hay Quality. North Auburn Beef Unit, Auburn, AL. March 22, 2019. Participants = 42.
42. Cowboy Math: Stocking Rate and Grazing Arithmetic. Alabama Grazing Academy. Chilton Research and Extension Center, Clanton, AL. April 17, 2019. Participants = 17.

43. Post-Weaning Calf Management. 2019 ACES-Clemson Extension Team Meeting. Talledega, AL. April 23, 2019. Participants = 35.
44. Dealing with Dry Conditions and Heat Stress in Beef Operations. Sand Mountain Systems 360 Working Group. Crossville, AL. June 10, 2019. Participants = 17.
45. Preconditioning Beef Calves – Nutritional Strategies. North Carolina Cattlemen’s Association Tour. Tennessee Valley Research and Extension Center, Belle Mina, AL. July 30, 2019. Participants = 45.
46. Annual Forages for Extending the Grazing Season. Agri-AFC, LLC Forage Short Course Training. Montgomery, AL. September 5, 2019. Participants = 50.
47. Grazing Management Practices. Alabama Grazing Academy. Atmore, AL. September 20, 2019. Participants = 21.
48. Supplementation and Ration Formulation Strategies. Alabama Grazing Academy. Atmore, AL. September 20, 2019. Participants = 21.
49. Backgrounding Systems and Management Practices for Beef Calves. Auburn University College of Veterinary Medicine Continuing Education Conference. Auburn, AL. October 17, 2019. Participants = 38.
50. Backgrounding Systems for Beef Calves. Tennessee Valley Research and Extension Center Beef-Forage Field Day. Belle Mina, AL. October 22, 2019. Participants = 28.
51. Winter Feeding Considerations for the Beef Cow Herd. Tallapoosa County Cattlemen’s Association. Dadeville, AL. November 12, 2019. Participants = 75.
52. Calf Backgrounding Practices – Demonstration Results. 2019 Alabama Forage Conference Pre-Conference Tour. Tennessee Valley Research and Extension Center, Belle Mina, AL. December 4, 2019. Participants = 68.
53. Mixing It Up with Alfalfa in the South. 2019 Alabama Forage Conference. Joe Wheeler State Park, Rogersville, AL. December 5, 2019. Participants = 105.
54. Alabama 4-H Beef It Up Program Webinar Series. Nutrition for Growing Beef Cattle. January 29, 2018. Participants = 8.
55. Alabama Farmers Federation Commodity Organizational Meeting – State Dairy Committee. Producing and Using High Quality Baleage. February 8, 2018. Participants = 32.
56. North Florida Beef Conference. Stored Forages – Hay vs. Baleage: Balancing Costs and Performance. February 14, 2018. Marianna, FL. Participants = 160.
57. Sand Mountain Pasture and Weeds Conference. A Systems Approach to Cattle Forage Management. Crossville, AL. February 22, 2018. Participants = 82.
58. Alabama Cattlemen’s Association Annual Convention. A SWOT Analysis of Nutrition for the Cow Herd. Huntsville, AL. March 8 and 9, 2018. Participants = 78.
59. Systems 360° Central Alabama Working Group. Pasture Management for the Spring-Summer Transition. Shorter, AL. March 23, 2018. Participants = 8.
60. Alfalfa in the South Workshops. Improving Animal Performance with Alfalfa. Tifton, GA. May 8-10, 2018. Participants = 26.
61. Alabama Farmers Federation State Beef Committee Meeting. Systems 360° Field Tour and Program Initiative. May 18, 2018. Participants = 15.
62. 2018 Deep South Stocker Conference. Forage Systems Research Update for Stocker Producers. Greensboro, AL. July 13, 2018. Participants = 115.
63. Alabama Agricultural Experiment Station Directors Meeting. Cattle Management Tools and Technologies. July 19, 2018. Participants = 30.

64. 2018 Auburn University Beef Cattle Conference. Forage Workshop. August 18, 2018. Participants = 30.
65. Master Cattle Producers Training Program. Forage Management for Beef Cattle. Ozark, AL. January 10, 2017. Participants = 37.
66. Master Cattle Producers Training Program. Nutrition Basics. Ozark, AL. January 12, 2017. Participants = 35.
67. Alabama Cattlemen's Association Annual Convention. Forage Recovery and Management Following the Drought. February 9, 2017. Participants = 91.
68. Spring Cow-Calf Shortcourse. Nutrition and Forage Management Following Drought Years. Black Belt Research and Extension Center, Marion Junction, AL. March 3, 2017. Participants = 24.
69. Alabama Conference for Food Animal Veterinarians. Current Research Questions in Beef-Forage Production Systems. Columbiana, AL. March 10, 2017. Participants = 45.
70. Systems 360 Working Group. Grazing Management and Nutrient Cycling On the Farm. Somerville, AL. March 21, 2017. Participants = 25.
71. Auburn University College of Veterinary Medicine Bovine Practitioners Association. Research Initiatives in Beef-Forage Production at Auburn University. Auburn, AL. April 4, 2017. Participants = 34.
72. The Spring Green Up: Forage Field Day. Pasture Condition Scoring. April 8, 2017. Lineville, AL. Participants = 18.
73. Tennessee Valley Research and Extension Center Beef-Forage Field Day. Economics of Creep Feeding and Preconditioning Beef Calves. April 25, 2017. Belle Mina, AL. Participants = 57.
74. USDA NRCS Ecology of Grazing Lands Training Course. Animal Conditions in Grazing Systems. May 3, 2017. Shorter, AL. Participants = 16.
75. Baleage Producer Working Group. Preconditioning Beef Calves with Baleage and Co-Product Feeds. May 23, 2017. Participants = 24.
76. Stocker Cattle Short Course. Nutrition for Growing Stocker Cattle in Alabama. July 14, 2017. Greensboro, AL. Participants = 85.
77. Alabama Farmer's Federation Commodity Conference. Forage Management Systems – Making It Work. August 4, 2017. Birmingham, AL. Participants = 102.
78. Auburn Beef Cattle Conference. Déjà vu: Nutritional Management Strategies for When the Drought Returns. August 12, 2017. Auburn, AL. Participants = 70.
79. Women in Agriculture Workshop. Body Condition Scoring Beef Cattle and Forage Supplementation. September 8 and 9, 2017. Belle Mina, AL. Participants = 25.
80. Beef Basics. Nutrition for the Cow Herd. September 14, 2017. Dadeville, AL. Participants = 15.
81. Troup County Cattlemen's Association. Forage Systems for Fall. September 19, 2017. Lagrange, GA. Participants = 28.
82. Nutrition Decision Tools for Cattle Producers. September 26, 2017. Prattville, AL. Participants = 16.
83. Montgomery County Extension Office Beef Breakfast Meeting. Small Grain/Ryegrass Mixtures for Wintering Beef Cattle. October 6, 2017. Montgomery, AL. Participants = 11.
84. Sunbelt Ag Expo. The Myth of the 1,000 lb Cow and 1,000 lb Hay Bale. October 17, 2017. Moultrie, GA. Participants = 32.

85. Fall Beef-Forage Update Meeting. EV Smith Research Center. November 3, 2017. Shorter, AL. Participants = 17.
86. USDA NRCS-Alabama and ACES Interagency Training. Tennessee Valley Research and Extension Center. Stockpiling tall fescue and meeting animal needs. November 8, 2017. Belle Mina, AL. Participants = 28.
87. Herdbuilder Consignor Meeting. Nutrition for Developing and Maintaining Replacement Heifers. Black Belt Research and Extension Center. November 15, 2017. Marion Junction, AL. Participants = 22.
88. 2017 Pre-Conference Tour – Wiregrass Research and Extension Center. Alfalfa-Bermudagrass Mixtures. November 28, 2017. Headland, AL. Participants = 72.
89. 2017 Alabama Forage Conference. Alfalfa in Bermudagrass: Success Stories in the Southeast. November 29, 2017. Eufaula, AL. Participants = 84.
90. Grassfed Beef in the Southeast. Growing Forages. December 7, 2017. Purvis, MS. Participants = 31.
91. BEEF U. Five Keys to Winter Management of the Cow Herd. December 9, 2017. Auburn, AL. Participants = 11.
92. Montgomery County Extension Office. Beef Breakfast Meeting. Weather and Its Impact on Beef Cattle Management Systems. January 15, 2016. Participants = 18.
93. Alabama Farmer's Federation Commodity Organizational Meeting. Nutritional Requirements for Reproduction. Montgomery, AL. February 2, 2016. Participants = 107.
94. Auburn College of Veterinary Medicine Beef Rotation. Beef Cattle Extension Resources for Veterinarians. Auburn, AL. February 5, 2016. Participants = 10.
95. Alabama Cattlemen's Association Convention – Cattlemen's College. Using web-based decision tools for cattlemen. Birmingham, AL. February 26, 2016. Participants = 38.
96. 2016 Spring Cow-Calf Short Course. Baleage production and use in beef cattle operations. Greensboro, AL. March 11, 2016. Participants = 72.
97. USDA NRCS Ecology of Grazing Land Systems Short Course. Grazing management (in-classroom and field tours). EV Smith Research Center. Shorter, AL. March 23 – 25, 2016. Participants = 28.
98. Lawrence County Cattlemen's Association Meeting. The use of baleage in beef cattle systems. Lawrence County Extension Office. Moulton, AL. March 28, 2016. Participants = 56.
99. Master Cattlemen 101 Program. Nutrition Basics. Fayette County Extension Office. Fayette, AL. March 29, 2016. Participants = 11.
100. Practical Ranch Management Workshop. Nutrient requirements, hay quality, and supplementation. Fayette County Extension Office. Fayette, AL. April 11, 2016. Participants = 18.
101. Practical Ranch Management Workshop. Nutrient requirements, hay quality, and supplementation. ALFA Living Center. Livingston, AL. April 12, 2016.
102. Lee County Hay and Forage Field Day. Ryegrass haylage: a growing interest. Lazenby Farms. Opelika, AL. April 21, 2016. Participants = 68.
103. Tennessee Valley Research and Extension Center Beef-Forage Field Day. Belle Mina, AL. April 26, 2016. Participants = 66.
104. Women in Agriculture Hands-On Workshop. Black Belt Research and Extension Center, Marion Junction, AL. May 13, 2016. Participants = 38.
105. Dealing with Hot, Dry Conditions in Beef Operations. Systems 360° Working Group. Webinar. Belle Mina, AL. July 21, 2016. Participants = 41.

106. Tall Fescue Toxicosis: Animal Perspectives. USDA NRCS/ACES Ecology of Grazing Land Systems Workshop. Marion Junction, AL. November 28, 2016. Participants = 32.
107. Master Cattle Producers Training Program. Nutrient Requirements of Beef Cattle. Clio, AL. Jan 13, 2015. Participants = 50.
108. Tallapoosa County Cattlemen's Association Meeting. Forage quality and animal performance in winter feeding systems. Dadeville, AL. Jan 29, 2015. Participants = 67.
109. Alabama Cattlemen's Convention. Wintering the brood cow herd with quality forages. Huntsville, AL. February 21, 2015. Participants = 72.
110. Pasture and Row Crop Meeting. Pasture management systems. Centre, AL. February 24, 2015. Participants = 121.
111. Wiregrass Research and Extension Center Field Day. Winter management systems. Headland, AL. March 6, 2015. Participants = 37.
112. 2015 Forage Workshop. RFQ and You – Interpreting a forage analysis. EV Smith Research Center, Shorter, AL. March 13, 2015. Participants = 21.
113. Cleburne County Cattlemen's Association Quarterly Meeting. Transitioning the cowherd from winter to spring. Heflin, AL. March 19, 2015. Participants = 56.
114. Stocker Cattle Field Day. Forage quality and animal nutrient requirements – receiving management. Moundville, AL. March 21, 2015. Participants = 48.
115. ACES Beef Cattle Meeting. Transitioning the cowherd from winter to spring. Russellville, AL. March 23, 2015. Participants = 9.
116. Master Cattlemen 101 Program. Beef cattle nutrition basics. Florence, AL. March 24, 2015. Participants = 32.
117. Spring Cow-Calf Short Course. Forage quality and supplementation strategies. Linden, AL. March 26, 2015. Participants = 54.
118. Shelby County Cattle Production Program. Understanding forage quality. Columbiana, AL. April 7, 2015. Participants = 38.
119. Practical Ranch Management Workshop: Interpreting a forage analysis and nutrient requirements of beef cattle. Black Belt Research and Extension Center, Marion Junction, AL. April 17, 2015. Participants = 48.
120. Practical Ranch Management Workshop: Interpreting a forage analysis and nutrient requirements of beef cattle. EV Smith Research Center, Shorter, AL. April 18, 2015. Participants = 54.
121. Practical Ranch Management Workshop: Interpreting a forage analysis and nutrient requirements of beef cattle. Tennessee Valley Research and Extension Center, Belle Mina, AL. April 28, 2015. Participants = 52.
122. Montgomery County Beef Breakfast meeting. Management tips for the summer. Montgomery, AL. June 5, 2015. Participants = 22.
123. Deep South Stocker Conference. Pre-Conference Tour at the Alabama Cattlemen's Association. Montgomery, AL. August 6, 2015. Participants = 75.
124. Deep South Stocker Conference. Grazing and Supplementation Panel Discussion. Montgomery, AL. August 7, 2015. Participants = 130.
125. Auburn University Beef Cattle Conference. 2015 Beef Cattle Conference. Extension tools are only a click away. August 8, 2015. Participants = 75.
126. Troup County Cattlemen's Association Meeting. Focus on Fall – Forages, Nutrition and Your Herd. Lagrange, GA. August 18, 2015. Participants = 33.
127. Farm Foundations Veterinary Feed Directive Meeting. Panel Discussion. Hanceville, AL. August 25, 2015. Participants = 55.

128. Coweta County Cattlemen's Association Meeting. Focus on Fall – Extending the grazing season. Newnan, GA. August 31, 2015. Participants = 43.
129. Montgomery Stockyards. Meet, greet, and formulate – ration balancing. Montgomery, AL. September 14, 2015. Participants = 24.
130. Wintering the Beef Cattle Herd. Leesburg, AL. October 8, 2015. Participants = 19.
131. Nutrition for the Beef Cattle Herd. Jasper, AL. November 17, 2015. Participants = 35.
132. Spotlight on the Wiregrass: Pre-Conference Tour. Headland, AL. December 9, 2015. Participants = 75.
133. Alabama Forage and Grassland Conference. Grass for the Gap – Extending the Grazing Season. Eufaula, AL. December 10, 2015. Participants = 126.
134. Alabama Farmer's Federation Commodity Hay and Forage Meeting. 2014. Use of perennial peanut for extending the grazing season in south Alabama. Montgomery, Alabama. February 5, 2014. Participants = 60.
135. Alabama Cattlemen's Convention. Options for wintering brood cows. Montgomery, Alabama. February 19, 2014. Participants = 120.
136. Spring Cow-Calf Management School. Feeding alternatives for beef cattle. Selma, Alabama. March 20, 2014. Participants = 51.
137. Master Cattlemen 101 Program: Beef nutrition for the beginning producer. Belle Mina, Alabama. March 25, 2014. Participants = 26.
138. Monroe County Cattlemen's Association. Forage and Nutritional Management for Beef Cattle. The Lasting Effects of Winter on Brood Cows. Monroeville, Alabama. April 1, 2014. Participants = 45.
139. E.V. Smith Dairy Field Day: Current Issues with the Veterinary Feed Directive for Cattle Producers. April 17, 2014. Shorter, Alabama. Participants = 35
140. Practical Ranch Management Workshop: Forage Quantity and Quality: Understanding Beef Cattle Nutrient Requirements. April 26, 2014. Participants = 63.
141. E.V. Smith Haylage Workshop: The Use of Haylage in Beef Cattle Systems. Shorter, Alabama. May 2, 2014. Participants = 20.
142. Haylage Field Day: Feeding baleage to beef cattle. May 13, 2014. New Brockton, Alabama. Participants = 32.
143. Haylage Field Day: Feeding baleage to beef cattle. May 15, 2014. Headland, Alabama. Participants = 36.
144. Pickens County 4-H Quiz Bowl Team Training: Beef Systems Trivia. May 16, 2014. Gordo, Alabama. Participants = 9.
145. Montgomery County Cattlemen's Breakfast Meeting. Considerations when using baleage in beef cattle systems. June 6, 2014. Montgomery, Alabama. Participants = 25.
146. 2014 Auburn University Beef Cattle Conference. The effect of forage programs on beef cattle performance and productivity. June 14, 2014. Auburn, Alabama. Participants = 25.
147. Russell County Cattlemen's Association Meeting. Stockpiled forages and winter annuals: alternatives for winter feeding. July 31, 2014. Crawford, Alabama. Participants = 35.
148. Alabama Farmer's Federation Commodity Conference. Nutritional considerations for Alabama cattle operations. August 9, 2014. Huntsville, Alabama. Participants = 72.
149. Alabama Farmer's Federation Commodity Conference. Supplementation considerations for Alabama Cattlemen. August 9, 2014. Huntsville, Alabama. Participants = 72.
150. Lee County Cattlemen's Association Summer Meeting. Stockpiled bermudagrass for beef cattle. August 14, 2014. Auburn, Alabama. Participants = 37.

151. Central Alabama Beef-Forage Update. Beef Systems Considerations for Fall. September 19, 2014. Shorter, Alabama. Participants = 61.
152. Sunbelt Ag Exposition Beef Educational Series. Cool-season forage systems for beef cattle. October 15, 2014. Moultrie, Georgia. Participants = 51.
153. Sunbelt Ag Exposition Beef Educational Series. Wintering the brood cow herd with quality forages. October 15, 2014. Moultrie, Georgia. Participants = 71.
154. Madison County Cattlemen's Association Educational Meeting. Energy requirements for brood cows in the winter months. October 20, 2014. Participants = 51.
155. Cullman County Extension Office. Energy requirements for brood cows in the winter months. October 21, 2014. Participants = 14.
156. Master Cattlemen 101 Program. Back to Basics: Nutritional Concepts for the Beginner Producer. October 21, 2014. Participants = 55.
157. Chamber's County Cattlemen's Association Educational Meeting. Winter management strategies for cattlemen. October 30, 2014. Participants = 33.
158. Forage Focus Webinar Series. Forages and Supplementation – Practices, Perspectives, and Practicality. Online. November 12, 2014.
159. Washington County Cattlemen's Association Educational Meeting. Managing beef cattle during the winter months. November 14, 2014. Participants = 43.
160. Cattle Production Meeting Series: Etowah County. Winter supplementation strategies for the beef cattle herd. December 11, 2014. Participants = 34.

Statewide Workshops: 10

1. Alabama Forage Conference. One-Day Educational Conference. Online – Zoom. December 1, 2021. (co-coordinator and presenter).
2. Alabama Forage Conference. One-Day Educational Conference. Joe Wheeler State Park. Rogersville, AL. November 30, 2019. (co-coordinator and presenter, 89 participants).
3. Alabama Forage Conference Pre-Conference Tour. Tennessee Valley Research and Extension Center, Belle Mina, AL. November 29 and 30, 2019. (co-coordinator and presenter, 39 participants).
4. Deep South Stocker Conference. Greensboro, AL. July 13, 2018. (coordinator and presenter, 115 participants).
5. Alabama Forage Conference. Lakepoint State Park, Eufaula, AL. November 28, 2017. (coordinator and presenter, 84 participants)
6. Alabama Forage Conference Pre-Conference Tour. Wiregrass Research and Extension Center, Headland, AL. November 28, 2017. (coordinator and presenter; 72 participants)
7. Deep South Stocker Conference. Montgomery, AL. August 6 and 7, 2015. (coordinator and presenter; 130 participants)
8. Alabama Forage and Grassland Pre-Conference Tour. Wiregrass Research and Extension Center, Headland, AL. December 9, 2015. (coordinator and presenter; 70 participants)
9. Alabama Forage and Grassland Conference. Lakepoint State Park, Eufaula, AL. December 9 and 10, 2015. (co-coordinator and presenter; 117 participants)
10. Soil and Forage 101 Workshop. Auburn University Beef Cattle Conference. Auburn, AL. June 13, 2014. (coordinator and presenter; 38 participants).

Field Days: 21

1. Tennessee Valley Beef and Forage Field Day. Belle Mina, AL. October 24, 2023. (presenter).

2. EV Smith Beef and Forage Field Day. Shorter, AL. May 5, 2023. (presenter)
3. Alfalfa in the South Workshop. Elkmont, AL. April 26, 2023. (co-coordinator and presenter)
4. Sand Mountain Beef and Forage Field Day. Crossville, AL. April 25, 2023. (presenter)
5. Wiregrass Research and Extension Center Beef-Forage Field Day. Headland, AL. March 16, 2023. (presenter)
6. EV Smith Research Center Beef-Forage Field Day. Shorter, AL. Systems Management Decisions. May 13, 2022. (presenter).
7. Tennessee Valley Beef-Forage Field Day. April 26, 2022. Belle Mina, AL. (co-coordinator and presenter).
8. Wiregrass Research and Extension Center Beef-Forage Field Day. Headland, AL. March 17, 2022.
9. Tennessee Valley Beef-Forage Field Day. May 13, 2021, Elkmont, Alabama (co-coordinator and presenter, 38 participants).
10. Wiregrass Baleage Field Day. April 15, 2021. Headland, AL (presenter, 18 participants).
11. Wiregrass Research and Extension Center Beef-Forage Field Day. March 26, 2021. Headland, AL (co-coordinator and presenter, 42 participants).
12. Wiregrass Research and Extension Center Beef-Forage Field Day. Virtual Field Day. March 20, 2020, Headland, AL. (co-coordinator and presenter).
13. Alfalfa in the South Workshop. Multi-State Extension Program. Pike County Cattlemen's Park. Troy, AL. (coordinator and presenter, 54 participants).
14. Tennessee Valley Research and Extension Center Beef-Forage Field Day. Belle Mina, AL. April 25, 2017. (coordinator and presenter; 57 participants).
15. Tennessee Valley Research and Extension Center Beef Systems Field Day. Belle Mina, AL. April 26, 2016. (coordinator and presenter; 60 participants).
16. Wiregrass Research and Extension Center Beef-Forage Field Day. Headland, AL. March 6, 2015. (coordinator and presenter; 70 participants).
17. EV Smith Fall Beef-Forage Update. April 10, 2016. Shorter, AL (co-coordinator and presenter; 31 participants).
18. EV Smith Fall Beef-Forage Update. September 11, 2015. Shorter, AL (co-coordinator and presenter; 34 participants).
19. Practical Ranch Management Workshop: Interpreting a forage analysis and nutrient requirements of beef cattle. Black Belt Research and Extension Center, Marion Junction, AL. April 17, 2015. Participants = 48.
20. Practical Ranch Management Workshop: Interpreting a forage analysis and nutrient requirements of beef cattle. EV Smith Research Center, Shorter, AL. April 18, 2015. Participants = 54.
21. Practical Ranch Management Workshop: Interpreting a forage analysis and nutrient requirements of beef cattle. Tennessee Valley Research and Extension Center, Belle Mina, AL. April 28, 2015. Participants = 52.
22. Black Belt Cow-Calf Short Course. Marion Junction, AL. March 3, 2017. (co-coordinator and presenter; 28 participants).
23. Practical Ranch Management Workshop. Moulton, AL April 26, 2014. (co-coordinator and presenter; 40 participants).
24. Systems 360° Working Group. 5 meetings in North Alabama. August 2016 – March 2017. (coordinator and presenter; 26 participants).

Online Educational Trainings: 80

- a) Celebrating National Forage Week – Resource Overview. American Forage and Grassland Council Affiliate Council Meeting. Zoom Workshop. May 17, 2022.
- b) Supplementation Strategies for Southern Forages. American Forage and Grassland Council Meeting: Southeast Hay Contest Workshop. January 19, 2022.
- c) Alfalfa in the South Virtual Series. Web archive of 7 educational seminars on alfalfa management in the Southeast US. Released May 2020. (co-coordinator with post-doctoral fellow L. Silva). <https://www.aces.edu/blog/topics/forages-livestock/alfalfa-in-south/>.
- d) Alfalfa in the South Roundtable. May 13, 2020.
<https://www.youtube.com/watch?v=67N4JktUygg>.
- e) American Society of Animal Science Southern Section Extension Agent Training Series. **25 webinars** on livestock and forage management – regional series for extension agent training in the Southeast. August 2016 – January 2017. (coordinator and presenter in series). Webinars archive on www.secattleadvisor.com.
- f) 2018 Animal Science and Forage Webinar Series. **11 webinars** on beef-forage management for extension agents and livestock producers. (coordinator and presenter in series).
- g) 2017 Animal Science and Forage Webinar Series. **11 webinars** on beef-forage management for extension agents and livestock producers. (co-coordinator and presenter in series).
- h) 2016 Animal Science and Forage Webinar Series. **11 webinars** on beef-forage management for extension agents and livestock producers. (co-coordinator and presenter in series).
- i) 2015 Forage Focus Webinar Series. **10 webinars** on beef-forage management for extension agents and livestock producers (co-coordinator and presenter in series).

Overall Reach Through Meetings and Webinars: Based on the meetings conducted above, since 2014, 156 face-to-face workshops have been conducted and overall estimated 6300+ individuals trained as part of the Alabama Beef Systems Extension Program through in-person or online program delivery methods. Workshop audiences included beef and hay/forage farmers, cooperative extension agents, federal technical service personnel, industry partners, and other interested citizens.

Demonstration Projects: 11

- 1. Private Farms. Alfalfa in Bermudagrass – Alfalfa in Bermudagrass – Collaborative effort with America's Alfalfa and USDA NIFA grant to establish alfalfa-bermudagrass sites in Alabama for improving forage quality and production in conserved forage systems. Four demonstration sites are established at private farms in Alabama. Fall 2018- Present.
- 2. Private Farms. Stockpiling bahiagrass – three on-farm locations for evaluation of various stockpiling period lengths in the fall months. Fall 2021-Fall 2023.
- 3. Wiregrass Research and Extension Center, Headland, AL. Overseeding bahiagrass pastures with cool-season annuals. Fall 2021.
- 4. Tennessee Valley Research and Extension Center, Belle Mina, AL. Farm-scale demonstration of value-added management practices for weaned beef calves in AL. 3-yr evaluation. 2018-2020.

5. Wiregrass Research and Extension Center, Headland, AL. Backgrounding beef calves using row crop byproducts from cotton and peanuts. 60-day backgrounding period with weaned calves from the research station. Summer 2020.
6. Wiregrass Research and Extension Center, Headland, AL. Limit-grazing evaluation of cool-season grass mixtures for cow-calf pairs (early- vs. late-planted pastures consisting of forage rape, rye, oats, and crimson clover as grazed cover crops. Fall 2016 – Spring 2018.
7. Black Belt Research and Extension Center, Marion, Junction, AL. 90-day feeding evaluation of commercial supplemental feed and byproduct-based rations for hay-based beef cattle diets. Fall 2016 – Spring 2017.
8. Sand Mountain Research and Extension Center, Crossville, AL. Late-Planting of Annual Ryegrass in Northern Alabama. Fall 2016 – Spring 2017.
9. Black Belt Research and Extension Center, Marion Junction, AL. Stockpiling tall fescue with four regionally available nitrogen fertilizer sources. Fall 2016.
10. Black Belt Research and Extension Center, Marion Junction, AL. Overseeding bahiagrass stubble height residual effects on forage production of small grains and annual ryegrass. Fall 2016.
11. Black Belt Research and Extension Center, Marion Junction, AL. Cool-season annual forage garden. Fall 2016.

In-Service Trainings: 23

Note: Some trainings were delivered across multiple dates during the calendar year.

1. North Alabama Extension Agent Focus Group – Nutrition Training and Discussion. April 26, 2023. Elkmont, AL.
2. 2023 Livestock and Forage Research Update Series. Coordinator. Schedule bi-monthly webinars on recently completed Auburn University College of Agriculture research projects for livestock and forage-based systems. n = 2 (to date); 30-minute virtual trainings.
3. Nutrition Basics. 2022. USDA Southern SARE Forage In-Service Training Course. Alabama 4-H Center, Columbiana, AL. 1 hour. April 15, 2022.
4. 2022 Livestock and Forage Research Update Series. Coordinator. Scheduled bi-monthly webinars on recently completed Auburn University College of Agriculture research projects for livestock and forage-based systems. n = 6; 30-minute virtual trainings.
5. Alfalfa in Bermudagrass Research, Economics and Success Stories. Webinar. September 25, 2019. Archived on www.secattleadvisor.com (coordinator and presenter in collaboration with UGA and UF).
6. Systems 360 Program Feedback and Beef Systems Short Course Planning Session. March 11, 2019. Chilton Research and Extension Center, Clanton, AL.
7. Beef Systems Short Course and Calving Simulator Model In-Service Training. August 8, 2019. Alabama Cattlemen's Association. Montgomery, AL.
8. Beef Systems Short Course Feedback and Planning Session. November 22, 2019. Chilton Research and Extension Center, Clanton, AL.
9. Facilitating Group Discussions – Preparation for the Systems 360° Working Group Program. 1 hour. July 25, 2018. Zoom Videoconference Training.
10. Development and implementation of the Systems 360° Working Group Program: A Statewide Educational Initiative for Alabama Cattle Producers. 6 hours. April 9, 2018. Clanton, AL.

11. Winter Management of Beef Cattle During Drought Years. Mullenix, M.K. 45 minutes. Webinar. November 17, 2016. Auburn, AL.
12. USDA Natural Resources Conservation Service Ecology of Grazing Land Systems/ ACES Joint Training Series. 4 hands-on, two-day workshops. March 2016 – December 2017.
13. 2016 ACES/Clemson Animal Science and Forage Team Spring Training. Nutrition Decision Tools in the Southeast. 45 mins. April 7, 2016. Clemson Outdoor Training Laboratory, Clemson, SC.

2. Technical Assistance. *List each type of assistance (e.g. job classification), the clientele, the contribution, and the number of times provided.*

Number of phone calls per week: 15 to 20

Number of emails per week: 50 to 80

Number of site visits per year: 10 to 15

Clientele for each type of assistance includes Alabama Cooperative Extension System agents, farmers, local and state government representatives, private industry personnel, and both formal and non-formal educators. Specific contributions include assessment of management scenarios and making recommendations to clientele regarding forage management, production, and nutritional strategies in beef operations. These questions are addressed using research-based resources developed through the Alabama Cooperative Extension System.

3. Outreach Publications

Books:

Note: Project contributions and chapter development are listed in the description of the candidate's role for each product.

National

1. **Mullenix, M.K.**, S.L. Dillard, L.S. Silva, J. Dubeux, J.J. Tucker, L.L. Baxter, C. Prevatt, E. Santos, and L. Garcia. 2023. Forage Legumes in the Southeast Booklet. The Forage and Grassland Foundation. Lexington, KY.
 - Candidate served as project leader for booklet development, contributed content to the introduction, management systems, and ecosystem services chapters, and served as overall content editor.
2. Tucker, J.J., **M.K. Mullenix**, L.S. Silva, C.G. Prevatt, D. Samac, K. Kesheimer, and M. Tomaso-Peterson. Alfalfa bermudagrass management guide. National Alfalfa Forage Alliance Publication. <https://www.alfalfa.org/pdf/AlfalfaBermudagrass-LowRes.pdf>.
- 1) Candidate served as project leader for forage management section. She served as the content editor and project facilitator for printing/coordination with the National Alfalfa Forage Alliance.

Regional

3. Silva, L.S., S.L. Dillard, **M.K. Mullenix**, J.J. Tucker, A.C.C.M. Vasco, M.O. Wallau, D.P. Russell, W.K. Kelley, M. Runge, K.A. Kesheimer, A. Gamble, R. Prasad, M. Elmore, M. Burns, K. Stanford, C.L. Wickens, W. Sawadgo, C. Heaton, and V. Niyigena. 2022. Concepts and research-based guidelines for forage-livestock systems in the Southeast region. USDA Southern SARE Educational Guide.
<https://projects.sare.org/information-product/concepts-and-research-based-guidelines-for-forage-livestock-systems-in-the-southeast-region>.
1. Candidate contributed to forage management practices chapter, and led chapter development on forage quality.

State Resources

4. **Mullenix, M.K.**, S.L. Dillard, and L.S. Silva. 2021. Alabama Extension Animal Science and Forages Demonstration Guide. 18 p. resource guide with hands-on educational demonstration projects which can be used by Extension agents as part of forage-livestock programs.
5. Dillard, S.L., L.S. Silva, **M.K. Mullenix**, A. Rabinowitz, A. Gamble, D. Russell, J. Sawyer, K. Kesheimer, K. Kelley, M. Runge, R. Prasad, and S. Rodning. 2021. Alabama Forages Handbook.
- 2) Candidate contributed content to development of a quick reference guide book for forage growers in Alabama. 2,000 copies to be distributed among Extension agents and commodity groups in fall 2021. Mullenix wrote chapters for forage species and forage quality sections.
6. **Mullenix, M.K.**, S.P. Rodning, L.A. Kriese-Anderson, S.L. Dillard, M. Elmore, W.K. Kelley, B. Goodrich, M. Runge, R. Prasad, K. Stanford. 2018. Alabama Beef Handbook.
- 3) Candidate served as project coordinator and lead editor for quick reference guide book for beef producers in Alabama. 2,500 copies distributed among Extension agents and commodity groups in fall 2018. Mullenix wrote nutrition chapter.
7. **Mullenix, M.K.**, E. Brantley, M. Elmore, S. Rodning, J. Elmore, G. Thompson, L. Dillard, W. Prevatt, C. Prevatt, and K. Kelley. 2017. Beef Systems Management Handbook. 28 pages.
- 4) Candidate served as lead project coordinator and editor. She contributed subject-matter expertise to water, forages, nutrition, and beef herd management sections.
8. **Mullenix, M. K.**, J. Johnson, S. Rodning, L. K. Anderson, M.L. Marks, and A. Tigue. 2016. Beef Basics Handbook. E-publication. Available for download through Apple iTunes Store (<https://itunes.apple.com/us/book/beef-basics/id1084045924?mt=11>). 92 pages.
- 5) Candidate served as lead project coordinator and editor for online book. She contributed subject-matter expertise to forages and grazing management chapters, and wrote the nutrition chapter for the publication.

Creative Works (3)

- 1) Silva, L.S., **M.K. Mullenix**, and J.J. Tucker. 2021. Alfalfa-Bermudagrass Mixture Management Calendar. 3 p.
 1. Candidate contributed content to reference guide for establishment and management of alfalfa-bermudagrass mixtures, fold-out poster-style resource for use by forage growers.
- 2) **Mullenix, M.K.**, M. Elmore, and S.P. Rodning. 2018. ANR-0968-A Alabama Beef Systems Management Calendar (Text Version). 14 p. <http://www.aces.edu/pubs/docs/A/ANR-0968-A/ANR-0968-A.pdf>.
- 3) **Mullenix, M.K.**, M.F. Elmore, and S.P. Rodning. 2018. Alabama Beef Systems Management Calendar (Wall Calendar and Reference Guide). 32 p. <http://www.aces.edu/pubs/docs/A/ANR-2418/ANR-2418.pdf>.
 - Highlighting management tips for fall, spring, and winter calving herds for each month of the year. Reported impact data for Alabama Beef Extension programs through producer testimonials.

Worksheets/Budget Tools (6)

Note: Candidate contributed in budget content development and product review.

1. Enterprise Budgets for Alabama Livestock Operations. Updated Fall 2023. <https://www.aces.edu/blog/topics/beef/enterprise-budgets-for-livestock/>
 - a. Tall Fescue Establishment
 - b. Cow-Calf – Grazing Tall Fescue
 - c. Stocker Budget – Winter Annuals
 - d. Stocker Grazing – Tall Fescue
 - e. Stocker Cattle – Drylot
 - f. Stocker Cattle – Winter Annuals with Supplemental Feed

Refereed Articles in Extension Methodology Journals: 7

Note: Where marked with an asterisk denotes a graduate student of Mullenix

1. Marks, M.L.*, M.K. Stanford, L. Kriese-Anderson, **M.K. Mullenix**, and J.B. Rhinehart. 2022. University demonstration program for developing beef replacement heifers on cool-season forages in Alabama. J. NACAA. <https://www.nacaa.com/file.ashx?id=d962756a-ff94-4d6f-8e3d-8d15835cbf1b>.
2. Mason, K.M.*, **M.K. Mullenix**, K. Kelley, and J. Elmore. Evaluation of cool-season annuals or reduced frequency supplementation systems for wintering cow-calf pairs. J. NACAA. Accepted for publication in December 2021. <https://kr.nacaa.com/journal/index.php?jid=1255>.
3. **Mullenix, M.K.**, J.L. Jacobs, G.L. Thompson, T.P. Vining, M.L. Marks, and M.K. Stanford. 2021. Peer-based working groups for teaching best management practices to beef producers. J. NACAA. 14:1. <https://www.nacaa.com/journal/index.php?jid=1170>.
4. Marks, M.L.*, M.K. Stanford, **M.K. Mullenix**, L.A. Kriese-Anderson, J. Bloodworth, and C. McElmoyl. 2019. Late-planting of annual ryegrass in the upper transition zone of Alabama. J. NACAA. 12:1. Online. <https://www.nacaa.com/journal/index.php?jid=945>.
5. Tucker, J.J., T.J. Hendricks, K.B. Mason, **M.K. Mullenix**, C.G. Prevatt, and D.W. Hancock. 2019. Alfalfa in the South Workshop Series: Increasing Acreage through Education. J. NACAA. 12:2. <https://www.nacaa.com/journal/index.php?jid=999>.
6. **Mullenix, M.K.**, J.J. Tucker, L.K. Anderson, S.P. Rodning, A. Tighe, and M.L. Marks. Beef Basics: An online short course for beef cattle farmers. Journal of the National

Association of County Agricultural Agents. December 2016. Online at:
<http://www.nacaa.com/journal/index.php?jid=636>.

7. **Mullenix, M. K.**, J. Hartley, and E. M. Forte. Early-use evaluation metrics of an Extension beef cattle management website. Journal of the National Association of County Agricultural Agents. December 2015. Online at:
<http://www.nacaa.com/journal/index.php?jid=531>.

Extension Conference Proceedings: 6

Note: Cases where the first author was a graduate student of Mullenix or a regional Extension agent that Mullenix coordinated the programming efforts with are indicated by an asterisk.

1. **Mullenix, M.K.**, S.P. Rodning, M. Elmore, and L.A. Kriese-Anderson. 2018. Programs for improving Alabama cattle production from Alabama Extension. Beef Cattle Conference and Departmental Report, August 18, 2018. Auburn, AL.
2. Mason, K.M.*, M.L. Marks*, **M.K. Mullenix**, J.J. Tucker, S.L. Dillard, and R.B. Muntifering. 2018. Managing alfalfa-bermudagrass mixtures in the Southeast: Simulated grazing small plot evaluation in Alabama. Proceedings of the 2018 Alfalfa in the South Workshops. May 8-10, 2018. Bacon, Tift, and Irwin Counties, Georgia.
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Note: Cases where the first author was a graduate student of Mullenix or a regional Extension agent that Mullenix coordinated the programming efforts with are indicated by an asterisk.

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2. Silva, L.S.*, **M.K. Mullenix**, S.L. Dillard and A.C. Vasco. 2022. Development of forage establishment and educational resources for Alabama farmers. J. Anim. Sci: Suppl. 1. ASAS Southern Section Annual Meeting, Fort Worth, TX.
3. Elmore, M.F. and **M.K. Mullenix**. 2022. Application of performance metrics to evaluate cow performance: a collaboration of the Alabama Beef Cattle Improvement Association and the Alabama Cooperative Extension System. J. Anim. Sci.: Suppl. 1. ASAS Southern Section Annual Meeting, Fort Worth, TX.
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 6. M.L. Marks*, M.K. Stanford, **M.K. Mullenix**, and S.P. Rodning. 2022. Sand Mountain Elite Heifer Development Program. Abstract. Proceedings of the National Association of County Agricultural Agents Annual Meeting. West Palm Beach, FL.
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 12. Thompson, G.L. and **M.K. Mullenix**. 2020. Peer-to-peer learning groups and their impact on adoption and change in knowledge of best management practices for Alabama beef producers. National Association of County Agricultural Agents Annual Meeting. Virginia Beach, VA.
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26. Stanford, M.K., M.L. Marks, **M.K. Mullenix**, and L.A. Kriese-Anderson. 2018. Forage nutritive value characteristics of early vs. late-maturing annual ryegrass varieties following delayed planting in North Alabama. Abstract. Proceedings of the 72nd Southern Pastures and Forage Crop Improvement Conference. May 14-16, 2018. Fayetteville, Arkansas.
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Note: Cases where the first author was a graduate student of Mullenix or where Mullenix served as a graduate committee member are indicated by an asterisk.

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- Justice, S.M.*, D. Daniel, J. Elmore, M. Elmore, K. Kelley, **K. Mullenix**, L. Dillard, A. Rabinowitz, M. Runge, W. Sawadgo, K. Stanford, A. Tighe, and S. Rodning. 2023.

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<https://www.aces.edu/blog/topics/beef/implants-their-use-in-beef-cow-calf-operations/>.
- **Mullenix, M. K.** and M.H. West.* 2023. ANR-0060. Nutrient Requirements of Beef Cattle. Revised from Rankins Jr., D. L. November 2015, Revised May 2023.
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- **M.K. Mullenix** and J.P. Elmore. 2020. Self-limiting feeds for beef cattle. Alabama Cooperative Extension System Agricultural and Natural Resources Publication. ANR-2669. Available Online: <https://www.aces.edu/blog/topics/beef/self-limiting-feeds-for-beef-cattle/>.
- Ruffin, B.G., N.J. Van Dyke, D.R. Rankins Jr., and T.A. McCaskey. Revised by **M.K. Mullenix** and M.K. Stanford. 2020. Feeding broiler litter to beef cattle. Alabama Cooperative Extension System Agricultural and Natural Resources Publication. ANR-0557. Available Online: https://www.aces.edu/wp-content/uploads/2020/10/ANR-0557_FeedingBroilerLitter_100920L-A.pdf.

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1. **Mullenix, M.K.** and S.L. Dillard. 2018. ANR-2466. Interpreting a Forage Analysis for Beef Cattle. <http://www.aces.edu/pubs/docs/A/ANR-2466/ANR-2466.pdf>.
2. **Mullenix, M.K.**, M.F. Elmore, and S.P. Rodning. 2018. Beef Cow Herd Planning Calendar. <http://www.aces.edu/pubs/docs/A/ANR-0968-A/ANR-0968-A.pdf>.
3. Prevatt, C.G., W.K. Kelley, and **M.K. Mullenix**. 2017. Planning to Make a Cow-Calf Profit. ANR-2435. <http://www.aces.edu/pubs/docs/A/ANR-2435/ANR-2435.pdf>
4. **Mullenix, M.K.**, S.L. Dillard, and C.M. Holland. 2018. Prussic Acid Poisoning of Livestock. ANR-2473. <https://www.aces.edu/wp-content/uploads/2018/12/ANR-2473.pdf>.
5. Rodning, S.P., T. Gwynn, **M.K. Mullenix**, B.J. Newcomer, W.F. Owsley. 2018. ANR-1278. Alabama Beef Quality Assurance: Managing for Good Herd Health. <http://www.aces.edu/pubs/docs/A/ANR-1278/ANR-1278.pdf>.
6. Rodning, S.P., T. Gwynn, **M.K. Mullenix**, B.J. Newcomer, W.F. Owsley. 2018. ANR-1279. Alabama Beef Quality Assurance: Cattle Health Product Use and Storage. <http://www.aces.edu/pubs/docs/A/ANR-1279/ANR-1279.pdf>
7. Rodning, S.P., T. Gwynn, **M.K. Mullenix**, B.J. Newcomer, W.F. Owsley. 2018. ANR-1280. Alabama Beef Quality Assurance: Administering Cattle Health Products Properly. <http://www.aces.edu/pubs/docs/A/ANR-1280/ANR-1280.pdf>.
8. Gunter, P.* and **M.K. Mullenix**. 2017. ANR-2375. Ionophore Inclusion in Cattle Diets. <http://www.aces.edu/pubs/docs/A/ANR-2375/ANR-2375.pdf>
9. Brantley, E. and **M.K. Mullenix**. 2017. ANR-2381. Drinking Water for Livestock. <http://www.aces.edu/pubs/docs/A/ANR-2381/ANR-2381.pdf>
10. **Mullenix, M.K.**, M. Elmore, and S.P. Rodning. 2017. Beef Herd Management Strategies. ANR-2415. <http://www.aces.edu/pubs/docs/A/ANR-2415/ANR-2415.pdf>
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12. **Mullenix, M.K.** and S.L. Dillard. 2017. Forage Systems for Cow-Calf Operations in Central Alabama. ANR-0155. <http://www.aces.edu/pubs/docs/A/ANR-0155/ANR-0155.pdf>
13. **Mullenix, M.K.** and S.L. Dillard. 2017. Forage Systems for Cow-Calf Operations in South Alabama. ANR-2432. <http://www.aces.edu/pubs/docs/A/ANR-2432/ANR-2432.pdf>
14. **Mullenix, M.K.** and E. Brantley. 2017. Water Requirements of Beef Cattle. ANR-2436. <http://www.aces.edu/pubs/docs/A/ANR-2436/ANR-2436.pdf>
15. **Mullenix, M.K.**, G.L. Thompson, and J.B. Elmore. 2017. Climate Effects on Forage and Beef Production. ANR-2437. <http://www.aces.edu/pubs/docs/A/ANR-2437/ANR-2437.pdf>
16. **Mullenix, M. K.** 2016. ANR-0112. Nitrate Poisoning of Cattle in Alabama. Revised from Ball, D.M. May 2016. <http://www.aces.edu/pubs/docs/A/ANR-0112/ANR-0112.pdf>
17. **Mullenix, M.K.** 2016. ANR-0495. Management Practices to Reduce Grass Tetany. Revised from Rankins Jr., D.L. May 2016. <http://www.aces.edu/pubs/docs/A/ANR-0495/ANR-0495.pdf>
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41. Mullenix, M.K. 2017. Baleage For An Improved Backgrounding Diet. Progressive Forage Grower. <http://www.progressiveforage.com/forage-production/management/baleage-for-an-improved-backgrounding-diet>
42. Mullenix, M. K. 2016. Using ionophores in grazed beef cattle systems. www.secattleadvisor.com.
43. Mullenix, M.K. and J.J. Tucker. 2016. Extending the Grazing Season with Stockpiling – Part 2. Carolina Cattle Connection. Vol. 30 (2):15-16.

44. Tucker, J.J. and M.K. Mullenix. 2016. Extending the Grazing Season with Stockpiling – Part 1. Carolina Cattle Connection. Vol. 30(2):10-11.
45. Mullenix, M. K. 2015. Beat the heat with these summer management tips. www.secattleadvisor.com. More than 500 views, 5 shares on Facebook, republished by UGA Extension blog, Purdue Extension blog, Mississippi State Extension blog, Virginia Cattlemen's Association Summer Newsletter.
46. Mullenix, M. K. Hot Days, Short Nights, More Water. Progressive Cattlemen E-news Extra Edition. July 2015.
47. Mullenix, M. K. Cool-season forage management decisions for stockers. Progressive Cattlemen E-news Extra Edition. April 2015.
48. Mullenix, M. K. Making hay or making feed. Braford News. May 2015.
49. Mullenix, M. K. and M. Hersom. Understanding the nutrient requirements of beef cattle. Gulf Coast Cattlemen. December 2014.
50. Mullenix, M. K. 2014. Five keys to winter supplementation of beef cattle. www.secattleadvisor.com. More than 400 views, 4 shares on Facebook, republished by Drovers, www.agweb.com.
51. Mullenix, M. K., C. M. Holland, and J. W. Prevatt. 2014. Stockpiled Tifton 85 bermudagrass for lactating beef cows. www.secattleadvisor.com. August 2014. More than 500 views, 3 shares on Facebook, retweeted and published on www.agweb.com, www.sefarmpress.com, and Mississippi State Extension blog.
52. Mullenix, M. K. 2014. Ryegrass haylage: a growing interest. www.secattleadvisor.com. May 2014.

Service Laboratory Forms: 2

1. Johnson, J. M. and M. K. Mullenix. 2014. Auburn University Soil Testing Laboratory - Forage Analysis Testing Form. September 2014. Updated Fall 2016.
2. Mullenix, M. K. and J. M. Johnson. 2014. Auburn University Soil Testing Laboratory - Feed Analysis Testing Form. September 2014. Updated Fall 2016.

d. Electronic Products

Note: Cases where the first author was a graduate student of Mullenix or where Mullenix served as a graduate committee member are indicated by an asterisk.

Webinars: 24 total (13 as presenter)

Note: Candidate served as presenter or coordinator for webinars listed below.

- 1) Mullenix, M.K. 2023. The Case for Whole Cottonseed in Beef Cattle Diets. Cotton Inc. Beef Advisory Council Meeting. Webinar. June 29, 2023.
- 2) Mullenix, M.K. 2021. Cotton Byproduct Research Update. Cotton Inc. Webinar. June 30, 2021.
- 3) Mullenix, M.K. 2019. Whole Cottonseed: Agronomic characteristics and feeding recommendations. Alabama Cooperative Extension System Animal Science and Forage Webinar Series. <https://www.youtube.com/watch?v=2W54qgVrcLc&feature=youtu.be>.
- 4) Alfalfa in Bermudagrass Research, Economics and Success Stories. Webinar. September 25, 2019. Archived on www.secattleadvisor.com (coordinator and presenter in collaboration with UGA and UF).

- 5) Stanford, M.K. and M.K. Mullenix. 2019. Temporary Electric Fencing: Can it work for me? Part 1. Alabama Cooperative Extension System Animal Science and Forage Webinar Series. <https://www.youtube.com/watch?v=ospcoEidKxI&feature=youtu.be>.
- 6) Stanford, M.K. and M.K. Mullenix. 2019. Temporary Electric Fencing: Can it work for me? Part 2. Alabama Cooperative Extension System Animal Science and Forage Webinar Series https://www.youtube.com/watch?v=qjHR_E5TGss&feature=youtu.be.
- 7) Mullenix, M.K. 2018. Baleage and silage production. Forage Month Webinar Series. www.alabamaforages.com.
- 8) Mullenix, M.K. 2018. Forage management practices and mineral availability for beef cattle. Alabama Cooperative Extension System Animal Science and Forage Webinar Series. www.alabamabeefsystems.com
- 9) Mullenix, M.K. and M.L. Marks. 2017. Native Warm-Season Grass Management. Alabama Cooperative Extension System Animal Science and Forage Webinar Series. www.alabamabeefsystems.com
- 10) American Society of Animal Science Southern Section – Regional Webinar Series. 2016. Helped reproductive management team organize 9 webinars for a web-based Extension agent in-service training. Co-coordinated with Justin Rhinehart (UT), Vitor Mercadante (VA Tech), and Philippe Moriel (UF). Webinars archived on www.secattleadvisor.com, and integrated into online course through University of Arkansas.
- 11) Mullenix, M.K. 2016. Silage management and use in beef cattle operations. Alabama Cooperative Extension System Animal Science and Forage Webinar Series. www.alabamabeefsystems.com.
- 12) Mullenix, M.K. (50%) and J.M. Johnson. Forage Systems Part 2: Stocking rates and forage management for winter grazing. 2015. Alabama Cooperative Extension Forage Focus Webinar Series. www.alabamaforages.com.
- 13) Johnson, J.M, and M.K. Mullenix (50%). Forage Systems Part 1: Understanding stocking rates and forage management. 2015. Alabama Cooperative Extension Forage Focus Webinar Series. www.alabamaforages.com.
- 14) Mullenix, M.K. Forages and Supplementation: Practices, practicality, and perspectives. 2014. Alabama Cooperative Extension Forage Focus Webinar Series. www.alabamaforages.com

Website(s)

1. Develop and contribute content to www.alabamabeefsystems.com, a website designed for outreach and educational information delivery from the Alabama Beef Systems Extension Program.
2. Develop and contribute content to www.alabamaforages.com, a website designed for outreach and educational information delivery from the Alabama Forage Focus Extension Program.
3. Contributor to regional beef cattle extension tool, the Southeast Cattle Advisor, website, Facebook, and twitter information delivery (www.secattleadvisor.com).

Social Media

1. Developed and maintain www.facebook.com/alabamabeefsystems as a resource for posting educational information and reminders for upcoming beef-related events and issues in Alabama. Released August 2014. 2,610 page likes; 3,100 followers (47% increase in followers since 2018).

2. Contributor to Alabama Cooperative Extension Forage Focus Page. 2,330 page likes; 2,700 page followers.

Electronic Extension Newsletters:

Alabama Extension Beef Systems E-Newsletter – managed email listserv of 543 producers who received a monthly e-newsletter from the Alabama Beef Systems Extension program highlighting current educational resources, upcoming events, and timely management topics (n = 12 per year). 2015 – 2020. *Newsletter merged with forage program newsletter to become Animal Science and Forage Team Program Quarterly Newsletter in 2020. Newsletter distribution is led by Animal Science Regional Agents and County Extension Coordinators.*

Videos: 19

Note: Cases where the first author was a graduate student of Mullenix or where Mullenix served as a graduate committee member are indicated by an asterisk. Videos posted on [Alabama Extension YouTube](#) or [Facebook](#) outlets.

1. Mullenix, M.K. and S.P. Rodning. 2023. Creating a Livestock Evacuation Plan. ACES Disaster Videos.
2. Mullenix, M.K. and S.P. Rodning. 2023. Disaster Preparations for Livestock Operations. ACES Disaster Videos.
3. Mullenix, M.K. 2022. Down to Earth: Livestock-Generated Gasses. Down to Earth Campaign. <https://youtu.be/XFDtMT0SSG4>.
4. Vining, P. and M.K. Mullenix. 2022. Alabama Beef Systems Videos: How to Collect a Soil Sample. <https://youtu.be/q418qg21wHI>.
5. Daniel, D. and M.K. Mullenix. 2022. Alabama Beef Systems Videos: How to Collect a Hay Sample. <https://youtu.be/hfFdTToCyp0>.
6. Elmore, M.F. and M.K. Mullenix. 2022. Alabama Beef Systems Videos: Electronic Animal Identification. <https://youtu.be/Ln97BwywBs4>.
7. Woods, J., M.K. Mullenix, and S.L. Dillard. Forage Research Highlights Video. 2019. Auburn University College of Agriculture. <https://www.youtube.com/watch?v=pEisKilkbAI&feature=youtu.be>.
8. Mullenix, M.K. 2018. Systems 360° Program. Alabama Cooperative Extension System YouTube Channel. Length: 0:58.
9. Mullenix, M.K. 2018. Why do alfalfa and bermudagrass work well in a mixture together? Alabama Beef Systems Extension Facebook Live. Length: 1:58
10. Mullenix, M.K. 2018. Evaluating frost effects on winter annual production in Alabama. Alabama Beef Systems Extension Facebook Live. Length: 1:21.
11. Mullenix, M.K. 2017. Unrolling hay and winter feeding practices for improving nutrient distribution in pastures. Alabama Beef Systems Extension Facebook Live. Length: 2:02.
12. Brantley, E., M.K. Mullenix, and B. Brown. 2016. Water quality and quantity for livestock. USDA Southern SARE Systems 360 Video Series.
13. Jolley, E., M.K. Mullenix, and B. Brown. 2016. Runoff simulator and soil infiltration. USDA Southern SARE Systems 360 Video Series.
14. Kelley, K., M.K. Mullenix, and B. Brown. 2016. Making money in the cattle business. USDA Southern SARE Systems 360 Video Series.
15. Beef Bites Video Series – Nutritional Toxicities
 - a. Gunter, P.* and M. K. Mullenix. Tall Fescue Toxicosis – length: 2:04
 - b. Gunter, P.* and M. K. Mullenix. Nitrate Poisoning – length: 2:16

- c. M. K. Mullenix. Grass Tetany – length: 3:18
- d. M. K. Mullenix. Dallisgrass Toxicity – length: 2:50
- 16. M. K. Mullenix. Factors influencing hay waste at feeding. Length: 0:58 seconds.
- 17. M. K. Mullenix. How to collect a soil sample. Length: 0:45 seconds.
- 18. M. K. Mullenix. How to collect a forage sample for laboratory analysis. Length: 0:51 seconds.
- 19. Johnson, J.M., and M.K. Mullenix. How to use a grazing stick. Length: 1:10 seconds.

Online Courses: 3

1. Dillard, S.L., M.K. Mullenix, L.S. Silva, D. Russell, R. Prasad, S. Rodning, J. Sawyer. 2023. Master Your Business: An Online Certificate Course for Forage and Livestock Farmers. To Be Released September 1, 2023.
2. Candidate developed content for grazing management and livestock nutrition modules for course.
2. Dillard, S.L., **M.K. Mullenix**, S. Rodning, J. Sawyer, K. Stanford, R. Prasad, A. Gamble, D. Russell, K. Kesheimer. 2021. Forage Basics Online Course. Released September 1, 2021.
 - Candidate was concept design co-coordinator and developer of content for grazing management, forage quality, and supplementation modules, respectively.
 - 20-chapter course with interactive lectures and quizzes
 - Available online at: <https://www.aces.edu/blog/topics/farming/forage-basics-from-the-pasture-to-your-phone/>
3. **Mullenix, M.K.**, S. Rodning, J. Johnson, L. K. Anderson, L. Marks, and A. Tigue. Beef Systems Basics Online Course. Released January 31, 2016.
 1. Candidate served as project leader for Beef Systems Basics Online Course, an online Extension-based course for new and beginning cattle producers, and content contributor to beef cattle industry overview, nutrition, forages, and management sections.
 2. Self-paced, online course providing a certificate of completion (8 hours of course work); open-enrollment using Canvas Catalog Software platform. Users must complete coursework in 8-week time window to receive certificate.
 3. Developed and organized course syllabus, online lesson content, recordings, and questions.
 4. Contributed or assisted with development of course content for overview of the beef industry, grazing management and methods, nutrition, and closing instructions.
 5. Enrollment online at: <http://www.aces.edu/agriculture/livestock-poultry/beef/BeefBasicsOnlineCourse.php>

PowerPoint Curriculum for Extension Team: 14

- 1) Mullenix, M.K. 2019. Beef Systems Short Course. 8 PowerPoint modules on basics of beef cattle production systems. Provided to Animal Science and Forage Extension Team for use in multi-night beef meeting series.
- 2) Mullenix, M.K. Winter Management Strategies for Beef Cattle During Drought Years. 2016. 36 slides. Provided to Animal Science and Forage Extension Team for use during drought programming.
- 3) Mullenix, M. K. and J. M. Johnson. Winter Forages and Stocking Rates. 2015. 46 slides. Provided to Rickey Hudson.

- 4) Mullenix, M. K. Cool-season annuals for wintering the cow herd. 2015. 24 slides. Provided to Rickey Hudson and Derek Bryan.
- 5) Mullenix, M. K. Nutrient Requirements of Beef Cattle. 2015. 25 slides. Provided to Jonathan Gladney and Josh Elmore.
- 6) Mullenix, M. K. Interpreting a Forage Quality Analysis. 2015. 51 slides. Provided to Alex Tigie.
- 7) Mullenix, M. K. Master Cattlemen's 101: Nutrition Basics. 2015. 95 slides. Provided to Gerry Thompson and Alex Tigie.

Radio/Media Interviews: 19

1. Skype interview. Samantha Bennett. RFD-TV. Garlic in Livestock Minerals: Does It Work? June 8, 2023.
2. Phone interview. Emily Pendergrass. Freezer Beef. Gulf Coast Cattlemen. March 15, 2023.
3. Alabama AgCast Interview. Chris Prevatt. Backgrounding Beef Calves. January 15, 2023.
4. Alabama AgCast Interview. Chris Prevatt. Optimizing Forage Systems for Beef Cattle. January 15, 2023.
5. Phone interview. Becky Mills. Beef cattle nutrient requirements. Angus Journal. September 15, 2022.
6. On-farm interview. Justin Miller. Alabama Cooperative Extension System Communications. Beef Cattle: Earth's Carbon Vacuum. Down to Earth Campaign. <https://www.aces.edu/blog/topics/farming/beef-cattle-earths-carbon-vacuum/>. May 10, 2022.
7. Phone interview. Emily Pendergrass. Body condition scoring beef cattle. August 5, 2021. Gulf Coast Cattlemen's Magazine.
8. Television interview. WHNT News 19 Huntsville. Impacts of summer rainfall on cattle and hay producers in Alabama. July 12, 2021.
9. Phone interview. Becky Mills. Tried and True Backgrounding Rations. September 24, 2019. Gulf Coast Cattlemen's Magazine.
10. Television interview. Tuscaloosa WVUA23 News. Managing heat stress in livestock. July 13, 2018.
11. Phone interview. Angus Beef Bulletin. Working around tall fescue. January 4, 2018.
12. Phone interview. Progressive Farmer. Stockpiling bermudagrass. December 19, 2016. Interviewed by Becky Mills.
13. Phone interview. Angus Beef Bulletin. Using bermudagrass for fall stockpiling. June 28, 2016. Interviewed by Becky Mills.
14. Phone interview. Gallagher. Stockpiling forage an economical option to extend the grazing season. September 30, 2015. Interviewed by Jesse Bussard.
15. Phone interview. Angus Beef Bulletin. Using management intensive grazing with a mid-sized herd. August 28, 2015. Interviewed by Becky Mills.
16. Phone interview. Gulf Coast Cattlemen's Magazine. Summer management to do list. April 28, 2015. Interviewed by Becky Mills.
17. Phone interview. Gulf Coast Cattlemen's Magazine. Understanding the nutrient requirements of beef cattle. Nov. 12, 2014.
18. Southeast Ag Net Interview. November 18, 2014. Winter supplementation strategies for southeastern cattlemen.

19. Phone interview. Progressive Farmer. Tall fescue and animal performance. December 15, 2014. Interviewed by Becky Mills.

e. Copyrights, patents, and inventions

None

f. Contracts, grants and gifts

The grants listed in the research section are all integrated research-Extension grants focused on beef cattle management systems in the Southeast U.S. (Section 2, subheading 'h').

Additional Donations/Funds Raised for Extension Programs

2019 Alabama Forage Conference. Helped acquire \$6,000 in private industry sponsorship for two-day educational conference. Rogersville, AL. November 29 and 30, 2019.

2018 Deep South Stocker Conference. \$3,850 in private industry sponsorship for one-day educational conference. Greensboro, AL. July 13, 2018.

2017 Alabama Forage Conference. \$5,900 in private industry sponsorship for two-day educational conference. Eufaula, AL. November 28 and 29, 2017.

2015 Deep South Stocker Conference. \$7,200 in private industry sponsorship for two-day educational conference. Montgomery, AL. August 6 and 7, 2015.

D. Service

1. Service to the University

N/A

Service to the College of Agriculture

Search Committee Member, Associate Dean of Extension, Fall 2021 – Spring 2022

Auburn University Collegiate Young Farmers Academic Advisor, Fall 2017 – Present

AAES Outlying Units Strategic Planning Committee, Fall 2017

Search Committee Chair, Associate Director, Ag Research/Extension Center – EV Smith Beef Unit, Summer 2017

Search Committee Member – Associate Director, Ag Research/Extension Center – Soil Testing Lab Director, Spring 2017

Auburn University Soil Testing Laboratory Advisory Review Committee, Spring 2017 – Present

Faculty Search Committee Member – Assistant Professor/Extension Specialist – Risk Management, Department of Agricultural Economics and Rural Sociology, 2016

Search Committee Member – Assistant Director, Sand Mountain Research and Extension Center, 2015

Search Committee Member – Interim Dean, College of Agriculture, Auburn University, 2015

Ag Ambassadors Junior Faculty Advisor, Fall 2014 – Spring 2016

Auburn University Forage Testing Laboratory Advisory Committee, Spring 2014- Present

Service to the Alabama Cooperative Extension System

Alabama Extension Program Priority Team Coordinator, Animal Science and Forages – Fall 2022 to Present

1. Candidate organizes monthly team Zoom call
2. Leads search committees for vacant Regional Extension Agent positions
3. New Extension agent onboarding and mentoring
4. Facilitate group discussions on team projects; Helps team prioritize areas of focus for programming
5. Organize spring and fall team meetings; Conducts Plan of Work overview process for team and compiles federal report items on livestock and forage programming for ACES

Search Committee Chair – Animal Science and Forage Team Regional Extension Agent – West Alabama SET, Summer 2023

Search Committee Chair – Animal Science and Forage Team Regional Extension Agent – East Central SET, Spring 2023

Search Committee Chair – Animal Science and Forage Team Regional Extension Agent – Northwest SET, Fall 2022

Search Committee Member – Animal Science and Forage Team Regional Extension Agent, Fall 2019

Search Committee Member – Animal Science and Forage Team Regional Extension Agent, Spring 2016

Service to the Department of Animal Sciences

Service Roles

Animal Sciences Graduate Program Officer (GPO), Spring 2021 – Fall 2022

- Department received ‘exemplary’ reporting assessment from Office of Assessment for graduate program during leadership as GPO.

Social Committee, 2016 – 2020

Graduate Program Committee, 2015 – Present

Seminar Committee, 2014 – 2019; 2022 - Present

Faculty Retreat Planning Committee Co-Chair, Fall 2014, 2021, Fall 2023

Search Committees

Faculty Search Committee Member – Tenure-Track Assistant/Associate Professor Meat Science Position, 2021-2022

Faculty Search Committee Chair – Tenure-Track Assistant/Associate Professor of Ruminant Nutrition Position, 2020-2021

Search Committee Member – Research Technician, Department of Animal Sciences, Summer 2021

Faculty Search Committee Chair – Tenure-Track Assistant Professor of Meat Microbiology Position, 2019

Auburn University Department of Animal Sciences Beef Cattle Conference Planning Committee, 2016 – Present

Faculty Search Committee Member – Tenure-Track Forage Extension Specialist Position, Beginning Summer 2016

Faculty Search Committee Member – Tenure-Track Beef Cattle Management Teaching/Research Position, 2016

Administrative Associate Search Committee Member, Spring 2015

2. Professional Service

Record of Membership

Alabama Cooperative Extension System, Animal Science and Forage Program Priority Team, 2014 – Present

Alabama Association of County Agents and Specialists, 2014- Present

American Society of Animal Science, 2008 - Present

American Forage and Grassland Council, 2010-2012; 2015-Present

Alabama Cattlemen's Association, Lifetime Member

Alabama Farmer's Federation, 2014 – Present

American Society of Agronomy, Crop Science Society of America, Soil Science Society of America, 2010 - 2022

Board Membership

- 1) President for the American Society of Animal Science Southern Section, 2023-2024; Vice President, 2022, Secretary-Treasurer, 2021, Secretary-Treasurer Elect, 2020
- 2) American Forage and Grassland Council – Board Member – Elected January 2019 - Present
- 3) Alabama Beef Cattle Improvement Association – Board Member; 2019 - Present
- 4) District 2-A Director, Alabama Association of County Agents and Specialists – 2017 - 2019

Societal Leadership

1. International Grassland Congress, Program Committee – 2020 – 2023; Help coordinate program schedule and selected keynote speakers for International Grassland Congress in Covington, KY
2. Chair, Bill E. Kunkle Interdisciplinary Beef Symposium – 2022 American Society of Animal Science Southern Section Annual Meeting
3. American Society of Animal Science Southern Section Distinguished Service Award Review Committee – December 2019
4. 2020 Southern Pastures and Forage Improvement Conference Planning Committee
5. American Society of Animal Science Southern Section Extension Committee; 2016-2019
6. American Society of Animal Science Southern Section Extension Forum Organizing Committee – 2015- 2018
7. SERA-041: Beef Cattle Production Utilizing Forages in the Southeast to Integrate Research and Extension Programs across State Boundaries
 - a. Chair (2021)
 - b. Secretary Elect (2019)
 - c. Alabama Report Leader (2015 – 2019)

Service to Agricultural Commodity Groups and Organizations

1. Judge, American Society of Animal Science Southern Section Academic Quadrathlon Oral Competition, Fort Worth, TX, January 2022
2. Judge, American Society of Animal Science Southern Section Academic Quadrathlon Oral Competition, Dallas, TX, Feb 2015
3. Judge, Alabama Farmer's Federation Collegiate Young Farmers Discussion Meet; November 2015
4. Input in development and delivery of beef cattle educational programming for the Alabama Farmers Federation annual stakeholder meetings for the beef commodity group: 2 meetings per year, 2015 - Present
5. Alabama Beef Checkoff Marketing Plan Taskforce Committee, 2014 - 2020
6. Judge, Alabama Farmer's Federation Young Farmers State Discussion Meet; December 2014
7. Lee County Young Farmers – Alabama Farmers Federation; Spring 2014 – Fall 2021
8. Master's of Beef Advocacy; National Cattleman's Beef Association; Fall 2012 – Present; Serve as voluntary industry contact for consumer education about misconceptions of the beef industry in media contexts within the US

Editorial Activities

Journal Reviewer Activities

Invited Reviewer (2014 – Present) for one to three publications per year for the following journals:

Crop Science
Crop, Forage, and Turfgrass Management
Applied Animal Science
Translational Animal Science
Journal of Animal Science
Animals

Cooperative Extension Reviewer

Periodic review of Extension publications from the following institutions:

- University of Georgia Extension
- UF/IFAS Extension
- University of Tennessee Extension

Periodic reviewer for Extension and research faculty promotion packets from the following institutions:

- University of Florida
- University of Georgia
- Virginia Tech University
- Montana State University
- Oregon State University

Grant Proposal Review Panels

AAES Production Agriculture Research Grants Program Reviewer – Spring 2020

USDA Southern SARE Professional Development Grants Reviewer – Fall 2019, Fall 2021, Fall 2022

USDA Southern SARE Research and Education Grants Reviewer – Winter 2018

AAES Production Agriculture Research Grants Program Reviewer – Spring 2017

Professional Development

LEAD 21 Program – Class 19 – 2023-2024

- Candidate was selected as a representative of Auburn University to attend USDA leadership program for facilitating growth in land-grant institution leadership.