

# Brooke A. Clemmons, Ph.D.

## *Curriculum Vitae*

Work: P.O. Box 3011  
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College of Agriculture/Natural Resources  
Commerce, TX 75429

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### **Education**

<b>Texas A&amp;M University-Commerce</b> , Commerce, TX (in progress) Doctor of Education in Higher Education Dissertation advisor: Dr. Michael Ponton Dissertation title: To be determined	Summer 2026
<b>University of Tennessee</b> , Knoxville, TN Doctor of Philosophy in Animal Science Dissertation advisor: Dr. Phillip Myer Dissertation title: Microbial and Metabolomic Biomarkers of Feed Efficiency in Angus Cattle	Summer 2020
<b>University of Tennessee</b> , Knoxville, TN Master of Science in Agricultural Leadership, Education, and Communications Graduate advisor: Dr. Carrie Stephens Concentration: Leadership Project: “Microbes in Agriculture” Undergraduate course curriculum development	Fall 2019
<b>University of Tennessee</b> , Knoxville, TN Master of Science in Animal Science Thesis advisor: Dr. Phillip Myer Thesis title: Biochemical and microbial biomarkers mediating feed efficiency phenotypes in black Angus cattle	Spring 2018
<b>North Carolina State University</b> , Raleigh, NC Bachelor of Science in Animal Science	Spring 2013

### **Appointments**

College of Agricultural Sciences and Natural Resources Program Coordinator Texas A&M University-Commerce at Dallas	2023 – current
Assistant Professor of Animal Science Texas A&M University – Commerce	2020 – current
Graduate Research/Teaching Assistant Animal Science, University of Tennessee, Knoxville, TN	2016 – 2020
Graduate Services Coordinator Zoology Graduate Program, North Carolina State University, Raleigh, NC	2015 – 2016
Academic Support Associate Biological Sciences, North Carolina State University, Raleigh, NC	2014 – 2015
Curriculum Developer Nextide Academy, Raleigh, NC	2014

## **Publications**

### ***Published (20)***

1. **Clemmons BA**, Ault-Seay TB, Henniger MT, Martin MG, Mulon PY, Anderson DE, Voy BH, McLean KJ, Myer PR\*. 2023. Blood parameters associated with residual feed intake in beef heifers. *BMC Research Notes* 16(1) 177.
2. **Clemmons BA**, Mulon PY, Anderson DE, Ault-Seay T, Henniger MT, Schneider LG, Staton M, Voy BH, Donohoe DR, Campagna SR, McLean KJ, Myer PR\*. 2022. Ruminal bacterial communities and metabolome variation in beef heifers divergent in feed efficiency. *Ruminants* 2(2) 282-296. Doi: <https://doi.org/10.3390/ruminants2020019>
3. **Clemmons BA**, Myer PR\*. 2021. Data of bacterial community dynamics resulting from total rumen content exchange in beef cattle. *BMC Research Notes*.
4. **Clemmons BA**, Shin SH, Smith TPL, Embree MM, Voy BH, Schneider LG, Donohoe DR, McLean KJ, Myer PR\*. 2021. Ruminal protozoal populations of Angus steers differing in feed efficiency. *Animals* 11:6 (1561).
5. Ault-Seay TB, Melchior-Tiffany EA, **Clemmons BA**, Cordero JF, Bates GE, Flythe MD, Klotz JL, Ji H, Goodman JP, McLean KJ, Myer PR\*. 2020. Rumen and serum metabolomes in response to endophyte-infected tall fescue seed and isoflavone supplementation in beef steers. *Toxins* 12, no. 744.
6. Myer PR, McDanel TG, Kuehn LA, Dedonder KD, Apley MD, Capik SF, Lubbers BV, Harhay GP, Harhay DM, Keele JW, Henniger MT, **Clemmons BA**, Smith TPL\*. 2020. Classification of 16S rRNA reads is improved using a niche-specific database constructed by near-full length sequencing. *PLoS ONE*
7. **Clemmons BA**, Schneider LG, Melchior EA, Lindholm-Perry AK, Hales KE, Wells JE, Freetly HC, Hansen SL, Drewnoski ME, Hartman SJ, Myer PR\*. 2020. The effects of feeding ferric citrate on ruminal bacteria, methanogenic archaea, and methane production in growing beef steers. *Access Microbiology*
8. Seay TB, **Clemmons BA**, Myer PR\*, McLean KJ\*. 2020. Bacteria in the reproductive tract: they are not all bad! *Frontiers for Young Minds*.
9. **Clemmons BA**, Myer PR\*. 2020. Microbes help predict more efficient cattle. *Frontiers for Young Minds*.
10. **Clemmons BA\***, Hernandez-Sanabria E\*. 2020. Getting big cows by feeding tiny microbes. *Frontiers for Young Minds*.
11. **Clemmons BA**, Campbell MA, Schneider LG, Grant RJ, Dann HM, Krawczel PD, Myer PR\*. 2020. Effects of stocking density on the rumen bacteriome in dairy cows. *PeerJ*, e9079, doi: 10.7717/peerj.9079.
12. **Clemmons BA**, Powers JB, Martino C, Campagna SR, Embree MM, Myer PR\*. 2019. Variation of rumen fluid metabolome in steers differing in feed efficiency. *Metabolomics*, 16(2), 23. <https://doi.org/10.1007/s11306-020-1643-x>.
13. **Clemmons BA**, Martino C, Powers JB, Campagna SR, Voy BH, Donohoe DR, Gaffney J, Embree MM, Myer PR\*. 2019. Rumen bacteria and serum metabolites predictive of feed efficiency phenotypes in beef cattle. *Scientific Reports*. <https://doi.org/10.1038/s41598-019-55978-y>
14. **Clemmons BA**, Martino C, Schneider LG, Embree MM, Myer PR\*. 2019. Temporal stability of the ruminal bacterial communities in beef steers. *Scientific Reports*. <https://doi.org/10.1038/s41598-019-45995-2>

15. Ault TB, **Clemmons BA**, Reese ST, Dantas FG, Franco GA, Smith TPL, Edwards JL, Pohler KP\*, Myer PR. 2019. Bacterial taxonomic composition of the postpartum cow uterus and vagina prior to artificial insemination. *Journal of Animal Science*. skz212, <https://doi-org.proxy.lib.utk.edu/10.1093/jas/skz212>
16. Ault TB, **Clemmons BA**, Reese ST, Dantas FG, Franco GA, Smith TPL, Edwards JL, Pohler KP\*, Myer PR. 2019. Uterine and vaginal bacterial community diversity prior to artificial insemination between pregnant and non-pregnant postpartum cows. *Journal of Animal Science*. skz210, <https://doi-org.proxy.lib.utk.edu/10.1093/jas/skz210>
17. Myer PR\*, **Clemmons BA**, Schneider LG, Ault TB. 2019. Microbiomes in ruminant protein production and food security. *CAB Reviews*. 14(008):1-1. 10.1079/PAVSNNR201914008
18. **Clemmons BA**, Voy BH, Myer PR\*. 2018. Altering the gut microbiome of cattle: Considerations of host-microbiome interactions for persistent microbiome manipulation. *Microbial Ecology*. <https://doi.org/10.1007/s00248-018-1234-9>
19. **Clemmons BA**, Mihelic RI, Beckford RC, Powers JB, Melchior EA, McFarlane ZD, Cope ER, Embree MM, Mulliniks JT, Campagna SR, Voy BH\*, Myer PR\*. 2017. Serum metabolites associated with feed efficiency in black angus steers. *Metabolomics*. 13:147. doi: 10.1007/s11306-017-1282-z
20. **Clemmons BA**, Reese ST, Dantas FG, Franco GA, Smith TPL, Adeyosoye OI, Pohler KG\*, Myer PR\*. 2017. Vaginal and uterine bacterial communities in postpartum lactating cows. *Front. Microbiol.* 8:1047. doi: 10.3389/fmicb.2017.01047

#### ***In review (1)***

1.

#### ***In preparation (3)***

1. **Clemmons BA\***, Mumm J, Eborn D, Owen MPT. 2023. Texas swine producer management practices and goals.
2. Brown A, Aquino T, **Clemmons BA\***. Beef cattle producer attitudes and management practices in northeast Texas.
3. Martin, MG, **Clemmons BA**, Powers JB, Mulon PY, Anderson D, Schneider LG, Campagna SR, Voy BH, Donohoe DR, McLean KJ, Staton ME, Myer PR\*. 2022. Effects of first-calf pregnancy on rumen microbiome and host physiology in Angus heifers.

#### ***Scientific abstracts (17)***

1. Martin MG, **Clemmons BA**, Ault-Seay TB, Henniger MT, Schneider LG, Voy BH, McLean KJ, Mulon PY, Anderson DE, and Myer PR\*. 2021. Pregnancy influences on the feed efficiency and rumen environment of Angus heifers in producing a quality beef product: a proposal. University of Tennessee Knoxville Beef and Forage Center Research Symposium
2. **Clemmons BA**, Mulon PY, Anderson D, Myer PR\*. Rumen bacteria associated with feed efficiency in Angus heifers. Microbiological Society Annual Conference 2020.
3. **Clemmons BA**, Powers JB, Campagna SR, Seay TB, Embree MM, Myer PR\*. 2020. Rumen fluid metabolites as potential biomarkers of feed efficiency in Angus steers. ASAS Southern Section Meeting 2020.
4. **Clemmons BA**, Myer PR\*. 2019. Rumen bacteria associated with feed efficiency in Angus heifers. UT Beef and Forage Center Research and Recommendation Meeting.
5. **Clemmons BA**, Martino C, Schneider LG, Embree MM, Myer PR\*. Temporal stability of the ruminal bacterial communities in beef steers. 2019. Congress on Gastrointestinal Function Biannual Conference.
6. **Clemmons BA**, Henniger MT, Voy BH, Donohoe DR, Myer PR\*. 2019. Effects of rumen content exchange on bacterial community dynamics and production-relevant parameters. ASM Microbe 2019.
7. **Clemmons BA**, Campbell MA, Grant RJ, Dann HM, Krawczel PD, Myer PR\*. 2019. Effect of stocking density on ruminal bacterial communities of Holstein dairy cows. ASM Microbe 2019.

8. **Clemmons BA**, Henniger MT, Powers JB, Campagna SR, Voy BH, Donohoe DR, Myer PR\*. 2018. Rumen and serum metabolomes differ in Angus cows. UT Beef and Forage Center Research and Recommendation Meeting.
9. **Clemmons BA**, Henniger MT, Powers JB, Campagna SR, Voy BH, Donohoe DR, Myer PR\*. 2018. Comparison of rumen fluid and serum metabolomes in black angus cows. ASAS Annual Meeting 2018.
10. Founts R, **Clemmons BA**. 2018. Peer advising leadership program. NACADA Region 2 2018.
11. **Clemmons BA**, Melchior EA, Martino C, Embree MM\*, Myer PR\*. 2018. Temporal stability of the rumen bacteriome in Black Angus steers. ASM Microbe 2018.
12. **Clemmons BA**, Martino C, Embree MM, Melchior EA, Voy BH, Campagna SR, Myer PR\*. 2018. 441 Biochemical and microbial biomarkers of feed efficiency in Black Angus steers. ASAS Midwest 2018. Journal of Animal Science, 96(Supplement 2) 237. doi: <https://doi.org/10.1093/jas/sky073.438>
13. **Clemmons BA**, Martino C, Embree MM, Voy BH, Myer PR\*. 19 December 2017. Biochemical and microbial biomarkers mediating feed efficiency phenotypes in cattle. UT Beef and Forage Center Research and Recommendation Meeting.
14. Ault TB, **Clemmons BA**, Myer PR, Pohler KG. 19 December 2017. Comparison of vaginal and uterine bacterial communities between pregnant and non-pregnant postpartum cows. UT Beef and Forage Center Research and Recommendation Meeting.
15. **Clemmons BA**, Mulliniks JT, Donohoe DR, Myer PR\*. 13 April 2017. Host animal genetic influence on rumen microbial community establishment in cows. University of Tennessee Knoxville Graduate Student Poster Showcase.
16. **Clemmons BA**, Reese ST, Dantas FG, Franco GA, Smith TPL, Adeyosoye OI, Pohler KG\*, Myer PR\*. 2017. Vaginal and uterine bacterial communities in postpartum lactating cows. Journal of Animal Science, 95(Supplement 1) 51-53.
17. **Clemmons BA**, Mulliniks JT, Donohoe DR, Myer PR\*. 2016. Host animal genetic influence on rumen microbial community establishment in cows. UT Beef and Forage Center Research and Recommendation Meeting.

#### **University/Extension (7)**

1. Ruminant Gut Microbe of the Month – Authored the feature *Ureaplasma spp.*  
August 2019
2. Ruminant Gut Microbe of the Month – Authored the feature *Butyrivibrio fibrosolvens*,  
May 2019
3. UTBFC Facebook Live – The rumen microbiome and feed efficiency.  
July 2018
4. Ruminant Gut Microbe of the Month – Authored the feature 2017 Review.  
Jan 2018
5. Ruminant Gut Microbe of the Month - Authored the feature *Dasytricha ruminantium*.  
Nov 2017
6. Ruminant Gut Microbe of the Month – Authored the feature *Neocallimastix frontalis*.  
Sep 2017
7. Ruminant Gut Microbe of the Month – Authored the feature *Ruminococcus flavefaciens*.  
Jul 2017

#### **Thesis/Dissertation Students**

Thomas Aquino – MS (thesis) Graduate Advisor	2021 – 2023
Mikaela Heggenstaller – MS (non-thesis) Graduate Advisor	2020 – 2022
Jory Goetz – MS (thesis) Graduate Advisor	2021 – 2022

Anthony Brown – MS (thesis) Graduate Co-Advisor	2021 – 2022
Emma Polus – MS (non-thesis) Graduate Advisor	2021 – 2021
Cheyenne Lee – MS (non-thesis) Graduate Advisor	2021 – 2022
Jessica Smithers – MS (non-thesis) Graduate Advisor	2021 – 2022
Courtney Baldwin – MS (thesis) Committee Member	2020 – 2022
Hunter Ganske – MS (thesis) Committee Member	2021 – 2023
Hailey Cooper – MS (non-thesis) Graduate Advisor	2021 – 2022
Logan Roper – MS (non-thesis) Graduate Advisor	2021 – 2023

## **Grants and Funding**

### ***Awarded (2)***

1. Aquino T, Frost KJ\*, Clemmons BA\*. 2020. Award value: **\$270**  
Texas A&M University – Commerce. Undergraduate Research Grant Competition. *Beef Cattle Producer Attitudes Toward Breed and Management Styles in Northeast Texas.*
2. **Clemmons BA**, Myer PR. 2018. Award value: **\$4,180**  
University of Tennessee, Knoxville. University of Tennessee Graduate School Student/Faculty Research Award. *Molecular and physiological effects of first pregnancy on feed efficiency in female cattle.*

### ***Submitted but not awarded (11)***

1. **Clemmons BA**, Owen MTP. 2021. Award value: **\$647,896**  
United States Department of Agriculture. USDA AFRI Foundational. *Improving uterine hemodynamics and offspring performance via red clover isoflavones supplementation in late gestation cows.*
2. Myer PR, **Clemmons BA**. 2017. Award value: **\$15,000**  
Illumina. Illumina 2018 Agricultural Greater Good Initiative. *Sequencing Grant Program for Illumina Sequencing Products: Host and mitochondrial genomic variants associated with gut microbiome structure and function.*
3. **Clemmons BA**, Myer PR, Ivey JZ, Voy BH. 2017. Potential Award: **\$935,259**  
National Science Foundation. Division of Molecular and Cellular Biosciences: Investigator-Initiated Research Projects. *Host and mitochondrial genomic variants associated with gut microbiome structure and function.*
4. **Clemmons BA**. 2018. Award: **\$500**  
American Society of Microbiology. *American Society of Microbiology Student Travel Award.*
5. Myer PR, Pohler K, Voy BH, **Clemmons BA**. 2017. Award: **\$877,352**  
National Science Foundation. Dimensions of Biodiversity. *Dimensions: Host influence and heritability of rumen and reproductive microbiome biodiversity and physiology in cows.*
6. **Clemmons BA**, Myer PR. Spring 2017. Award: **\$5,000**

- University of Tennessee, Knoxville. University of Tennessee Graduate School Student/Faculty Research Award. *Host animal genetic influence in rumen microbial community establishment in cows.*
7. **Clemmons BA**, Myer PR. Spring 2017. Award: **\$5,000**  
American Simmental Association. Walton-Berry Graduate Student Support Grant. *Host animal genetic influence in rumen microbial community establishment in cows.*
  8. **Clemmons BA**, Myer PR. Fall 2016. Award: **\$5,000**  
University of Tennessee, Knoxville. University of Tennessee Graduate School Student/Faculty Research Award. *Host animal genetic influence in rumen microbial community establishment in cows.*
  9. **Clemmons BA**, Myer PR, Pohler K. Summer 2016. Award value: **\$10,000**  
Pacific Biosciences. PacBio Plant and Animal SMRT Grant. FINALIST.
  10. **Clemmons BA**. 2016. National Science Foundation Graduate Research Fellowship Program.
  11. **Clemmons BA**. 2015. National Science Foundation Graduate Research Fellowship Program.

## **Teaching Experience**

### ***Course Instructor***

ANS 597: Advanced Nutritional Biochemistry Texas A&M University – Commerce	2021 –current
AG 408: Nutritional Biochemistry Texas A&M University – Commerce	2021 – current
ANS 307: Animal Feeds and Feeding Texas A&M University – Commerce	2021 – current
ANS 515: Advanced Animal Nutrition Texas A&M University – Commerce	2021 – current
AG 400: Seminar Texas A&M University – Commerce	2021 –current
ANS 1319: Introduction to Animal Science Texas A&M University – Commerce	2020 – current
ANS 308: Animal Nutrition Texas A&M University – Commerce	2020 – current
ANS 317: Livestock Management Techniques Texas A&M University – Commerce	Fall 2020
ANS 231: Nutrition of Domestic Animals Lab North Carolina State University	Fall 2012

### ***Teaching Assistant***

ANSC 330: Comparative Animal Nutrition University of Tennessee, Knoxville	Spring 2020
MICR 479/679: Advanced Techniques in Nucleic Acid Sequencing University of Tennessee, Knoxville	Fall 2019
ANSC 495: Ethics in Agriculture University of Tennessee, Knoxville	Fall 2018
ANSC 160: Introduction to Animal Science University of Tennessee, Knoxville	Spring 2018
ANSC 160: Introduction to Animal Science University of Tennessee, Knoxville	Fall 2017
ANSC 100: Orientation to Animal Science	Fall 2017

University of Tennessee, Knoxville	
ANSC 281: Companion, Exotic and Equine Management	Spring 2017
University of Tennessee, Knoxville	
ANSC 281: Companion, Exotic and Equine Management	Fall 2016
University of Tennessee, Knoxville	
BIO 233: Human – Animal Interactions	Fall 2011
North Carolina State University	
ANS 230: Nutrition of Domestic Animals	Fall 2012
North Carolina State University	
ANS/PO 415: Comparative Nutrition	Spring 2013
North Carolina State University	

***Invited Guest Lecture***

AREC 444: Agriculture Production and Technology Management	November 2019
University of Tennessee, Knoxville	
“Using the GrowSafe System for Beef Management”	
MICR 679: Nucleic Acid Sequencing	October 2019
University of Tennessee, Knoxville	
“Introduction to Bioinformatics and Bioinformatic Tools”	
ANSC 495: Ethics in Agriculture	September 2019
University of Tennessee, Knoxville	
“Breed Specific Legislation”	
ANSC 495: Ethics in Agriculture	September 2018
University of Tennessee, Knoxville	
“Breed Specific Legislation”	
ANSC 160: Introduction to Animal Science	January 2018
University of Tennessee, Knoxville	
“Common Livestock Breeds”	
AGNR 103: Introduction to Team Building	October 2017
University of Tennessee, Knoxville	
“Teamwork and Teambuilding”	
ANSC 100: Orientation to Animal Science	October 2017
University of Tennessee, Knoxville	
“Strategies for Adapting”	
ANSC 281: Equine, Exotic, and Companion Animal Management	March 2017
University of Tennessee, Knoxville	
“Basics of Equine Nutrition”	
ANSC 281: Equine, Exotic, and Companion Animal Management	January 2017
University of Tennessee, Knoxville	
“Domestication of Dogs and Cats”	
ANSC 281: Equine, Exotic, and Companion Animal Management	November 2016
University of Tennessee, Knoxville	
“Dog and Cat Nutrition”	
ANSC 281: Equine, Exotic, and Companion Animal Management	November 2016
University of Tennessee, Knoxville	
“Domestication of Dogs and Cats”	

***K-12 Experience***

Curriculum Developer, Nextide Academy	Summer 2014
Chemistry, Earth Science	
High School Science Teacher, Corinth Holders High School	2013-2014

Chemistry (Honors), Physical Science, Earth Science

***Certification***

Best Practices in Teaching

Spring 2017

**Awards and Honors**

Jimmy & Ileen Cheek Graduate Student Medal of Excellence Award  
Recipient

Spring 2020

ASAS Southern Section 2020 PhD 3 Minute Thesis Competition  
Third Place

Spring 2020

University of Tennessee Fellowship for Graduate Excellence  
Recipient

2018 – 2022

ASAS Midwest 2017 MS Poster Competition  
First Place

Spring 2017

UT Beef and Forage Center Research and Recommendation Meeting  
Graduate Student Poster Competition  
Third Place

Fall 2016

**Service**

***Disciplinary***

Session Chair, American Society of Animal Science Southern Section  
Annual Conference

2022 – 2025

Reviewer, Animals

2021 – current

Reviewer, Journal of Applied Microbiology

2020 – current

American Society of Animal Science Southern Section  
Section co-chair

2020 – current

Reviewer, Scientia Agricola

2020 – current

Reviewer, FEMS Microbiology

2020 – current

Reviewer, Journal of Animal Science

2019 – current

Science Mentor (Reviewer), Frontiers for Young Minds

2018 – current

***Society Affiliations***

National Academic Advising Association

2018 – current

Gamma Sigma Delta Honor Society of Agriculture

2017 – current

Gamma Beta Phi National Honor Society

2017 – current

American Society of Animal Science

2017 – current

American Society of Microbiology

2017 – current

***University/Extension***

Texas State FFA CDE Vet Sciences, Coordinator

April 2022

Ag Outreach Day for Children's Learning Center, Lead

August 2021

Texas State FFA CDE Vet Sciences Contest, Exam Lead

April 2021

Agriculture Outreach Day

March 2021

Ag Ambassador Interview Committee

September 2020

Steak and Potatoes Field Day Speaker

August 2019

SASEF Science and Engineering Fair, Lead Judge

March 2018

State 4-H Horse Educational Contest, Assistant

February 2018



Wilson County Fair 4-H/FFA Goat Show	August 2017
Department of Animal Science Undergraduate Orientation	Summer 2017
State 4-H Livestock Judging Education Contest, Assistant	June 2017
State 4-H Horse Educational Contest, Assistant	February 2017

***K-12 Outreach***

Skype-A-Scientist, participant	Jan/Feb 2020
Skype-A-Scientist, participant	February 2020
3 classes	
Skype-A-Scientist, participant	November 2019
3 classes	
Invited speaker: "Animal Agriculture in the Modern World"	October 2016
Hardin Valley High School	

***Leadership***

American Society of Animal Science Southern Section	2019-2021
Graduate Director	
Animal Science Graduate Student Association	
Vice President	2019-2020
President	Fall 2018
Fundraising Chair	2016-2018
Department of Animal Science Peer Advisor Leader (PAL)	Fall 2017
Assistant Coordinator, PAL Cohort Leader (3 cohorts)	
Leader Training Coordinator	Spring 2018