

Andrew P. Foote, Ph.D.

Assistant Professor

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Education

Ph.D. – Animal Science, University of Kentucky – 2013

M.S. – Agriculture, Tarleton State University –2009

B.S. – Animal Science, Tarleton State University –2007

Professional Experience

2018 – present	Assistant Professor, Oklahoma State University Ruminant Nutritional Physiology 70% research, 30% teaching
2013 – 2018	Research Physiologist, USDA-ARS, US Meat Animal Research Center
2013	Research Associate, USDA-ARS, US Meat Animal Research Center
2009 – 2013	Research Assistant, University of Kentucky
2007 – 2009	Research Assistant, Tarleton State University

Professional Activities

- Board of Director for the American Society of Animal Sciences, 2019 - 2022
- Associate Editor for Domestic Animal Endocrinology, 2018 - 2020
- Editorial board member for Journal of Animal Science, 2017 – 2020
- Ad hoc grant proposal reviewer – Natural Sciences and Engineering Research Council of Canada
- Ad hoc grant proposal reviewer - Alberta Agriculture and Forestry Strategic Research & Development Program
- Ad hoc grant proposal reviewer - Canadian Beef Cattle Research Council
- Panel member for USDA-NIFA-AFRI Animal nutrition, growth, and lactation foundational grant review panel
- Ad hoc reviewer for 12 international scientific journals
- Committee member for the comparative gut physiology symposium at the 2015 - 2017 Annual Meetings of ASAS

- Chairman of the committee for the comparative gut physiology symposium at the 2016 Joint Annual Meeting of ASAS and ADSA

Professional Affiliations

- American Society of Animal Science
- American Society of Dairy Science
- Canadian Society of Animal Science
- American Forage and Grassland Council
- Sigma Xi
- Gamma Sigma Delta
- Alpha Chi
- Alpha Zeta

Awards

- Emerging Scholar - American Society of Animal Science Southern Section, 2013
- Dissertation Enhancement Award - University of Kentucky \$3,000 for travel to University of Saskatchewan, 2013
- Joseph P. Fontenot Travel Scholarship - American Society of Animal Science, 2012
- 1st Place Poster Presentation - University of Kentucky Graduate Student Association Symposium, 2012
- 2nd Place Master's level Agriculture Poster - Texas A&M System Research Symposium, 2008
- 2nd Place Poster Presentation - Tarleton State University Research Symposium, 2008
- Honorable Mention - Texas AgriLife Conference Research Symposium, 2008
- Outstanding Graduate - Department of Animal Science, Tarleton State University, 2007
- 1st Place Undergraduate Oral Research Presentation - Tarleton State University Research, Symposium, 2006 & 2007
- First Team All-American Meat Judging Team, 2005

Research

Funding

Total Funded (active and past) - \$1,770,114

Active

1. Evaluation of confidential supplements in a negative DCAD diet in transition dairy cows. **A. P. Foote** and R.R. Reuter. Phibro Animal Health. 2019. \$56,716.
2. Use of high oleic soybean oil in feedlot rations. **A. P. Foote** and P. Beck. Oklahoma Soybean Board. 2020. \$15,660.
3. Certillus as a Direct Fed Microbial. L. Spicer and **A. P. Foote**. Church & Dwight, Inc. Arm & Hammer Animal and Food Production. \$92,417.
4. Comparison of cotton products to traditional diet ingredients (dry distillers grains and hay) in feedlot steers: Impact on animal performance, carcass traits, and the ruminal degradation of ingredients and whole diets. B. Wilson, P. Beck, **A.P. Foote**, and R. R. Reuter. Cotton Inc. \$81,221.
5. PurSUIt: Discovery, characterization, and elucidation of the global patterns and determinants of anaerobic fungal (*Neocallimastigomycota*) diversity in the herbivorous gut. M. Elshahed, N. Youssef, and **A. P. Foote**. National Science Foundation. \$762,260.
6. Evaluation of monensin bolus in stocker cattle. R. R. Reuter, B. K. Wilson, and **A. P. Foote**. Elanco Animal Health Inc. 2020 – 2021. \$526,467.
7. Use of in vitro fermentation to test fly control products. **A. P. Foote** and R. R. Reuter. McLaughlin Gormley King (private company). 2020. \$2,693.

Funded and Completed

1. Renovation of Critical Research Facilities: Updating and upgrading the Oklahoma State University Animal Nutrition and Behavior Laboratories. **A.P. Foote**, P. Beck, S. Carter, L. Goodman, J. Salak-Johnson, D. Lalman, A. Pezeshki, R. Reuter, A. Roceteli, and B. Wilson. Oklahoma State University, Office of the Vice President for Research. 2018. \$232,680.

Peer-Reviewed Publications

1. Warner, A. L., P. A. Beck, **A. P. Foote**, K. N. Pierce, C. A. Robison, N. E. Stevens, and B. K. Wilson. 2020. Evaluation of ruminal degradability and metabolism of feedlot finishing diets with or without cotton byproducts. *J. Anim. Sci.* *Accepted July 29, 2020*.
2. Freetly, H. C., A. Dickey, A. K. Lindholm-Perry, R. M. Thallman, J. W. Keele, **A. P. Foote**, and J. E. Wells. 2020. Digestive tract microbiota of beef cattle that differed in feed efficiency. *J. Anim. Sci.* doi:10.1093/jas/skaa008.
3. Rathert, A., A. M. Meyers, **A. P. Foote**, R. J. Kern, L. A. Kuehn, and A. K. Lindholm-Perry. 2020. Centromere-associated protein E may have a role in the rumen tissue of beef steers with variation in residual feed intake. *Anim. Genetics*. 51: 453-456. doi:10.1111/age.12926.
4. Warner, A. L., P. A. Beck, **A. P. Foote**, K. N. Pierce, C. A. Robison, D. S. Hubbell, and B. K. Wilson. 2020. Effects of utilizing cotton byproducts in a finishing diet on beef cattle performance, carcass traits, fecal characteristics and plasma metabolite levels. *J. Anim. Sci.* doi.org/10.1093/jas/skaa038.

5. Andresen, C.E., A. W. Wiseman, A. McGee, C. Goad, **A. P. Foote**, R. R. Reuter, and D. L. Lalman. 2020. Maintenance energy requirements and forage intake of purebred vs crossbred beef cows. Translation. Anim. Sci. doi.org/10.1093/tas/txaa008.
6. Lalman, D. L., C. E. Andresen, A. L. Holder, R. R. Reuter, and **A. P. Foote**. 2019. Applications of the California Net Energy System to grazed forage: feed values and requirements. Translational Anim. Sci. 3: 962-968.
7. Petzel, E. A., E. C. Titgemeyer, A. J. Smart, K. E. Hales, **A. P. Foote**, S. Acharya, E. A. Bailey, J. E. Held, D. W. Brake. 2019. What is the digestibility and caloric value of different botanical parts in corn residue to cattle? J. Anim. Sci. doi:10.1093/jas/skz137.
8. Artegoitia, V. M., **A. P. Foote**, R. M. Lewis, and H. C. Freetly. 2019. Metabolomics profile and targeted lipidomics in multiple tissues associated with feed efficiency in beef steers. ACS Omega 4: 3973-3982.
9. Oliver, W. T., B. N. Keel, A. K. Lindholm-Perry, and **A. P. Foote**. 2018. The effects of *Capn1* gene inactivation on the differential expression of genes in skeletal muscle. Gene 668: 54-58.
10. Thorson, J. F., L. D. Prezotto, H. Adams, S. L. Petersen, J. A. Clapper, E. C. Wright, W. T. Oliver, B. A. Freking, **A. P. Foote**, E. D. Berry, D. J. Nonneman, and C. A. Lents. 2018. Energy balance affects pulsatile secretion of luteinizing hormone from the adenohypophysis and expression of neurokinin b in the hypothalamus of ovariectomized gilts. Biol. Reprod. 99: 433-445.
11. **Foote, A. P.***, S. A. Jones, and L. A. Kuehn. 2017. Association of pre-weaning and weaning serum cortisol and metabolites with ADG and incidence of respiratory disease in beef cattle. J. Anim. Sci. 95: 5012-5019.
12. Lindholm-Perry, A. K., V. M. Artigotia, J. R. Miles, and **A. P. Foote**. 2017. Expression of cytokine genes and receptors in white blood cells associated with divergent body weight gain in beef steers. Agri. Gene. 6: 37-39.
13. **Foote, A. P.***, B. N. Keel, C. M. Zarek, and A. K. Lindholm-Perry. 2017. Beef steers with average DMI and divergent ADG have altered gene expression in the jejunum. J. Anim. Sci. 95: 4430-4439.
14. Artegoitia, V. M., **A. P. Foote**, R. M. Lewis, T. L. Wheeler, and H. C. Freetly. 2017. Endocannabinoids concentrations in plasma during the finishing period associated with feed efficiency and carcass composition of beef calves. J. Anim. Sci. 95: 4568-4574.
15. **Foote, A. P.*** 2017. Comparative Gut Physiology Symposium: The Microbe-Gut-Brain Axis. J. Anim. Sci. 95: 3214.
16. Hales, K. E., **A. P. Foote**, D. W. Brake, T. M. Brown-Brandl, V. M. Artegoitia, and H. C. Freetly. 2017. Effects of zilpaterol hydrochloride on methane production, total body oxygen consumption, and blood metabolites in finishing beef steers. J. Anim. Sci. 95: 3195-3197.
17. Lindholm-Perry, A. K., H. C. Cunningham, L. A. Kuehn, J. L. Vallet, J. W. Keele, **A. P. Foote**, K. M. Cammack, and H. C. Freetly. 2017. Relationships between the genes expressed in the mesenteric adipose tissue of beef cattle and feed intake and gain. Anim. Genet. 48: 386-394.

18. Reynolds, J. G., **A. P. Foote***, H. C. Freetly, W. T. Oliver, and A. K. Lindholm-Perry. 2017. Relationships between inflammation- and immunity-related transcript abundance in the rumen and jejunum of beef steers with divergent average daily gain. *Anim. Genet.* 48: 447-449.
19. Artegoitia, V. M., **A. P. Foote**, R. M. Lewis, and H. C. Freetly. 2017. Rumen fluid metabolomics analysis associated with feed efficiency on crossbred steers. *Sci. Rep.* 7: 2864.
20. **Foote, A. P.***, C. M. Zarek, L. A. Kuehn, H. C. Cunningham, K. M. Cammack, H. C. Freetly, and A. K. Lindholm-Perry. 2016. Effect of abomasal butyrate infusion on gene expression in the duodenum of lambs. *J. Anim. Sci.* 95: 1191-1196.
21. Hales, K. E., **A. P. Foote**, T. M. Brown-Brandl, and H. C. Freetly. 2016. The effects of feeding increasing concentrations of corn oil on energy metabolism and nutrient balance in finishing beef steers. *J. Anim. Sci.* 95: 939-948.
22. Artegoitia, V. M., **A. P. Foote**, R.M. Lewis, K. E. Hales, D. A. King, S. D. Shackelford, T. L. Wheeler, and H. C. Freetly. 2016. Endocannabinoids concentrations in plasma associated with feed efficiency and carcass composition of beef steers. *J. Anim. Sci.* 94: 5177-5181.
23. Klotz, J. L., G. E. Aiken, J. R. Bussard, **A. P. Foote**, D. L. Harmon, B. M. Goff, F. N. Schrick, and J. R. Strickland. 2016. Vasoactivity and vasoconstriction changes in cattle related to time off toxic endophyte-infected tall fescue. *Toxins* 8: 271.
24. **Foote, A. P.***, and H. C. Freetly. 2016. Effect of abomasal butyrate infusion on net nutrient flux across the portal-drained viscera and liver of growing lambs. *J. Anim. Sci.* 94: 2962-2972.
25. **Foote, A. P.***, K. E. Hales, and H. C. Freetly. 2016. Changes in acyl and total ghrelin concentrations and their association with dry matter intake, average daily gain, and feed efficiency of finishing beef steers and heifers. *Dom. Anim. Endocrinol.* 57: 100-107.
26. Hales, K. E., **A. P. Foote**, S. A. Jones, S. D. Shackelford, B. M. Boyd, and G. E. Erickson. 2016. The effects of zilpaterol hydrochloride and shade on blood metabolites of finishing beef steers. *J. Anim. Sci.* 94: 2937-2941.
27. Lindholm-Perry, A. K., A. R. Butler, R. J. Kern, R. Hill, L. A. Kuehn, J. E. Wells, W. T. Oliver, K. E. Hales, **A. P. Foote**, and H. C. Freetly. 2016. Differential gene expression in the duodenum, jejunum and ileum among crossbred beef steers with divergent gain and feed intake phenotypes. *Anim. Genet.* 47: 408-427.
28. Kern, R. J., A. K. Lindholm-Perry, H. C. Freetly, W. M. Snelling, J. W. Kern, J. W. Keele, J. R. Miles, **A. P. Foote**, W. T. Oliver, L. A. Kuehn, and P. A. Ludden. 2016. Transcriptome differences in the rumen of beef steers with variation in feed intake and gain. *Gene* 586: 12-26.
29. **Foote, A. P.***, R. G. Tait Jr, D. H. Keisler, K. E. Hales, and H. C. Freetly. 2016. Leptin concentrations in finishing beef steers and heifers and their association with dry matter intake, average daily gain, feed efficiency, and body composition. *Dom. Anim. Endocrinol.* 55: 136-141.
30. **Foote, A. P.***, K. E. Hales, R. G. Tait Jr., E. D. Berry, C. A. Lents, J. E. Wells, A. K. Lindholm-Perry, and H. C. Freetly. 2015. Relationship of glucocorticoids and hematological

- measures with feed intake, growth, and efficiency of finishing beef cattle. *J. Anim. Sci.* 94: 275-283.
31. **Foote, A. P.***, K. E. Hales, L. A. Kuehn, D. H. Keisler, D. A. King, S. D. Shackelford, T. L. Wheeler, and H. C. Freetly. 2015. Relationship of leptin concentrations with feed intake, growth, and efficiency in finishing beef steers. *J. Anim. Sci.* 93: 4401-4407.
 32. Hales, K. E., **A. P. Foote**, T. M. Brown-Brandl, and H. C. Freetly. 2015. Effects of dietary glycerin inclusion at 0, 5, 10, and 15 percent of dry matter on energy metabolism and nutrient balance in finishing beef steers. *J. Anim. Sci.* 93: 348-356.
 33. D. H. Kim, K. R. McLeod, A. F. Koontz, **A. P. Foote**, J. L. Klotz, and D. L. Harmon. 2015. Effect of intake on fasting heat production, respiratory quotient and plasma metabolites measured using the washed rumen technique. *Animal* 9: 58-66.
 34. **Foote, A. P.***, K. E. Hales, C. A. Lents, and H. C. Freetly. 2014. Association of circulating active and total ghrelin concentrations with dry matter intake, growth, and carcass characteristics of finishing beef cattle. *J. Anim. Sci.* 92: 5651-5658.
 35. **Foote, A. P.**, G. B. Penner, M. E. Walpole, J. L. Klotz, K. R. Brown, L. P. Bush, and D. L. Harmon. 2014. Acute exposure to ergot alkaloids from endophyte-infected tall fescue does not alter absorptive or barrier function of the isolated bovine ruminal epithelium. *Animal* 8: 1106-1112.
 36. **Foote, A. P.**, N. B. Kristensen, J. L. Klotz, D. H. Kim, A. F. Koontz, K. R. McLeod, L. P. Bush, F. N. Schrick, and D. L. Harmon. 2013. Ergot alkaloids from endophyte-infected tall fescue decrease reticuloruminal epithelial blood flow and volatile fatty acid absorption from a washed reticulorumen. *J. Anim. Sci.* 91: 5366-5378.
 37. Koontz, A. F., **A. P. Foote**, D. H. Kim, L. P. Bush, J. L. Klotz, K. R. McLeod, and D. L. Harmon. 2013. Alteration of fasting heat production during fescue toxicosis in Holstein steers. *J. Anim. Sci.* 91: 3881-3888.
 38. Kim, D. H., K. R. McLeod, J. L. Klotz, A. F. Koontz, **A. P. Foote**, and D. L. Harmon. 2013. Evaluation of a rapid determination of heat production and respiratory quotient in Holstein steers using the washed rumen technique. *J. Anim. Sci.* 91: 4267-4276.
 39. **Foote, A. P.**, D. L. Harmon, K. R. Brown, J. R. Strickland, K. R. McLeod, L. P. Bush, and J. L. Klotz. 2012. Constriction of bovine vasculature caused by endophyte-infected tall fescue seed extract is similar to pure ergovaline. *J. Anim. Sci.* 90: 1603-1609.
 40. **Foote, A. P.**, D. L. Harmon, J. R. Strickland, L. P. Bush, and J. L. Klotz. 2011. Effect of ergot alkaloids on contractility of bovine right ruminal artery and vein. *J. Anim. Sci.* 89: 2944-2949.
 41. **Foote, A. P.**, B. D. Lambert, J. A. Brady, and J. P. Muir. 2011. Short communication: Phosphate transporter expression in Holstein cows. *J. Dairy Sci.* 94: 1913-1916.
 42. Reinhard, M. S., **A. P. Foote**, B. D. Lambert, and J. P. Muir. 2011. Effects of protein or energy supplementation on in situ disappearance of low- and high-quality coastal bermudagrass hay in goats. *Texas Journal of Agriculture and Natural Resources* 24: 97-105.

43. Patterson, J. M., B. D. Lambert, J. P. Muir, and **A. P. Foote**. 2009. Effects of protein and energy supplementation on growth, forage intake, forage digestion and nitrogen balance in meat goat kids. *Animal* 3: 1109-1113.

Submitted and Pending Peer-Reviewed Publications

44. Smith, W. N., D. W. Brake, A. K. Lindholm-Perry, W. T. Oliver, H. C. Freetly, and **A. P. Foote**. 2020. Associations of mucosal disaccharidase kinetics and expression in the jejunum of steers with divergent average daily gain. *J. Anim. Sci.* *Submitted April 21, 2020.*

Symposia and Other Publications

1. **Foote, A. P.** 2018. Metabolic and physiological mechanisms responsible for variation in feed efficiency. Presented at the XI SIMCORTE – XI National Symposium on Beef Cattle Production and VII International Symposium on Beef Cattle Production. Viçosa, Brazil.
2. **Foote, A. P.** 2017. Comparative Gut Physiology Symposium: The Microbe-Gut-Brain Axis. *J. Anim. Sci.* 95: 3214.
3. **Foote, A. P.**, N. B. Kristensen, J. L. Klotz, K. R. McLeod, L. P. Bush, and D. L. Harmon. Ergot alkaloids produced by endophyte-infected tall fescue decrease rumen epithelial blood flow of cattle. 2013. Proceedings of the American Forage and Grassland Council Annual Conference.
4. J. L. Klotz, G. E. Aiken, **A. P. Foote**, J. R. Bussard, K. R. Brown, B. M. Goff, D. L. Harmon, J. R. Strickland. 2012. Vascular activity increases with time off of tall fescue. Kentucky Research and Extension Beef Report: 19-22.
5. **Foote, A. P.**, N. B. Kristensen, J. L. Klotz, D. H. Kim, A. F. Koontz, K. R. McLeod, L. P. Bush and D. L. Harmon. 2012. Ergot alkaloids reduce rumen epithelial blood flow and volatile fatty acid absorption. Kentucky Research and Extension Beef Report: 16-19.
6. **Foote, A. P.**, D. L. Harmon, K. R. Brown, J. R. Strickland, K. R. McLeod, L. P. Bush, and J. L. Klotz. 2012. Constriction of bovine vasculature caused by endophyte-infected tall fescue seed extract is similar to pure ergovaline. Kentucky Research and Extension Beef Report: 13-15.
7. Koontz, A. F., **A. P. Foote**, D. H. Kim, L. P. Bush, J. L. Klotz, K. R. McLeod, and D. L. Harmon. 2012. Alteration of basal metabolic rate in Holstein steers during fescue toxicosis. Kentucky Research and Extension Beef Report: 7-9.
8. Kim, D. H., K. R. McLeod, J. L. Klotz, A. F. Koontz, **A. P. Foote**, and D. L. Harmon. 2012. Evaluation of a rapid determination of heat production and respiratory quotient in Holstein steers using the washing rumen technique. Kentucky Research and Extension Beef Report: 26-28.
9. **Foote, A. P.**, J. L. Klotz, D. L. Harmon, L. P. Bush, and J. R. Strickland. 2010. Effect of ergot alkaloids on bovine foregut vasculature. Kentucky Research and Extension Beef Report: 16-17.

Invited Presentations

1. 4/24/2019. Presented invited talk titled “Utilizing metabolomics to understand physiological mechanisms associated with feed efficiency of beef cattle” at Alltech, Lexington, KY.
2. 1/27/2019. Presented invited talk titled “Thoughts on energetic efficiency of grazing cattle” at the SERA 41 Symposium at the American Society of Animal Science Southern Section Meeting, Oklahoma City, OK.
3. 5/31/2018. Presented seminar titled “Metabolic and physiological mechanisms responsible for variation in feed efficiency” at the XI SIMCORTE – XI National Symposium on Beef Cattle Production and VII International Symposium on Beef Cattle Production, Viçosa, Brazil.
4. 12/1/2017. Presented seminar titled “Physiological mechanisms regulating feed intake and growth of beef cattle”. South Dakota State University, Department of Animal Science, Brookings SD.
5. **Foote, A. P.**, 2015. The role of gut peptides in the gut-brain-axis of livestock. *J. Anim. Sic.* 93: 200. Presented in the Comparative Gut Physiology Symposium at the Joint Annual Meeting of ASAS and ADSA in Orlando, FL.
6. **Foote, A. P.**, N. B. Kristensen, J. L. Klotz, K. R. McLeod, L. P. Bush, and D. L. Harmon. 2013. Emerging Young Scholar Award: Effect of ergot alkaloids from endophyte-infected tall fescue on ruminal vasculature, blood flow, and nutrient absorption. Southern Section American Society of Animal Science Conference, Orlando, FL.
7. **Foote, A. P.** 2013. My philosophy on beef cattle efficiency research: An integrative approach to achieve applicable results. U.S. Meat Animal Research Center, Clay Center, NE. November 19, 2013.
8. **Foote, A. P.** 2013. Effect of ergot alkaloids from tall fescue on gut vasculature and nutrient absorption in cattle. University of Saskatchewan, Department of Animal and Poultry Science, Saskatoon, SK, Canada. March 21, 2013.
9. **Foote, A. P.** 2013. Effect of ergot alkaloids from tall fescue on gut vasculature and nutrient absorption in cattle. U.S. Meat Animal Research Center, Clay Center, NE. March 7, 2013.
10. **Foote, A. P.** 2012. Factors affecting gut permeability. University of Kentucky Department of Animals and Food Sciences Seminar Series.
11. **Foote, A.P.**, N. B. Kristensen, J. L. Klotz, D. H. Kim, A. F. Koontz, K. R. McLeod, L. P. Bush, and D. L. Harmon. 2012. Ergot alkaloids decrease rumen epithelial blood flow. University of Kentucky Forage and Grassland Discussion Group.
12. **Foote, A.P.**, N.B. Kristensen, J.L. Klotz, D.H. Kim, A.F. Koontz, K.R. McLeod, L.P. Bush, and D.L. Harmon. 2012. Ergot alkaloids decrease rumen epithelial blood flow. University of Kentucky & USDA, ARS-FAPRU Research Update Symposium.
13. **Foote, A. P.**, J. L. Klotz, D. L. Harmon, L. P. Bush, and J. R. Strickland. 2010. Ergot alkaloids induce vasoconstriction of bovine foregut vasculature. University of Kentucky & USDA, ARS-FAPRU Research Update Symposium.

Peer-Reviewed Abstracts

1. **Foote, A. P.** and H. C. Freetly. 2019. Association of insulin, glucagon, and glucagon-like peptide-1 with production traits of growing and finishing beef heifers fed forage- and concentrate-based rations. *J. Anim. Sci. (E-Suppl.)*: .
2. Freetly, H. C., J. Wells, A. Dickey, A. Lindholm-Perry, J. Keele, and **A. P. Foote**. 2019. Digestive tract microbiota of beef cattle that differed in feed efficiency. 2019 Congress on Gastrointestinal Function: 41-42.
3. Smith, W., D. Brake, W. T. Oliver, H. C. Freetly, and **A. P. Foote**. 2018. Late-breaking: Mucosal disaccharidase kinetics in the jejunum of steers with a divergent average daily gain. *J. Anim. Sci.* 96 (E-Suppl. 3): 84.
4. Meyer, A. M., N. B. Duncan, and **A. P. Foote**. 2018. Dam parity affects neonatal beef calf energy-related metabolites. 96 (E-Suppl. 3): 407.
5. Petzel, E. A., A. J. Smart, K. E. Hales, **A. P. Foote**, S. Acharya, C. L. Wright, and D. W. Brake. 2018. An evaluation of digestibility and caloric value of different botanical parts of corn residues to cattle. 96 (E-Suppl. 3): 205.
6. Grant, M. S., and **A. P. Foote**. 2018. The relationship between blood metabolites and hormones with intake, gain, and efficiency in beef cattle consuming forage then concentrate diets. 96 (E-Suppl. 2): 252.
7. **Foote, A. P.**, R. G. Tait, Jr., H. C. Freetly. 2017. Changes in feed intake, growth, feed efficiency, and body composition of beef cattle fed forage then concentrate diets. *J. Anim. Sci.* 95 (E-Suppl. 4): 64.
8. **Foote, A. P.**, B. N. Keel, and A. K. Lindholm-Perry. Alteration in gene expression in the jejunum mucosa of Angus steers with divergent ADG. *J. Anim. Sci.* 95 (E-Suppl. 4): 64-65.
9. Artegoitia, V. M., **A. P. Foote**, R. M. Lewis, and H. C. Freetly. 2017. Liver metabolomics analysis associated with feed efficiency on steers. *J. Anim. Sci.* 95 (E-Suppl. 4): 258-259.
10. Artegoitia, V. M., **A. P. Foote**, R. M. Lewis, and H. C. Freetly. 2017. Metabolic profile in multiple tissues associated with feed efficiency on steers. *J. Anim. Sci.* 95 (E-Suppl. 4): 259.
11. Artegoitia, V. M., **A. P. Foote**, R. M. Lewis, and H. C. Freetly. 2016. Rumen fluid metabolomics analysis associated with feed efficiency on crossbred steers. *J. Anim. Sci.* 94 (E-Suppl. 5): 768.
12. Hales, K. E., **A. P. Foote**, T. M. Brown-Brandl, and H. C. Freetly. 2016. The effects of feeding increasing concentrations of corn oil on energy metabolism and nutrient balance in finishing beef steers. *J. Anim. Sci.* 94 (E-Suppl. 5): 724.
13. Artegoitia, V. M., **A. P. Foote**, R. M. Lewis, D. A. King, S. D. Shackelford, T. L. Wheeler, and H. C. Freetly. 2016. Endocannabinoid concentrations in plasma associated with feed efficiency and carcass composition on crossbreed steers. *J. Anim. Sci.* 94 (E-Suppl. 5): 704.

14. **Foote, A. P.**, D. H. Keisler, K. E. Hales, R. G. Tait Jr., and H. C. Freetly. 2015. Changes in leptin and metabolite concentrations over time in finishing beef steers and heifers. *J. Anim. Sci.* 93 (E-Suppl. 2): 91.
15. Klotz, J. L., D. H. Kim, **A. P. Foote**, and D. L. Harmon. 2014. Effects of ergot alkaloid exposure on serotonin receptor mRNA in the smooth muscle of the bovine gastrointestinal tract. *J. Anim. Sci.* 92 (E-Suppl. 2): 890.
16. **Foote, A. P.**, G. B. Penner, M. E. Walpole, J. L. Klotz, L. P. Bush, and D. L. Harmon. 2014. Effect of acute exposure to ergot alkaloids on short-chain fatty acid absorption and barrier function of isolated bovine ruminal epithelium. *J. Anim. Sci.* 92 (E-Suppl. 2): 874.
17. **Foote, A. P.**, K. E. Hales, C. A. Lents, and H. C. Freetly. 2014. Association of plasma ghrelin concentrations with feed intake in beef cattle. *J. Anim. Sci.* 92 (E-Suppl. 2): 361.
18. Hales, K. E., **A. P. Foote**, T. M. Brown-Brandl, and H. C. Freetly. 2014. Effects of dietary glycerin inclusion at 0%, 5%, 10%, and 15% of dry matter on energy metabolism and nutrient balance in finishing beef steers. *J. Anim. Sci.* 92 (E-Suppl. 2): 296-297.
19. Kim, D. H., K. R. McLeod, J. L. Klotz, A. F. Koontz, **A. P. Foote**, and D. L. Harmon. 2013. Application of washed rumen technique for rapid determination of fasting heat production in steers. In: *Energy and Protein Metabolism and Nutrition in Sustainable Animal Production*. 134: 235-236.
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33. **Foote, A. P.**, J. Struthoff, B. D. Lambert, and J. P. Muir. 2006. Effect of carbohydrate and protein supplements on ruminal in situ disappearance of dry matter and fiber from coastal bermuda-grass hay in goats. *J. Anim. Sci.* 85 (Suppl. 2): 42.

Other Abstracts and Presentations

1. **Foote, A. P.**, G. B. Penner, M. E. Walpole, J. L. Klotz, L. P. Bush, and D. L. Harmon. 2013. Effect of ergot alkaloids on in vitro VFA flux and epithelial barrier function. University of Kentucky, Department of Animal & Food Science Graduate Student Association Symposium.
2. **Foote, A. P.**, N. B. Kristensen, J. L. Klotz, K. R. McLeod, L. P. Bush, and D. L. Harmon. 2013. Ergot alkaloids produced by endophyte-infected tall fescue decrease rumen epithelial blood flow of cattle. Emerging Scientist Competition; American Forage and Grassland Council Annual Conference.
3. **Foote, A. P.**, N. B. Kristensen, J. L. Klotz, D. H. Kim, A. F. Koontz, K. R. McLeod, L. P. Bush, and D. L. Harmon. 2012. Ergot alkaloids decrease rumen epithelial blood flow. University of Kentucky, Department of Animal & Food Science Graduate Student Association Symposium.
4. Reinhard, M., **A. P. Foote**, B. D. Lambert, J. P. Muir, R. M. Harp. 2008. Digestibility of medium- and low-quality coastal bermudagrass as affected by protein and energy supplements in goats. Texas AgriLife Conference, College Station, TX.

5. **Foote, A. P.**, J. A. Brady, and B. D. Lambert. 2008. Phosphorus absorption in the dairy cow gastrointestinal tract. Texas AgriLife Conference, College Station, TX.
6. **Foote, A. P.**, J. A. Brady, and B. D. Lambert. 2007. Phosphorus absorption in the dairy cow gastrointestinal tract. Texas A&M University System Student Research Symposium, Stephenville, TX.
7. Reinhard, M., **A. P. Foote**, B. D. Lambert, J. P. Muir, R. M. Harp. 2007. Digestibility of medium- and low-quality coastal bermudagrass as affected by protein and energy supplements in goats. Texas A&M University System Student Research Symposium, Stephenville, TX.
8. **Foote, A. P.**, J. A. Brady, and B. D. Lambert. 2007. Phosphorus absorption in the bovine small intestine. Sigma Xi Student Research Symposium, Tarleton State University, Stephenville, TX.
9. **Foote, A. P.**, J. Struthoff, B. D. Lambert, and J. P. Muir. 2007. Effect of carbohydrate and protein supplements on ruminal in situ disappearance of dry matter and fiber from coastal bermuda-grass hay in goats. TAMU Agriculture Program Conference. College Station, TX.
10. **Foote, A. P.**, J. Struthoff, B. D. Lambert, J. P. Muir, and Y. Newman. 2006. In Situ degradation of sorghum-sudan, coastal bermuda, and alfalfa in mature beef steers consuming sorghum-sudan hay. Sigma Xi Student Research Symposium, Tarleton State University. Stephenville, TX.
11. **Foote, A. P.**, J. Struthoff, B. D. Lambert, and J. P. Muir. 2006. Effect of carbohydrate and protein supplements on ruminal in situ disappearance of dry matter and fiber from coastal bermuda-grass hay in goats. TAMU System Student Research Symposium. Prairie View, TX.

Teaching

My teaching program is focused on graduate education. One philosophy I believe in strongly is that a large portion of a graduate education is obtained outside of the classroom. This includes activities such as lab meetings and journal club. In my first semester at OSU, I instituted a ruminant nutrition journal club with the graduate students from our group. A total of 14 students presented and 2 additional students participated but did not present. In this activity, the students choose a paper related to their interests and present the paper to the other students and the faculty. Presentations are fairly informal, as the main purpose is not to teach the finer points of giving a seminar. The needs and benefits of this program were obvious from the beginning of the semester. The multitude of goals for this program include gaining experience presenting primary scientific literature, interpreting data, presenting data, reading literature, generating PowerPoint presentations, and many more.

Courses

ANSI 5743 Rumenology

I developed this course with new material in Spring 2019. This course provides the fine details of ruminant nutritional physiology. Topics covered include anatomy, growth, and development of ruminant gastrointestinal tract, digestive tract motility, saliva function and production, rumen microbiology, volatile fatty acid production, absorption, and metabolism, and lipid metabolism.

Taught Spring 2019, 17 students

ANSI 5753 Animal Nutrition Techniques and Laboratory Methods

I developed this course with new material in Fall 2019. This course provides an introduction of the “how’s and why’s” of laboratory methods commonly used in animal nutrition. Students gain hands-on experience in collecting, processing, and analyzing feed and biological samples. Attention is paid to lab safety and record keeping in the form of the lab notebook.

Taught Fall 2019, 12 students

Graduate Advising & Mentorship

#	Year of Graduation	Student	Degree	Department	Role
1	2019	Wyatt Smith	MS	ANSI (SDSU)	Committee Member
2	2020	Corban Hemphill	MS	AFS	Committee Member
3	2020	Madison Lockhart	MS	AFS	Committee Member
4	2020	Dakota Zapalac	MS	AFS	Committee Member
5	2020	Andrea Northup- Warner	MS	AFS	Committee Member
6	2020	Julia Sutton	MS	AFS	Committee Member
7	2021	Abbey Rathert	MS	AFS	Chair and Advisor
8	2021	Jancy Jeffus	MS	AFS	Committee Member
9	2022	Zane Grigsby	MS	AFS	Committee Member
10	2022	Nick Uzee	MS	AFS	Chair and Advisor
11	2022	Jordan Adams	MS	AFS	Committee Member
12	2022	Dagan Montgomery	MS	AFS	Chair and Advisor