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Education

1999 Ph.D., Cornell University. Ithaca, New York. *Major*: Microbiology (Anaerobic); *Minors*: Animal Science (Ruminant nutrition) and Biochemistry.

Dissertation: The adaptation and selection of ruminal bacteria by monensin.

1996 M.S., University of Georgia, Athens. *Major*: Animal and Dairy Science; *Emphasis*, Ruminant Nutrition and Rumen (Anaerobic) Microbiology.

Thesis: Effects of monensin and organic acids on the *in vitro* mixed ruminal microorganism fermentation.

1993 B.S. Agriculture, University of Georgia, Athens. *Majors*: Animal and Dairy Science, and Biological Sciences.

Professional Positions Held

2022-Present Editor in Chief, *Foodborne Pathogens and Disease*

2020-Present *Associate Professor (Ruminant Nutrition and Microbiology)*, Department of Animal and Dairy Science, University of Georgia. Athens, GA.
70% Research, 25% Teaching, and 5% Service (2017-2022)
60% Research, 35% Teaching, and 5% Service (2022-Present)

- *Adjunct*, Dept. of Poultry Science. (2017-Present)
- *Adjunct*, Center Food Safety, Griffin. (2017-Present)
- *Member*, Institute for Integrative Precision Agriculture (2022-Present)

2021-Present *Invited Associate Professor (Honorary and Adjunct)*, Faculty of Bioengineering and Animal Resources, Banat University of Agricultural Sciences and Veterinary Medicine Timisoara, (USAMVBT), Timisoara, Romania.

2014-Present *Adjunct Assistant Professor*. Department of Food Science, Autonomous University of Queretaro. Queretaro, Mexico.

2017-2020 *Assistant Professor (Ruminant Nutrition and Microbiology)*, Department of Animal and Dairy Science, University of Georgia. Athens, GA.

2016-2017 *Acting* and *Permanent National Program Leader (Food Safety and Antimicrobial Resistance portfolios)*. USDA, Agricultural Research Service. National Program Staff; Nutrition, Food Safety, and Quality. Beltsville, MD.

2000-2017 *Research Microbiologist* (GS-12 through GS-15). USDA, Agricultural Research Service. Food and Feed Safety Research Unit. College Station, TX.

1999-2000 *Research Chemist* (GS-11). USDA, Agricultural Research Service. Food and Feed Safety Research Unit. College Station, TX

2010-2015 *Adjunct Assistant Professor*. Department of Animal Science, Mississippi State University, Starkville, MS.

2004-2010 *Adjunct Assistant Professor*. College of Veterinary Medicine. Universidad Nacional Autonomous de Mexico (UNAM), Mexico City, Mexico.

2001-2021 *Adjunct Assistant Professor*. Departments of Animal Science, Poultry Science, and Center for Food Safety in the Institute of Food Science and Engineering, Texas A&M University, College Station, TX.

2001-2021 *Adjunct Assistant Professor of Agriculture*. Angelo State University, San Angelo, TX.

2006 *Science Fellow* (Food Safety Risk and Impact Assessment on Trade). USDA, Foreign Agricultural Service and APHIS. U.S. Mission to the European Union (USEU), Brussels, Belgium.

1996-1999 *Graduate Research and Teaching Assistant*. Section of Microbiology. Cornell University, Ithaca, NY.

1993-1996 *Graduate Research and Teaching Assistant*. Department of Animal and Dairy Science. University of Georgia, Athens.

Consulting

2022-2023 Bioveritas Technology, Bryan, TX

2020-2022 *Science Advisor (Panel Manager)*, National Institute of Food and Agriculture, USDA, Kansas City, KS.

2020-2023 *Expert witness*, Department of Justice, Food and Drug Administration, Center for Veterinary Medicine, Office of Surveillance and Compliance, Silver Spring, MD.

2020-2021 *External Expert in E. coli O157:H7 mitigation strategies*, Food and Agriculture Organization of the United Nations, FAO-WHO, Rome Italy.

Multi-State Project Participation

1) Sustainable Small Ruminant Production in the Southeastern U.S. (SCC81) 2017-2022.
2) National Animal Nutrition Program (NRSP9) 2020-2021 https://www.nimss.org/projects/view/appendix_e_direct/17416?search=NRSP9
3) National Animal Nutrition Program (NRSP-9), Modeling Committee, 2021-2025

Refereed Research Articles, T. R. Callaway

1) **Callaway**, T. R., and S. A. Martin. 1996. Effects of monensin and organic acids on the *in vitro* mixed ruminal microorganism fermentation of cracked corn. J. Anim. Sci. 74:1982-1989.

2) Wells, J. E., D. O. Krause, T. R. **Callaway** and J. B. Russell. 1997. A bacteriocin-mediated antagonism between ruminal lactobacilli and *Streptococcus bovis*. FEMS Microbiol. Ecol. 22:237-243.

3) **Callaway**, T. R., and S. A. Martin. 1997. Effects of cellobiose and monensin on the *in vitro* fermentation of organic acids by mixed ruminal bacteria. J. Dairy Sci. 80:1126-1135.

4) **Callaway**, T. R., A. M. S. Carneiro De Melo, and J. B. Russell. 1997. The effect of nisin and monensin on ruminal fermentations *in vitro*. Curr. Microbiol. 35:90-96.

5) **Callaway**, T. R., S. A. Martin, J. L. Wampler, N. S. Hill, and G. M. Hill. 1997. Malate content of forage varieties commonly fed to cattle. J. Dairy Sci. 80:1651-1655.

6) Attia-Ismail, S. A., S. A. Martin and T. R. **Callaway**. 1998. Effects of chlorhexidine diacetate on ruminal microorganisms. Curr. Microbiol. 36:348-352.

7) Diez-Gonzalez, F., T. R. **Callaway**, M. Kizoulis and J. B. Russell. 1998. The potential link between grain feeding and the dissemination of acid-resistant *Escherichia coli* from cattle. Science 281:1666-1668.

8) **Callaway**, T. R., K. A. Adams and J. B. Russell. 1999. The ability of "low G+C Gram Positive" ruminal bacteria to resist monensin and counteract potassium depletion. Curr. Microbiol. 39:226-230.

9) **Callaway**, T. R., and J. B. Russell. 1999. Selection of a highly monensin resistant *Prevotella bryantii* subpopulation with altered outer membrane characteristics. Appl. Environ. Microbiol. 65:4753-4759.

10) **Callaway**, T. R., and J. B. Russell. 2000. Variations in the ability of ruminal gram-negative *Prevotella* species to resist monensin. Curr. Microbiol. 40:185-189.

11) Anderson, R. C., S. A. Buckley, T. R. **Callaway**, K. J. Genovese, L. F. Kubena, R. B. Harvey and D. J. Nisbet. 2001. Effects of sodium chlorate on *Salmonella* Typhimurium concentrations in the weaned pig gut. J. Food Prot. 64:255-258.

12) Byrd, J. A. B. M. Hargis, D. E. Corrier, D. J. Caldwell, R. H. Bailery, K. Herron, J. McRenyolds, R. L. Brewer, R. C. Anderson, K. M. Bischoff, T. R. **Callaway**, L. H. Stanker, and L. F. Kubena. 2001. Effect of lactic acid administration in the drinking water during preslaughter feed withdrawal on *Salmonella* and *Campylobacter* contamination of broilers. J. Poult. Sci. 80:278-283.

13) **Callaway**, T. R., R. C. Anderson, T. J. Anderson, T. L. Poole, K. M. Bischoff, L. F. Kubena and D. J. Nisbet. 2001. *Escherichia coli* O157:H7 becomes resistant to sodium chlorate addition in pure culture but not in mixed culture or *in vivo*. J. Appl. Microbiol. 91: 427-434.

14) Donskey, C. J., M. E. Hume, T. R. **Callaway**, S. M. Das, C. K. Hoyen, and L. B. Rice. 2001. Inhibition of vancomycin-resistant *Enterococci* by an *in vitro* continuous flow competitive exclusion culture containing human stool flora. J. Infect. Dis. 184:1624-1627.

15) Anderson, R. C., T. R. **Callaway**, S. A. Buckley, T. J. Anderson, K. J. Genovese, C. L. Sheffield, and D. J. Nisbet. 2001. Effect of oral sodium chlorate administration on *Escherichia coli* O157:H7 in the gut of experimentally infected pigs. Int. J. Food Microbiol. 71:125-130.

16) Poole, T. L., K. J. Genovese, T. J. Anderson, K. M. Bischoff, T. R. **Callaway** and D. J. Nisbet. 2001. Inhibition of a vancomycin-resistant *Enterococci* by an anaerobic continuous flow culture of chicken microflora. Microb. Ecol. Health Dis. 13:246-253.

17) Anderson, R. C., T. R. **Callaway**, T. J. Anderson, L. F. Kubena, N. K. Keith and D. J. Nisbet. 2002. Bactericidal effect of sodium chlorate on *Escherichia coli* concentrations in bovine ruminal and fecal contents in vivo. Microb. Ecol. Health Dis. 14:24-29.

18) **Callaway**, T. R., R. C. Anderson, K. J. Genovese, T. L. Poole, T. J. Anderson, J. A. Byrd, L. F. Kubena and D. J. Nisbet. 2002. Sodium chlorate supplementation reduces *E. coli* O157:H7 populations in cattle. J. Anim. Sci. 80:1683-1689.

19) Edrington, T. S., T. R. **Callaway**, K. M. Bischoff, K. J. Genovese, R. O. Elder, R. C. Anderson, and D. J. Nisbet. 2003. Effect of feeding the ionophores monensin and laidlomycin propionate and the antimicrobial bambermycin to sheep experimentally infected with *E. coli* O157:H7 and *Salmonella Typhimurium*. J. Anim. Sci. 81:553-560.

20) **Callaway**, T. R., T. S. Edrington, R. C. Anderson, K. J. Genovese, T. L. Poole, R. O. Elder, J. A. Byrd, K. M. Bischoff and D. J. Nisbet. 2003. *Escherichia coli* O157:H7 populations in sheep can be reduced by chlorate supplementation. J. Food Prot. 66:194-199.

21) Poole, T. L., K. J. Genovese, K. D. Knape, T. R. **Callaway**, K. M. Bischoff, and D. J. Nisbet. 2003. Effect of subtherapeutic concentrations of tylosin on the inhibitory stringency of a mixed anaerobic continuous-flow culture of chicken microflora against *E. coli* O157:H7. J. Appl. Microbiol. 94:73-79.

22) Edrington, T. S., T. R. **Callaway**, P. D. Varey, Y. S. Jung, K. M. Bischoff, R. O. Elder, R. C. Anderson, E. Kutter, A. D. Brabban, and D. J. Nisbet. 2003. Effects of the antibiotic ionophores monensin, lasalocid, laidlomycin propionate and bambermycin on *Salmonella* and *E. coli* O157:H7 in vitro. J. Appl. Microbiol. 94:207-213.

23) Jung, Y. S., R. C. Anderson, J. A. Byrd, T. S. Edrington, R. W. Moore, T. R. **Callaway**, J. L. McReynolds, and D. J. Nisbet. 2003. Reduction of *Salmonella* typhimurium in experimentally challenged broilers by nitrate adaptation and chlorate supplementation in drinking water. J. Food Prot. 66:660-663.

24) Genovese, K. J., R. C. Anderson, R. B. Harvey, T. R. **Callaway**, T. L. Poole, T. S Edrington and D. J. Nisbet. 2003. Competitive exclusion of *Salmonella* from the gut of pigs. J. Food Prot. 66:1353-1359.

25) Byrd, J. A., R. C. Anderson, T. R. **Callaway**, R. W. Moore, K. Knape, L. F. Kubena, R. L. Ziprin, and D. J. Nisbet. 2003. Effect of experimental chlorate product administration in the drinking water on *Salmonella typhimurium* contamination of broilers. J. Poult. Sci. 82:1403-1406.

26) Edrington, T. S., T. R. **Callaway**, R. C. Anderson, K. J. Genovese, Y. S. Jung, R. O. Elder, K. M. Bischoff, and D. J. Nisbet. 2003. Reduction of *E. coli* O157:H7 populations in sheep by supplementation of an experimental sodium chlorate product. Small Ruminant Res. 49:173-181.

27) **Callaway**, T. R., R. C. Anderson, T. S. Edrington, R. O. Elder, K. J. Genovese, K. M. Bischoff, T. L. Poole, Y. S. Jung, R. B. Harvey and D. J. Nisbet. 2003. Preharvest intervention strategies to reduce food borne pathogens in food animals. J. Anim. Sci. 81(E. Suppl. 2):17-24

28) Anderson, R. C., T. R. **Callaway**, J. A. S. Van Kessel, Y. S. Jung, T. S. Edrington, D. J. Nisbet. 2003. Effect of select nitrocompounds on ruminal fermentation in vitro and their potential to reduce economic and environmental costs associated with ruminal methanogenesis. Bioresource Technol. 90:59-63.

29) Fitzgerald, A.C., T.S. Edrington, M.L. Looper, T.R. **Callaway**, R.O. Elder, K.J. Genovese, K.M. Bischoff, J.D. Thomas, R.C. Anderson, and D.J. Nisbet. 2003. Antimicrobial susceptibility and factors affecting the shedding of *E. coli* O157:H7 and *Salmonella* in dairy cattle. Lett. Appl. Microbiol. 37:392-398.

30) **Callaway**, T. R., T. S. Edrington, J. L. Rychlik, K. J. Genovese, T. L. Poole, Y. S. Jung, K. M. Bischoff, R. C. Anderson and D. J. Nisbet. 2003. Ionophores: their use as ruminant growth promotants and impact on food safety. Curr. Issues Intest. Microbiol. 4:43-51.

31) **Callaway**, T. R., R. O. Elder, J. E. Keen, R. C. Anderson, and D. J. Nisbet. 2003. Forage feeding to reduce pre-harvest *E. coli* populations in cattle, a review. J. Dairy. Sci. 86:852-860.

32) Leyendecker, S. A., T. R. **Callaway**, R. C. Anderson, and D. J. Nisbet. 2004. A technical note on a much simplified method for collecting ruminal fluid using a nylon paint strainer. J. Sci. Food Agric. 84:387-389.

33) **Callaway**, T. R., R. C. Anderson, T. S. Edrington, Y. S. Jung, K. M. Bischoff, K. J. Genovese, T. L. Poole, R. B. Harvey, J. A. Byrd, and D. J. Nisbet. 2004. Effects of sodium chlorate on toxin production by *Escherichia coli* O157:H7. Curr. Issues Intest. Microbiol. 5:19-22.

34) **Callaway**, T. R., R. C. Anderson, T. S. Edrington, K. M. Bischoff, K. J. Genovese, T. L. Poole, J. A. Byrd, R. B. Harvey, and D. J. Nisbet. 2004. Effects of sodium chlorate on antibiotic resistance in *Escherichia coli* O157:H7. Foodborne Path. Dis. 1:59-63.

35) Edrington, T. S., C. L. Schultz, K. M. Bischoff, T. R. **Callaway**, M. L. Looper, K. J. Genovese, Y. S. Jung, R. C. Anderson, and D. J. Nisbet. 2004. Antimicrobial resistance and serotype prevalence of *Salmonella* isolated from dairy cattle in the southwestern United States. Microbial Drug Res. 10:51-56.

36) Anderson, R. C., M. E. Hume, K. J. Genovese, T. R. **Callaway**, Y. S. Jung, T. S. Edrington, T. L. Poole, R. B. Harvey, K. M. Bischoff and D. J. Nisbet. 2004. Effect of drinking water administration of experimental chlorate ion preparations on *Salmonella enterica* serovar Typhimurium colonization in weaned and finished pigs. Vet. Res. Comm. 28:179-189.

37) Bischoff, K. M., T. S. Edrington, T. R. **Callaway**, K. J. Genovese, and D. J. Nisbet. 2004. Characterization of multi-drug resistant *Salmonella* Kinshasa from dairy calves in the southwestern United States. Lett. Appl. Microbiol. 38:140-145.

38) Edrington, T. S., M. E. Hume, M. L. Looper, A. C. Fitzgerald, T. R. **Callaway**, K. J. Genovese, K. M. Bischoff, J. L. McReynolds, R. C. Anderson, and D. J. Nisbet. 2004. Variation in the faecal shedding of *Salmonella* and *E. coli* O157:H7 in lactating dairy cattle and examination of *Salmonella* genotypes using pulsed field gel electrophoresis. Lett. Appl. Microbiol. 38:366-372.

39) Edrington, T. S., K. J. Genovese, T. R. **Callaway**, M. L. Looper, K. M. Bischoff, J. L. McReynolds, R. C. Anderson, and D. J. Nisbet. 2004. Examination of heat stress and stage of lactation on fecal shedding of *E. coli* O157:H7 and *Salmonella* in dairy cattle. Foodborne Path. Dis. 1:114-119.

40) Harvey, R. B., R. E. Droleskey, C. L. Sheffield, T. S. Edrington, T. R. **Callaway**, R. C. Anderson, D. L. J. Drinnon, R. L. Ziprin, and D. J. Nisbet. 2004. *Campylobacter* prevalence in lactating dairy cows. J. Food Prot. 67:1476-1479.

41) Poole, T. L., K. J. Genovese, T. R. **Callaway**, K. M. Bischoff, C. J. Donskey, and D. J. Nisbet. 2004. Competitive exclusion of a glycopeptide resistant *Enterococcus* faecium GRE in the presence of vancomycin, but not equivalent concentrations of tylosin or gentamicin. J. Poultry Sci. 83:1099-1105.

42) Stahl, C. H., T. R. **Callaway**, L. M. Lincoln, S. M. Lonergan, K. J. Genovese. 2004. Inhibitory activities of colicins against *Escherichia coli* strains responsible for post-weaning diarrhea and edema disease in swine. Antimicrob. Agents Chemother. 48:3119-3121.

43) Jung, Y. S., R. C. Anderson, T. S. Edrington, K. J. Genovese, J. A. Byrd, T. R. **Callaway**, and D. J. Nisbet. 2004. Experimental use of 2-nitropropanol for reduction of *Salmonella* Typhimurium in the ceca of broiler chicks. J. Food Prot. 67:1945-1947.

44) **Callaway**, T. R., R. C. Anderson, G. Tellez, C. Rosario, G. M. Nava, C. Eslava, M. A. Blanco, M. A. Quiroz, A. Olguín, M. Herradora, T. S. Edrington, K. J. Genovese, R. B. Harvey, and D. J. Nisbet. 2004. The incidence of *Escherichia coli* O157 in cattle and swine in central Mexico. J. Food Prot. 67:2274-2276.

45) **Callaway**, T. R., R. C. Anderson, T. S. Edrington, K. J. Genovese, K. M. Bischoff, T. L. Poole, Y. S. Jung, R. B. Harvey and D. J. Nisbet. 2004. What are we doing about *E. coli* O157:H7 and other food borne pathogens in cattle? J. Anim. Sci. 82(E Suppl.): E93-E99.

46) Hume, M. E., T. S. Edrington, M. L. Looper, T. R. **Callaway**, K. J. Genovese, and D. J. Nisbet. 2004. *Salmonella* serotype and genotype diversity in heat stressed lactating and non-lactating dairy cows. J. Food Prot. 67:2280-2283.

47) **Callaway**, T. R., C. H. Stahl, T. S. Edrington, K. J. Genovese, L. M. Lincoln, R. C. Anderson, S. M. Lonergan, T. L. Poole, R. B. Harvey, and D. J. Nisbet. 2004. Colicin concentrations inhibit growth of *Escherichia coli* O157:H7 *in vitro*. J. Food Prot. 67:2603-2607.

48) Jung, Y. S., R. C. Anderson, T. R. **Callaway**, T. S. Edrington, K. J. Genovese, R. B. Harvey, T. L. Poole and D. J. Nisbet. 2004. Inhibitory activity of 2-nitropropanol against select foodborne pathogens *in vitro*. Lett. Appl. Microbiol. 39:471-476.

49) Brabban, A., D., D. A. Nelson, E. Kutter, T. S. Edrington, and T. R. **Callaway**. 2004. Approaches to controlling *Escherichia coli* O157:H7, a food-borne pathogen and an emerging environmental hazard. Environ. Pract. 6:208-229.

50) **Callaway**, T. R., R. C. Anderson, R. C., T. S. Edrington, K. J. Genovese, R. B. Harvey, T. L. Poole, and D. J. Nisbet. 2004. Recent pre-harvest supplementation strategies to reduce carriage and shedding of food-borne pathogens. Anim. Health Res. Rev. 5:35-47.

51) Anderson, R. C., M. A. Carr, R. K. Miller, D. A. King, G. E. Carstens, K. J. Genovese, T. R. **Callaway**, T. S. Edrington, Y. S. Jung, J. L. McReynolds, M. E. Hume, R. C. Beier, R. O. Elder and D. J. Nisbet. 2005. Effects of experimental chlorate preparations as feed and water supplements on *Escherichia coli* colonization and contamination of beef cattle and carcasses. Food Microbiol. 22:439-447.

52) Morrow, J. L., F. M. Mitloehner, A. K. Johnson, M. L. Galyean, J. W. Dailey, T. S. Edrington, R. C. Anderson, K. J. Genovese, T. L. Poole, S. E. Duke, and T. R. **Callaway**. 2005. Effect of water sprinkling on incidence of zoonotic pathogens in feedlot cattle. J. Anim. Sci. 83:1959-1966.

53) King, D. A., R. C. Anderson, R. K. Miller, M. A. Carr, G. E. Carstens, J. W. Savell, Y. S. Jung, T. R. **Callaway**, T. S. Edrington, K. J. Genovese, R. O. Elder, and D. J. Nisbet. 2005. Effects of pre-harvest supplemental chlorate on beef carcass and meat quality. Meat Sci. 70:215-221.

54) Anderson, R. C., W. Majak, R. E. McDiarmid, M. A. Rasmussen, T. R. **Callaway**, R. C. Beier, D. J. Nisbet, and M. J. Allison. 2005. Toxicity and metabolism of the naturally occurring nitrocompounds 3-nitro-1-propanol and 3-nitro-1-propionic acid. J. Agric. Food Chem. 53:2344-2350

55) Kim, W. K., N. Karabasil, S. Bulajic, K. D. Dunkley, T. R. **Callaway**, T. L. Poole, S. C. Ricke, R. C. Anderson, and D. J. Nisbet. 2005. Comparison of spontaneous antibiotic resistance frequency of *Salmonella* Typhimurium growth in glucose-limited continuous culture at slow and fast dilution rates. J. Environ. Sci. Health. 40:475-484.

56) *Branham*, L. A., M. A. Carr, C. B. Scott, and T. R. **Callaway**. 2005. *E. coli* O157:H7 and *Salmonella* in white-tailed deer and livestock. Curr. Iss. Intest. Microbiol. 6:25-29. *(Student M.S. Research Project at Angelo State University under partial direction of Dr. Callaway)*

57) Anderson, R. C., R. B. Harvey, J. A. Byrd, T. R. **Callaway**, K. J. Genovese, T. S. Edrington, Y. S. Jung, J. L. McReynolds, and D. J. Nisbet. 2005. Novel preharvest strategies involving the use of experimental chlorate preparations and nitro-based compounds to prevent colonization of food-producing animals by foodborne pathogens. J. Poultry Sci. 84:649-654.

58) Harvey, R. B., R. C. Anderson, K. J. Genovese, T. R. **Callaway** and D. J. Nisbet. 2005. Use of competitive exclusion to control enterotoxigenic strains of *E. coli*. J. Anim. Sci. 83 (E. Suppl.):E44-E47.

59) Harvey, R. B., M. E. Hume, R. E. Droleskey, T. S. Edrington, T. R. **Callaway**, R. L. Ziprin, H. M. Scott, R. C. Anderson, and D. J. Nisbet. 2005. Further characterization of *Campylobacter* isolated from U. S. dairy cows. Foodborne Path. Dis. 2:182-187.

60) Fox, J. T., R. C. Anderson, G. E. Carstens, R. K. Miller, Y. S. Jung, J. L. McReynolds, T. R. **Callaway**, T. S. Edrington, and D. J. Nisbet. 2005. Effect of nitrate adaptation of an experimental chlorate product against *E. coli* in cattle. Int. J. Appl. Res. Vet. Med. 3:76-80.

61) **Callaway**, T. R., J. L. Morrow, A. K. Johnson, J. W. Dailey, F. M. Wallace, E. A. Wagstrom, J. J. McGlone, A. R. Lewis, S. E. Dowd, T. L. Poole, T. S. Edrington, R. C. Anderson, K. J. Genovese, J. A. Byrd, R. B. Harvey, and D. J. Nisbet. 2005. Environmental prevalence and persistence of *Salmonella spp.* in outdoor swine wallows. Foodborne Path. Dis. 2:263-273.

62) **Callaway**, T. R., J. E. Keen, T. S. Edrington, L. H. Baumgard, L. Spicer, E. S. Fonda, K. E. Griswold, T. R. Overton, M. E. Van Amburgh, R. C. Anderson, K. J. Genovese, T. L. Poole, R. B. Harvey, and D. J. Nisbet. 2005. Fecal prevalence and diversity of *Salmonella* spp. in lactating dairy cattle in four states. J. Dairy Sci. 88:3603-3608.

63) Schultz, C. L., T. S. Edrington, S. B. Schroeder, D. M. Hallford, K. J. Genovese, T. R. **Callaway**, R. C. Anderson, and D. J. Nisbet. 2005. Effect of the thyroid on faecal shedding of *E. coli* O157:H7 and *Escherichia coli* in naturally-infected yearling beef cattle. J. Appl. Microbiol. 99:1176-1180.

64) Nava, G. M., L. R. Bielke, T. R. **Callaway**, M. P. Castenada. 2005. Probiotic alternatives to reduce gastrointestinal infections: the poultry experience. Anim. Health Res. Rev. 6:105-118.

65) Brabban, A. D., E. Hite, and T. R. **Callaway**. 2005. Temperate bacteriophage-mediated gene transfer and its role in the evolution of foodborne pathogens. Foodborne Path. Dis. 2:287-303.

66) Poole, T. L., T. R. **Callaway**, K. M. Bischoff, and D. J. Nisbet. 2006. Macrolide inactivation gene cluster *mph*A-*mrx*-*mph*R adjacent to a class 1 integron in *Aeromonas hyrophila* isolated from a diarrheic pig in Oklahoma. Antimicrob. Chemother. 57:31-38.

67) Schultz, C. L., T. S. Edrington, T. R. **Callaway**, S. B. Schroeder, D. M. Hallford, K. J. Genovese, R. C. Anderson and D. J. Nisbet. 2006. The influence of melatonin on growth of *E. coli* O157:H7 in pure culture and exogenous melatonin on fecal shedding of *E. coli* O157:H7 in experimentally infected wethers. Lett. Appl. Microbiol. 43:105-110.

68) Dimitrijevic, M., R. C. Anderson, T. R. **Callaway**, Y. S. Jung, R. B. Harvey, S. C. Ricke, and D. J. Nisbet. 2006. Inhibitory effect of select nitrocompounds on growth of *Listeria monocytogenes* in vitro. J. Food Prot. 69:1061-1065.

69) **Callaway**, T. R., J. L. Morrow, T. S. Edrington, K. J. Genovese, S. Dowd, J. Carroll, J. W. Dailey, R. B. Harvey, T. L. Poole, R. C. Anderson, and D. J. Nisbet. 2006. Social stress

increases fecal shedding of *Salmonella* Typhimurium by early weaned piglets. Curr. Issues Intest. Microbiol. 7:65-72.

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25) *Lourenco*, J., T. D. Pringle, B. Heins, and T. R. **Callaway**. 2021. Group of UGA Investigators set to study the gastrointestinal microbiome of dairy-beef steers. Georgia DairyFax, Extension Report. Jan-March 2021. Pp 6-7. http://ads.caes.uga.edu/content/dam/caes-website/departments/animal-and-dairy-science/documents/DairyFax/Jan-Feb-Mar-21-dairyfax-newsletter.pdf.

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29) Rambau, M. D., F. Fushai, T. R. **Callaway**, and J. J. *Baloyi*. 2021. The use of biodigester slurry and the inclusion of carbohydrate additives at ensiling on the nutritive value of Napier grass (Pennisetum purpureum) silage: A South African experience. Georgia DairyFax, Extension Report. Apr-Jun 2021. Pp 4-5. https://animaldairy.uga.edu/content/dam/caes-subsite/animal-dairy-science/documents/DairyFax/2021-dairyfax/DairyFax_JAS2021.pdf

30) Lourenco, J. M., P. R. Broadway, and T. R. **Callaway**. 2022. Editorial: The Relationship of Animal Health and Management to Food Safety. Front. Anim. Sci. 3:951316. https://doi.org/10.3389/fanim.2022.951316

31) Lourenco, J. M., T. D. Pringle, and T. R. **Callaway**. 2022. Harnessing the microbiome to improve beef cattle production. Georgia Cattlemen's Magazine. September 2022.

Funded Grants

1) Effect of chlorate treatment on transmission of *Salmonella* in swine during transport and lairage. (PI) 2002-2003. National Pork Board. $25,000.

2) Use of chlorate to reduce post-weaning *E. coli* diarrhea (PWECD) in swine. (Co-PI). 2002-2003. National Pork Board. $25,000.

3) Use of bacteriophage to reduce *E. coli* O157:H7 in cattle. (PI) 2004-2005. National Cattlemen's Beef Association. $71,000.

4) Use of naturally-occurring bacteriophage to reduce *Salmonella* in swine prior to harvest. (PI) 2005-2006. National Pork Board. $18,400.

5) Isolation and use of bacteriophage to reduce *E. coli* O157:H7 populations on hides of cattle. (PI) 2006-2007. National Cattlemen's Beef Association. $25,500.

6) Use of bacteriophage to reduce the incidence of *Salmonella* in poultry. (PI) 2006-2008. U.S. Poultry and Egg Association. $15,000.

7) Examination of waste milk pasteurization on *Salmonella* prevalence in dairy cattle. (Co-PI) 2006-2007. National Cattlemen's Beef Association. $44,850.

8) Effect of stressors on acquisition of multi-drug resistance by *Salmonella* species. (PI) 2007-2008. National Cattlemen's Beef Association. $20,000.

9) Bacteriophage involvement in the acquisition of multidrug resistance by *Salmonella*. (PI) 2007-2008. National Cattlemen's Beef Association. $22,000.

10) Examination of organic acids to reduce *Salmonella* in swine and poultry. (PI) 2008-2010. VetAgro (Emilio Reggiano, Italy). $41,000.

11) Orange pulp and peel as feedstuffs to reduce *E. coli* O157:H7 and *Salmonella* populations in ruminants. (PI) 2009-2010. National Cattlemen's Beef Association. $27,000.

12) DISCOVER Conference support grant. (PI) 2009. USDA/ARS. $5,000.

13) Correlation of research data and FSIS preharvest proposal. (PI) 2010. National Cattlemen's Beef Association. $7,000.

14) Effects of MSM on foodborne pathogenic bacteria in vitro. (Co-PI) 2012-2013. Bergstrom Nutrition. $11,800.

15) Determination of factors affecting frequency of conjugative transfer of antimicrobial resistance and virulence. (Co-PI) 2013-2014. Texas Beef Council. $20,000.

16) Cow-calf research technology: cow manager monitoring system for research. (Co-PI), 2018-2019. Georgia Farm Bureau Federation, $9,600.

17) Support for the 9th Annual VTEC conference (Co-PI) 2014-2015. USDA/NIFA. $50,000.

18) *E. coli* bacteriophage to control post-weaning diarrhea in weaned swine: a model for human enteropathy (Co-PI), 2015-2017. Bill and Melinda Gates Foundation, $100,000.

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19) Support for the 10th Annual VTEC conference (PI) 2018. U.S. FDA. $10,000.

20) Use of high pressure and fluidic nozzles to remove fecal material, normal bacteria and human enteropathogenic bacteria from broiler carcasses (PI) 2018-2021. Spraying Systems Company. $78,180

21) Horn flies: Can genetics help solve this billion dollar problem? 2018-2019. Georgia Commodity Commission for Beef. $36,100 (Co-PI)

22) Employing the Cow Manager Monitoring system to track activity and feeding behavior of Angus steers selected for feed efficiency. Georgia Commodity Commission for Beef. $15,600 (Co-PI)

23) Effect of Lagoon Water Application Relative to Silage Harvest on Pathogen Concentrations and Silage Fermentation With or Without Inoculant. 2019-2020. University of Florida. $14,800 (Co-PI)

24) Interdisciplinary Graduate Training in Gastrointestinal Microbial Ecology, Neuroscience, Food Safety, and Food Production. USDA-NIFA, 2019-2024. 224,000 (Co-PI)

25) The impact of Selection based on Residual Average Daily Gain EPD on the rumen and Gastrointestinal microbial populations in Angus cattle. 2019-2020. Georgia Commodity Commission for Beef. $30,000 (Co-PI)

26) Evaluating Isoflavone Concentration and Stability in Legume: Grass Baleage. 2019-2020. Georgia Commodity Commission for Beef. $12,000 (Co-PI)

27) Can Common Nutritional Strategies Have A Negative Impact on Beef Production? Is Cottonseed Going to Make My Bulls Infertile? Will High Protein Diets Decrease Heifer Pregnancy Rates? 2019-2020. $19,975 (Co-PI)

28) Can we add more cows to your herd by improving cow efficiency in the pasture? Georgia Commodity Commission for Beef. 2020-2021 $30,000 (PI)

29) Elementary School Agricultural Education in Georgia: Opportunities to Grow New Beef Producers and Consumers. Georgia Commodity Commission for Beef. 2020-2021 $5,000 (PI)

30) Assessing the effects of maternal supplementation of eggs and docosahexaenoic acid on gut microbiome and cognitive development in an infant pig model. USDA-NIFA, 2020-2023, $498,290 (Co-PI)

31) Dysregulated microbiome, metabolome, and microbiome-metabolome interactions in beef cattle grazing toxic tall fescue. 2020-2023. USDA/NIFA. $500,000. (Co-PI)

32) Impact of calcium gluconate treatment on intestinal populations and weights in a growing steer model. 2020. Micronutrients, LLC. $27,209. (PI)

33) Elementary School Agricultural Education in Georgia: Opportunities for the Dairy Industry. Southeast Dairy Checkoff. 2020-2021 $7,890 (PI)

34) Literature Review: STEC in beef cattle, 2020 Vision. Beef Industry Food Safety Council/National Cattlemen's Beef Association. 2020-2021 $8,010 (PI)

35) Literature Review: AMR spread in beef cattle. Beef Industry Food Safety Council/National Cattlemen's Beef Association. 2020-2021 $8,000 (PI)

36) The Effects of Pre-weaning Nutrition on the Gastrointestinal Microbiome and Productivity of Dairy-Beef Steers during Their Life Cycle. Georgia Commodity Commission for Beef. 2021-2022 $19,520 (PI)

37) Development of a microbiome enhanced EPD for beef cattle. Sponsored Research Project, with Kelly Products Inc. 2022-2025. $738,000 (Co-PI)

PI/Co-PI Grant total: $2,596,724

Research Gifts

1) Miyarisan Pharmaceuticals, $25,000 (2022)
2) Provita, $25,000 (2022)

Invited Professional Presentations

1) The role of trans-aconitate in the etiology of grass tetany in grazing dairy cattle. Conference of Northeastern Independent Feed Dealers. Mar. 11, 1997. Ithaca, NY.

2) The potential use of dicarboxylic acids in dairy rations to improve animal performance. Conference of Northeastern Independent Feed Dealers. Mar. 12, 1997. Ithaca, NY.

3) The use of antimicrobial feed additives in beef cattle rations. Department of Animal Science. California Polytechnic University at Pomona. May 13, 1999.

4) Methods to control *Escherichia coli* O157:H7 in food animals prior to harvest. Animal Sciences Department, University of Florida, Gainesville. September 18, 2000.

5) Use of sodium chlorate to reduce *Escherichia coli* O157:H7 in cattle prior to harvest. Animal Science Department, University of Tennessee, Knoxville. October 2, 2000.

6) Forage feeding to reduce pre-harvest *E. coli* populations in cattle. Ruminant Nutrition Symposium. International Animal Agriculture and Food Science Conference. Indianapolis, IN. July 28, 2001.

7) Methods to reduce *E. coli* O157:H7 and *Salmonella* populations in cattle prior to harvest. Dept. of Poultry Production, College of Veterinary Medicine, National Autonomous University of Mexico. Mexico City, D. F., Mexico. October 29, 2001.

8) Pre-harvest intervention strategies to reduce *E. coli* O157:H7 in cattle. Department of Animal and Food Science. University of Delaware, Newark. November 5, 2001. Externally funded.

9) Pre-harvest intervention strategies under investigation at ARS-FFSRU. FSIS Meat and Poultry Inspection Seminar for International Government Officials. FSIS Training Center, College Station, TX. February 27, 2002. (Presentation to governmental officials from 32 nations).

10) Strategies to erect pre-harvest critical control points in ruminants. FSIS Meat Inspectors Training Seminar for Veterinary Medical Officers. FSIS Training Center, College Station, TX. March 19, 2002.

11) How can we prevent food borne pathogens from entering the food chain? 20th International Avian Symposium and Southeastern Meeting for Animal Science. College of Veterinary Medicine, University of Tabasco. Villahermosa, Tabasco, Mexico. June 12, 2002.

12) Effects of sodium chlorate on *E. coli* O157:H7 populations in ruminants. 20th International Avian Symposium and Southeastern Meeting for Animal Science. College of Veterinary Medicine, University of Tabasco. Villahermosa, Tabasco, Mexico. June 13, 2002.

13) Pre-harvest intervention strategies to reduce food borne pathogens in food animals. Food Safety Symposium. Joint meeting of Canadian Society of Animal Science, American Society of Animal Science, and American Dairy Science Association. Quebec, QC, Canada. July 24, 2002.

14) Near-market strategies to decrease the incidence of food-borne pathogenic bacteria in cattle. University of Georgia, Athens. August 30, 2002.

15) Keeping *E. coli* O157:H7 out of the slaughter plant. FSIS Red Meat Inspectors Training Seminar for Veterinary Medical Officers. FSIS Training Center, College Station, TX. September 25, 2002.

16) Scientific research and careers in the USDA/Agricultural Research Service. Department of Animal Sciences. Angelo State University, San Angelo, TX. December 5, 2002.

17) Effects of dietary shifts on *Escherichia coli* O157:H7 populations. FSIS/ARS Annual Research Meeting. Shepherdstown, WV. January 7, 2003.

18) Use of bacteriophage to reduce preharvest levels of *Escherichia coli* O157:H7. FSIS/ARS Annual Research Meeting. Shepherdstown, WV. January 7, 2003.

19) Antibiotic treatment to decrease populations of *Escherichia coli* O157:H7. FSIS/ARS Annual Research Meeting. Shepherdstown, WV. January 8, 2003.

20) Pre-harvest strategies to reduce food borne pathogens in the United States. FSIS Meat and Poultry Inspection Seminar for International Government Officials. FSIS Training Center, College Station, TX. February 4, 2003. (Presentation to governmental officials from 53 nations).

21) How common are food borne pathogens in production food animals? And what are we doing about them? Food Safety of Animal Products, International Master's Degree Program. University of Bologna. Bologna, Italy. April 15-16, 2003. (Ten hour training course for governmental officials from 16 European Union nations) Externally funded.

22) Post-slaughter intervention strategies to improve food safety in the United States and the European Union. Food Safety of Animal Products, International Master's Degree Program. University of Bologna. Bologna, Italy. April 17-18, 2003. (Ten hour training course for governmental officials from 16 European Union nations) (In conjunction with Dr. John Sofos, Colorado State University)

23) Near market pre-harvest intervention strategies to reduce food borne pathogens in ruminants. Research Institute for Animal Production in a Mediterranean Environment (IAABAM). Naples, Italy. April 19, 2003.

24) What are we doing about *E. coli* O157:H7 and other food borne pathogens in cattle? Alpharma Beef Cattle Symposium. Amer. Soc. Animal Sci./Amer. Dairy Sci. Assoc Joint Annual Meeting. Phoenix, AZ. June 23, 2003.

25) Pathogen reduction strategies from the Food and Feed Safety Research Unit. Beef Safety Committee, National Cattlemen's Beef Association, Summer Research Advances Meeting. Dallas, TX. July 25, 2003.

26) Use of neomycin sulfate to reduce *E. coli* O157:H7 in beef cattle. Animal Health Committee, National Cattlemen's Beef Association, Summer Research Advances Meeting. Dallas, TX. July 26, 2003.

27) Preharvest strategies to reduce foodborne pathogens in cattle…adjuncts to bacteriophage therapy. 15th International Evergreen Phage Biology Meeting. Olympia, WA. July 27, 2003.

28) The impact of sodium chlorate on *E. coli*. Southwestern Meat Science Conference. Lubbock, TX. September 19, 2003.

29) What is being done in pre-harvest intervention research in ARS in College Station? FSIS Office of Public Health and Science. Teleconference with Washington, DC offices. November 3, 2003.

30) Why pre-harvest food safety? American Society for Microbiology, Texas Branch, Annual Meeting. College Station, TX. November 6, 2003.

31) Once and future strategies to reduce food borne pathogens levels in food animals. Agriculture and Agri-Food Canada Research Center. Lethbridge, AB, Canada. January 28, 2004. Externally funded.

32) What is the USDA and the beef industry in the U.S. doing to reduce *E. coli* O157:H7 and *Salmonella* in the live animal. Alberta Agriculture Research Center. Edmonton, AB, Canada. January 30, 2004. Externally funded.

33) Effects of aeration on nutrient cycling and pathogen populations. Innovative approaches to nutrient cycling field day. Davis, CA. February 13, 2004. (Declined).

34) What pre-harvest pathogen intervention strategies are being studied in the United States? FSIS Office of International Affairs, Meat and poultry inspection seminar for international government officials. College Station, TX. 16 June 2004. (Presentation to governmental officials from 25 nations)

35) Sodium chlorate: Potential food-borne pathogen reduction strategy for use in ruminant and monogastric food animals. Western Nutrition Conference (Canada). Saskatoon, SK, Canada. 28 September 2004. Externally funded.

36) Why intervene before the animal is harvested? Dept. of Animal and Poultry Science, University of Saskatchewan, Elstow, SK, Canada. 30 September 2004. Externally funded.

37) It's a jungle in there! The secret life of the gastrointestinal microbial ecosystem of food-producing animals. Society for Risk Analysis Annual Meeting. Palm Springs, CA. 6 December 2004. Externally funded.

38) Investigative pre-harvest food-borne pathogen reduction strategies in the United States. Dept. of Med. Microbiol., Univ. Aberdeen. Foresterhill, Scotland, UK. 30 March, 2005.

39) Microbial metabolism: Exploitable mechanisms to reduce food-borne pathogenic Bacteria. Rowett Research Institute. Aberdeen, Scotland, UK. 1 April, 2005.

40) Bacteriophage as a strategy to reduce food-borne pathogenic bacteria in food animals. 30th Ann. Meet. Nat. Poult. Sci. Assoc. Mexico (ANECA). Puerto Vallarta, Jalisco, MX. 30 April 2005.

41) Pathogen control in the field. What can we do to reduce pathogens entering the abattoir? Amer. Soc. Anim. Sci./Amer. Dairy Sci. Assoc. Annual Meeting. Cincinnati, OH. 21 July 2005. (Declined)

42) Food safety as a critical national issue. Food Safety Symposium. Amer. Soc. Anim. Sci./Amer. Dairy Sci. Assoc. Annual Meeting. Cincinnati, OH. 21 July 2005.

43) How is food safety being enhanced in the United States? North African Meat and Poultry Inspection Officials Training Program. Texas A&M University, Office of International Agriculture and USDA Foreign Agriculture Service. College Station, TX. 26 September 2005.

44) Bacteriophage as a food-safety enhancement strategy. International conference on the perspective of usage of bacteriophage preparation for prevention and treatment of infections caused by pathogenic and conditioned pathogenic microorganisms. Tbilisi, Rep. of Georgia. 11 November 2005. (Unable to present due to State Dept. security concerns).

45) Microbial ecology: Key to improving animal productivity and food safety. Dept. Animal Sci., Cornell University, Ithaca, NY. 8 December 2005. Externally funded.

46) Antibiotic use in cattle and swine: why they are used and what we think they do. Dept. Animal Sci., Cornell University, Ithaca, NY. 9 December 2005. Externally funded.

47) Pre-harvest strategies to reduce food-borne pathogens in food animals: an animal health perspective. BASF Aktiengesellschaft. Ludwigshafen, Rhineland, Germany. 18 January 2006. Externally funded.

48) Ionophores and their alternatives to improve ruminant production. BASF Aktiengesellschaft. Offenbach Nutrition Research Station, Offenbach, Rhineland, Germany. 19 January 2006. Externally funded.

49) Who shouts the loudest no more: Regulatory/Scientific/Industrial interactions in the U.S. and their impact on food safety. Lessons in talking. U.S. Mission to the EU, Brussels, Belgium. 21 March 2006.

50) How is Food Safety regulated in the United States? New Zealand Mission to the EU, Brussels, Belgium. 24 March 2006.

51) What are the shared food safety challenges facing the U.S. and EU? And what are we doing to address them? European Commission, Directorate General of Sanitation and Consumer Protection (DG-SANCO), Veterinary Hygiene and Control Measures Unit. Brussels, Belgium. 30 March 2006.

52) Use of bacteriophage to control foodborne pathogenic bacteria in food animals. 2006 Texas/Evergreen Phage/Virus Genomics, Ecology and Therapy Meeting. Kingsville, TX. 14 May 2006.

53) Alternative strategies for improving the ruminant fermentation efficiency: Better living through chemistry, vaccination and antimicrobial proteins. International Agriculture Symposium. Amer. Soc. Anim. Sci./Amer. Dairy Sci. Assoc. Annual Meeting. Minneapolis, MN. 12 July 2006.

54) Novel strategies to reduce food-borne pathogens in cattle and swine. International Food Safety Congress. University of Guadalajara, Mexico. Puerto Vallarta, Jalisco, MX. 11 November 2006. (Declined).

55) Food safety goals in the United States. New Zealand Food Safety Authority. Wellington, New Zealand. 24 October 2006.

56) Ruminant nutrition and food safety research. Dexcel, Inc. (Dairy cooperative). Hamilton, New Zealand. 25 October 2006.

57) Dairy farms and food safety: nutrition and epidemiology. University of Tasmania, Burnie. Burnie, Tasmania, Australia. 27 October 2006.

58) Nutrition, intestinal microbes and food safety in cattle in the United States. University of Bologna. Ozzano Emilia (Bologna), Italy. 9 May 2007. Externally funded.

59) Gastrointesinal microbial ecology and the safety of our food supply as related to *Salmonella*. Food Safety Symposium. Amer. Soc. Anim. Sci./Amer. Dairy Sci. Assoc./Mexican Soc. Anim. Prod. Annual Meeting. San Antonio, TX. 9 July 2007.

60) Preharvest food-borne pathogen reduction strategies for use in food animals. University of Arkansas. Fayetteville. 30 July 2007. Externally funded.

61) Phage incidence and potential applications in commercial swine. 17th International Evergreen Phage Biology Meeting. The Evergreen State College, Olympia, WA. 12 August 2007.

62) Pre-harvest interventions to improve food safety in food animals. Department of Diagnostic Medicine/Pathobiology, College of Veterinary Medicine, Kansas State University, Manhattan. 4 October 2007. Externally funded.

63) Antibiotic Resistance – Darwinian and neo-Darwinian selection mechanisms in bacteria. CA Chapter, American Registry of Professional Animal Scientists (ARPAS) Continuing Education Conference. 25 October 2007. Externally funded.

64) Ecological concepts to reduce colonization of cattle by food-borne pathogens. International Food Safety Congress. International Food Safety Conference. Univ. Guadalajara and Mexican Association for Food Protection. Puerto Vallarta, Jalisco, MX. 8-10 November 2007. Externally funded.

65) Bacteriophage and dietary changes as methods to reduce *E. coli* O157:H7 populations in cattle prior to slaughter. FSIS/ARS Annual Research Meeting. Shepherdstown, WV. February 5, 2008.

66) What would Darwin do? Antibiotic resistance and selection mechanisms in food animals. ARPAS Symposium. Amer. Soc. Anim. Sci./Amer. Dairy Sci. Assoc. Annual Meeting. Indianpolis, IN.. 8 July, 2008.

67) How can we use microbial ecology to reduce *E. coli* O157:H7 in cattle? Ann. Mtg. Amer. Vet. Med. Assoc. New Orleans, LA. 20 July, 2008. Externally funded.

68) Phages isolated from animal feces effectively reduce foodborne pathogens in the gut of cattle and swine. Food Micro 2008. Aberdeen, Scotland, UK. 2 September, 2008. Externally funded.

69) Use of the intestinal ecosystem to reduce foodborne pathogens in poultry. Mexican Soc. Poultry Sci. Queretaro, Queretaro, MX. 25-27 Feb, 2009. Externally funded.

70) Probiotics: an alternative to antibiotics to improve animal health and food safety. Conference on food safety and public health frontiers: Minimizing antibiotic resistance transmission through the food chain. Washington, DC. 2-3 April, 2009. Externally funded.

71) Probiotics, an adjunct to animal and public health [Keynote address]. Amer. Dairy Sci. Assoc. DISCOVER Conference on Food Animal Agriculture, Direct-Fed Microbials and Prebiotics for Animals: Science and Mechanisms of Action. Nashville, IN. April 19, 2009. Externally funded.

72) Probiotics into the future. Where do we go from here? [Concluding conference remarks]. Amer. Dairy Sci. Assoc. DISCOVER Conference on Food Animal Agriculture, Direct-Fed Microbials and Prebiotics for Animals: Science and Mechanisms of Action. Nashville, IN. April 22, 2009. Externally funded.

73) Actual and future solutions for the resistance problem at the Human-Animal Interface of Resistance. International Conference of Chemotherapy, Toronto, Canada, 19 June, 2009.

74) *Salmonella* in food animals in the United States: Challenges, risks and potential solutions. VetAgro Opening Ceremonies. Reggio-Emilia, Italy. 26-27 June, 2009. Externally funded.

75) Probiotic and dietary approaches to control pathogenic *E. coli* in live cattle. Pathogenic *Escherichia coli* Network (PEN) International Conference on Control and Management of Pathogenic *E. coli*. Dublin, Ireland. 17-18 September, 2009. Externally funded.

76) Orange pulp and peel as feedstuffs to reduce *E. coli* O157:H7 and *Salmonella* populations in ruminants. Beef Industry Food Safety Committee (BIFSCo) Summit. Dallas, TX. 3-4 March 2010. Externally funded.

77) The use of pre- and probiotics to improve food safety in the live animal [Keynote address]. International Scientific Conference on Probiotics and Prebiotics. Kosice, Slovakia. 15-17 June, 2010.

78) James B. Russell: Contributions as a scholar and researcher. Cornell Nutrition Conference. Syracuse, NY. 19-21 October 2010.

79) Pre-harvest interventions that we can use to reduce foodborne pathogens in ruminants. Ohio State University. Wooster, OH, 4 November and Columbus, OH, 5 November 2010. Externally funded.

80) Citrus by-products: a green, cost-effective method to reduce pathogens. 5th Annual Scientific Symp. Natural Products- Cost-Effectiveness and Safety of Dietary Supplements. Bloomingdale, IL. 18 November 2010. Externally funded.

81) Interventions to reduce pathogens in swine and cattle. Agri-Medical Research: Providing Dual Benefit for Agriculture and Human Health Symposium. American Society of Nutrition (ASN), American Society of Animal Science (ASAS) and American Dairy Science Association (ADSA). New Orleans, LA. 9 July 2011. Externally funded.

82) USDA approaches to reducing *Salmonella* in animal feeds. *Salmonella* in Feed Coalition. American Feed Industry Association. Arlington, VA. 22 September 2011. Externally funded.

83) *Salmonella* in the feed supply. U.S. Animal Health Association *Salmonella* committee Annual Meeting. Buffalo, NY. 4 October 2011. Externally funded.

84) Preharvest risk factors for *Salmonella enterica* in pork. International *Salmonella* in Pork production Conference. Teagasc Research Institute, Ashtown, Ireland. 6 October 2011. Externally funded.

85) Bacterial physiology, microbial ecology and pre-harvest food safety. Dept. of Microbiology Seminar Series. Mississippi State University, Starkville, MS. 8 March 2012.

86) An overview of the contributions and limitations of culture-based microbiological studies. DISCOVER Conference on Food Animal Agriculture. New Developments in Rumen Microbiology and Their Potential to Improve Animal Performance. Naperville, IL. 11 September 2012. Externally funded.

87) Antibiotic alternatives: Where shall we go? What shall we do? 2012 Carolina Swine Nutrition Conference, Carolina Feed Industry Association. Raleigh, NC. 14 November 2012. Externally funded.

88) Food Safety- mitigating pathogens. 2013 Beef Production Symposium, Canadian Society of Animal Science. Banff, AB. 18 June 2013. Externally funded.

89) Improving food safety in the live animal. Canadian Society of Animal Science Annual Meeting. Banff, AB. 20 June 2013. Externally funded.

90) Ecological and dietary impactors of foodborne pathogen prevalence and methods to reduce colonization in cattle. Amer. Soc. Anim. Sci./Amer. Dairy Sci. Assoc. Joint Annual Meeting. Indianapolis, IN. 11 July, 2013.

91) 9th International VTEC Infections in humans symposium 2015. Food Safety Inspection Service, Office of Public Health Science, Seminar Series. 7 August, 2013.

92) Shiga Toxin-Producing *E. coli* and ruminants: a match made in heaven. Arkansas Society of Food Protection Annual Meeting, Fayetteville, AR. 10-11 September, 2013.

93) Food safety on the farm, on the truck and on the line. Dept. Animal Science. Univ. Vermont, Burlington, VT. 23 September, 2013. Externally funded.

94) Foodborne zoonotic pathogens associated with ruminants. Diamond V Mills, Cedar Rapids, IA. 18 April, 2014.

95) Pre-harvest food safety and food animal microbial modulation. Conference on Production efficiency and food safety: The uncompromised needs of the competitive feed industry. 3 June 2014. Chateaubourg, France. Externally funded.

96) Shiga Toxin-Producing *E. coli* and microbial ecology. Arkansas Society of Food Protection Annual Meeting, Fayetteville, AR. 11-12 September, 2014.

97) Ensuring the intestinal health in calves. Seminar on State of the Art on Intestinal Health on Poultry, Swine, and Calves. Mexican Association of Animal Nutrition Specialists (AMENA). Queretaro, QRO, Mexico. 13-14 November, 2014. Externally Funded.

98) How I learned to stop worrying and love the gut microbiome. Iowa State University, Ames, IA. 23 March, 2015. Externally funded.

99) The ruminant gastrointestinal microbiome; an intersection of animal production, animal welfare, and food safety. University of Georgia, Athens. 24 April, 2015. Externally funded.

100) Probiotic approaches to replacing antibiotics. Industrial Forum on Curbing Antibiotic use in European Poultry Production. Paris, France. 30 June, 2015. (Webinar).

101) Moving beyond O157:H7 – the New STEC Millennium. Arkansas Society of Food Protection Annual Meeting, Fayetteville, AR. 9-10 September, 2015.

102) Practical interventions for use in cattle and swine to control nontyphoidal *Salmonella*. FAO/WHO meeting on Control of nontyphoidal *Salmonella* spp. in Beef and Pork Meat. Rome, Italy. 28 September-2 October, 2015. Externally funded.

103) Efficiency of the use of pre and probiotics for dairy cows. 5th National and 3rd International Symposium on Dairy Cattle. Federal University of Viçosa, Viçosa, Brazil. 30 October-1 November, 2015. Externally funded.

104) Systematic approach in reducing *Salmonella* in livestock. 6th Saudi Conference on Food and Nutrition. Jeddah, Saudi Arabia. 17 November, 2015. Externally funded. (Cancelled by U.S. State Department Security following attacks; Remotely presented)

105) *Salmonella* in poultry: a global view. 6th Saudi Conference on Food and Nutrition. Jeddah, Saudi Arabia. 18 November, 2015. Externally funded. (Cancelled by U.S. State Department Security following attacks; Remotely presented)

106) You want me to put my arm….Where? Food animals and their interface with Infectious Disease. Infectious Disease (ID) Gateway Course. Washington University (St. Louis) College of Medicine. 2 February 2016. Externally funded.

107) Improving Food safety: Interfaces of Microbiology, Live Animals, Meat Production, and You. School of Animal and Comparative Biomedical Sciences, Univ. Arizona, Tucson. 14 April 2016. Externally funded.

108) Measuring the chicken microbiome and how it is influenced by nutrition. Huvepharma International Research Forum for Producers. Porto, Portugal. 27-28 June 2016. Externally funded.

109) Improving food safety in live swine. Food Safety Symposium, Joint Annual Meeting Amer. Soc. Anim. Sci./Amer. Dairy Sci. Assoc. Salt Lake City, UT. 22 July 2016.

110) Improving food safety through microbial ecology-based live animal interventions. Office of National Programs. Beltsville, MD. 6 August 2016.

111) Probiotic approaches to live animals and impacts on Food Safety. Arkansas Society of Food Protection Annual Meeting, Fayetteville, AR. 14 September 2016.

112) Gut health and chick performance. Caribbean Poultry Association, Third Annual Technical Symposium. Spanish Lookout, Belize. 22 September 2016. Externally funded.

113) Strategies to improve gut health in commercial poultry. Caribbean Poultry Association, Third Annual Technical Symposium. Spanish Lookout, Belize. 23 September 2016. Externally funded.

114) Live animal foodborne pathogen reduction strategies. Zoonoses and animal health diseases conference. Islamabad, Pakistan. 20 October 2016. (Remotely presented by request of U.S. Department of State).

115) The rumen microbiome and cattle nutrition: what do we know and where are we going? Kemin Dairy Technical Symposium. Chicago, IL. 8 November 2016. Externally funded.

116) How can we manipulate the chicken microbiome using nutrition. Huvepharma International Research Forum for Producers. Bangkok, Thailand. 29-30 March 2017. Externally funded.

117) How can we harness the ruminal microbiome to maximize fiber digestion. 5th International Symposium on Dairy Cow Nutrition and Milk Quality. Beijing, China. 5-7 May 2017. Externally funded.

118) Fiber digestion, food safety, and live cattle. Beijing Key Laboratory of Dairy Cow Nutrition, Beijing University of Agriculture. Beijing, China. 7 May 2017. Externally funded.

119) The ruminal microbiome, fiber digestion and food safety. China-Ireland Dairy Science and Technology Center, State Key Laboratory of Animal Nutrition, Institute of Animal Science, Chinese Academy of Agricultural Sciences. Beijing, China. 8 May 2017. Externally funded.

120) Where are the best areas for nutritional improvement in a post-antibiotic world? [Keynote address]. Translating Scientific Discoveries into On-Farm Solutions: VetAgro International Forum. Rome, Italy. 18-19 May 2017. Externally funded.

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121) Microbial ecology, the ruminant, and food safety. Poultry Disease Research Center Seminar Series, College of Veterinary Medicine, University of Georgia, Athens. 28 August 2017.

122) General criteria for feed additives for farm animals: Nutritional and Food Safety Strategies. Arkansas Association for Food Protection and Oklahoma Association for Food Protection Joint Annual Meeting. Springdale, AR. 20 September 2017.

123) Pre-harvest strategies for use in food animals: how can the gut microbiome improve food safety. Center for Food Safety, University of Georgia, Griffin. 27 September 2017.

124) Food Safety on the Farm: What can we do. Department of Poultry Science, University of Georgia. Athens, 16 October 2017.

125) The gastrointestinal microbiome of food animals on the farm: impacts on food safety, antimicrobial resistance, and animal health and productivity [Keynote address]. Southern Section of the Association of Analytical Chemists (AOAC), Atlanta. 17 April 2018.

126) Probiotics, the microbiome, and a functional approach to future applications to improve food safety, animal health, and productivity. Microbiome Movement Summit on Animal Microbiomes, St. Louis. 29 May 2018. Externally funded.

127) AMR Resistance in food animals and humans: some possible One Health solutions. [Symposium Keynote address]. World Buiatrics Congress, Sapporo, Japan. 30 August 2018. Externally funded.

128) Government versus Academia: Career functions. Graduate and Postdocs in Science Annual Meeting. Athens, GA. 2 November 2018.

129) Microbiome! What is it good for? Southwest Dairy Nutrition Conference, Phoenix, AZ. 7 February 2019. Externally funded.

130) Alternative Strategies to Manipulate the Microbiome. Animal Microbiome Congress, Overland Park, KS. 13 March 2019.

131) Pre- and probiotics, your cows, and their microbial balance. Amer. Dairy Science Assoc. Ann. Meeting, Cincinnati, OH. 24 June 2019.

132) Pre- and probiotics, your cows, and how they can alter the microbial balance…and why. AgriKing Industries. Fulton, IL. 2 July 2019. Externally Funded.

133) The microbiome of livestock animals and how it impacts animal production and food safety. Dept. Animal Science, Berry College, Rome, GA. 30 August 2019.

134) DFM: Pre- and probiotics. What's the Difference, and how do you choose and why? Ag Partners Technical Meeting, Red Wing, MN. 9 October 2019. Externally Funded.

135) Organic acids and their use in dairy production 37th ADSA DISCOVER Conference, Natural Bioactives in Dairy Production: Science, Functions, and the Future. Itasca, IL. 29 October 2019. Externally Funded.

136) Can the gastrointestinal microbiome change the way we raise dairy cows? Penn State Dairy Nutrition Conference and North East ARPAS Annual meeting, Hershey, PA. 5 November 2019. Externally funded.

137) Animal Health, Microbiome, and Food Safety. USDA/ARS, Washington State University, Pullman, WA. 21 November 2019. Externally Funded.

138) Microbial impacts on animal production and ways to enhance efficiency. USDA/ARS, Beltsville, MD. 9 December 2019. Externally Funded.

139) Non antibiotic strategies to modify the microbial population of dairy cattle: impacts on milk production, animal health, and food Safety. 3rd International Symposium on Alternatives to Antibiotics (ATA), Bangkok, Thailand. 18 December 2019. Externally Funded.

140) Improving Food Safety One Animal at a Time. Department of Food Science, University of Georgia. 14 January 2020.

141) Dairy focused OneHealth strategies to improve animal performance and health. Presidential Advisory Council on Combatting Antimicrobial Resistant Bacteria (PACCARB) Public Meeting, Washington, DC. 27 February 2020. Externally Funded.

142) Use of in vitro assays in ruminant nutrition. Department of Animal Production, Los Banos University, Philippines. 17 April 2020. Webinar.

143) What data on STEC do we have to assess? Joint FAO/WHO Expert Meeting on Control of Shiga Toxin-Producing *Escherichia coli* (STEC) Associated with Meat and Dairy Products. Rome, Italy. 5 June 2020. Webinar

144) Natural Bioactives: Function; results from the field explaining how and why natural bioactives work in the real world of dairying. Amer. Dairy Sci. Assoc. Ann. Mtg. West Palm Beach, FL. 24 June 2020. Virtual Roundtable.

145) Probiotic approaches to modifying the microbial populations: how do you choose and why? Multidisciplinary Conference on Sustainable Development and Bioengineering, Banat University of Agricultural Sciences and Veterinary Medicine of Timisoara (USAMVBT). Timisoara, Romania. 8 October 2020. Virtual.

146) OneHealth and pre-harvest food safety in the live animal. International Visitor Leadership Program, U.S. Department of State. (Representatives from 19 nations). 15 December 2020. Virtual.

147) Is the microbiome the answer to all nutritional questions? Department of Animal Sciences, Iowa State University, Ames, IA. 26 February 2021. Webinar.

148) Food Safety Improvements in Food Animals. Wal-Mart Global Food Safety Office. 2 March 2021. Virtual.

149) Alternatives to antibiotic usage in cattle. 3rd Ruminant Production Conference for Cattle and Sheep. Institute of Animal Science, Chinese Academy of Agricultural Sciences. Beijing, China. 26 March 2021. Virtual.

150) Microbial additives to improve dairy production. GBiotech/Provita Dairy Seminar series for Asia. 29 March 2021. Virtual. Externally Funded.

151) Practical aspects of use of the microbiome in beef and dairy cattle. Academy of Veterinary Consultants Annual Meeting, Norman, OK. 9 April 2021. Virtual. Externally Funded.

152) Produce safety and Cattle: Facts, Challenges, and Opportunities of Cattle Vaccines. Western Growers Association Meeting, Needles, CA. 28 April 2021. Virtual. Externally Funded.

153) Incentives for preharvest control of zoonoses in food animals. International Association of Food Protection (IAFP). 20 July 2021. Virtual Round Table.

154) How can cattle producers enhance food safety on the farm? California Agricultural Neighbors (CAN), California Department of Food and Agriculture (CDFA), Monterey County Farm Bureau dialog, Salinas, CA. 25 August 2021. Virtual. Externally Funded.

155) Pathogen reduction / migration in cattle and pigs - alternatives to antibiotic usage. Kemin 2021 Intestinal Health Symposium. Tucson, AZ. 15 October 2021. Externally Funded.

156) Approaches to reduce pathogen shedding in cattle: what is the state of the art? Leafy Green Safety Coalition (Industry Association). 27 October 2021. Virtual. Externally Funded.

157) Probiotics and gut health in animals. Annual Producers Vitasim Meeting (Producers Conference). Shanghai, China. 9 December 2021. Virtual. Externally Funded.

158) Probiotic (eubiotic) and Prebiotic modes of action. Vitasim Technical Group Meeting. Guangzhou, China. 19 January 2022. Virtual. Externally Funded.

159) What is an efficient ruminal population? Phileo Technical Meeting. Santa Monica, CA. 11 May 2022. Virtual. Externally Funded.

160) Can we draw a line between the resident microbiome and cattle performance/quality? Phileo Global Microbiota Days Symposium. Lille, France. 15 June 2022. Externally Funded.

161) Forage biodegradation: advances in ruminal microbial ecology. Forage cell wall structure and digestibility Symposium. Amer. Soc. Anim. Sci. Ann. Meeting. Oklahoma City, OK. 26-30 June 2022. Externally Funded.

162) Gut Inflammation: Fanning non-specific flames that impact health and performance. Ruminant Nutrition Symposium. Amer. Soc. Anim. Sci. Ann. Meeting. Oklahoma City, OK. 26-30 June 2022. Externally Funded.

163) Contribution of microbiome on sustainability: a nitrogen management approach. Poult. Sci. Assoc. San Antonio, TX. 11-14 July 2022. Externally Funded.

164) Rumenology and you. Plains Nutrition Council Feedlot Nutritionist Boot Camp. West Texas A&M University, Canyon, TX. 10 August 2022. Externally Funded.

165) What dietary and supplemental approaches are available to reduce STEC shedding in cattle? California *E. coli* workshop for producers. Salinas, CA. 23 August 2022. Virtual.

166) What does the microbiome tell us about animal nutrition and food safety? International Microorganism Day Symposium, North-West University. Potchefstroom, South Africa. 23 September 2022. Virtual. [Keynote]

167) Is this a good microbiome? What about that one? How does the microbiome affect efficiency and productivity of my herd? Cornell Nutrition Conference. 19 October 2022. Syracuse, NY. Externally Funded.

168) STEC, animal reservoirs, and the food supply: what do we know now? 11th Intl. Symp. on Verotoxin Producing *Escherichia coli* (VTEC) Infection. Banff, Alberta, Canada. 7-10 May 2023

Professional Presentations

1) Effects of monensin and organic acids on the in vitro mixed ruminal microorganism fermentation of cracked corn. 23rd Biennial Conference on Rumen Function. Chicago, IL. Nov. 14-16, 1995.

2) Bacteria from cattle fed concentrates become resistant to monensin but not nisin. 24th Biennial Conference on Rumen Function. Chicago, IL. Nov. 13-15, 1997.

3) The adaptation of *Prevotella bryantii* (*ruminicola* $B_1$4) to monensin. American Society of Animal Science/American Dairy Science Association Joint Meeting. Denver, CO. July 27-31, 1998.

4) Development of an in vitro model of *Escherichia coli* O157:H7 competition with ruminal and fecal microbial populations. 101st General Meeting of the American Society for Microbiology, Los Angeles, CA. May 21-25, 2000.

5) *Escherichia coli* O157:H7 becomes resistant to sodium chlorate addition in pure culture but not in mixed culture or *in vivo*. ASAS/ADSA Joint Meeting. Baltimore, MD. July 24-28, 2000.

6) Effect of sodium chlorate on *in vitro* ruminal fermentations. 25th Biennial Conference on Rumen Function. November 15, 2000.

7) Pre-slaughter intervention strategies to reduce *E. coli* O157:H7 in ruminants. Food Safety Research in ARS. College Station, TX. June 21, 2001.

8) Chlorate supplementation in drinking water reduces *E. coli* O157:H7 populations in cattle prior to harvest. International Animal Agriculture and Food Science Conference. Indianapolis, IN. July 24-28, 2001.

9) Effect of mixing stress on fecal shedding of *Salmonella* typhimurium by early-weaned piglets. Joint meeting of Canadian Society of Animal Science, American Society of Animal Science, and American Dairy Science Association. Quebec, QC, Canada. July 21-25, 2002.

10) Sodium chlorate treatment reduces *E. coli* O157:H7 in production cattle. 22nd World Buiatrics Congress. Hanover, Germany. August 18-23, 2002.

11) Experimental chlorate product treatment to reduce food borne pathogenic bacteria in ruminant and monogastric food animals. 26th Conference on Gastrointestinal Function. Chicago, IL March 10-12, 2003.

12) Use of bacteriophage, chlorate and other potential intervention strategies to reduce food borne pathogenic bacteria in cattle and swine. Food Safety Research in ARS. College Station, TX. May 28, 2003.

13) Isolation of naturally occurring bacteriophage from sheep that reduce populations of *E. coli* O157:H7 *in vitro* and *in vivo*. 5th Intl. Symp. on Verotoxin Producing *Escherichia coli* (VTEC). Edinburgh, UK. 9 June, 2003.

14) Experimental chlorate product reduces *Salmonella* populations in swine during lairage. Amer. Soc. Animal Sci./Amer. Dairy Sci. Assoc. Joint Annual Meeting. Phoenix, AZ. 22-26 June, 2003.

15) Colicin E1, N and A treatment inhibits growth of *Escherichia coli* O157:H7 strains *in vitro*. Amer. Soc. Animal Sci./Amer. Dairy Sci. Assoc./Amer. Poultry Sci. Assoc. Joint Annual Meeting. St. Louis, MO. 25-29 July, 2004.

16) How common are bacteriophage in the feces of U.S. feedlot cattle? Society for Gen. Microbiol. Ann. Mtg. Edinburgh, UK. 6 April, 2005.

17) Phage incidence in feedlot cattle feces and the use of phage to reduce *E. coli* O157:H7 in vivo. 27th Conference on Gastrointestinal Function. Chicago, IL. 11 April, 2005.

18) Orange pulp reduces growth of *E. coli* O157:H7 and *Salmonella* Typhimurium in pure culture and in vitro mixed ruminal microorganism fermentation. Amer. Soc. Anim. Sci/ Amer. Dairy Sci. Assoc./Can. Soc. Anim. Sci. Annual Meeting. Cincinnati, OH. 27 July, 2005.

19) Microbial ecology-based intervention strategies against *E. coli* O157:H7 and *Salmonella* spp. Food Safety Research in ARS. College Station, TX. October 19, 2005.

20) Isolation of bacteriophage active against *E. coli* O157:H7 and *Salmonella* spp. from cattle and swine. Gut Microbiology Conference, Aberdeen, Scotland, UK. 21 June, 2006.

21) Isoamyl acetate as a method to reduce pathogens and methane production in cattle prior to harvest. Amer. Soc. Anim. Sci./Amer. Dairy Sci. Assoc. Annual Meeting. Minneapolis, MN. 11 July, 2006.

22) Use of bacteriophage to reduce *E. coli* O157:H7 in the intestinal tract and on the hides of cattle. 6th International Verotoxin Producing *E. coli* (VTEC) Conference. Melbourne, Victoria, Australia. 30 October 2006.

23) Isolation of *Salmonella* spp. and bacteriophage active against *Salmonella* spp. from commercial swine. 7th International Symposium on the Epidemiology and Control of Foodborne Pathogens in Pork. Verona, Italy. 10 May 2007.

24) Effects of the dicarboxylic acids malate and fumarate on *E. coli* O157:H7 and *Salmonella* Typhimurium populations in pure culture and mixed ruminal culture in *in vitro* fermentations. Amer. Soc. Anim. Sci./Amer. Dairy Sci. Assoc. Annual Meeting. Indianapolis, IN. 9 July, 2008.

25) Orange byproduct feedstuffs can reduce *E. coli* O157:H7 in ruminants. 7th International Symposium on Shiga Toxin (Verocytotoxin)-Producing *Escherichia coli* Infections. Buenos Aires, Argentina. 10-14 May, 2009.

26) Effects of Aviplus on *E. coli* O157:H7 in pure culture and in mixed ruminal culture fermentations. Amer. Soc. Anim. Sci./ Amer. Dairy Sci. Assoc./Can. Soc. Anim. Sci. Joint Annual Meeting. Montreal, Quebec. 12-16 July, 2009.

27) Dietary orange peel can reduce *Salmonella* populations in the intestinal tract of sheep. Rowett/INRA International Gut Microbiology Conference. Aberdeen, Scotland, UK. 20-24 June, 2010.

28) Aviplus® treatment reduces *E. coli* and *Salmonella* populations in pure and mixed ruminal culture fermentations. Amer. Soc. Anim. Sci./Amer. Dairy Sci. Assoc. Ann. Mtg., Denver, CO 11-15 July, 2010.

29) Aviplus® treatment improves growth efficiency in broilers and swine but does not affect intestinal populations of experimentally inoculated *Salmonella*. Amer. Soc. Anim. Sci./Amer. Dairy Sci. Assoc. Ann. Mtg., Denver, CO 11-15 July, 2010.

30) Effects of dietary orange peel on populations of *Salmonella* and *E. coli* O157:H7 in ruminants. 6th Conference on New Frontiers in Microbiology, "*Salmonella* from basic science to clinical aspects". Villars Sur Ollon, Switzerland 3-7 October, 2010.

31) In vitro dry matter and fiber digestibility of different varieties of peanut tops and Bermuda grass forage. Amer. Soc. Anim. Sci. Ann. Meeting. Oklahoma City, OK. 26-30 June 2022. Externally Funded.

Cooperative Agreements

2018-Present Developed and executed an International Cooperative Agreement between the Institute of Animal Science of The Chinese Academy of Agricultural Sciences and the University of Georgia.

2018-Present Developed and executed a Cooperative Agreement between Spraying Systems Inc. and the University of Georgia.

2021-Present Developed and executed an International Cooperative Agreement between the University of Venda (South Africa) and the University of Georgia.

2022-2027 Developed and executed an International Cooperative Agreement for exchange program between Miyarisan Pharmaceuticals (Tokyo, Japan)

2022-2024 Material Transfer Agreement with Lactosan Inc. (Germany)

Abstracts

1) **Callaway**, T. R., and S. A. Martin. 1995. Effects of monensin and organic acids on the in vitro mixed ruminal microorganism fermentation of cracked corn. Proceedings of the 23rd Biennial Conference on Rumen Function.

2) **Callaway** T. R., S. A. Martin, J. L. Wampler, N. S. Hill and G. M. Hill. 1996. Malate content of forage varieties commonly fed to cattle. J. Dairy Sci. 79 (Suppl. 1):152.

3) **Callaway**, T. R., R. P. Lana, and J. B. Russell. 1997. Bacteria from cattle fed concentrates become resistant to monensin but not nisin. Proceedings of the 24th Biennial Conference on Rumen Function.

4) **Callaway**, T. R. and J. B. Russell. 1998. The adapatation of *Prevotella bryantii* (*ruminicola* B_14) to monensin. J. Dairy Sci. 81(Suppl. 1):309.

5) Martin, S. A. and T. R. **Callaway**. 1998. Effects of chlorhexidine diacetate on ruminal microorganisms. Abstracts of the General Meeting of the American Society for Microbiology. 98:328.

6) **Callaway**, T. R., R. C. Anderson, S. A. Buckley, K. M. Bischoff, C. L. Sheffield, L. F. Kubena, D. J. Nisbet. 2000. Development of an in vitro model of *Escherichia coli* O157:H7 competition with ruminal and fecal microbial populations. 101st General Meeting of the American Society for Microbiology, Los Angeles, CA.

7) Anderson, R. C., S. A. Buckley, K. J. Genovese, T. R. **Callaway**, L. F. Kubena, R. B. Harvey, D. J. Nisbet. 2000. Effect of sodium chlorate on concentrations of *Salmonella* serovar *typhimurium* and *Escherichia coli* O157:H7 within the pig gut model. 9th Int. Cong. Infect. Dis. Bueno Aires, Argentina.

8) Anderson, R. C., S. A. Buckley, T. R. **Callaway**, K. J. Genovese, L. F. Kubena, R. B. Harvey, D. J. Nisbet. 2000. Effect of sodium chlorate on concentrations of *Salmonella typhimurium* concentrations in the pig gut. Proceedings of the International Symposium on Digestive Physiology in Pigs. Stockholm, Sweden.

9) **Callaway**, T. R., R. C. Anderson, S. A. Buckley, L. F. Kubena and D. J. Nisbet. 2000. *Escherichia coli* O157:H7 becomes resistant to sodium chlorate addition in pure culture but not in mixed culture or in vivo. Amer. Soc. Animal Sci./Amer. Dairy Sci. Assoc. Joint Meeting. Baltimore, MD. J. Dairy Sci. 83 (Suppl. 1):452.

10) Anderson, R. C., S. A. Buckley, T. R. **Callaway**, L. F. Kubena and D. J. Nisbet. 2000. Effect of lactate and chlorate on *E. coli* O157:H7 in vitro. Proceedings of the Canadian Society of Animal Science Annual Meeting. Winnipeg, Manitoba. Can. J. Anim. Sci. 80:765.

11) Buckley, S. A. T. R. **Callaway**, R. C. Anderson, L. F. Kubena and D. J. Nisbet. 2000. A simple, improved method for collecting ruminal fluid via nylon strainer. Proceedings of the Canadian Society of Animal Science Annual Meeting. Winnipeg, Manitoba. Can. J. Anim. Sci. 80:768-769.

12) **Callaway**, T. R., R. C. Anderson, S. A. Buckley and D. J. Nisbet. 2000. Sodium chlorate kills *E. coli* O157:H7, but does not stimulate Shiga-toxin release. Proceedings of the 4th Verotoxin-Producing *Escherichia coli* (VTEC) Meeting. Kyoto, Japan. 181.

13) Anderson, R. C., S. A. Buckley, K. J. Genovese, T. R. **Callaway**, T. J. Anderson, C. L. Sheffield and D. J. Nisbet. 2000. Bactericidal effect of chlorate against wildtype *Escherichia coli* and *Escherichia coli* O157:H7 in the porcine gut. Proceedings of the 4th Verotoxin-Producing *Escherichia coli* (VTEC) Meeting. Kyoto, Japan. 122.

14) **Callaway**, T. R., R. C. Anderson, S. A. Buckley, and D. J. Nisbet. 2000. Effect of sodium chlorate on in vitro ruminal fermentations. Proceedings of the 25th Biennial Conference on Rumen Function.

15) **Callaway** T. R., R. O. Elder, J. E. Keen, R. C. Anderson, and D. J. Nisbet. 2001. Forage feeding to reduce pre-harvest *E. coli* populations in cattle, a review. Amer. Soc. Animal Sci./Amer. Dairy Sci. Assoc. Joint Meeting. Indianapolis, IN. J. Anim. Sci. 79:241. (Pastures and Forages Symposium)

16) **Callaway**, T. R., R. C. Anderson, T. J. Anderson, T. L. Poole, and D J. Nisbet. 2001. Chlorate supplementation in drinking water reduces *E. coli* O157:H7 populations in cattle prior to harvest. Amer. Soc. Animal Sci./Amer. Dairy Sci. Assoc. Joint Meeting. Indianapolis, IN. J. Anim. Sci. 79:114.

17) Moore, R. W., J. A. Byrd, K. D. Knape, R. C. Anderson, T. R. **Callaway**, T. S. Edrington, L. F. Kubena, and D. J. Nisbet. 2002. The effect of an experimental chlorate compound on *Salmonella* recovery of turkeys when administered prior to feed and withdrawal. Amer. Soc. Poultry Sci. Annual Meeting.

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163) *Intanoo*, M., V. Pattarajinda, J. K. Bernard, and T. R. **Callaway**. 2018. Supplementation of ruminal aflatoxins-detoxifying bacteria on *in vitro* nutrients digestibility and aflatoxin B_1 detoxification. Amer. Soc. Anim. Sci. Ann. Mtg. Vancouver, BC, Canada. Submitted 26 March.

164) Lourenço, J. M., T. J. Kieran, J. C. McCann, T. C. Glenn, R. L. Stewart, Jr., and T. R. **Callaway**. 2018. Analysis Of The Gastrointestinal Tract-Associated Microbiome Of Calves Supplemented During The Suckling Phase. Amer. Soc. Anim. Sci. Ann. Mtg. Vancouver, BC, Canada. Submitted 26 March.

165) Wilkerson, S. R., P. R. Broadway, J. A. Carroll, N. C. Burdick-Sanchez, D. A. Tigue, J. G. Rehm, T. R. **Callaway**, and C. L. Bratcher. 2018. Translocation of orally inoculated *Salmonella* following immunosuppression in dairy calves. Recip. Meats Conf. Kansas City, KS. Submitted 3 April.

166) Jeon, J., J. Lourenco, E. Kaiser, E. Waters, K. Scheulin, M. Fegan, X. Fang, H. Kinder, S. Platt, K. J. Duberstein, T. R. **Callaway**, F. D. West, and H. J. Park. 2019. Changes of gut microbiome during acute stage of ischemic stroke in a pig model. Nutrition 2019 Conference, Baltimore, MD. Submitted 7 February.

167) *Seidel*, D. S., T. R. Whitney, J. W. Walker, J. M. Musser, and T. R. **Callaway**. 2019. Effect of camphor concentrations on caprine in vitro mixed ruminal microorganism fermentations. Congress on Gastrointestinal Function, Chicago, IL. 12-14 April.

168) *Hampton*, R. S., M. S. Azain, J. Lourenco, C. R. Dove, C. Edmunds, and T. R. **Callaway**. 2019 Impact of sub-therapeutic carbadox feeding on growth performance and the fecal microbial population of newly weaned swine. Congress on Gastrointestinal Function, Chicago, IL. 12-14 April.

169) Hampton, R. S., J. M. Lourenco, and T. R. **Callaway**. 2019. Pre- and probiotics, your cows, and their microbial balance. Amer. *Dairy* Science Assoc. Ann. Meeting, Cincinnati, OH. 24 June 2019.

170) Maia, F., J. *Lourenco*, D. *Seidel*, M. Intanoo, T. **Callaway**, and L. Stewart. 2019. The effect of forage quality and protein supplementation source on digestibility of Tifton 85 Bermudagrass. Amer. Soc. Anim. Sci. Ann. Meeting, Austin, TX. 8-11 July.

171) Maia, F., J. *Lourenco*, D. Davis, T. **Callaway**, and L. Stewart. 2019. The effect of forage quality and protein supplementation source on digestibility of Kentucky 31 Tall Fescue. Amer. Soc. Anim. Sci. Ann. Meeting, Austin, TX. 8-11 July.

172) *Seidel*, D. S., T. R. Whitney, J. W. Walker, J. M. Musser, and T. R. **Callaway**. 2019. Alterations in caprine ruminal microorganism fermentation over time using camphor. Amer. Soc. Anim. Sci. Ann. Meeting, Austin, TX. 8-11 July.

173) Cosby, D. E., J. DeVoll, S. C. Mize, M. McIntyre, O. Y. *Koyun*, T. R. **Callaway**, M. E. Berrang, and A. Hinton. 2019. Use of high pressure, heated water and fluidic nozzles to reduce the bacterial load on poultry carcasses. Amer. Poul. Sci. Assoc. Ann. Meeting, Montreal, QC. 15 July.

174) Wilkerson, S. R., P. R. Broadway, J. A. Carroll, N. C. Burdick-Sanchez, D. A. Tigue, J. G. Rehm, T. R. **Callaway**, and C. L. Bratcher. 2019. Translocation of orally inoculated *Salmonella* following mild immunosuppression in dairy calves and the presence of the *Salmonella* in ground beef samples. Recip. Meats Conf. Fort Collins, CO. Submitted 4 April

175) **Callaway**, T. R., J. M. *Lourenco*, T. D. Pringle, and F. Fluharty. 2019. Non-antibiotic strategies to modify the microbial population of dairy cattle:impacts on milk production, animal health, and food safety. 3rd International Symposium on Alternatives to Antibiotics (ATA), Bangkok, Thailand. 18 December. Submitted 30 August.

176) *Jeon*, J., X. Fang, J. *Lourenco*, S. Ravalam, M. J. Rothrock, T. R. **Callaway**, and H. J. Park. 2020. The effect of maternal DHAand Lutein supplementation on the changes in gut microbiota of the offspring. Exper. Biol. Submitted 14 November.

177) *Jeon*, J., X. Fang, J. *Lourenco*, S. Ravalam, M. J. Rothrock, T. R. **Callaway**, and H. J. Park. 2020. Fecal microbiota composition of a mother-infant dyad in a pig model. Nutrition 2020. 30 May -2 June. Seattle, WA. Submitted 21 January.

178) Goetz, B. M., E. A. Horst, E. J. Mayorga, M. A. Abeyta, S. Rodriguez-Jimenez, S. Carta, C. Hikita, T. Watanabe, J. M. *Lourenco*, M. N. *Carmichael*, T. R. **Callaway**, and L. H. Baumgard. 2020. Effects of a cashew nut shell extract on production and rumen dynamics in transition dairy cows. Amer. Dairy Sci. Assoc. Ann. Mtg. West Palm Beach, FL. Submitted 19 February.

179) **Callaway**, T. R., J. S. Osorio, and K. E. Griswold. 2020. Natural Bioactives: Function; results from the field explaining how and why natural bioactives work in the real world of dairying. Amer. Dairy Sci. Assoc. Ann. Mtg. West Palm Beach, FL. Submitted 19 February.

180) Osorio, J. S., T. R. **Callaway**, and K. E. Griswold. 2020. Natural Bioactives: Science; a multidisciplinary approach to develop, produce, and understand natural bioactives. Amer. Dairy Sci. Assoc. Ann. Mtg. West Palm Beach, FL. Submitted 19 February.

181) Krause, T. R., J. M. Lourenco, C. B. Welch, T. R. **Callaway**, and T. D. Pringle. 2020. The relationship between the hindgut microbiome and carcass merit in Angus steers. Recip. Meat Conf. *1st place Ph.D. Research Competition RMC.*

182) Edmunds, C. E., D. S. Seidel, C. B. Welch, E. A. Lee, M. J. Azain, T. R. **Callaway**, and C. R. Dove. 2020. The Effect of Altering Dietary Manganese and Selenium Levels on the Growth Performance and Manganese-Superoxide Dismutase Activity in Nursery Pigs. Midwest Amer. Soc. Anim. Sci. Submitted 1 November.

183) Kort, R. N., G. E. Nichols, C. E. Evans, J. P. Holen, H. K. Wecker, T. R. **Callaway**, J. M. Lourenco, C. R. Stark, C. B. Paulk. 2020. Effects of decreasing corn particle size on metabolizable energy and alters proportions of fecal volatile fatty acids in gestating sows. Midwest Amer. Soc. Anim. Sci. Submitted 5 November.

184) Tilahun, M., L Zhao, G. Zitai, Y. Shen, L. Ma, T. R. **Callaway**, J. Xu, and D. Bu. 2021. Amla (Phyllanthus emblica) fresh fruit as anew feed source: I Effect on apparent digestibility, ruminal fermentation, and milk performance in lactating dairy cows. Amer. Dairy Sci. Assoc. Ann. Meeting. Submitted 4 March.

185) Tilahun, M., L Zhao, L. Sun, L. Ma, T. R. **Callaway**, J. Xu, and D. Bu. 2021. Amla (Phyllanthus emblica) fresh fruit as anew feed source: II Effect on milk antioxidant capacity, milk metabolites, and fatty acid profiles in lactating dairy cows. Amer. Dairy Sci. Assoc. Ann. Meeting. Submitted 4 March.

186) Abeyta, M. A., B. M. Goetz, S. Rodriguez-Jimenez, E. J. Mayorga, J. A. Opgenorth, A. D. Freestone, J. M. Lourenco, T. R. **Callaway**, and L. H. Baumgard. 2021. Effects of rumen acidosis on fecal pH, metabolism, and inflammatory biomarkers in lactating dairy cows previously acclimated to high fiber diet. Amer. Dairy Sci. Assoc. Ann. Meeting.

187) Balta, I. M. Linton, L. Stef, I. Peta, T. **Callaway**, S. Phittawat, and N. Corcionivoschi. 2021. Mixtures of natural antimicrobials can reduce *Campylobacter jejuni, Salmonella enterica* and *Clostridium perfringens* infections and cellular inflammatory response in MDCK cells. Intl. Symp. Gut Microbiology. Submitted 20 May.

188) Jeon, J., J. Lourenco, E. Kaiser, E. S. Waters, X. Yange, M. Fagan, K. Scheulin, S. Sneed, S. K. Shin, H. A. Kinder, A. Kumar, S. Platt, K. J. Duberstein, J. Xie, T. R. **Callaway**, F. D. West, and H. J. Park. 2021. Fecal Short Chain Fatty Acids Show Correlations with Stroke Recovery in a Stroke Pig Model. Annual Meeting Obesity Society. Submitted 18 July.

189) Julie H. Jeon, Jeferson Lourenco, Madison M. Fagan, Christina B. Welch, Sydney E. Sneed, Kylee J. Duberstein, Todd R. **Callaway**, Franklin D. West, Hea Jin Park. 2022. Changes in Oral Microbial Diversity in a Piglet Model of Traumatic Brain Injury. FASEB J. 36. Suppl. 1. doi: 10.1096/fasebj.2022.36.S1.0R483. PMID: 35555382.

190) Fagan, M. M., C. B. Welch, K. M. Scheulin, S. E. Sneed, J. H. Jeon, M. E. Golan, T. D. Pringle, T. R. **Callaway**, H. J. Park, J. M. Lourenco, K. J. Duberstein, and F. D. West. 20022. Gut microbial transplant therapy significantly decreases brain injury in a piglet traumatic brain injury model. Nuerotrauma 2022, Atlanta, 24-26 June.

191) Welch, C. B., M. M. Fagan, S. E. Sneed, K. M. Scheulin, J. H. Jeon, M. E. Golan, H. J. Park, T. R. **Callaway**, K. J. Duberstein, T. D. Pringle, J. M. Lourenco, and F. D. West . 2022. Gut microbial transplantation restores the gastrointestinal microbial populations following a traumatic brain injury in pediatric porcine model. Nuerotrauma 2022, Atlanta, 24-26 June.

192) Welch, C. B., M. M. Fagan, S. E. Sneed, K. M. Scheulin, J. H. Jeon, M. E. Golan, H. J. Park, T. R. **Callaway**, K. J. Duberstein, T. D. Pringle, J. M. Lourenco, F. D. West. Gut microbial transplantation restores the gastrointestinal microbial populations following

a traumatic brain injury in a pediatric porcine model. The 39th Annual Symposium of the National Neurotrauma Society. 24-26 June 2022

193) Welch, C. B., M. M. Fagan, S. E. Sneed, K. M. Scheulin, J. H. Jeon, M. E. Golan, H. J. Park, T. R. **Callaway**, K. J. Duberstein, T. D. Pringle, J. M. Lourenco, F. D. West. Gut microbial transplantation restores the gastrointestinal microbial populations following a traumatic brain injury in a pediatric porcine model. University of Georgia – NSF Infectious Disease Ecology Across Scales (IDEAS) Retreat. May 2022.

194) *Koyun*, O. Y., E. D. Rowland, J. M. Lourenco, J. J. Baloyi, F. L. Fluharty, R. L. Stewart, M. McCarthy, S. Fry, K. E. Griswold, and T. R. **Callaway**. 2022. Impact of calcium gluconate feeding on an intestinal microbial population in a growing steer model. Amer. Dairy Sci. Assoc. Ann. Meeting. Kansas City, 20-22 June.

195) *Koyun*, O. Y., E. D. Rowland, J. M. Lourenco, J. J. Baloyi, F. L. Fluharty, T. D. Pringle, A. M. Stelzleni, R. L. Stewart, M. McCarthy, S. Fry, K. E. Griswold, and T. R. **Callaway**. 2022. Impact of calcium gluconate feeding on growth performance, ruminal and intestinal microbial activity and morphology in a growing steer model. Amer. Dairy Sci. Assoc. Ann. Meeting. Kansas City, 20-22 June.

196) *Jeon*, J. H., E. E. Kaiser, E. S. Waters, X. Yang, J. Lourenco, K. M. Scheulin, S. E. Sneed, S. K. Shin, H. A. Kinder, A. Kumar, S. R. Platt, J. Ahn, M. J. Rothrock, T. R. **Callaway**, J. Xie, F. D. West, H. J. Park. 2022. Tanshinone IIA and neural stem cell combination therapy decrease gut inflammation and maintains gut integrity in a translational pig ischemic stroke model. Nutrition 2022 live online. (Accepted)

197) *Fagan*, M. M., C. B. Welch, K. M. Scheulin, S. E. Sneed, J. H. Jeon, M. E. Golan, T. D. Pringle, T. R. **Callaway**, H. J. Park, J. M. Lourenco, K. J. Duberstein, and F. D. West. 2022.. Gut microbial transplantation therapy significantly decreased brain injury in a piglet traumatic brain injury model. Swine in Biomedical Research Conference.

198) *Koyun*, O. Y., J. M. Lourenco, T. R. **Callaway**, S. Tao, and J. K. Bernard. Impacts of irrigating triticale with dairy lagoon wastewater prior to harvest and treating with a bacterial inoculant at harvest on the chemical composition, fermentation quality, and bacterial community of silage. Congress on Gastrointestinal Function Conference. Chicago, IL. 11-13 April.

199) *Welch*, C. B., M. M. Fagan, S. E. Sneed, K. M. Scheulin, J. H. Jeon, M. E. Golan, H. J. Park, T. R. **Callaway**, K. J. Duberstein, T. D. Pringle, J. M. Lourenco, and F. D. West. Fecal matter transplantation restores the gastrointestinal microbial populations following a traumatic brain injury in a pediatric porcine model. Congress on Gastrointestinal Function Conference. Chicago, IL. 11-13 April.

200) Abeyta, M. A., B. M. Goetz, E. J. Mayorga, S. Rodriguez-Jimenez, J. Opgenorth, A. D. Freestone, J. M. Lourenco, T. R. **Callaway**, and L. H. Baumgard. 2022. Effects of abomasally infused rumen fluid from corn-challenged donor cows on production, metabolism, and inflammatory biomarkers in naïve recipient cows. J. Dairy Sci. 105(Suppl.1):152.

201) **Callaway**, T. R., J. M. Lourenco, and T. D. Pringle. 2022. Can we draw a line between the resident microbiome and cattle performance/quality? Phileo Global Microbiota Symposium. Lille, France. 15 June.

202) **Callaway**, T. R., J. M. Lourenco, R. L Stewart, W. B. Smith, and F. L. Fluharty. 2022. Forage biodegradation: advances in ruminal microbial ecology. Pastures and Forages Symposium. Amer. Soc. Anim. Sci. Ann. Meeting. Oklahoma City, OK. 27-30 June.

203) Abeyeta, M. A., L. H. Baumgard, and T. R. **Callaway**. 2022. Gut Inflammation: Fanning non-specific flames that impact health and performance. Beef Species and Ruminant Nutrition Symposium. Amer. Soc. Anim. Sci. Ann. Meeting. Oklahoma City, OK. 27-30 June.

204) Baloyi, J. J., and T. R. **Callaway**. 2022. In vitro dry matter and fiber digestibility of different varieties of peanut tops and Bermuda grass forage. Amer. Soc. Anim. Sci. Ann. Meeting. Oklahoma City, OK. 27-30 June 2022.

205) **Callaway**, T. R., and C. R. Dove. 2022. Contribution of microbiome on sustainability: a nitrogen management approach. Poult. Sci. Assoc. Ann. Meeting. San Antonio, TX. 11-14 July 2022.

Undergraduate Research Projects

Feldmann, Katie- Essential oil impacts on the mixed ruminal microorganism fermentation of feeds Fall 2021. Funded by CAES. (*1st place in CAES Undergraduate Research Oral Presentations 2022*)

Hood, Hannah – Mapping the bovine reproductive microbial ecosystem. Fall 2021. Funded by CAES.

Hudson, Brandon – Impact of tannins on mixed ruminal microorganism fermentation characteristics and microbiome composition. Fall 2020-Spring 2021, UGA CAES Undergraduate

Research Initiative. Funded by CAES. (*2nd place in CAES Undergraduate Research Oral Presentations 2021*)

Hunnicut, Austin – Degradation of a commercial modified starch product by a mixed ruminal microorganism fermentation in vitro. Biochemistry, Cell, and Molecular Biology Research, Fall 2018.

Johnson, Hannah – In vitro fermentation of gossypol by cattle mixed ruminal microorganisms. Spring 2020, UGA CAES Undergraduate Research Initiative. Funded by CAES.

Jones, Benjamin – Effect of a xylanase on release of xylan from warm season forages. Fall 2018, UGA CAES Undergraduate Research Initiative. Funded by CAES.

Kennedy, Taylor – Evaluation of the Antibacterial Efficacy of *Ambrosia trifida L*. Against *Salmonella* Newport and *Salmonella* Typhimurium *In Vitro*. Biochemistry, Cell, and Molecular Biology Research, Fall 2018.

Pisani, Kristen – Terpenoids effect on foodborne pathogenic bacteria. Spring 2019, UGA CAES Undergraduate Research Initiative. Funded by CAES. (*2nd place in CAES Undergraduate Research Presentations 2019*)

Walker, Madison – Impact of camphor and ethanolamine on *E. coli* O157:H7 and *Salmonella* Typhimurium populations in pure and mixed fecal cultures. Fall 2018 and Spring 2019, UGA CAES Undergraduate Research Initiative. Funded by CAES.

Honors, Awards, and Professional Activities

2022	***Outstanding Faculty Member Award***, Block and Bridle Club (ADSC), University of Georgia
2022-2027	*Editor in Chief, Foodborne Pathogens and Disease*, Mary Ann Leibert Publishing
2022	***Panel Manager***, USDA/National Institute for Food and Agriculture, AFRI, Sustainable Agricultural Systems (SAS)
2021-2024	*Director at Large*, Production Division Council, American Dairy Science Association (ADSA)
2021-2024	*Steering Committee Member*, American Dairy Science Association (ADSA) DISCOVER Conferences
2021	*Breaking Grounds*, Mentor for Graduate Students via ASAS
2021	***Panel Manager***, USDA/National Institute for Food and Agriculture, AFRI, Mitigating Antimicrobial Resistance Across the Food Chain
2020- Present	*Scientific Member*, National Institute of Antimicrobial Resistance Research and Education (NIAMRRE)
2020-Present	*Associate Editor*, Animal Nutrition Section, *Frontiers in Animal Science*.

2020-2024 *Organizing Committee*, International Symposium on Ruminant Physiology.

2020-2021 ***Chair Expert Panel***, Joint FAO/WHO Expert Meeting on "Control of Shiga Toxin-Producing *Escherichia coli* (STEC) Associated with Meat and Dairy Products". Food and Agriculture Organization of the United Nations/World Health Organization. Rome, Italy.

2019-2021 ***Career Development Contributor Award***
Classes of 2019, 2020, and 2021, UGA Career Services

2019-2024 *Expert Panelist*, AMR and the Development of Innovative Alternatives to Antibiotics Working Group. Global Strategic Alliance for the Coordination of Research on the Major Infectious Diseases of Animals and Zoonoses (STAR-IDAZ), World Organization for Animal Health (OIE). Bangkok, Thailand.

2018-2022 *Expert Panelist and Chair*, Joint FAO/WHO Expert Meetings on Microbiological Risk Assessment (JEMRA). Food and Agriculture Organization of the United Nations/World Health Organization. Rome, Italy.
https://www.fao.org/3/BU616EN/bu616en.pdf

2018-2023 *Expert Panelist*, Joint FAO/WHO Expert Meetings on Foodborne Antimicrobial Resistance (AMR). Food and Agriculture Organization of the United Nations/World Health Organization. Rome, Italy.
https://www.fao.org/3/CA2310EN/ca2310en.pdf

2018-2021 *Advisory Board*, TExAS Scholar Program: Teaching with Experiential learning in Animal Science, Texas A&M University-Kingsville

2018-2019 ***First Year Odyssey Teaching Award***, University of Georgia

2018-2019 ***Chair***, Organizing Committee, Amer. Dairy Sci. Association DISCOVER Conference on "Natural Bioactives in Dairy Production: Science, Function, and the Future", Itasca, Illinois.

2018 ***Outstanding Faculty Member Award***, Block and Bridle Club (ADSC), University of Georgia.

2018 *Session chair* of "VTEC interventions on the farm", 10th International Symposium on Shiga Toxin (Verocytotoxin)-Producing *Escherichia coli* (VTEC) Infections, Florence, Italy.

2017-2020 *Production, Management & the Environment Annual Meeting Program Committee*, American Dairy Science Association (ADSA); ***Chair***, 2020

2017-2019 *External Advisory Committee*, Institute for Infectious Animal Diseases (IIAD), A Department of Homeland Security Science and Technology Center of Excellence, Texas A&M University System, College Station, TX.

2017 ***Chair***, "Production Challenges in the post-antibiotic era" Translating Scientific Discoveries into On-Farm Solutions: VetAgro International Forum. Frascati, Italy.

2016, 2017 *Animal Health Session Co-Chair*, International Conference on Probiotics and Prebiotics. Budapest, Hungary.

2016 *External Research Review Panelist*, Bio5 Institute, University of Arizona, Tucson, AZ.

2016-2021 *Scientific Organizing Committee* for International Symposium on Shiga Toxin (Verocytotoxin)-Producing *Escherichia coli* (VTEC) Infections, (Florence, Italy; Banff, Canada).

2015-2021 ***Co-Chair***, Microbiology Panel, Congress on Gastrointestinal Function (CGF, formerly Rumen Function Conference), Chicago, IL.

2015 *Expert Panelist*, Joint FAO/WHO meeting on "Control of nontyphoidal *Salmonella* spp. in Beef and Pork Meat", Rome, Italy

2014, 2015 ***Panel Manager***, USDA/National Institute for Food and Agriculture, AFRI, Improved Nutritional Performance, Growth and Lactation of Animals Panel

2013 Referred journal article (101) was named "***Top 10 papers in the First Decade of Foodborne Pathogens and Disease***"

2013-2014 *ASAS National Awards committee* for the American Feed Industry Association Award in Ruminant Nutrition Research

2013 ***National Pork Board Award*** for Innovation at Southern Section of Amer. Soc. Anim. Science. For "*Novel Use of Lipid-Producing Bacteria to increase circulating triglycerides in Swine*"

2013-Present ***Editor-in-Chief***, *Microbiology Discovery*

2012-2015 ***Congress President***, 9th International Symposium on Shiga Toxin (Verocytotoxin)-Producing *Escherichia coli* Infections (VTEC), Boston, MA, 13-16 September, 2015.

2012-2015 *Biological Hazards Scientific Committee* Reserve Pool, European Food Safety Agency (EFSA)

2012-Present *NCBA/Beef Industry Food Safety Committee* (BIFSCO) Committee on Preharvest Beef Food Safety BQA Guidelines (Preharvest Working Group).

2012 *Organizing Committee*, Amer. Dairy Sci. Association DISCOVER Conference on "New Developments in Rumen Microbiology and Their Potential to Improve Animal Performance", September 2012. Naperville, Illinois.

2012-Present *International Scientific Steering Committee*, International Symposium on Shiga Toxin (Verocytotoxin)-Producing *Escherichia coli* (VTEC) Infections

2011-2016 *Member*, *Salmonella* in Feed Coalition, American Feed Industry Association.

2010-Present *Biological Safety Officer*, Livestock Issues Research Unit, Lubbock, TX

2010-2012 *Advisory Board*, Egyptian Society of Microbiology

2010 *Session chair* of "Animal Health Symposium", International Scientific Conference on Probiotics and Prebiotics, June 2010, Kosice, Slovakia.

2010 *Organizing Committee*, Gastrointestinal Function Conference on "James B. Russell Memorial Symposium on Rumen and Gastrointestinal Microbiology", October 2010. Urbana, Illinois.

2010 ***National Pork Board Award*** for Innovation at Southern Section of Amer. Soc. Anim. Science. For "Oral administration of citrus pulp reduces gastrointestinal recovery of orally dosed *Escherichia coli* F18 in weaned pigs".

2009-2010 ***Center Director***, Microbial Physiology and Ecology Centre of Excellence, National Alliance for Food Safety and Security (NAFSS).

2009-2011 *External Expert*, SAFE FOOD Project, European Food Safety Authority (EFSA), Parma, Italy.

2008-2009 *Associate Center Director*, Microbial Physiology and Ecology Centre of Excellence, National Alliance for Food Safety and Security (NAFSS)

2009 *Session chair* of "VTEC in Agricultural Settings", 7th International Symposium on Shiga Toxin (Verocytotoxin)-Producing *Escherichia coli* (VTEC) Infections, Buenos Aires, Argentina.

2009 ***Organizing Committee Co-Chair***, International Society of Chemotherapy for Infection and Cancer, Human Animal Interface in Resistance (HAIR) Symposium, Toronto, Canada.

2008-2009 *Organizing Committee*, Amer. Dairy Sci. Association DISCOVER Conference on "Probiotics in Animal Agriculture: Science and Mechanisms of Action", Nashville, Indiana.

2007-2012 *Executive Board*, International Society of Chemotherapy for Infection and Cancer, Working Group on Human Animal Interface in Resistance (HAIR)

2007 ***Early Career Achievement Award***, American Society of Animal Science (ASAS)

2007 ***Early Career Scientist of the Year Award***, USDA/ARS Southern Plains Area

2007, 12 *RPES panelist*, Berkeley, CA

2006 ***Science Fellow*** (Food Safety and Risk and Impact Assessment), USDA/FAS, U.S. Mission to the E.U., Brussels, Belgium. Served as a scientific liaison during

trade and regulatory negotiations between the U.S. and E.U. Organized a meeting of 30 scientists and policy makers from the E.U. to discuss in vivo intervention strategies.

2004 *Organizing committee* for "New ARS Scientist Orientation for Southern Plains Area", organized speakers and lectured to new scientists on ARS procedures and policies.

2003 ***Chairman***, "Food Safety Research in ARS" meeting. College Station, TX. 28-29 May. Meeting of >50 industrial, academic and governmental scientists and officials from the U.S. and Mexico.

2002-2012, 2014, 2016 *Outstanding Rating* in annual reviews by USDA/ARS

2014-2017, 2008-2010, 2002-2005 *Amer. Soc. Anim. Sci. Annual Meeting Food Safety Program Committee* (Food Safety Program Chair, 2016; Session chair at annual meetings 2002-2010; symposium organizer in 2004, 2005, 2007 *ex officio*, 2009) (3 terms)

2002-2012 *Member*, Southern Plains Agricultural Research Center Safety and Environmental Management Systems, and Out-reach Committees

2002-2017 *Biological Safety Officer*, Southern Plains Agricultural Research Center

2000-2011 *Member*, National Alliance for Food Safety and Security (NAFSS): Microbial Physiology and Ecology, and Intervention Strategies Centres for Excellence

2013, 2015
1999-2001 *Superior Ratings* in annual reviews by USDA/ARS

1997-1999 *President*, Field of Microbiology Graduate Students, Cornell.

1997-1999 *Chair of Graduate Student Speakers Committee* (secured external funding and invited speakers of interest to present research seminars at Cornell)

1996 *Recipient*, Outstanding Teaching Assistant Award, University of Georgia. (Determined from undergraduate teaching evaluations)

1996 *Recipient*, Outstanding Graduate Student Award, Department of Animal and Dairy Science, University of Georgia (Awarded by faculty).

1995-Present *Member*, Gamma Sigma Delta, Honor Society of Agriculture.

1994 *Recipient*, American Feed Industry Association Scholarship.

1994-1995 *President*, Animal and Dairy Science Graduate Student Association, University of Georgia.

1993 *Recipient*, Carl S. Akey, Inc. Nutrition Scholarship.

1993-Present *Member*, American Society of Animal Science and American Dairy Science Association.

University and College Professional Service

2022 *Member*, CAES International Programs Task Force

2019-2020 Reviewer, Office of Global Engagement General Scholarships

2019-2020 *Judge*, Georgia 4H Horse Quiz Bowl Competition

2019 *Judge*, College of Agricultural and Environmental Sciences Undergraduate Research Symposium

2018-Present *Advisor*, Block and Bridle Club, Department of Animal and Dairy Science, University of Georgia.

2017-Present *Advisor*, Phi Kappa Literary Society, University of Georgia.

2002-2006 *Advisor*, Alpha Gamma Rho Professional Agricultural Fraternity, Texas A&M University.

Department of Animal and Dairy Science Committees

2022	Non Ruminant Nutrition Faculty Hiring
2022	Laboratory Space Evaluation Committee
2021	Post-Tenure Review Committee
2021-Present	Faculty Mentoring Committee Member • Dr. Yao Yao • Dr. Pedro Fontes
2021	Bioinformatics and Microbiome Faculty Hiring- Chair
2020-Present	Internship Coordinator
2020-2021	Beef Cattle Nutrition Faculty (Tifton) Hiring
2019	Molecular Muscle Biology Faculty Hiring – Chair
2019-Present	ADSC Scholarship Committee
2018 - 2021	ADSC Curriculum Review
2018 - Present	ADSC LARU Programming Review
2018 - Present	ADSC Graduation Event
2018 - Present	Eatonton UGA Beef Farm Management
2018 - Present	Double Bridges UGA Beef Farm Management
2018 - Present	UGA Sheep Unit Management
2017 - Present	ADSC Awards Nomination

Teaching Experience

University of Georgia, Department of Animal and Dairy Science (Semesters taught)

ADSC 3700	Special Problems in Animal Science (F21, S22)
ADSC 3810	Orientation to Animal and Dairy Science (Co taught F21)
ADSC 3910/3920	Internship in ADSC (Coordinator) – (Su20, F20, S 21)
ADSC 4150/6150	Microbial Ecology of the Rumen - (F18, F20, F21)
ADSC 4350/6350	Grazing Animal Production and Management – (Su19 -21; Online)
ADSC 4360/6360	Ruminant Nutrition (2018-2022, Springs)

ADSC 4820	Senior Seminar in ADSC
ADSC 4960	Undergraduate Rsch. ADSC I
ADSC 4970	Undergraduate Rsch. ADSC II
ADSC 7000	Master's Research
ADSC 7300	Master's Thesis
ADSC 8150	Gastrointestinal Microbiology of the Ruminant – (F19, F20, F21)
ADSC 8700	Special Problems in Animal and Dairy Science – (S18 through S21)
ADSC 8884	Curr. Lit. NonRum. Nutrition & Microbiology - (F18, F19, F21)
ADSC 8885	Curr. Lit. Rum. Nutrition & Microbiology - (S19, S20, S21, S22)
ADSC 9000	Doctoral Research
FYOS 1001	Poo and You: First Year Odyssey Course (F18-21, S21, S22)
BCMB 4960L	Biochemistry and Molecular Biology Research
BCMB 4970L	Biochemistry and Molecular Biology Research II
BIOL 4960 R	Undergraduate Research I
BIOL 4870 R	Undergraduate Research II

Guest Lectures

ADSC 2010	Introductory Animal and Dairy Science (F18, F19, F21)
ADSC 3810	Animal and Dairy Science Orientation (F19, F20)
ADSC 4310	Quantitative Feeding of Livestock (F18, F19) 3 lectures
POUL 3750	Integrated Animal Nutrition (F18, F19, F21)
ANNU 8350	Carbohydrates and Lipids in Animal Nutrition (S18, S20)

Texas A&M University, Department of Animal Science

Rumen and Gastrointestinal Microbiology (Lead) – (F14)
Ruminant Nutrition (Rumen Microbiology Section) – (F07 - F16)
Veterinary Physiology (Guest Lectures) College of Veterinary Medicine (F02 - F07)

TA for courses as graduate student

Advanced Microbial Physiology Laboratory; Cornell University
Introductory Microbiology Discussion Seminars; Cornell University
Introductory Animal Science; University of Georgia
Feeds and Feeding; University of Georgia
Animal Nutrition; University of Georgia
Animal Metabolism; University of Georgia

Teaching evaluations available upon request.

Reviewer or Editor for Scientific Publications

Advanced Studies in Biology (Editorial Board, 2008-present)
Advances in Microbiology (Editorial Board, 2008-present)
African Journal of Agricultural Research (2009-present)
African Journal of Microbiology Research (2009-present)
African Journal of Biotechnology (2010-present)
Agriculture, Food and Analytical Bacteriology (Founding Editorial Board, 2011-2016; Associate Editor, 2011-2016)
Agronomy Journal (1998)
Anaerobe (2004-present)
Animal Feed Science and Technology (2008-present)
Animal Production Science (2014-present)
Animal: The International Journal of Animal Biosciences (2022-present)
Animals (2018-present)
Antimicrobial Agents and Chemotherapy (2007-present)
Annals of the New York State Academy of Science (2013-present)
Annals of Animal Science (Poland) (2014-present)

Applied and Environmental Microbiology, ASM (1996-present)
Applied Microbiology and Biotechnology (2015-present)
Asian Pacific Journal of Tropical Medicine (2012-present)
Beneficial Microbes (2009-present)
Bioengineered (2012)
Biologia Part C (2016)
Bioresource Technology (2001-present)
Biotechnology Advances (2009-present)
Biotechnology Progress (2008-present)
BMC Microbiology (2005-present)
British Journal of Nutrition (2010-present)
Canadian Journal of Microbiology (2008-present)
Canadian Journal of Animal Science (2010-present)
Canadian Veterinary Journal (2007-present)
Comparative Microbiology, Immunology and Infectious Diseases (2010-present)
Current Issues in Intestinal Microbiology (Founding Editor, 2003-2007 [2 terms])
Current Issues in Molecular Biology (Editorial Board, 2007-2011 [2 terms])
Current Microbiology (1999-Present; Editorial Board, 2001-2015; Associate Editor, 2005-2015)
Emerging Infectious Diseases (2004-present)
Environmental Microbiology (2010-present)
Epidemiology and Infection (2005-present)
Egyptian Journal of Microbiology (Editorial Board, 2010-2012)
Federation of European Microbiology Societies Microbial Ecology (2003-present)
FASEB Journal (2018-present)
Foodborne Pathogens and Disease (Founding Editorial Board, 2004-present; Editor in chief, 2022-present)
Food and Chemical Toxicology (2007-present)
Food Research International (2010-present)
Frontiers in Animal Science (Associate Editor, Animal Nutrition, 2020-Present)
Frontiers in Microbiology (Review Editor, Gastrointestinal Microbiology, 2021-Present)
Frontiers in Systems Microbiology (Editorial Board, 2013-2018)
Frontiers in Food Microbiology (Editorial Board, 2015-present)
Germs (2018-present)
German Journal of Microbiology (Editorial Board, 2021-present)
International Journal of Microbiology (Editorial Board, 2008-present)
International Journal of Food Microbiology (2009-present)
Irish Veterinary Journal (2021-present)
Journal of Animal Science (1999-present; Editorial Board, 2002-2006; 2011-2013)
Journal of Applied Microbiology (2003-present)
Journal of the Association of Official Analytical Chemists (2001)
Journal of Basic Microbiology (2013)
Journal of Dairy Science (2000-present)
Journal of Dairy Science Communications (2021)
Journal of Environmental Quality (2005-Present)
Journal of Environmental Science and Health, Part B (2010-present)
Journal of Food Protection (Editorial Board, 2004-2024 [7 terms])
Journal of the Science of Food and Agriculture (2006-present)
Journal of Scientific and Industrial Research (2010-present)
Journal of Theoretical Biology (2015-present)
Letters in Applied Microbiology (2002-present)
Livestock Science (2009-present)
Microbial Ecology (2011-present; Editorial Board, 2020-present)
Microbial Pathogenesis (2010-present)
Microbiology (U.K.) (2004-present)
Microbiology Discovery (Editor –in-Chief, 2013-present)
Microbiology Open (2019-present)
Microorganisms (2017-present; Editorial Board, 2018-present)
Nature (2015-2017)
Nature Scientific Reports (2017-present)
New Zealand Journal of Agricultural Research (2007-present)
New Zealand Veterinary Journal (2014-present)
The Open Microbiology Journal (Editorial Board, 2008-present)
PLoS Pathogens (2008-present)
Poljoprivreda (Agriculture, Croatia; 2015-present)
Research in Veterinary Science (2012-present)
Romanian Biotechnological Letters (Editorial Board, 2011-2017)
Scientific Research and Essays (2010)
Toxicology (2002)
Tropical Medicine and Health (Japan) (2009-present)
Vaccine (2007-present)
Veterinary Medicine and Science (2019-present)
Veterinary Microbiology (2006-present)
Veterinary Research (France) (2006-present)
Virology (UK) (2010-present)
Virology Journal (2012-present)
Virulence (2012)
Water Research (2012-present)
Zoonoses and Public Health (2007-present)

Expert Panels

Expert Round Table Panel on ruminants and food safety, Pew Charitable Trust, Washington, DC (2014-2015)

Expert Panelist, FAO/WHO, Control of nontyphoidal *Salmonella* spp. in Beef and Pork Meat, Rome, Italy (2015)

Expert Round Table Panelist, Environmental Defense Fund, Role of Biotechnology in Reducing Methane Emissions from Enteric Fermentation, San Francisco, CA (2016)

Expert Panelist (Chair), FAO/WHO, Control of Shiga Toxin-Producing *Escherichia coli* (STEC) Associated with Meat and Dairy Products, Rome, Italy (2020-2021)

Expert Panelist, AMR and the Development of Innovative Alternatives to Antibiotics Working Group. Global Strategic Alliance for the Coordination of Research on the Major Infectious Diseases of Animals and Zoonoses (STAR-IDAZ), World Organization for Animal Health (OIE) (2020-2023)

Research Program Reviews

Reviewer, University of California System, Agricultural Program Plan (2010)

Research Program Review Panel, Constructed Gut Microbiomes Workshop, Office of Naval Research (2010)

External Research Review Panelist, Bio5 Institute, University of Arizona, Tucson, AZ (2016)

Research Review Panelist, Biotechnology and Biological Sciences Research Council (UK), UK Research Initiative (2019)

Reviewer of state research programs, Shota Rustaveli Georgia (Former Soviet Republic) National Science Foundation (2008-2015, 2017-2019)

Internal Reviewer, USDA/ARS Project plans for Animal Production National Program (2017, 2020)

Reviewer, USDA/ARS Food Safety Project Plans (2020)

Grant and Award Reviews

Reviewer of Hatch Grant Proposal from University of Georgia, Department of Animal and Dairy Science (2000)

Reviewer of research grants for the United States - Israel Bi-national Agricultural Research and Development Fund (BARD) (2004-2006, 2008-2010)

Review Panel of research grant proposals for USDA/CSREES National Research Initiative, Competitive Research Grants Program (NRI/CRGP), National Integrated Food Safety Initiative (NIFSI) Program (2005, 2006); Epidemiology Approaches for Food Safety (2007)

Reviewer of food safety research grants for the Swiss National Science Foundation (SNFS) (2006, 2009)

Reviewer of National Sciences and Engineering Research Council (NSERC) of Canada research programs (2006, 2010, 2011, 2013, 2018, 2021)

Reviewer National Pork Board, Pork Safety research grants (2006, 2009)

Reviewer of Food Safety Research Grants, Alberta (Canada) Funding Consortium (16 agricultural funding agencies) (2006)

External Reviewer for research grant proposals, Agriculture and Agri-Food Canada (2006)

External Reviewer of Kansas State University Ecological Genomics Institute Seed Grant Program (2008)

Reviewer of Food Safety Grants for the U.S. National Cattleman's Beef Association (2008)

External Reviewer of research grant proposals, Alberta Agricultural Research Institute (Alberta Innovation and Science) (2008)

External Reviewer of research grants, Lincoln University, New Zealand (2008)

External Reviewer, Competitive Research Grant Program, Wyoming Agricultural Experiment Stations (2009, 2010)

External Reviewer, Ontario Food Safety Research Program, Ontario Ministry of Agriculture, Food and Rural Affairs (2009, 2010, 2013, 2015, 2016, 2017)

External Reviewer, Institute of Science, Technology and Commerce (ISTC), Moscow, Russia (2009)

Reviewer of Food Safety Grants for the U.S. National Pork Board (2009)

Review of Higuchi Endowment Awards, University of Kansas (2009)

Reviewer, Alberta Livestock and Meat Agency (ALMA), grant funding proposals (2009, 2010, 2011, 2012, 2014)

Reviewer of Agricultural Experiment Station Research Program for University of Minnesota, Department of Food Science and Nutrition (2002, 2005, 2010, 2014)

External Reviewer, National Science Foundation (USA) Merit Research Grants (2009, 2010, 2012)

Reviewer, Agriculture and Food Council of Alberta, grant funding proposals (2010)

Review Panel for research grant proposals for the Initiative for Renewable Energy and the Environment (IREE), Institute of the Environment, University of Minnesota (2009, 2010, 2011)

Review Panel for research grant proposals for the Tropical, Sub-tropical Agricultural Research (TSTAR) Program of USDA/NIFA and Agricultural Experiment Stations of Florida, Puerto Rico and the US Virgin Islands (2011)

Review Panel, Israel Science Foundation (2011)

Review Panel, Croatia Science Foundation (2011)

Review Panel, Czech Republic National Science Foundation (2011)

Review Panel, National Commission for Scientific and Technological Development of Chile (2011)

Review Panel, Agricultural Science College, University of the Philippines Los Baños College, Laguna, Philippines (2012)

External grants reviewer, City University of New York (CUNY), Incentive research grant program (2012)

Review Panel, International Foundation for Science (Animal Production), Sweden (2012)

Review panel, Alberta Innovates Biosolutions, Food Safety Panel, Alberta, Canada, (2012, 2018)

External reviewer, Ohio Agricultural Research and Development Center Competitive Grants Program, The Ohio State University, Wooster. (2012, 2013)

Review Panel, Great Ormond Street Hospital (UK) Children's Charity Trust (2012)

Review Panel of research grant proposals for Agriculture and Agri-Food Canada Livestock Panel (2013, 2014, 2015).

External Reviewer, ALMA One Health Proposals, Canada (2013)

Review Panel, National Science Center (Narodowe Centrum Nauki), Poland (2014)

Review Panel, University of Veterinary Medicine, Vienna, Austria (2015, 2019)

Reviewer of research proposals, Center for Food Safety, University of Georgia, Griffin, GA (2017)

External Reviewer, Project proposals for food production and safety, Genome Alberta (2018)

Reviewer, Food Safety Grants, Canadian Poultry Research Council, Ottawa, Canada (2020)

Reviewer of grants, Alberta Milk, Edmonton (2020)

External Reviewer, Ultra-Processed Food Report, Triptolemos Foundation, Barcelona, Spain (2021)

Reviewer, Liver Abscess Development Grants, International Consortium for Antimicrobial Stewardship in Agriculture, Foundation for Food & Agricultural Research (FFAR), Washington, DC (2021)

Review Panel, National Research Foundation (South Africa), Food Safety Enhancement Grants, Praetoria, South Africa. (2021)

External Reviewer, Penn State University Internal Grants in Agriculture (2021)

External Reviewer, Project proposals, Alberta Agriculture and Forestry (2018, 2019, 2020, 2021)

External Reviewer, Genomic Innovation for Regenerative Agriculture, Food and Fisheries (GIRAFF), Genome British Columbia, and Investment Agriculture Foundation (2022)

External Reviewer, Grants Progress Evaluations, Kuwait Foundation for the Advancement of Science (2022)

Reviewer of Hatch Grant Proposal from University of Wisconsin, Department of Animal and Dairy Science (2022)

Review Panel, National Center for Science and Technology Evaluation, Kazakhstan (2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022)

Reviewer of research grants for Beef Cattle Research Council (BCRC) for the Canadian Cattlemen's Association (2003-2008, 2012, 2014, 2017, 2021, and 2022)

Review Panel, Sustainability Science Research Program Grants, Academia Sinica, Taiwan (2023)

External Reviewer, International Development Research Grants, Ministry of Foreign Affairs, Denmark (2023)

External Reviewer, Research Projects and Walsh Scholarships, Teagasc, Ireland (2023)

Review Panel of research grant proposals for USDA/National Institute for Food and Agriculture (USDA-NIFA)

- National Research Initiative in Food Safety (NIFSI) (2003)
- Food Safety Panel (2009, 2010, 2020)
- Animal Growth and Nutrient Utilization Panel (2004, 2009, 2011)
- Animal Nutrition, Growth, and Lactation Panel (2013, 2014, 2015, 2016)
  - ***Panel Manager*** (2014, 2015)
- Exploratory Research Panel (2014, 2015)
- Small Business Innovation Research (SBIR) Panel (2016)
- InterDisciplinary Engagement in Animal Systems (IDEAS) Panel (2020, 2023)
- Mitigating Antimicrobial Resistance Across the Food Chain (2021)
  - ***Panel Manager*** (2021)
- Sustainable Agricultural System (SAS)
  - ***Panel Manager*** (2022)

External Examiners

External Examiner (Ph.D.), Massey University, Palmerston North, New Zealand (2016)

External Examiner (Ph.D.), School of Agriculture and Food Science, University of Queensland, Gatton, Australia (2018)

External Examiner (Ph.D.), Department of Production Animal Studies, College of Veterinary Science, University of Pretoria, South Africa (2019)

External Examiner, Viva Voce, Queen's University Belfast, Belfast, Northern Ireland, UK (2021)

External Examiner, Department of Veterinary and Animal Science, University of Lahore, Pakistan (2021, 2022)

External Examiner, Viva Voce, Cluj-Napoca University of Agricultural Science, Cluj, Romania (2023)

Tenure/Productivity Review Panels

External Reviewer, Tenure promotion and retention panel, University of Minnesota (2010)

External Reviewer, Tenure promotion and retention panel, University of Arizona, Tucson, AZ (2016)

External Reviewer, Tenure promotion and retention panel, The Ohio State University (2009, 2010, 2011, 2015, 2020)

External Reviewer, Tenure promotion and retention panel, University of Nebraska, Lincoln, NE (2016, 2020)

External Reviewer, Tenure promotion and retention panel, North Carolina State University (2020)

External Reviewer, Tenure promotion and retention panel, University of California, Davis (2021)

External Reviewer, USDA/ARS, Research Position Evaluation System (Promotion system for USDA/ARS) (2003-2021)

External Reviewer, Tenure promotion and retention panel, Purdue University (2022)

External Reviewer, Tenure promotion and retention panel, College of Veterinary Medicine Kansas State University (2022)

External Reviewer, Research Productivity Evaluation, Research and Innovation Support and Advancement (RISA), National Research Foundation (South Africa), Praetoria, South Africa (2014, 2015, 2016, 2020, 2021, 2022)

Continuing Education

- Enterohemorrhagic *E. coli* Training Course. Texas Department of Health. 1999.

- Beef Cattle Short Course. Texas A&M University. 2003.
- Security Overseas Training. Department of State, Foreign Affairs Training Center. Arlington, VA, 2006.
- ARS Congressional Briefing Conference, Governmental Training Institute, Washington, DC, 2006.
- Research Personnel Evaluation System Panel Training. RPES Center, George Washington Carver Center, Beltsville, MD. 2006, 2011.
- Leadership/Science Management Detail with National Program Staff. Beltsville, MD. 2006.
- Leadership Potential Seminar. US GOV, Office of Personnel Management. Shepherdstown, MD. 2008.
- Managing the Federal Employee I: Discipline and Performance Process. Brookings Executive Education with USDA. College Station, TX. 2010.
- Exploiting the explosion of information associated with next generation omics to tackle STEC in Global Food Production. International Workshop on STEC Genomics. OECD Cooperative Research Programme. Charlotte, NC. 2013.

Visiting scientists in laboratory

1. Dr, Collins Ateba, Northwest University, South Africa
2. Dr. Mohammad Azghadi, Tehran, Iran
3. Ricardo Barri, University of Bologna, Italy
4. Silvia Carta, University of Sassari, Italy
5. Jacquelyn Escarcha, University of Luzon, Philippines
6. Malinee Intanoo, Khon Kaen University, Thailand (with Dr. John Bernard)
7. Dr. Fabio Maia, Brazil (with Dr. Lawton Stewart)
8. Rebecca Oot, Evergreen State University
9. Dr. Andrea M. O. Ramirez, Univ. Queretaro, Mexico
10. Dr. Magali Silviera, Brazil (with Dr. Alex Stelzleni)
11. Dr. Raul Raya, Tecuman Research Station, Tecuman, Argentina
12. Peter Varey, Evergreen State University

Postdoctoral Fellows trained

1. Jeferson Lourenco, UGA 2018-2021
2. Bianca Brown, Yale University (NSF Fellowship) 2021-2025
3. Dr. Rim Draief El Jeni, Institut Pasteur Tunis, Tunisia (Fulbright Scholar, 2019-2020)
4. Dr. Joseph Baloyi, University of Venda, South Africa (Fulbright Scholar, 2021-2022)

Graduate students trained (Bold indicates advisor, Italics indicates degree completed)

1. *Dr. Amber Barham (Angelo State University, MS)*
2. *Marissa Blackwell (UGA, Animal and Dairy Science, MS)*
3. *Dr. Rand Broadway (Mississippi State University, MS)*
4. *Dr. Joe Buntyn (Mississippi State University, MS)*
5. *Caitlyn Cagle (TAMU, Animal Science, MS)*
6. ***Mia Carmichael*** *(UGA, Animal and Dairy Science, MS)*
7. *Dr. Whitney Crossland (Williams) (TAMU, Animal Science, MS)*
8. ***Dylan Davis*** *(UGA, Animal and Dairy Science, MS, Co-Advisor)*
9. *Dr. Heather Duoss (Mississippi State University, MS)*
10. *Dr. Clint Edmunds (UGA, Animal and Dairy Science, MS)*
11. *Sebastian Escandon (TAMU, Rural Public Health, MPH)*
12. **Jenna Farmer** (UGA, Animal and Dairy Science, MS, Co-Advisor)
13. **Katie Feldmann** (UGA Animal and Dairy Science, MS)
14. **Alexa Harvey** (UGA, Animal and Dairy Science, MS, Co-Advisor)

15. *Shane Hernandez (UGA, Animal and Dairy Science, MS)*
16. **Wenyi Huang** (UGA, Animal and Dairy Science, MS)
17. *Taylor Krause (UGA, Animal and Dairy Science, MS)*
18. ***Dr. Sarah Klopatek** (TAMU, Animal Science, MS, Co-Advisor)*
19. Bryan Larsen (UGA, Comparative Biomedical Sciences, MS)
20. *Dr. Zac Paddock (TAMU, Animal Science, MS)*
21. ***Kristen Pisani** (UGA, Animal and Dairy Science, MS, Co-Advisor)*
22. ***Evann Rowland** (UGA, Animal and Dairy Science, MS)*
23. *Sara Sprayberry (TAMU, Animal Science, MS)*
24. **Madison Walker** (UGA, Animal and Dairy Science, MS, Co-Advisor)
25. *Lucas Wang (UGA, Animal and Dairy Science, MS)*
26. ***Madison Warbington** (UGA, Animal and Dairy Science, MS- Non Thesis)*
27. *Nathan Webb (UGA, Animal and Dairy Science, MS)*
28. ***Christina Welch** (UGA, Animal and Dairy Science, MS)*
29. *Jenna Williamson (UGA, Animal and Dairy Science, MS)*
30. Ivan Zurita (Univ. Queretaro, MS)

1. *Dr. Yaqoub Al-Hosni (University of Queensland [Australia], Ph.D., External Examiner)*
2. *Dr. Carolyn Arnold (TAMU, College of Veterinary Medicine, Ph.D.)*
3. *Dr. Aurele Ayemele (China Agricultural University, Ph.D.)*
4. Igor Balta (Cluj-Napoca Univ. of Agricultural Science, Romania, Ph.D, Viva Voce)
5. *Dr. Natasha Bell (TAMU, Animal Science, Ph.D.)*
6. *Dr. Justin Burt (UGA-Tifton, Animal Science, Ph.D.)*
7. Stephanie Dubrof (UGA, Foods and Nutrition, Ph.D.)
8. *Dr. Kingsley Dunkley (TAMU, Poultry Science, Ph.D.)*
9. *Dr. Clint Edmunds (UGA, Animal Science, Ph.D.)*
10. *Dr. Samy Elsaadawy (China Agricultural University, Ph.D.; External Examiner)*
11. *Dr. Madison Fagan (UGA, Animal and Dairy Science, Ph.D.)*
12. Shahna Fathima (UGA, Poultry Science, Ph.D.)
13. **Regina Fitzpatrick** (UGA, Animal and Dairy Science, Co-Advisor Ph.D.)
14. Aaron Golson (UGA, Ag Leadership, Ph.D.; Laboratory Experience)
15. Abbigail Hines (Auburn, Animal Sciences, Ph.D.)
16. **Shane Hernandez** (UGA, College of Veterinary Medicine, Co-Advisor DVM/Ph.D.)
17. *Dr. Anitha Isaiah (TAMU, College of Veterinary Medicine, Ph.D.)*
18. *Dr. Julie Jeon (UGA, Foods and Nutrition, Ph.D.)*
19. Hanseo Ko (UGA, Poultry Science, Ph.D.)
20. *Dr. Abby Korn (TAMU, Biomedical Sciences, Ph.D.)*
21. **Osman Yasir Koyun** (UGA, Poultry Science, MS; UGA ADSC, Ph.D.)
22. Taylor Krause (UGA, Animal and Dairy Science, Ph.D.)
23. Ignacio Llada (UGA, Population Health, Ph.D.)
24. Abu Macavoray (Univ. Veterinary and Animal Science, Lahore, Pakistan, Ph.D.; External Examiner)
25. *Dr. Sayyad Hussan Magsi* (Univ. Veterinary and Animal Science, Lahore, Pakistan, Ph.D.; External Examiner)
26. Thiago Marins (UGA, Animal and Dairy Science, Ph.D.)
27. Robert McKee (UGA, Animal and Dairy Science, Ph.D.)
28. *Dr. Aaron McKenna (Queen's University Belfast, Northern Ireland, UK, Viva Voce)*
29. *Dr. Muhammed Murtada* (UGA, Poultry Science, Ph.D.)
30. *Dr. Gerardo Nava (UNAM, Mexico City, Ph.D)*
31. *Dr. Filomena Ng (Massey University, New Zealand, Microbiology, External Examiner)*
32. *Dr. L. Onyeka (University of Pretoria, Faculty of Veterinary Medicine, South Africa, External Examiner)*
33. **Andrea Osorio-Doblado** (UGA, Animal and Dairy Science, Ph.D.)
34. ***Dr. Ricardo Apellido Paterno** (Univ. Queretaro, Ph.D., Co-Advisor)*
35. Ray Adil Quddus (Univ. Veterinary and Animal Science, Lahore, Pakistan, Ph.D.; External Examiner)

36. *Dr. Kate Sabey (UGA, Infectious Disease, Ph.D.) IDEAS program, NSF Fellow*
37. ***Dr. Darren Seidel** (UGA, ADSC, Ph.D.) IDEAS program, NSF Fellow, UGA Outstanding Teaching Assistant Award (2020)*
38. *Dr. W. Brandon Smith (TAMU, Rangeland management)*
39. *Dr. Mekkonen Tilahun (Chinese Academy of Agricultural Sciences, Ph.D.)*
40. Shravani Veluri (UGA, Poultry Science, Ph.D.)
41. *Dr. Ou Wang (Univ. Alberta; Ph.D. External Examiner)*
42. Christina Welch, (UGA, Animal and Dairy Science, Ph.D.) IDEAS program, NSF Fellow

Undergraduate student researchers

1. Lauren Abbot – TAMU
2. Sara Albrecht - TAMU
3. Kristin Arnold – TAMU
4. Corinna Angell - UGA
5. Savannah Austin- UGA
6. Quenterrius Banks – UGA
7. Juliana Bluhm -UGA (YSP)
8. Rachel Boyd - UGA
9. Sarah Carlisle – UGA
10. Yu-Jin Chang – UGA
11. Ellie Clark - UGA
12. Megan Crowe-- UGA
13. Stephen Davidson – UGA
14. Ashlyn Davison – UGA (YSP)
15. Mikayla Dycus -- UGA
16. Brooke Edwards – UGA
17. Harrison Feininger- UGA
18. Katie Feldmann – UGA
19. Rene Fernandez - UGA
20. Victoria Fleet - UGA
21. Amber Gnatzig – TAMU
22. Charese Hammond- -UGA
23. Alexa Harvey -- UGA
24. Mckenzie Hedrick – UGA
25. Taylor Hillhouse - UGA
26. Hannah Hood-UGA
27. Brandon Hudson– UGA
28. Austin Hunnicut – UGA
29. Hannah Johnson - UGA
30. Ben Jones – UGA
31. Taylor Kennedy – UGA
32. Lee Kucera – TAMU
33. Allison Martino – TAMU
34. Davis Meyer – UGA
35. Elizabeth Milner -- UGA
36. Mikaela Mooney – UGA
37. Morgan Padgett - UGA
38. Kristen Pisani - UGA
39. Emily Peterson – TAMU
40. Yaires Ruiz - UGA
41. Mira Lee Schaffer -- UGA
42. Haley Segars -- UGA
43. Travis Sims – TAMU
44. Yuri Smith – UGA/FVSU
45. Sydney Stephens – UGA
46. Dru Swoboda – TAMU
47. Alexandra Thompson – UGA
48. Anna Unger – UGA
49. Josey Walker -- UGA
50. Madison Walker – UGA (YSP and ADSC)
51. Riley Walker - UGA
52. Zoe Weiss -- UGA
53. Beth West – TAMU
54. Michael Wieczorek – UGA
55. Adelaide Wilson – UGA
56. Tyler Xu -- UGA
57. Bri Young - TAMU