VITA

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EDUCATION

2002	Bachelor of Science in Animal Science, University of California, Davis
2007	Doctor of Philosophy in Nutritional Biology with an emphasis in Immunology, University of California, Davis

PROFESSIONAL EXPERIENCE

2002 – 2004	Graduate Teaching Assistant, University of California at Davis
2004 – 2007	Graduate Research Assistant, University of California at Davis
2007	Associate Instructor, University of California at Davis
2007 – 2013	Assistant Professor, Texas Tech University
2013 – Present	Associate Professor, Texas Tech University
2014 – Present	Associate Dean for Research, Texas Tech University

INTERNATIONAL EXPERIENCE

1. Collaborate with Breedlove Foods Inc., Here's Hope Ministries Inc., and Evangelistic International Ministries on the influence of a high energy, protein, and micronutrient supplement on improving the nutritional status of undernourished pregnant and lactating women and children 0.5 to 5 years old in the Philippines.
2. Collaborate with the Faculdade de Zootecnia e Engenharia de Alimentos, Pirassununga, Brazil on the influence of stress on the performance efficiency of beef cattle.
3. Consulted for Naturediet Pet Foods in Norfolk, UK on changes in the use of microorganisms as health promotants within the European Union.
4. Collaborate with the Animal Behavior and Welfare Group at AgResearch in Hamilton, New Zealand on the physiological and immunological effects of castration and dehorning and the use of anesthetics and analgesics to alleviate any adverse effects.
5. Collaborate with Adigrat University in Ethiopia on the development of dairy production and processing research facility.

6. Lectured in Brazil, Canada, Mexico, and Panama on the relationships between dairy nutrition and health.

MEMBERSHIP IN PROFESSIONAL AND HONORARY SOCIETIES

Professional:

1. American Dairy Science Association; 2002 – present
2. American Society of Animal Sciences; 2002 – 2008
3. American Society of Nutritional Sciences; 2005 – present
4. American Registry of Professional Animal Scientists; 2002 – 2010

HONORS AND AWARDS

Honors:

1. Top 10 Veterinary Internal Medicine Manuscript of 2011, American College of Veterinary Internal Medicine; 2012
2. Excellence in College and University Teaching in the Food and Agricultural Sciences, USDA-NIFA; nominee; 2012

Awards:

1. G.H. Humpfrey Summer Fellow – 2003, 2004, and 2006
2. Jastro Shields Research Fellow - 2003 – 2005
3. Beatrice Oberly and S. Atwood McKeehan Fellow – 2004 and 2006
4. Humanities Research Fellow – 2005
5. James Monroe McDonald Fellow – 2005
6. Austin Eugene Lyons Fellow – 2005 – 2006
7. Alex Kutches Scholarship – CA ARPAS; 2005
8. California Animal Nutrition Scholarship – CANC; 2006

AREA OF EXPERTISE

My research is focused on (1) understanding how the innate leukocyte responses of animals at various physiological states are involved in development of immunity and resistance to diseases and (2) modulation of health through management and nutrition practices.

PATENTS

1. Byelashov, O.A., H. Yin, M.E. Griffin, and **M.A. Ballou**. Purification of DPA enriched oil. Application No. 14/532,893. US2014063930.

PUBLICATIONS

Books: total of 0

Book Chapters: total of 1

1. Carroll, J.A., N.C. Burdick, **M.A. Ballou**, and J.D. Arthington. 2011. Phytochemicals as a preharvest pathogen reduction strategy. *In* On-Farm Strategies to Control Foodborne Pathogens. T.R. Callaway and T.S. Edrington (Eds). Nova Science Publishers, New York. ISBN: 978-1-62100-411-0.

Books and Book Chapters Edited: total of 0

Referred Journals: total published 48, in press 0 *Denotes graduate student, post-doc, or visiting scientist

Published:

1. Santos, J.E.P, R.L.A. Cerri, **M.A. Ballou**, G.E. Higginbotham, and J.H. Kirk. 2004. Effect of timing of first clinical mastitis occurrence on lactational and reproductive performance of Holstein dairy cows. J. Anim. Repro. 80:31-45.
2. **Ballou, M.A**., E.J. DePeters, H. Perez-Monti, S.J. Taylor, and J.W. Pareas. 2008. Effect of saturation ratio of supplemental dietary fat on production performance of lactating Holstein cows in early lactation. Prof. Anim. Sci. 24:120-127.
3. **Ballou, M.A.** and E.J. DePeters. 2008. Supplementing milk replacer with omega-3 fatty acids from fish oil on immunocompetence and health of Jersey calves. J. Dairy Sci. 91:3488-3500.
4. **Ballou, M.A.**, G.D. Cruz, W. Pittroff, D.H. Keisler, and E.J. DePeters. 2008. Modifying the acute phase response of Jersey calves by supplementing milk replacer with omega-3 fatty acids from fish oil. J. Dairy Sci. 91:3478-3487.
5. **Ballou, M.A.**, R.C. Gomes, S.O. Juchem, and E.J. DePeters. 2009. Effects of supplemental fish oil during the peripartum period on blood metabolites and hepatic fatty acid compositions and total triacylglycerol concentrations of multiparous Holstein cows. J. Dairy Sci. 92:657-669.
6. **Ballou, M.A.**, R.C. Gomes, and E.J. DePeters. 2009. Supplemental fish oil does not alter immune competence or the pathophysiological response to an intramammary infusion of endotoxin in peri-partum multiparous Holstein cows. J. Dairy Res. 5:1-8.
7. Covey, T.L., N.E. Elam, J.A. Carroll, D.B. Wester, **M.A. Ballou**, D.M. Hallford, and M.L. Galyean. 2010. Supplemental selenium source in Holstein steers challenged with intranasal

bovine infectious rhinotracheitis virus: Blood metabolites, hormones, and cytokines. Prof. Anim. Sci. 26:93-102.

8. Burdick, N.C, J.A. Carroll, L.E. Hulbert*, J.W. Dailey, **M.A. Ballou**, R.D. Randel, S.T. Willard, R.C. Vann, and T.H. Welsh, Jr. 2010. Temperament influences endotoxin-induced changes in rectal temperature, sickness behavior and plasma epinephrine concentration in bulls. Innate Immun. 17:355-364.
9. Oliveira, R.A, C.D. Narciso, R.S. Bisinotto, M.C. Perdomo, **M.A. Ballou**, M. Dreher, and J.E.P. Santos. 2010. Effect of feeding polyphenols from pomegranate extract on health, growth, nutrient digestion, and immunocompetence of calves. J. Dairy Sci. 93:4280-4291.
10. Collier, C.T., J.A. Carroll, **M.A. Ballou**, J.A. Starkey, and J.C. Sparks. 2010. Oral administration of *Saccharomyces cerevisiae boulardii* reduced mortality associated with immune and cortisol responses to *Escherichia coli* endotoxin in weaned pigs. J. Anim. Sci. 89:52-58.
11. ***Ballou, M.A.**, C.J. Cobb[*], L.E. Hulbert[*], and J.A. Carroll. 2011. Effects of an intravenous *Escherichia coli* dose on the pathophysiological response of colostrum-fed Jersey calves. Vet. Immunol. Immunopathol. 141:76-83.
12. Hulbert, L.E.*, C.J. Cobb*, J.A. Carroll, and **M.A. Ballou.** 2011. The effects of early weaning on innate immune responses of Holstein calves. J. Dairy Sci. 94:2545-2556.
13. Hulbert, L.E.*, C.J. Cobb*, J.A. Carroll, and **M.A. Ballou.** 2011. Effects of changing milk replacer feedings from twice to once daily on Holstein calf innate immune responses before and after weaning. J. Dairy Sci. 94:2557-2565.
14. Hulbert, L.E.[*], J.A. Carroll, N.C. Burdick, R.D. Randel, M.S. Brown, and **M.A. Ballou**. 2011. Innate immune responses of temperamental and calm cattle after transportation. Vet Immunol. Immunopathol. 143:66-74.
15. **Ballou, M.A.** 2011. Case Study: Effects of a blend of prebiotics, probiotics, and hyperimmune dried egg protein on the performance, health, and innate immune responses of Holstein calves. Prof. Anim. Sci. 27:262-268.
16. Ponce, C.H.[*], **M.A. Ballou**, R.G. Godbee, L.E. Hulbert[*], N. DiLorenzo, M.J. Quinn, D.R. Smith, and M.L. Galyean. 2011. Case Study: Effects of Morinda citrifolia extract on performance and morbidity of newly received beef heifers. Prof. Anim. Sci. 27:269-275.
17. Schwertner, L.R.*, M.L. Galyean, L.E. Hulbert*, J.A. Carroll, and **M.A. Ballou**. 2011. Effects of dietary source and intake of energy on immune competence and the response to an Infectious Bovine Rhinotracheitis Virus (IBRV) challenge in cattle. Livestock Sci. 141:259-266.
18. Gomes, R.D.[*], R. F. de Siqueira, **M.A. Ballou**, T. R. Stella, and P.R. Leme. Hematological profile of beef cattle with divergent residual feed intake following feed deprivation. Braz. J. Vet. Anim. Sci. 49:1105-1111.
19. Schmitt, E., **M.A. Ballou**, M. Nunes Correa, E.J. DePeters, J.K. Drackley, and J.J. Loor. 2011. Dietary lipid during the transition period to manipulate adipose tissue peroxisome

proliferator-activated receptor-γ coregulator and target gene expression. J. Dairy Sci. 94:5913-5925.

20. ***Ballou, M.A.** 2012. Inflammation: Role in the etiology and pathophysiology of clinical mastitis in dairy cows. J. Anim. Sci. 90:1466-1478.
21. Hulbert, L.E.[*] and **M.A. Ballou**. 2012. Innate immune responses and health of individually-reared Holstein calves after placement into transition-pens 23 d after weaning. J. Dairy Res. 79:333-340.
22. Obeidat, B.S., M.S. Awawdeh, B.T. Telfah, and **M.A. Ballou**. Calcium salts of long chain fatty acids in Awassi ewe lambs' diet: Effects on nutrient intake, digestibility, and blood metabolies. Livestock Sci. 150:391-396.
23. **Ballou, M.A.** Immune responses of Holstein and Jersey calves during the pre- and immediate post-weaned periods when fed varying planes of nutrition. 2012. J. Dairy Sci. 95:7319-7330.
24. Hulbert, L.E.*, J.A. Carroll, **M.A. Ballou**, N.C. Burdick, J.W. Dailey, L.C. Caldwell, A.N. Loyd, R.C. Vann, T.H. Welsh, Jr., and R.D. Randel. 2012. Sexually dimorphic stress and pro-inflammatory cytokine response to an intravenous corticotropin-releasing hormone challenge of Brahman cattle following transportation. Innate Immunity. PMID 23112011.
25. Sellers, M.D.[*], L.E. Hulbert[*], and **M.A. Ballou**. 2013. Technical Note: Determination of pre-analysis storage temperature and time allowances for *ex-vivo* innate immune responses. J. Dairy Sci. 96:384-389.
26. ***Ballou, M.A.**, M.A. Sutherland, L.E. Hulbert, C.J. Cobb, B.L. Davis, and T.A. Brooks. 2013. Administration of anesthetic and analgesic prevent the suppression of many leukocyte responses following surgical castration and physical dehorning. Vet. Immunol. Immunopathol. 151:285-293.
27. **Ballou, M.A.**, C.J. Cobb[*], T.J. Earleywine, and B.S. Obiedat[*]. 2013. Interaction of breed and plane of milk replacer nutrition on the performance of pre- and post-weaned dairy calves. Prof. Anim. Sci. 29:116-123.
28. Sutherland, M.A., **M.A. Ballou**, B.L. Davis, and T.A. Brooks. 2013. The effect of castration and dehorning singularly or combined on the behavior and physiology of Holstein calves. J. Anim. Sci. 91:935-942.
29. Mendonça, L.G.D., N.B. Litherland, M.C. Lucy, D.H. Keisler, **M.A. Ballou**, L.B. Hansen, and R.C. Chebel. 2013. Comparison of innate immune responses and somatotropic axis components of Holstein and Montbéliarde-sired crossbred dairy cows during the transition period. J. Dairy Sci. 96:3588-3598.
30. Osorio, J.S., **M.A. Ballou**, J.K. Drackley, and J.J. Loor. 2013. Effect of maternal energy intake prepartum on immunometabolic markers, polymorphonuclear leukocyte function, and neutrophil gene network expression in neonatal Holstein heifers calves. J. Dairy Sci. 96:3573-3587.
31. Akbar, H., E. Schmitt, M.A. Ballou, M.N. Corrêa, E.J. DePeters, and J.J. Loor. 2013. Dietary lipid during late-pregnancy and early-lactation to manipulate metabolic and

inflammatory gene network expression in dairy cattle liver with a focus on PPARs. Gene Regul. Syst. Bio. 7:103-123.

32. Obeidat, B.S.[*], C.J. Cobb[*], M.D. Sellers[*], A.R. Pepper-Yowell[*], T.J. Earleywine, and **M.A. Ballou**. 2013. Plane of nutrition during the pre-weaning period but not the grower phase influences the neutrophil activity of Holstein calves. J. Dairy Sci. 96:7155-7166.
33. Silva, P.R.B., J.G.N. Moraes, L.G.D. Mendoca, A.A. Scanevez, G. Nakagawa, **M.A. Ballou**, B. Walcheck, M.I. Endres, and R.C. Chebel. 2013. Effects of weekly regrouping of prepartum dairy cows on innate immune response and antibody concentration. J. Dairy Sci. 96:7649-7657
34. Cobb, C.J.[*], B.S. Obeidat[*], M.D. Sellers[*], A.R. Pepper-Yowell[*], D.L. Hanson[*], and **M.A. Ballou**. 2014. Improved performance and heightened neutrophil responses during the neonatal and weaning periods among outdoor group-housed Holstein calves. J. Dairy Sci. 97:930-939.
35. Cobb, C.J.[*], B.S. Obeidat[*], M.D. Sellers[*], A.R. Pepper-Yowell[*], and **M.A. Ballou.** 2014. Group housing Holstein calves in a poor indoor environment increases respiratory disease but does not influence performance or leukocyte responses. J. Dairy Sci. 3099-3109.
36. Obeidat, B.S., M.S. Awawdeh, R.T. Kridli, H.J. Al-Tamimi, **M.A. Ballou**, M.D. Obeidat, M.A. Abu Ishmais, F.A. Al-Lataifeh, and H.S. Subih. 2014. Feeding corn silage improves nursing performance of Awassi ewes when used as a source of forage compared to wheat hay. Anim. Feed Sci. Tech. 192:24-28.
37. Greco, L.F., J.T. Neves Neto, A. Pedrico, R.A. Ferrazza, F.S. Lima, R.S. Bisinotto, N. Martinez, M. Garcia, E.S. Riberio, G.C. Gomes, J.H. Shin, **M.A. Ballou**, W.W. Thatcher, C.R. Staples, and J.E.P. Santos. 2015. Effects of altering the ratio of dietary n-6 to n-3 fatty acids on performance and inflammatory responses to a lipopolysaccharide challenge in lactating Holstein cows. J. Dairy Sci. 602 – 617.
38. ***Ballou, M.A.**, D.L. Hanson[*], C.J. Cobb[*], B.S. Obeidat[*], M.D. Sellers[*], A.R. Pepper-Yowell[*], J.A. Carroll, T.J. Earleywine, and S.D. Lawhon. 2014. Plane of nutrition influences the performance, innate leukocyte responses, and resistance to an oral *Salmonella enterica* serotype Typhimurium challenge in Jersey calves. J. Dairy Sci.
39. *Nightingale, C.R.[*], M.D. Sellers[*], and **M.A. Ballou.** 2015. Elevated plasma haptoglobin concentrations following parturition are associated with elevated leukocyte responses and decreased subsequent reproductive efficiency in multiparous Holstein dairy cows. Vet. Immunol. Immunopathol.
40. Carroll, J.A., N.C. Burdick-Sanchez, L.E. Hulbert[*], **M.A. Ballou**, L.C. Caldwell, A.N. Loyd, N.C. Burdick, R.C. Vann, T.H. Welsh, Jr., and R.D. Randel. 2015. Sexually dimorphic innate immunological responses among pre-pubertal Brahman cattle following an intravenous lipopolysaccharide challenge. Vet. Immunol. Immunopathol. 166:108-115.
41. Treanor, J.J., C. Geremia, **M.A. Ballou**, D.H. Keisler, P.J. White, J.J. Cox, and P.H. Crowley. 2015. Maintenance of brucellosis in Yellowstone bison: linking seasonal food

resources, host-pathogen interaction, and life-history trade-offs. Ecology and Evolution. 17:3783-3799.

42. Liang, Y.*, J.A. Carroll, and **M.A. Ballou**. 2016. The gastrointestinal system of 1-week old Jersey calves is well suited to digest, absorb, and incorporate protein and energy into tissue growth even when fed a high plane of milk replacer. J. Dairy. Sci. 99:1929-1937.
43. Silva, P.R., K.M. Lobech-Luchterhand, R.L. Cerri, D.M. Haines, **M.A. Ballou**, M.I. Endres, and R.C. Chebel. 2016. Effects of prepartum stocking density on innate and adaptive leukocyte responses and serum and hair cortisol concentrations. Vet. Immunol. Immunopathol. 169:39-46.
44. Calvo-Lorenzo, M.S., L.E. Hulbert, A.L. Fowler, A. Louie, L.J. Gershwin, K.E. Pinkerton, **M.A. Ballou**, K.C. Klasing, and F.M. Mitloehner. 2016. Wooden hutch space allowance influences male Holstein calf health, performance, daily resting time, and respiratory immunity. J. Dairy Sci. [Epub doi:10.3168] .
45. Chebel, R.C., P.R.B. Silva, M.I. Endres, **M.A. Ballou**, and K.L. Luchterhand. 2016. Social stressors and their effects on immunity and health of periparturient dairy cows. J. Dairy Sci. [Epub doi: 10.3168].
46. Richeson, J.T., J.A. Carroll, N.C. Burdick Sanchez, N.D. May, H.D. Hughes, S.L. Roberts, P.R. Broadway, K.P. Sharon*, and **M.A. Ballou.** 2016. Dexamethasone treatment differentially alters viral shedding and the antibody and acute phase protein response after multivalent respiratory vaccination in beef steers. J. Anim. Sci. 94:3501-3509.
47. Pineda, A. **M.A. Ballou**, J.M. Campbell, F.C. Cardoso, and J.K. Drackley. 2016. Evaluation of serum protein-based arrival formula and serum protein supplement (Gammulin) on growth, morbidity, and mortality of stressed (transport and cold) male dairy calves. J. Dairy Sci. [Epub doi:10..30615-4].
48. Zhou, Z., O. Bulgari, M. Vailati-Riboni, E. Trevisi, **M.A. Ballou**, F.C. Cardoso, D.N. Luchini, and J.J. Loor. 2016. Rumen-protected methionine compared with rumen-protected choline improves immunometabolic status in dairy cows during the peripartal period. J. Dairy Sci. Epub doi:10.3168].

In Press:

In Review:

1. **Ballou, M.A.**, E.J. DePeters, A.R. Pepper-Yowell*, and J.G. Fadel. Fatty acid kinetics in plasma and peripheral blood mononuclear cell phospholipids of neonatal calves and the effects of supplemental fish oil. Lipids.
2. Sellers, M.D.* and **M.A. Ballou**. The utility of reporting standardized measures of effect size along with measures of statistical significance. J. Dairy Sci.

Proceedings: total of <u>10</u>

Refereed

Volunteered:

Invited:

1. **Ballou, M.A.** 2012. Metabolic costs of immune protection – impacts on nutritional requirements and milk production. Second Simpósio Internacional Leite Integral. Belo Horizonte, MG, Brazil.
2. **Ballou, M.A.** 2012. Why dairy calves should eat more fish – Attenuating the inflammatory response of dairy calves by supplementing milk with omega-3 fatty acids from fish oil. Animal Nutrition Association of Canada Eastern Nutrition Conference. Kitchener, Ontario, Canada.
3. **Ballou, M.A.** 2013. Enhancing calf immunity through nutrition. Florida Ruminant Nutrition Conference. Gainesville, FL, USA.
4. **Ballou, M.A.** 2014. The effects of nutrition on the development of the calf's immune system. Forth Simpósio Internacional Leite Integral. Curitiba, PR, Brazil. March 28th and 29th.
5. **Ballou, M.A.** 2014. Nutrition and immunity for pre-weaned dairy calves. Tri-state dairy nutrition conference. Fort Wayne, IN April 14th – 16th.
6. **Ballou, M.A.** 2014. Effects of nutrition on the health of dairy calves. Pacific Northwest Animal Nutrition Conference. Vancouver, BC, Canada. October 8th and 9th.
7. **Ballou, M.A.** 2015. Dietary strategies to improve the health of dairy calves. Florida Ruminant Nutrition Conference. Gainsville, FL, USA. February 3rd.
8. **Ballou, M.A.** 2015. Considerations of gut integrity in the young ruminant: a review of nutrition-microbiota, immune function interface using novel feed additives to enhance sustainability and productivity. Southwest Nutrition and Management Conference. Tempe, AZ, USA. February 19th, 2015.
9. **Ballou, M.A.** 2015. Nutrition influences the health of dairy calves. Western Dairy Management Conference. Reno, NV, USA. March 3rd and 4th.
10. **Ballou, M.A.** 2015. Effects of housing and nutrition on the immunity of dairy calves. Western Canadian Dairy Seminar. Red Deer, Alberta, Canada. March 10th and 11th.

Non-refereed

Volunteered:

Invited:

Abstracts: total of 100

Volunteered:

1. Santos, J.E.P., R.L.A. Cerri, J.H. Kirk, S.O. Juchem, M. Villaseñor, and **M.A. Ballou**. 2002. Effect of prepartum milking of primigravid cows on mammary gland health and lactation performance. J. Dairy Sci. (85):1503.
2. Santos, J.E.P., R.L.A. Cerri, **M.A. Ballou**, and G. Higginbotham. 2002. Effect of clinical mastitis incidence on lactational and reproductive performance of Holstein dairy cows. J. Dairy Sci. (85):1504.
3. **Ballou, M.A.**, E.J. DePeters, H. Perez-Monti, S.J. Taylor, and J.W. Pareas. 2003. Effect of saturation ratio of supplemental dietary fat on production performance of lactating Holstein cows in early lactation. J. Dairy Sci. (86):T141.
4. **Ballou, M.A.,** and E.J. DePeters. 2006. Effects of dietary fish oil on immunocompetence of neonatal Jersey calves. J. Dairy Sci. (89):589.
5. **Ballou, M.A.**, and E.J. DePeters. 2006. Modifying the acute phase response of neonatal Jersey calves by supplementing milk replacer with fish oil. J. Dairy Sci. (89):590.
6. **Ballou, M.A.,** J.G. Fadel, and E.J. DePeters. 2007. Modeling fatty acid kinetics in plasma and immune cells of neonatal calves in response to increasing levels of dietary fish oil. J. Dairy Sci. (90):M372.
7. Yelle, M.K., D.W. Kim, E.J. DePeters, and **M.A. Ballou.** 2007. Dietary fish oil does not impact the response of early lactating cows to an endotoxic mastitis challenge. J. Dairy Sci. (90):W21.
8. **Ballou, M.A.**, R.C. Gomes, and E.J. DePeters. 2007. Feeding unprotected fish oil 3 weeks prepartum alters the fatty acid composition of plasma in both the cow and calf at parturition, but had no effect on bactericidal or cytokine function. J. Dairy Sci. (90):W27.
9. **Ballou, M.A.**, M.K. Yelle, R.C. Gomes, D.W. Kim, and E.J. DePeters. 2007. The energetic and non-energetic effects of supplemental fish oil during the peripartum period on the metabolic status of multiparous Holstein cows. J. Dairy Sci. (90):913.
10. Oliveira, R., C. Narciso, R. Bisinotto, **M.A. Ballou**, and J.E.P. Santos. 2008. Effect of feeding polyphenols on growth, health, nutrient digestion, and immunocompetence of calves. J. Dairy Sci. (91):W221.
11. Gomes, R.C., **M.A. Ballou**, R.F. Siqueira, T.R. Stella, J.A. Negrão, R.D. Sainz, and P.R. Leme. 2008. Blood cell profiles and plasma concentrations of glucose and cortisol of Nellore steers and bulls selected for low and high residual feed intake before and following a mild stressor. J. Dairy Sci. (91):TH214.
12. **Ballou, M.A.,** L.R. Schwertner*, J.A. Carroll, L.H. Hulbert*, J.W. Dailey, N.C. Burdick, R.C. Vann, T.H. Welsh, Jr., and R.D. Randel. 2009. Temporal effects on bovine neutrophil function following an intravenous endotoxin challenge. ASAS Southern Section.
13. Carroll, J.A., L.H. Hulbert*, N.C. Burdick, L.C. Caldwell, J.W. Dailey, **M.A. Ballou**, R.C. Vann, T.H. Welsh, Jr., and R.D. Randel. 2009. Bovine exhibit a sexually dimorphic innate immune response following an endotoxin challenge. ASAS Southern Section.
14. Burdick, N.C., J.A. Carroll, R.D. Randel, R.C. Vann, L.C. Caldwell, L.H. Hulbert*, J.W. Dailey, **M.A. Ballou**, and T.H. Welsh, Jr. 2009. Sexually dimorphic secretion of cortisol

but not catecholamines in response to an endotoxin challenge in beef calves. ASAS Southern Section.

15. Hulbert, L.E.*, J.A. Carroll, N.C. Burdick, J.W. Dailey, L.C. Caldwell, R.C. Vann, **M.A. Ballou**, T.H. Welsh, Jr., and R.D. Randall. 2009. Influence of temperament on inflammatory cytokine responses of cattle to a lipopolysaccharide (LPS) challenge. ASAS Southern Section.
16. Behrends, S.M., J.A. Carroll, J.O. Buntyn, K.M. Cooley, D.J. Sykes, L.H. Hulbert*, J.W. Daily, **M.A. Ballou**, and T.B. Schmidt. 2009 Evaluation of immunological and physiological parameters associated with an infectious bovine rhinotracheitis viral challenge in beef steers. ASAS Southern Section.
17. **Ballou, M.A.**, L.E. Hulbert*, L.R. Schwertner*, J.A. Carroll, L.C. Caldwell, R.C. Vann, T.H. Welsh, Jr., and R.D. Randel. 2009. Influence of *in vivo* endotoxin challenge on *ex vivo* phagocytic and oxidative burst capacities of bovine neutrophils. J. Dairy Sci. (92): 193.
18. **Ballou, M.A.**, L.E. Hulbert*, L.R. Schwertner*, J.A. Carroll, L.C. Caldwell, R.C. Vann, T.H. Welsh Jr., and R.D. Randel. 2009. Influence of *in vivo* corticotropin-releasing hormone (CRH) challenge on *ex vivo* phagocytic and oxidative burst capacities of bovine neutrophils. J. Dairy Sci. (92): 194.
19. Hulbert, L.E.*, J.A. Carroll, **M.A. Ballou**, J.W. Dailey, L.C. Caldwell, A.N. Loyd, N.C. Burdick, R.C. Vann, T.H. Welsh, Jr., and R.D. Randel. 2009. A comparison of measures of stress following administration of either lipopolysaccharide (LPS) or corticotropin-releasing hormone (CRH) to Brahman bulls and heifers. J. Dairy Sci. (92):22.
20. Carroll, J.A., L.E. Hulbert*, N.C. Burdick, L.C. Caldwell, **M.A. Ballou**, J.D. Arthington, R.C. Vann, A.N. Loyd, T.H. Welsh, Jr., and R.D. Randel. 2009. The acute phase response: Differentiating corticotropin-releasing hormone (CRH) versus lipopolysaccharide (LPS) induced proinflammatory cytokine and acute phase protein profiles in beef calves. J. Dairy Sci. (92):702.
21. Mendonca, L.G.D., G. Lopes Jr., **M.A. Ballou**, and R.C. Chebel. 2009. Relationship between *ex vivo* neutrophil function in response to an enteropathogenic *Escherichia coli* and measures of health and performance of dairy calves. J. Dairy Sci. (92):M24.
22. **Ballou, M.A.**, J.A. Dailey, L.E. Hulbert*, C.J. Cobb*, and J.A. Carroll. 2010. Effects of intravenous *Escherichia coli* dose on the pathophysiological response of colostrum-fed Jersey calves. J. Dairy Sci. (93):M28.
23. **Ballou, M.A.** and C.J. Cobb*. 2010. Interaction of breed and quantity of milk replacer on innate immune competence of dairy calves. J. Dairy Sci. (93):M31.
24. Cobb, C.J.* and **M.A. Ballou**. 2010. Interaction of breed and quantity of milk replacer on the performance of dairy calves. J. Dairy Sci. (93):337.
25. Hulbert, L.E.*, J.A. Carroll, and **M.A. Ballou**. 2010. Tumor necrosis factor-α concentrations from whole blood cultures correlate with isolated peripheral blood mononuclear cell cultures. J. Dairy Sci. (93):T156.

26. Hulbert, L.E.*, L.R. Schwertner*, J.A. Carroll, and **M.A. Ballou**. 2010. Intra- and inter-dairy heifer variation of cellular neutrophil functions. J. Dairy Sci. (93):T154.
27. Schwertner, L.R.*, L.E. Hulbert*, J.A. Carroll, M.L. Galyean, and **M.A. Ballou**. 2010. Effects of source and level of energy on the immune competence and response to an Infectious Bovine Rhinotracheitis Virus (IBRV) challenge in cattle. J. Dairy Sci. (93):T15.
28. Khan, M.J., E. Schmitt, **M.A. Ballou**, E.J. DePeters, S.L. Rodriguez-Zas, R.E. Everts, H.A. Lewin, J.K. Drackley, and J.J. Loor. 2010. Liver transcriptomics in Holstein cows fed lipid supplements during the peripartal period. J. Dairy Sci. (93):1060.
29. Garcia, A.L., H.A. Brady, **M.A. Ballou,** D.D. Varner, C.C. Love, and G. Blodgett. 2010. Stallion spermatozoa parameters of motility and conception rates on a large commercial ranch. J. Anim. Sci. (93):124.
30. Perdermo, M.C., R.A. Oliveira, C.D. Narciso, R.S. Bisinotto, **M.A. Ballou**, M. Dreher, and J.E.P. Santos. 2010. Effect of feeding polyphenols from pomegranate extract on health, growth, nutrient digestion, and immunocompetence of calves. J. Dairy Sci. (93):390.
31. Burdick, N.C., L.E. Hulbert*, J.A. Carroll, L.C. Caldwell, **M.A. Ballou**, R.C. Vann, A.N. Loyd, T.H. Welsh, Jr., and R.D. Randel. 2011. Differential response to lipopolysaccharide (LPS) and corticotrophin-releasing hormone (CRH) on immune parameters. ASAS – Southern Section.
32. **Ballou, M.A.,** M.A. Sutherland, B.L. Davis, T.A. Brooks, C.J. Cobb[*], and L.E. Hulbert[*]. 2011. The physiological and immunological affects of surgical castration and amputation dehorning and the influence of anesthetics and analgesics in Holstein calves. J. Dairy Sci. 313.
33. Hulbert, L.E.[*], C.J. Cobb[*], and **M.A. Ballou**. 2011. Influence of comingling on the innate immune response of Holstein calves. J. Dairy Sci. 814.
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35. **Ballou, M.A.** and L.E. Hulbert[*]. 2011. Influence of blood sample storage temperature and latency until analyzed on various *ex vivo* innate immune response assays in Holstein heifers. J. Dairy Sci. W12.
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39. Falkenberg, S.M., J.A. Carroll, **M.A. Ballou**, J.L. Sartin, J.O. Buntyn, T. Elsasser, S. Kahl, and T.B. Schmidt. 2011. Alterations in the somatotropic axis during a dual stress and *M. haemolytica* challenge in beef steers. J. Dairy Sci. 399.

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42. **Ballou, M.A**., M.D. Sellers*, D.L. Hanson*, A.R. Pepper-Yowell*, C.J. Cobb*, and B.S. Obeidat*. 2012. Innate immunological or metabolic status prior to an oral *Salmonella typhimurium* challenge is not predictive of a heightened acute phase response in weaned Jersey calves. J. Dairy Sci. 310.
43. Sellers, M.D.*, A.R. Pepper-Yowell*, D.L. Hanson*, C.R. Nightingale*, C.J. Cobb*, B.S. Obeidat*, and **M.A. Ballou**. 2012. Variation in metabolic, hematologic and innate immunologic parameters in early postpartum dairy cows is not largely influenced by dairy, days in milk, or parity. J. Dairy Sci. 443.
44. Sellers, M.D.*, C.J. Cobb*, D.L. Hanson*, A.R. Pepper-Yowell*, and **M.A. Ballou**. 2012. Variation in innate immune parameters in Holstein calves is influenced by housing environment and physiological period. J. Dairy Sci. M21.
45. Nightingale, C.R.*, M.D. Sellers*, A.R. Pepper-Yowell*, D.L. Hanson*, C.J. Cobb*, B.S. Obeidat*, and **M.A. Ballou.** 2012. Acute phase response intensity is related to the metabolic and immunologic statuses of early postpartum dairy cattle. J. Dairy Sci. M24.
46. Obeidat, B.S.*, C.J. Cobb*, M.D. Sellers*, A.R. Pepper-Yowell*, D.L. Hanson*, T.J. Earleywine, and **M.A. Ballou**. 2012. Plane of nutrition during the pre- and post-weaned periods influences the innate immune activity of Holstein calves. J. Dairy Sci. T17.
47. Cobb, C.J.*, D.L. Hanson*, M.D. Sellers*, A.R. Pepper-Yowell*, B.S. Obeidat*, and **M.A. Ballou**. 2012. Indoor group housing does not influence performance or measures of innate immune activity of Holstein calves during the neonatal, weaning, and commingling periods. J. Dairy Sci. 221.
48. Cobb, C.J.*, D.L. Hanson*, M.D. Sellers*, A.R. Pepper-Yowell*, B.S. Obeidat*, and **M.A. Ballou**. 2012. Outdoor group housed calves have improved performance and activated innate immune responses during the neonatal and weaning periods compared to outdoor single housed calves. J. Dairy Sci. 311.
49. Hanson, D.L.*, C.J. Cobb*, M.D. Sellers*, T.J. Earleywine, and **M.A. Ballou**. 2012. Plane of nutrition during the pre- and post-weaned periods influences the performance and innate immune activity of Jersey calves. J. Dairy Sci. T353.
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51. Sellers, M.D.*, C.J. Cobb*, D.L. Hanson*, A.R. Pepper-Yowell*, B.S. Obeidat*, and **M.A. Ballou.** 2012. Indoor vs. outdoor housing during the neonatal, weaning, and commingling periods influences immune responses in single-housed Holstein calves. J. Dairy Sci. M30.

52. Pepper-Yowell, A.R.[*], D.L. Hanson[*], M.D. Sellers[*], C.J. Cobb[*], B.S. Obeidat[*], and **M.A. Ballou**. 2012. Pathophysiological response to an oral *Salmonella typhimurium* challenge is influenced by the inoculum dose in newborn colostrum-fed Jersey calves. J. Dairy Sci. T18.
53. Cobb, C.J.[*], D.L. Hanson[*], M.D. Sellers[*], B.S. Obeidat[*], B.L. Miller, J.A. Davidson, K.L. Perfield, and **M.A. Ballou**. 2012. Ionophore source in a calf starter influences the performance of calves during the immediate post-weaned period. J. Dairy Sci. T296.
54. Guatam, K.K.[*], C.J. Cobb[*], B.S. Obeidat[*], M.L. Galyean, B.L. Miller, J.A. Davidson, K.L. Perfield, and **M.A. Ballou**. 2012. Influence of ionophore source and a proprietary nutrition supplement on the performance and rumen metabolism of Holstein calves previously fed a high plane of milk replacer. J. Dairy Sci. T291.
55. Silva, P.R.B., J.G.N. Moraes, L.G.D. Mendonça, A.A. Scanavez, G. Nakagawa, M.I. Endres, **M.A. Ballou**, and R.C. Chebel. 2012. Effects of prepartum grouping strategy on immune parameters of peripartum dairy cows. J. Dairy Sci. M109.
56. Moraes, J.G.N., P.R.B. Silva, L.G.D. Mendonça, J. Silva, **M.A. Ballou**, K.N. Galvão, and R.C. Chebel. 2012. Effects of intra-uterine infusion with *E. coli* lipopolysaccharide on systemic and local inflammatory immune responses. J. Dairy Sci. 251.
57. Hulbert, L.E., M.S. Calvo, **M.A. Ballou**, K.C. Klasing, and F.M. Mitloehner. 2012. Group housed Holstein bull calves have decreased innate immune responses compared to individually housed calves after surgical castration. J. Dairy Sci. M18.
58. Hulbert, L.E., M.S. Calvo, R.A. Kurzbard, **M.A. Ballou**, K.C. Klasing, and F.M. Mitloehner. 2012. Group housed Holstein bull calves have suppressed innate immune function compared to individually housed calves during weaning. J. Dairy Sci. T31.
59. Hulbert, L.E., M.S. Calvo, **M.A. Ballou**, K.C. Klasing, and F.M. Mitloehner. 2012. Space allowance influences the innate immune responses of Holstein calves during weaning. J. Dairy Sci. M17.
60. Hulbert, L.E., M.S. Calvo, **M.A. Ballou**, K.C. Klasing, and F.M. Mitloehner. 2012. Space allowance influences the innate immune responses of Holstein calves after castration. J. Dairy Sci. M15.
61. Obeidat, B.S.[*], K.K. Guatam[*], and M.A. Ballou[*]. 2013. Neither enzymes nor symbiotic supplementation influenced nutrient digestibility or fecal characteristics of dogs. ASAS/ADSA (accepted).
62. Sellers, M.D.[*], C.R. Nightingale[*], A.R. Pepper-Yowell[*], T.L. Harris[*], B.S. Obeidat[*], and **M.A. Ballou**. 2013. Decomposing between-cow and within-cow variation in hematology and leukocyte responses in dairy cows during the periparturient period. ASAS/ADSA (accepted).
63. Sellers, M.D.[*], C.R. Nightingale[*], R.Y. Liang[*], T.L. Harris[*], A.R. Pepper-Yowell[*], B.S. Obeidat[*], **M.A. Ballou**. 2013. Immune status immediately following calving is not predictive of first test day milk yield of somatic cell count in multiparous Holstein cows. ASAS/ADSA (accepted).

64. Nightingale, C.R.[*], M.D. Sellers[*], T.L. Harris[*], A.R. Pepper-Yowell[*], J.D. Chapman, and **M.A. Ballou**. 2013. Effect of Omnigen-AF® supplementation on immunologic status of periparturient dairy cows.
65. Greco, L.F., J.T. Neves Neto, A. Pedrico, R. Ferraza, F.S. Lima, R.S. Bisinotto, N. Martinez, E.S. Ribeiro, M. Garcia, G.C. Gomes, **M.A. Ballou**, W.W. Thatcher, C.R. Staples, and J.E.P. Santos. 2013. Effect of altering the ratio of dietary n-6 to n-3 fatty acids (FA) on lactational performance and acute phase response to a LPS challenge. ASAS/ADSA (accepted).
66. Obeidat, B.S., M.S. Awawdeh, R.T. Kridli, H.J. Al-Tamimi, **M.A. Ballou**, M.A. Abu Ishmais, F.A. Al-Lataifeh, and H.S. Subih. 2013. Feeding corn silage improves nursing performance of Awassi ewes when used as a source of forage. ASAS/ADSA (accepted).
67. Pepper-Yowell, A.R.[*], S. Wang, A. Byelashov, M.D. Sellers[*], R.Y. Liang[*], and **M.A. Ballou**. 2014. All omega 3 fatty acids improve serum lipid profiles and decrease aortic plaque buildup in LDLr-/- mice fed an atherogenic diet. Experimental Biology
68. Pepper-Yowell, A.R.[*], S. Wang, A. Byelashov, M.D. Sellers[*], T.L. Harris[*], and **M.A. Ballou**. 2014. All omega 3 fatty acids decrease macrophage prostaglandin E_2 and inflammatory cytokine production. Experimental Biology.
69. Taasoli, G.[*], C.R. Nightingale[*], F. Karilzadeh, D. Ghadimi, J.A. Carroll, and **M.A. Ballou**. 2014. Switching lactating Jersey cows from a greater neutral detergent fiber diet to an isoenergetic greater soluble carbohydrate diet induces mild inflammation. ASAS/ADSA.
70. Sellers, M.D.[*], C.R. Nightingale[*], and **M.A. Ballou**. 2014. Average daily gain among calves fed a high plane of milk replacer during the pre-weaning period is not associated with improved reproductive efficiency or lactational performance in Holstein heifers. ASAS/ADSA.
71. Guatam, K.K.[*], B.S. Obeidat[*], S.J. Trojan, and **M.A. Ballou**. 2014. Evaluation of nutrient intake, *in situ* disappearance, and fermentation characteristics of fermented Chaffhaye with alfalfa hay and prairie grass hay in steers. ASAS/ADSA.
72. **Ballou, M.A.**, A.R. Pepper-Yowell, S. Wang, C.L. Shen, P. Grammas, X. Yin, J. Martinez, and O. Byelashov. 2014. The effects of docosapentaenoic omega-3 on atherosclerosis, brain inflammation, bone microstructure, and macrophage inflammatory mediator production. Satelilite Symposium on DPA: An essential omega-3 fatty acid for health. 11th Congress of the International Society for the Study of Fatty Acids and Lipids.
73. Sharon, K.P.[*], Y.L. Liang[*], N.C. Burdick-Sanchez, J.A. Carroll, and **M.A. Ballou**. 2015. Plane of nutrition during the preweaned period influences the pathophysiological responses to a combined intranasal bovine herpesvirus-1 and intratracheal *Mannheimia haemolytica* challenge in post-weaned Holstein calves. ASAS Southern Section.
74. **Ballou, M.A.**, J.A. Carroll, N.C. Burdick Sanchez, N.D. May, S.L. Roberts, H.D. Hughes, and P.R. Broadway, K.P. Sharon[*], and J.T. Richeson. 2015. Functional capacities of blood neutrophils are influenced by both acute and chronic dexamethasone stress models in beef steers. ASAS/ADSA.

75. Taasoli, G.*, F. Kafilzadeh, D. Ghadimi, and **M.A. Ballou**. 2015. The effects milk production class on serum haptoglobin concentrations in mid-lactation Holstein cows with and without clinical mastitis. ASAS/ADSA.
76. Liang, Y.*, J.A. Carroll, and **M.A. Ballou**. 2015. Plane of milk replacer nutrition influences the resistance to an oral *Citrobacter freundii* opportunistic infection in Jersey calves at 10 days of age. ASAS/ADSA.
77. Liang, Y.*, T.L. Harris*, J.A. Carroll, and **M.A. Ballou**. 2015. Gastrointestinal tract of healthy 1-week old Jersey calves is well suited to digest, absorb, and incorporate nutrients into lean tissue even when fed a high plane of milk replacer. ASAS/ADSA.
78. Harris, T.L*, Y. Liang*, M.D. Sellers*, C.R. Nightingale*, K.P. Sharon*, J.A. Carroll, I. Yoon, M.F. Scott, and **M.A. Ballou**. 2015. Influences of SmartCare™ in Milk Replacer and XPC™ in Calf Starter on the Performance and Health of Pre-weaning Holstein Calves Challenged Orally with an Opportunistic Infection with *Citrobacter freundii*. ASAS/ADSA
79. Harris, T.L*, Y. Liang*, M.D. Sellers*, J.A. Carroll, I. Yoon, M.F. Scott, and **M.A. Ballou**. 2015. Influences of SmartCare™ in milk replacer and XPC™ in calf starter on the performance and health of pre-weaning Holstein calves challenged with *Salmonella enterica* serotype Typhimurium. ASAS/ADSA.
80. Sharon, K.P.*, L.E. Hulbert, J.A. Carroll, and **M.A. Ballou**. 2015. The effects of plane of milk replacer nutrition on the health and performance of high-risk Holstein bull calves from a commercial calf ranch. ASAS/ADSA.
81. Sharon, K.P.*, Y. Liang*, N.C. Burdick Sanchez, J.A. Carroll, P.R. Broadway, and **M.A. Ballou**. 2015. Plane of nutrition during the preweaned period and *Mannheimia haemolytica* dose influence metabolic responses in post-weaned Holstein calves challenged with bovine herpesvirus-1 and *Mannheimia haemolytica*. ASAS/ADSA.
82. Sharon, K.P.*, Y. Liang*, N.C. Burdick Sanchez, J.A. Carroll, P.R. Broadway, and **M.A. Ballou**. 2015. Preweaning plane of nutrition and *Mannheimia haemolytica* dose influences inflammatory responses to a combined bovine herpesvirus-1 and *Mannheimia haemolytica* challenge in post-weaned Holstein calves. ASAS/ADSA.
83. Hulbert, L.E., S.C. Trombetta, K.P. Sharon*, and **M.A. Ballou**. 2015. Milk replacer plane of nutrition influences calf nutritive and non-nutritive oral behaviors. ASAS/ADSA.
84. Burdick Sanchez, N.C., J.A. Carroll, N. May, S.L. Roberts, H.D. Hughes, P.R. Broadway, K.P. Sharon*, **M.A. Ballou**, and J.T. Richeson. 2015. Modulation of metabolic response to vaccination in naïve beef steers using an acute and chronic stress model. ASAS/ADSA.
85. May, N., J.A. Carroll, N.C. Burdick Sanchez, S.L. Roberts, H.D. Hughes, P.R. Broadway, K.P. Sharon*, **M.A. Ballou**, and J.T. Richeson. 2015. Acute and chronic stress models differentially impact inflammation and the antibody titer response to respiratory vaccination in naïve beef steers. ASAS/ADSA.
86. May, N., J.A. Carroll, N.C. Burdick Sanchez, S.L. Roberts, H.D. Hughes, P.R. Broadway, K.P. Sharon*, **M.A. Ballou**, and J.T. Richeson. 2015. Comparative efficacy of

dexamethasone or corticotropin releasing hormone/vasopressin administration to induce chronic physiological stress in beef cattle. ASAS/ADSA.

87. Hudson, R.E.[*], Y. Liang[*], T.L. Harris[*], K.P. Sharon[*], and **M.A. Ballou**. 2016. Effects of supplementing a commercial blend of anaerobic probiotic bacteria, MBiotix Calf, on the growth and health of pre-weaned and immediately post-weaned Holstein calves. ASAS/ADSA.
88. Guatam, K.K.[*], S.J. Trojan, J.O. Sarturi, and **M.A. Ballou**. 2016. Lactation performance, *in situ* degradability, and rumen fermentation of Holstein cows fed BMR-6 sorghum silage versus corn silage based diets. ASAS/ADSA.
89. Campanili, P.R.B., J.O. Sarturi, S.J. Trojan, **M.A. Ballou**, B.J.M. Lemos, L.A. Ovinge, and J.B.G. Mayorquin. 2016. Effects of growing system and silage type on feedlot growth performance, carcass characteristics, and nutrient digestibility of beef steers. ASAS/ADSA.
90. Liang, Y.[*], R.E. Hudson[*], T.L. Harris[*], K.P. Sharon[*], J.P. Jarrett, D. McLean, J.D. Chapman, J.A. Carroll, and **M.A. Ballou**. 2016. Effects of OmiGen-AF and Provia 6086 on growth, leukocyte, and hematological variables of pre-weaned and immediately post-weaned Holstein calves. ASAS/ADSA.
91. Word, A.B.[*], P.R. Broadway, N.C. Burdick Sanchez, K.P. Sharon[*], S.L. Roberts, J.T. Richeson, P.J. Deforr, M.D. Cravey, J.R. Corley, **M.A. Ballou**, and J.A. Carroll. 2016. Yeast supplementation altered the metabolic response to a combined viral-bacterial challenge in feedlot heifers. ASAS/ADSA.
92. Word, A.B.[*], P.R. Broadway, N.C. Burdick Sanchez, K.P. Sharon[*], S.L. Roberts, J.T. Richeson, P.J. Deforr, M.D. Cravey, J.R. Corley, **M.A. Ballou**, and J.A. Carroll. 2016. Acute immunological responses to a combined viral-bacterial respiratory disease challenge in feedlot heifers supplemented with yeast. ASAS/ADSA.
93. Harris, T.L.[*], Y. Liang[*], R.E. Hudson[*], K.P. Sharon[*], J.A. Carroll, and **M.A. Ballou**. 2016. Safmannan and Actisaf supplementation in milk replacer modulates health and performance in high-risk, pre-weaned Holstein calves. ASAS/ADSA.
94. Campanili, P.R.B., J.O. Sarturi, S.J. Trojan, **M.A. Ballou**, L.A. Pellarin, J.D. Sugg, L.A. Ovinge, A. Alrumaih, and A.A. Hoffman. 2016. Effects of silage type and inclusion level on ruminal characteristics and feeding behavior of feedlot steers. ASAS/ADSA.
95. Sharon, K.P.[*], Y. Liang[*], R.E. Hudson[*], I. Yoon, M.F. Scott, N.C. Burdick Sanchez, P.R. Broadway, J.A. Carroll, and **M.A. Ballou**. 2016. Influence of dietary supplementation with a *Saccharomyces cervisiae* fermentation product prototype on the pathophysiological response to a combined intranasal bovine herpesvirus-1 and intratracheal *Mannheimia haemolytica* challenge in Holstein steers. ASAS/ADSA.
96. Sharon, K.P.[*], Y. Liang[*], R.E. Hudson[*], I. Yoon, M.F. Scott, N.C. Burdick Sanchez, P.R. Broadway, J.A. Carroll, and **M.A. Ballou**. 2016. Dose response effect of *Saccharomyces cervisiae* fermentation product prototype on leukocyte functionality and *ex vivo* cytokine production during a dexamethasone challenge in Holstein steer calves. ASAS/ADSA.

97. Liang, Y.[*], R.E. Hudson[*], and **M.A. Ballou**. 2016. Neonatal Jersey calves supplemented with BIOTIX, a blend of probiotic bacteria, improved the pathophysiological response to an oral *Salmonella enterica* challenge. Symposium on gut health in production animals.

Invited

1. **Ballou, M.A.** 2011. The role inflammation plays during clinical mastitis on the performance and health of dairy cows. ASAS/ADSA Invited Symposium – Growth and Development. 519.
2. **Ballou, M.A.** 2015. Understanding what stresses a dairy cow and the impacts on immunity. ASAS/ADSA Invited Symposium – Animal Health.
3. **Ballou, M.A.**, D.E. Kerr, K.P. Sharon[*], and A.L. Benjamin. 2015. Genetic, epigenetic, and management factors contribute to the risk of morbidity and mortality of Holstein feeder calves. ASAS/ADSA Invited Symposium – Beef Nutrition.

Technical reports: total of <u>0</u>

Other publications: total of <u>6</u>

1. **Ballou, M.A.** 2006. "Milk…it's not just about strong bones" <u>Hoard's Dairyman</u> 25 Jan. 2006: 68.
2. **Ballou, M.A.** and R. Hinders. 2006. "Bottom line of nutrition: Dairy nutrition's connection with health" <u>Feedstuffs</u> 10 May 2006: 12.
3. DePeters, E.J., J. Heguy, and **M.A. Ballou**. 2011. "Colostrum: More than just '4 quarts equals passive transfer" <u>Progressive Dairyman</u> 20 Jan. 2011: 53.
4. **Ballou, M.A.** and M.D. Sellers. 2013. "Understanding why cows get sick during the transition period" <u>Progressive Dairyman</u> 11 October 2013: 15.
5. **Ballou, M.A.** and L.E. Hulbert. 2014. "Less pain, more to gain - We have the ability to make castration and dehorning less painful for calves" <u>Hoard's Dairyman</u> 25 April 2014: 285.
6. **Ballou, M.A.** 2015. Nutrition and housing of calves influences their health. "<u>Progressive Dairyman</u>"15 May 2015.
7. Natzke, D., **M.A. Ballou**, and D. Nydam. 2016. Can nutritional strategies improve calfhood immunity and future disease resistance. <u>Progressive Dairyman</u>

<u>INVITED PRESENTATIONS AND LECTURES</u> total of <u>57</u>

1. **Ballou, M.A.** May 13th, 2009. Safety of consuming animal products produced with current and future technologies. US Food Service Food and Nutrition Seminar. Lubbock, TX.
2. **Ballou, M.A.** April 13th – 16th, 2010. Understanding Animal Immunology. University of Florida Graduate Student Association Distinguished Lecturer. Gainesville, FL.

3. **Ballou, M.A.** May 19th, 2010. Securing the future of the feedlot – The impact of receiving cattle health on overall profitability. 26th Alltech Annual Symposium. Lexington, KY.
4. **Ballou, M.A.** January 18th, 2011. The impacts of immune factors on well-being of cattle at feedlot arrival and their ultimate carcass grade. Southern States Beef Feedmaster Advanced Program. Lexington, KY.
5. **Ballou, M.A.** July 13th, 2011. Inflammation: Role in the etiology and pathophysiology of clinical mastitis in dairy cows. Growth and Development Symposium at Joint ASAS/ADSA Annual Meeting. New Orleans, LA.
6. **Ballou, M.A.** November 14th – 17th, 2011. Nutritional impacts on immunity of dairy calves. Pfizer/Alltech Veterinarian Meeting. Weedville, PA.
7. **Ballou, M.A.,** D. Fish, and E. Galo. April 9th – April 12th, 2012. A nutritional intervention program for undernourished pregnant / lactating women and their families using a high energy, protein, and micronutrient supplement. Bacolod City and Iloilo, Philippines.
8. **Ballou, M.A.** April 17th – 19th, 2012. Immunology of the transition cow & immunology of the pre- and post-weaned calf. Dairy Cow Academy. Prince Agri-Products, Inc. University of Minnesota, New Sweden Dairy Research Unit. Mankato, MN.
9. **Ballou, M.A.** May 3rd & 4th, 2012. Metabolic costs of immune protection – impacts on nutritional requirements and milk production. Second Simpósio Internacional, Revista Leite Integral. Belo Horizonte, MG, Brazil.
10. **Ballou, M.A.** May 9th & 10th, 2012. How the fatty acid composition of the diet influences the immune responses, health, and performance of dairy calves. Animal Nutrition Association of Canada - 2012 Eastern Nutrition Conference. Kitchener, Ontario, Canada.
11. **Ballou, M.A.** June 14th – 16th, 2012. Immunity of transition dairy cows. Western Dairy Summit. Prince Agri-Products, Inc. Monterey, CA.
12. **Ballou, M.A.** September 5th & 6th, 2012. Transition cow immunity – Critical for a healthy and (re)productive lactation. Land O Lakes Purina Mills. Alexandria, MN.
13. **Ballou, M.A.** September 24th & 25th, 2012. Current management strategies to reduce production losses associated with the inflammatory response during mastitis: The role of trace minerals and vitamins. Seminario Ganado Leche. Novus. Torreón and Querétaro, Mexico.
14. **Ballou, M.A.** October 23rd, 2012. Environmental and nutritional influences on the innate immune responses of calves and transition cows. Texas Animal Nutrition Council. Amarillo, TX.
15. **Ballou, M.A.** October 29th – 31st, 2012. Development of neonatal calf immunity. DVM VIP Nutrition Conference. Land O Lakes Animal Milk Products Co. St. Louis, MO.
16. **Ballou, M.A.** January 9th & 10th, 2013. Transition cow immunity – Critical for a healthy and (re)productive lactation. Leading Midwest Dairy Producers. Dells, Wisconsin.
17. **Ballou, M.A.** February 5th & 6th, 2013. Enhancing calf immunity through nutrition. Florida Ruminant Nutrition Symposium. Gainesville, FL.

18. **Ballou, M.A.** March 25th & 26th, 2013. Nutrition influences dairy calf immune responses and health. Ontario Canada Progressive Dairy Operators. Toronto, Ontario, Canada.
19. **Ballou, M.A.** March 27th & 28th, 2013. Transition cow immunity – Critical for a healthy and (re)productive lactation. Central Plains Dairy Expo. Sioux Falls, SD.
20. **Ballou, M.A.** May 28th – 31st, 2013. Interactions of nutrition and environment with immune function in the preruminant calf. 25th ADSA Discover Conference. New Developments in Immunity, Nutrition, and Management of Preruminant Calf. Itasca, IL.
21. **Ballou, M.A.** November 2nd – 3rd, 2013. The role nutrition and environment play in the immune competence of transition dairy cows. Western Corn Belt Dairy Summit. Minneapolis, MN.
22. **Ballou, M.A.** January 12th and 13th, 2014. There is no silver bullet to improving transition success – A multifactorial approach to improving the health and performance of transition cows. VitaPlus Continuing Education, Madison, WI.
23. **Ballou, M.A.** and A.R. Pepper-Yowell. February 5th, 2014. The lesser known omega-3 polyunsaturated fatty acid – The effects of docosapentaenoic acid on inflammation and cardiovascular disease risk. Obesity Research Cluster. Lubbock, TX.
24. **Ballou, M.A.** March 21st, 2014. How nutrition of calves during the pre-weaned period influences the health of replacement dairy heifers. Tortuga / DSM, Castrolanda, PR, Brazil.
25. **Ballou, M.A.** March 26th and 27th, 2014. Development and effects of nutrition on the immune system of calves. Forth Simpósio Internacional, Revista Leite Integral. Curitiba, PR, Brazil.
26. **Ballou, M.A.** April 1st, 2014. Practical strategies to improve the health and future productivity of replacement dairy heifers. Biogenesis Bago, Passos, MG, Brazil.
27. **Ballou, M.A.** April 10th and 11th, 2014. Practical strategies to improve the health of transition cows. Southwest Nutrition Meeting, Home, TX.
28. **Ballou, M.A.** April 15th, 2014. Opening Speaker – An overview of immunity and dairy production. 2014. Tri-state dairy nutrition conference Pre-conference symposium. Ft. Wayne, IN.
29. **Ballou, M.A.** April 16th, 2014. Nutrition and immunity of Pre-weaned dairy calves. Tri-state dairy nutrition conference. Ft. Wayne, IN.
30. **Ballou, M.A.**, A.R. Pepper-Yowell, S. Wang, C.L. Shen, P. Grammas, X. Yin, J. Martinez, and O. Byelashov. July 2nd, 2014. The effects of docosapentaenoic omega-3 on atherosclerosis, brain inflammation, bone microstructure, and macrophage inflammatory mediator production. Satelilite Symposium on DPA: An essential omega-3 fatty acid for health. 11th Congress of the International Society for the Study of Fatty Acids and Lipids. (ISSFAL). Stockholm, Sweden.
31. **Ballou, M.A.** July 8th, 2014. The utilization of producer dairy cooperatives for small stakeholders. Adigrat University. Adigrat, Ethiopia.

32. **Ballou, M.A.** August 14th and 15th, 2014. Decomposing the variation among herd, parity and within herd x parity variation in leukocyte and hematology in postpartum Holstein cows. Immunology Think Tank. Denver, CO.
33. **Ballou, M.A.** August 17th – 21st, 2014. A systematic approach to improving transition health. Nutrition Consultant and Feed Mill Road Show. Central Minnesota and Wisconsin.
34. **Ballou, M.A.** October 8th and 9th, 2014. Dairy calf nutrition and health. Pacific Northwest Animal Nutrition Conference. Vancouver, British Colombia, Canada.
35. **Ballou, M.A.** December 11th, 2014. Influences of nutrients on enteric health of calves. Texas Tech University Health Sciences Center, Department of Immunology and Molecular Microbiology Seminar Series. Lubbock, TX.
36. **Ballou, M.A.** 2015. Dietary strategies to improve the health of dairy calves. Florida Ruminant Nutrition Conference. Gainsville, FL, USA. February 3rd.
37. **Ballou, M.A.** 2015. Considerations of gut integrity in the young ruminant: a review of nutrition-microbiota, immune function interface using novel feed additives to enhance sustainability and productivity. Southwest Nutrition and Management Conference. Tempe, AZ, USA. February 19th, 2015.
38. **Ballou, M.A.** 2015. Nutrition influences the health of dairy calves. Western Dairy Management Conference. Reno, NV, USA. March 3rd and 4th.
39. **Ballou, M.A.** 2015. Effects of housing and nutrition on the immunity of dairy calves. Western Canadian Dairy Seminar. Red Deer, Alberta, Canada. March 10th and 11th.
40. **Ballou, M.A.**, M.D. Sellers, and M.L. Galyean. 2015. Experimental design and statistical considerations for feedlot studies. Plains Nutrition Council. San Antonio, TX. April 16th and 17th.
41. **Ballou, M.A.** 2015. Advanced immunological concepts in dairy cattle – What do we know and what do we need to know. Diamond V Yeast. Technical Meeting. Cedar Rapids, IA. April 29th and 30th.
42. **Ballou, M.A.** 2015. Improving health of dairy cattle through nutrition - California dairy nutritionists meeting. Turlock, Fresno, and Tulare, CA. May18th – 21st.
43. **Ballou, M.A.** 2015. Modulation of the Immune System through Nutrition and Feeding. Dairy Health Summit. Cedar Rapids, IA. May 28th.
44. **Ballou, M.A.** 2015. Nutrition influences on health and immunity. 4-State Dairy Nutrition and Management Conference. Dubuque, IA. June 10th and 11th.
45. **Ballou, M.A.** 2015. Influence of various lipid (fat) sources on performance of dairy cattle. J.D. Heiskell & Co. Technical Training. Amarillo, TX July 1st.
46. **Ballou, M.A.** 2015. Genetic, epigenetic, and management factors contribute to the risk of morbidity and mortality of Holstein feeder calves. JAM. Beef Cattle Nutrition Symposium. Orlando, FL July 14th.
47. **Ballou, M.A.** 2015. Understanding what stresses a dairy cow and the impact on immunity. JAM. Animal Health Symposium. Orlando, FL July 13th.

48. **Ballou, M.A.** 2015. Strategies to enhance immunity and health in calves and heifers. American Association of Bovine Practitioners Annual Meeting. New Orleans, LA. September 18th.
49. **Ballou, M.A.** 2015. Dietary Strategies to Improve the Health of Dairy Calves. ShurGain Nutrition Meeting. Guelph, ON, Canada. November 18th.
50. **Ballou, M.A.** 2016. Systematic Approach to Improving Transition Immunity. Cargill Animal Nutrition Sales Meeting. Phoenix, Az. January 18th to 20th.
51. **Ballou, M.A.** 2016. Metabolic Costs of Disease in Lactating Dairy Cows. 20th New Focuses in Production and Reproduction of Cattle. UNESP-Botucatu. Uberlandia, MG, Brasil. March 17th.
52. **Ballou, M.A.** 2016. How Nutrition can Improve Gastrointestinal Health of Dairy Cattle. 20th New Focuses in Production and Reproduction of Cattle. UNESP-Botucatu. Uberlandia, MG, Brasil. March 18th.
53. **Ballou, M.A.** 2016. Impacts of Nutrition on the Development of Gastrointestinal Immunity of Dairy Calves. Central Plains Dairy Expo. Sioux Falls, SD. March 30th.
54. **Ballou, M.A.** 2016. Influence of stress and pain on immunity. 9th Boehringer Ingelheim Expert Forum on Farm Animal Well-Being. Montreal, Quebec, Canada. June 3rd and 4th.
55. **Ballou, M.A.** 2016. How can nutrition impact the immunity of dairy calves and heifers. Dairy Press Editor Summit. Sioux Fall, SD. June. 15th to 17th.
56. **Ballou, M.A.** 2016. Keynote: Immunological phenotypes of periparturient dairy cows that increase the incidence of negative health outcomes. Elanco's California Leading Nutritionist Symposium. Monterey, CA. July 18th.
57. **Ballou, M.A.** 2016. Impacts of the veterinary feed directive and the use of nutrition to modulate immunity of dairy calves. Calf Advisory Council. Minneapolis, MN. August 16th and 17th.
58. **Ballou, M.A.** 2016. Applied immunology of dairy cattle and the implications for disease resistance. Kemin Technical Training. Chicago, IL. Nov. 7th.
59. **Ballou, M.A.** 2016. How can nutrition influence disease resistance of dairy cattle. Penn State Nutrition Conference Preconference Symposium. Harrisburg, PA. Nov. 9th.
60. **Ballou, M.A.** 2016. "My calves and heifers look good…what does that really mean and what should we be monitoring?" Penn State Nutrition Conference. Harrisburg, PA. Nov. 10th.

GRADUATE STUDENT COMMITTEES

Completed:

Chaired: total of 8

M.S.

1. Luke R. Schwertner. 2010. *Influence of dietary energy and source on immune competence and response to an infectious bovine rhinotracheitis virus challenge in beef steers.*
2. Clayton J. Cobb. 2012. *Effect of single versus group housing from the first week of life on the performance, immune responses, and well-being of Holstein calves.*
3. Devin L. Hanson. 2012. *The influence of milk replacer plane of nutrition on the performance, innate immune responses and pathophysiological response to an oral Salmonella typhimurium challenge.*
4. Yu Liang. 2015. *The influences of planes of nutrition on development and health of the gastrointestinal tract of calves.*

Ph.D.

1. Amanda R. Pepper-Yowell. 2014. *Understanding the role Docosapentaenoic acid omega-3 plays in controlling inflammation, lipid metabolism, and the risk for obesity, atherosclerosis, and neural inflammation.*
2. Matthew D. Sellers. 2015. *Decomposing variation in ex vivo leukocyte responses and measures of metabolic status in multiparous Holstein cows during the transition period.*
3. Tyler Harris. 2013. *Influence of yeast components on immunity in dairy calves.*
4. Cameron Nightingale. 2016. *Understanding immunological phenotypes of periparturient dairy cows and associations with subsequent disease outcomes.*

Co-chaired: total of 3

Ph.D.

1. Lindsey E. Hulbert. 2010. *Exploring the linkages between stress and innate immune responses in cattle.*
2. Kishor K. Gautam. 2015. *Improving nutrient utilization of animals.*
3. Kate P. Sharon. 2016. *Nutritional strategies to improve the pathophysiological response to bovine respiratory disease complex.*

Committee member of: total of 16

M.S.

1. Alexis Garcia. 2009. *Stallion Spermatozoal Motility Parameters: An Examination of Stallion Variability and Conception Rates over a Breeding Season on a Commercial Texas Ranch.*

2. Brittany Davis. 2010. *The effect of prenatal stress on the physiology and behavioral development of offspring.*
3. Matthew Sellers. 2010. *The impact of extended liquid storage on ATP status, membrane damage, heat shock protein 70 localization, and functional parameters in boar spermatozoa.*
4. Matthew Vaughn. 2012. *Effect of rate of gain during the stocker period on beef cattle skeletal muscle development, satellite cell activity, and marbling development.*
5. Glenn Yeomans. 2012. *Breed differences in seminal plasma chemistry; implications for the cryopreservation of semen.*
6. Tyler Harris. 2013. *The effect of zinc on the B-adrenergic receptor in bovine satellite cells and the use of b-agonists and steroidal implants on muscle protein and mRNA levels in feedlot cattle.*
7. Anna Meyers. 2014. *Effect of habitat management on native and non-native ants.*
8. Miles Harris. 2015. *Non-thesis.*

Ph.D.

1. Nadege Krebs. 2007. *Odors and pheromones: Influence of olfaction on behavior, physiology, and performance to reduce stress in pigs.*
2. Lisa Welch. 2010. *A comparison study of physiological properties and biochemical markers in spermatozoa collected using either a device for improved semen collection of a standard collection cup.*
3. Argenis Rafael Rodas Gonzalez. 2011. *Effects of postmortem calcium chloride injection on meat quality traits of steaks from cattle fed with zilpaterol hydrochloride.*
4. Doug Smith. 2011. *Effects of dietary concentration of wet distillers grains on health and performance of newly received beef cattle, in vitro methane production and volatile fatty acid concentrations, and in vitro and in situ dry matter disappearance.*
5. Hadil Subih. 2013. *Impact of monthly high dose oral cholecalciferol on serum 25 hydroxy vitamin D levels in bariatric surgery subjects.*
6. Anna VanStelten. 2014. *Characterization of virulence-attenuated Listeria monocytogenes common among food and food-associated environment but rarely associated with disease*.
7. Jia Zhang. 2015. *Molecular imaging and prevention of atherosclerosis using CD36-targeted nanoparticles and Epigallocatechin gallate.*
8. Jada Stevenson. 2015. *Dietary fatty acid effects on hunger, satiety, and metabolism.*

External reviewer: total of <u>2</u>

Ph.D.

1. Zahid Farooq. 2012. *Prevalence of gastro-intestinal helminthes in some ruminant species and documentation of ethnoveterinary practices in cholistan desert.* Department of Zoology and Fisheries, University of Agriculture, Faisalabad, Pakistan.

2. Claire Ann Kentler. 2012. *Influence of dietary additives on immunity in hand-reared dairy calves.* School of Life Sciences, La Trobe University, Bundoora, Victoria, Australia.

In Progress:

Chair: total 5

M.S.

1. Emily Davis — Anticipated completion date: May, 2018

Ph.D.

1. Cameron Nightingale — Anticipated completion date: December, 2016
2. Kate Sharon — Anticipated completion date: December, 2016
3. Yu Liang — Anticipated completion date: April, 2017
4. Alyssa Word — Anticipated completion date: December, 2017

Committee member of: total of 5

M.S.

1. Drew Arnold
2. Abdullah Alrumaih
3. Matthew May

Ph.D.

1. Mandana Pahlavani
2. Amal Bouyanfif

Visiting International Graduate Students: total of 1

1. Ms. Golnaz Taasoli, MS (Ph.D. candidate)
   Razi University
   Tazeh Abad, Kermãnshãh, Iran

Visiting Scientist: total of 1

1. Dr. Belal Obeidat, Ph.D. – Associate Professor
   Jordan University of Science and Technology
   Animal Production
   Irbid, Jordan

UNDERGRADUATE ADVISING

Undergraduate research mentor: total of 7

1. Diane Kim, DVM – Animal Biology, UC Davis; Veterinarian
2. Clayton Cobb, MS – Animal Science, TTU, Honors College; Veterinarian
3. Justin Ayankola – Biology, TTU, HHMI; MD
4. Bianca Ibarra – Health, TTU, HHMI; MD
5. Caitlin Oneal – Animal Science, TTU, Honors College; Veterinary Student
6. Anastasia Warden – Chemistry, TTU, Honors College; Undergraduate
7. Rachel Hudon – Animal Science, TTU; MS Student WTA&M University

TEACHING RESPONSIBILITIES

1. Courses taught at Texas Tech University
   a. ANSC 3301 – *Principles of Nutrition.* 3 credits
   b. ANSC 3305 – *Applied Animal Nutrition.* 3 credits
   c. ANSC 5313 – *Nutritional Biochemistry of Animals.* 3 credits
   d. ANSC 5403 – *Biometry.* 4 credits
   e. ANSC 5100 – *Graduate Seminar – Academic Principles.* 1 credit

FIVE YEAR SUMMARY OF TEACHING EVALUATIONS FOR NAME MICHAEL ALAN BALLOU

Term/Class	Number of Students	Instructor Overall (Question #1) Mean	Availability (Question #2) Mean	Treated all Fairly (Question #4) Mean	Presented Clearly (Question #7) Mean
Spring 2008					
ANSC 3305	37	3.96	4.19	4.38	3.62
Fall 2008					
ANSC 3301	73	3.15	4.18	4.17	2.95
ANSC 5313	22	4.15	4.7	4.55	3.75
Spring 2009					
ANSC 3305	38	4.3	4.37	4.33	4.19
ANSC 5100	11	No evals	No evals	No evals	No evals
Fall 2009					
ANSC 3301	63	3.74	3.83	4.02	3.38
ANSC 5313	17	3.71	4.19	4	3.47
Spring 2010					
ANSC 3305	29	4.44	4.36	4.6	4.33
ANSC 5100	12	No evals	No evals	No evals	No evals
Fall 2010					
ANSC 3301	120	4.35	4.15	4.73	4.31

ANSC 5313	17	4.40	4.40	4.67	4.27
Spring 2011					
ANSC 3305	28	4.47	4.31	4.65	4.71
ANSC 5100	19	4.75	4.42	4.75	4.67
Fall 2011					
ANSC 3301	106	3.67	3.93	4.27	3.38
ANSC 5313	28	4.35	4.56	4.39	3.59
ANSC 5403	33	3.7	3.89	3.65	3.23
Spring 2012					
ANSC 3305	31	4.68	4.48	4.74	4.58
ANSC 5100	22	4.3	4.63	4.42	4.37
Fall 2012					
ANSC 3301	118	4.35	4.04	4.58	4.46
ANSC 5403	25	4.05	3.84	4.32	3.79
Spring 2013					
ANSC 3305	15	4.53	4.07	4.47	4.60
ANSC 5100	13	4.78	4.56	4.78	4.78
ANSC 5313	13	4.09	3.91	4.36	4.00
Fall 2013					
ANSC 3301	117	4.28	4.04	4.51	4.14
ANSC 5403	41	4.03	3.97	4.32	3.56
Spring 2014					
ANSC 3305	21	4.53	4.07	4.47	4.60
ANSC 5100	7	4.78	4.56	4.78	4.78
ANSC 5313	13	4.09	3.91	4.36	4.00
Fall 2014	Did not teach				
Total	**1066**	**4.20**	**4.21**	**4.41**	**4.04**

Other Teaching Responsibilities

GRANTS AND AWARDS: total funded $2,385,275 ($976,905)

Funded:

SERVICE TO PROFESSIONAL ORGANIZATIONS

National:

1. American Dairy Science Association Animal Health Committee, 2014 – present, Member
2. Journal of Dairy Science, 2007 – present, Ad hoc Reviewer
3. Journal of Animal Science, 2007 – present, Ad hoc Reviewer
4. Professional Animal Scientist, 2007 – present, Ad hoc Reviewer
5. Physiological Genomics, 2009 – present, Ad hoc Reviewer
6. Veterinary Immunology Immunopathology, 2011 – present, Ad hoc Reviewer

Regional:

1. Animal Care and Use Commitee – USDA-ARS Livestock Issues Research Unit, 2008 – 2010, Scientific Reviewer
2. Animal Care and Use Committee – USDA-ARS Livestock Issues Research Unit, 2010 – present, Chairperson

SERVICE TO

UNIVERSITY:

1. Animal Care and Use Committee
    a. 2009 – 2012, Alternate
    b. 2012 – 2014, member
2. Faculty Senate, 2011 – 2014, CASNR senator
    a. Academic Programs Committee
3. Student Campus and Community Safety Working Group, 2011 – 2014
4. Institutional Biosafety Committee, 2012 – present, member
5. Obesity Research Initiative Advisory Committee, 2013 – present, board member
6. Research Advisory Council, 2014 – present, member

COLLEGE:

1. Applied Statistician Faculty Position Search Committee, 2012, Member
2. CASNR Quantitative and Statistical Skills Committee, 2013 – present, member
3. CASNR Research and Graduate Committee, 2014 – present, co-chair

DEPARTMENT:

1. Muscle Biology Faculty Position Search Committee, 2008, Member
2. Nutrient and Environmental Management Faculty Position Search Committee, 2009, Chairperson
3. Business Assistant Supervisor, 2009 – present
4. Graduate Education Committee, 2010 – present, Member
5. Research Strategic Plan, 2011, Chairperson
6. Cattle Nutrition, Health, and Welfare Faculty Search Committee, 2012, Member
7. Laboratory Space Allocation, 2015 – present.

COMMUNITY:

1. The Bridge of Lubbock - Middle & High School Educational Success Program, Life Skills Curriculum, 2010 - 2011, Mentor and Instructor

INDUSTRY:

1. US National Park Service – Bison Brucellosis Control Program in Yellowstone National Park. 2009 – 2011
2. Breedlove Foods Inc. Board of Directors, 2012 – present
3. American Heart Association's Lipids Basic Science 2 Study Group, 2013-2014.
4. ASAS/ADSA Joint Annual Meeting Animal Health Committee, member.
5. USDA-NIFA Animal Health Panel 2 Study Group, 2015 – present.
6. UN/FAO Dairy Production Management Symposium in Panama City, Panama, 2015, organizer and speaker.
7. USA-Israel Binational Agricultural Research and Development Fund Reviewer, 2016.

OTHER:

1. Amplify Student Ministries TTU Organization, 2010 – 2016. Faculty Advisor
2. Victory Life Baptist Church, 2011 – 2016, Leadership Board