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Education

University of California Davis	Genetics	Ph.D.	2009
Western Illinois University	Biology	M.S.	2003
Nebraska Wesleyan University	Biology	B.S.	2000

Professional Experience

July 2020 – current	Associate Professor – University of Nebraska Lincoln, Dept of Animal Science Animal Functional Genomics
Jan 2014 – June 2020	Assistant Professor – University of Nebraska Lincoln, Dept of Animal Science
July 2016 – present	Courtesy Faculty – University of Nebraska Lincoln, School of Biological Sciences
May – Dec 2013	Research Associate – University of Minnesota College of Veterinary Medicine Equine Genetics and Genomics
2011 – 2013	Post-doctoral Research Fellow (NIH T32 Training Grant) – University of Minnesota College of Veterinary Medicine, Equine Genetics and Genomics
2009 – 2013	Associate of the AES, University of California Davis, Dept of Animal Science
2009 – 2011	Post-doctoral Associate –University of Minnesota College of Veterinary Med

Peer-Reviewed Publications ([‡]-mentored student/post-doc, [ł]-lab manager)

1. Wilson CS, **Petersen JL**, Brito LF, Freking BA, Nilson SM[‡], Taylor JB, Murphy TW, Lewis RM. 2024. Assessment of genetic diversity and population structure of US Polypay sheep from breed origins to future genomic selection. Frontiers in Genetics. 15:1436990. doi:10.3389/fgene.2024.1436990.
2. Hess MK, Mersha A, Ference SS, Nafziger SR, Keane JA, Fuller AM[ł], Kurz SG, Sutton CM, Spangler ML, **Petersen JL**, Cupp AS. 2024. Puberty classifications in beef heifers are moderately to highly heritable and associated with candidate genes related to cyclicity and timing of puberty. Frontiers in Genetics. 15:2024. doi:10/3389/fgene/20241405456.
3. Reith RR[‡], Beever JE, Paschal JC, Banta J, Porter BF, Steffen DJ, Hairgrove TB, **Petersen JL**. 2024. A de novo mutation in association with autosomal dominant bovine familial convulsions and ataxia in Angus cattle. Animal Genetics. 55(3);344-351. doi:10.1111/age.13409.
4. Reith RR[‡], Batt MC[‡], Fuller AM[ł], Meekins J, Diehl KA, Zhou Y, Bedwell PS, Ward JA, Sanders SK, **Petersen JL***[1], Steffen DJ*. [1]corresponding author. *authors contributed equally. 2024. A novel *CLN3* variant is responsible for delayed-onset retinal degeneration in Hereford cattle. Journal of Veterinary Diagnostic Investigation. 36(3):438-446. doi:10.1177/10406387241239918.
5. Batt MC[‡], Venzor LG, Gardner K, Reith RR[‡], Roberts KA[‡], Herrera NJ, Fuller AM[ł], Sullivan GA, Mulliniks JT, Spangler ML, Valberg SJ, Steffen DJ*, **Petersen JL***. *authors contributed equally.

2024. An autosomal recessive mutation in *PYGM* causes myophosphorylase deficiency in Red Angus composite cattle. BMC Genomics. 25:417. doi: https://doi.org/10.1186/s12864-024-10330-1

6. Gibbs RL, Wilson JA, Swanson RM, Beard JK, Hicks ZM, Beer HN, Marks-Nelson ES, Schmidt TB, **Petersen JL**, Yates DT. 2024. Daily injection of the β2 adrenergic agonist clenbuterol improved muscle glucose metabolism, glucose-stimulated insulin secretion, and hyperlipidemia in juvenile lambs following heat-stress induced intrauterine growth restriction. Metabolites. 14:156. doi:10.3390/metabo1403156.
7. Gibbs R, Swanson RM, Beard JK, Hicks Z, Most MS, Beer HN, Grijalva PC, Clement SM, Marks-Nelson ES, Schmidt TB, **Petersen JL**, Yates DT. 2023. Daily injection of the β2 adrenergic agonist clenbuterol improved poor muscle growth and body composition in lambs following heat stress induced intrauterine growth restriction. Frontiers in Physiology. 14:1252508. doi:10.3389/fphys.2023//1252508.
8. Cappelletti E, Piras FM, Sola L, Santagostino M, **Petersen JL**, Bellone RR, Finno CJ, Peng SC, Kalbfleisch T, Bailey E, Nergadze S, Giulotto E. 2023. The localization of centromere protein A is conserved among tissues. Communications Biology. 6:963. doi:10.1038/s42003-023-05335-7.
9. Lu A, Fei Z … **Petersen JL** …Raj K. 2023. Universal DNA methylation age across mammalian tissues. Nature Aging. 3:1144-1166. doi:10.1038/s43587-023-00462-6.
10. Haghani A, Li CZ, … Petersen JL…Horvath S. 2023. DNA methylation networks underlying mammalian traits. Science. 381, eabq5693. doi:10.1126/science.abq5693.
11. Todd E, Fromentier A, Sutcliffe R, Running Horse Collin Y, Perdereau A, Aury J-M, Èche C, Bouchez O, Donnadieu C, Wincker P, Kalbfleisch T, **Petersen JL**, Orlando L. 2023. Imputed genomes of historical horses provide insights into modern breeding. iScience. 26, 107104.
12. **Petersen JL**, Sieck RL[‡], Steffen DJ. 2023. White coat color of a Black Angus calf attributed to an occurrence of the delR217 variation of *MITF*. Animal Genetics. 54(4):549-552. doi:10.1111/age.13327.
13. Mousavi SF, Razmkabir M, Rostamzadeh J, Seyedabadi H-R, Naboulsi R, **Petersen JL**, Lindgren G. 2023. Genetic diversity and signatures of selection in four indigenous horse breeds of Iran. Heredity. doi:10.1038/s41437-023-00624-7.
14. Valberg SJ, Williams Z, Finno CJ, Schultz A, Velez-Irizarry D, Henry M, Gardner K, **Petersen JL**. 2023. Type 2 polysaccharide storage myopathy in Quarter Horses is a novel glycogen storage disease causing exertional rhabdomyolysis. Equine Veterinary Journal. 55(4): 618-631. doi:10.1111/evj.13876
15. Peng SC, Dahlgren AR, Donnelly CG, Hales EN, **Petersen JL**, Bellone RR, Kalbfleisch T, Finno CJ. 2023. Functional annotation of the animal genomes: an integrated annotation resource for the horse. PLoS Genetics. 19(3):e1010468. doi:10.1371/journal.pgen.1010468.
16. Valberg SJ, Henry ML, Herrick KL, Velez-Irizarry, Finno CJ, **Petersen JL**. 2023. Absence of myofibrillar myopathy in Quarter Horses with a histopathologic diagnosis of type 2 polysaccharide storage myopathy and lack of association with commercial genetic tests. Equine Veterinary Journal. 55(2):230-238. doi:10.1111/evj.13574.
17. Klouth E, Zablotski Y, **Petersen JL**, de Bruijn CM, Gröndahl G, Müller S, Goehring LS. 2022. Epidemiological Aspects of Equid Herpesvirus-associated Myeloencephalopathy (EHM) outbreaks. Viruses. 14(11):2576. doi:10.3390/v14112576.
18. Wang Z, Chivu AG, Choate LA, Rice EJ, Miller DC, Chu T, Chou S-P, Kingsley NB, **Petersen JL**, Finno CJ, Bellone RR, Antczak DF, Lis JT, Danko CG. 2022. Prediction of histone post-translational modification patterns based on nascent transcription data. Nature Genetics. 54:295-305. doi:10.1038/s41588-022-01026-x.

19. Sieck RL[‡], Treffer LK[‡], Fuller AM[‡], PointeViana M, Khalimonchuk O, Schmidt TB, Yates DT, **Petersen JL**. 2022. Beta-adrenergic agonists alter oxidative phosphorylation in primary myoblasts. Journal of Animal Science. 100(8):skac208. doi: 10.1093/jas/skac208
20. Posont RJ, Most MS, Cadaret CN, Marks-Nelson E, Beede KA, Limesand SW, Schmidt TB, **Petersen JL**, Yates DT. 2022. Primary myoblasts from intrauterine growth-restricted fetal sheep exhibit intrinsic dysfunction of proliferation and differentiation that coincides with enrichment of inflammatory cytokine signaling pathways. Journal of Animal Science. 100(8):skac145. doi: 10.1093/jas/skac145.
21. Wilson CS, **Petersen JL**, Blackburn HD, Lewis RM. 2022. Assessing population structure and genetic diversity in the US Suffolk sheep to define a framework for genomic selection. Journal of Heredity. 113:431-443. doi:10.1093/jhered/esac026.
22. Gurgul A, Szmatoła T, Ocłoń E, Jasielczuk I, Semik-Gurgul E, Finno CJ, **Petersen JL**, Bellone RR, Hales EN, Ząbek T, Arent Z, Kotula-Balak M, Bugno-Poniewierska M. 2022. Another lesson from unmapped reads – in depth analysis of RNA-Seq reads from various horse tissues. Journal of Applied Genetics. 63:571-581. doi:10.1007/213353-022-00705-z.
23. Reith RR[‡], Sieck RL[‡], Grijalva PC, Swanson R, Fuller AM[‡], Diaz DE, Schmidt TB, Yates DT, **Petersen JL**. 2022. Transcriptome analyses indicate that heat stress-induced inflammation in white adipose tissue and oxidative stress in skeletal muscle is partially moderated by zilpaterol supplementation in beef cattle. Journal of Animal Science. 100(3):skac109. doi.org/10.1093/jas/skac019.
24. Bailey E, **Petersen JL**, Kalbfleisch T. Invited Review: Genetics of Thoroughbred racehorse performance. 2022 Annual Review of Animal Biosciences. 10:131-150. doi.org/10.1146/annurev-animal-020420-035235.
25. Horvath S, Haghani A, Peng S, Hales EN, Zoller JA, Raj K, Larison B, Robeck TR, **Petersen JL**, Bellone RR, Finno CJ. 2022. DNA methylation aging and transcriptomic studies in horses. Nature Communications. 13:40. doi.org/10.1038/s41467-021-27754-y.
26. Cadaret CT, Posont RJ, Swanson RM, Beard JK, Gibbs RL, Barnes TL[‡], Marks-Nelson ES, **Petersen JL**, Yates DT. 2021. Intermittent maternofetal oxygenation during late gestation improved birthweight, neonatal growth, body symmetry, and muscle metabolism in intrauterine growth-restricted lambs. Journal of Animal Science. 100:skab358:.doi.org/10.1093/jas/skab358.
27. Peng S, **Petersen JL**, Bellone RR, Kalbfleisch T, Kingsley NB, Barber AM[‡], Cappelletti E, Giulotto E, Finno CJ. 2021. Decoding the Equine Genome: Lessons from ENCODE. Genes. 12(11): 1707. doi.org/10.3390.genes12111707.
28. Barnes TB[‡], Burrack RM[‡], Schmidt TB, **Petersen JL**, Yates DT. 2021. Sustained heat stress elevated corneal and body surface temperatures and altered circulating leukocytes and metabolic indicators in wether lambs supplemented with ractopamine or zilpaterol. Journal of Animal Science. 99:skab236. doi:10.1093/jas/skab236.
29. Peng S, Bellone RR, **Petersen JL**, Kalbfleisch TS, Finno CJ. Successful ATAC-seq from snap-frozen equine tissues. 2021. Frontiers in Genetics. 12:641788. doi:10.3389/fgene.2021.641788.
30. Herrera NJ, Bland NA, Ribeiro FA, Henriott ML, Hofferber EM, Meier J, **Petersen JL**, Iverson NM, Calkins CR. 2021. Oxidative stress and postmortem meat quality in crossbred lambs. Journal of Animal Science. 99:skab156. doi:10.1093/jas/skab156.
31. Posont RJ, Cadaret CN, Beard JK, Swanson RM, Gibbs RM, Marks-Nelson ES, **Petersen JL**, Yates DT. 2021. Maternofetal inflammation induced for two weeks in late gestation reduced birthweight and impaired neonatal growth and skeletal muscle glucose metabolism in lambs. Journal of Animal Science. 99:skab102. doi:10.1093/jas/skab102

32. Kingsley NB, Hamilton N, Lindgren G, Orlando L, Bailey E, Brooks SB, McCue M, Kalbfleisch TS, MacLeod JN, **Petersen JL**, Finno CJ, Bellone RR. 2021. Adopt-a-tissue initiative advances efforts to identify tissue-specific histone marks in the mare. Frontiers in Genetics. 12:390. doi:10.3389/fgene.2021.649959.
33. Donnelly CG, Bellone RR, Hales E, Nguyen A, Katzman S, Dujovne G, Knickelbein K, Avila F, Kablfleisch T, Guiulotto E, Kingsley NB, Tanaka J, Esedaile E, Peng S, Dahlgren A, Fuller A[ł], Mienaltowski M, Raudsepp T, Affolter V, **Petersen JL**, Finno CJ. 2021. Generation of a Biobank From Two Adult Thoroughbred Stallions for the Functional Annotation of Animal Genomes Initiative. Frontiers in Genetics. 12:301. doi:10.3389/fgene.2021.650305.
34. Yousefi Mashouf N, Mehrabani Yeganeh H, Nejati Javaremi A, Bailey E, **Petersen JL**. 2021. Genomic comparisons of Persian Kurdish, Persian Arabian, and American Thoroughbred horse populations. PLoS One. 16(2):e0247123. doi:10.1371/journal.pone.0247123.
35. Valberg SJ, Finno CJ, Henry M, Schott M, Velez-Irizarry D, Peng S, McKenzie E, **Petersen JL**. 2021. Commercial genetic testing for type 2 polysaccharide storage myopathy and myofibrillar myopathy does not correspond to a histopathologic diagnosis. Equine Veterinary Journal. 53: 690-700. doi.org/10.1111/evj.13345
36. Kalbfleisch T, **Petersen JL**, Tait Jr. RG, Qiu J, Basnayake V, Hackett P, Heaton MP. 2020. Using triallelic SNPs for determining parentage in North American yak (*Bos grunniens*) and estimating cattle (*B. taurus*) introgression. F1000. doi:10.12688/f1000research.25803.2
37. Sieck RL[ǂ], Fuller AM[ł], Bedwell PS, Ward JA, Sanders SK, Xiang S-H, Peng S, **Petersen JL**, Steffen DJ. 2020. Mandibulofacial dysostosis attributed to a recessive mutation of *CYP26C1* in Hereford cattle. Genes. 11:1246. doi:10.3390/genes11111246
38. Dahlgren A, Scott E, Mansour T, Hales E, Ross P, Kalbfleisch TS, MacLeod JN, **Petersen JL**, Bellone RR, Finno CJ. 2020. Comparison of Poly-A$^+$ Selection and rRNA Depletion in Detection of lncRNA in Two Equine Tissues Using RNA-seq. ncRNA. 6(3):32. doi.org/10.3390/ncrna6030032
39. **Petersen JL**, Coleman SJ. 2020. Invited Review: Next-generation sequencing in equine genomics. Veterinary Clinics: Equine Practice. 36:195-209. doi.org/10.1016/j.cveq.2020.03.002
40. Swanson RM, Tait Jr RG, Galles RM, Duffy EM[ǂ], Schmidt TB, **Petersen JL**, Yates DT. 2020. Heat stress-induced deficits in growth, metabolic efficiency, and cardiovascular function coincided with chronic systemic inflammation and hypercatecholaminemia in ractopamine-supplemented feedlot lambs. Journal of Animal Science. 98:skaa168. doi.org/10.1093/jas/skaa168.
41. Rice ES[ǂ], Koren S, Rhie A, Heaton MP, Kalbfleisch TS, Hardy T, Hackett PH, Bickhart DM, Rosen BD, Vander Ley B, Maurer NW, Green RE, Phillippy AM, **Petersen JL**, Smith TPL. 2020. Continuous chromosome-scale haplotypes assembled from a single interspecies F1 hybrid of yak and cattle. Gigascience. 9:giaa029. doi.org/10.1093/gigascience/giaa029.
42. Helms A, Thompson RE, Lawton S, **Petersen JL**, Watson A, Sula M-J, Steffen DJ, Whitlock BK. 2020. Uterine torsion dystocia complicated by Perosomus elumbis in an Angus calf associated with a consanguineous mating. Case Reports in Veterinary Medicine. 2020:6543037. doi.org/10.1155/2020/6543037.
43. Nilson SM[ǂ], Workman AM, Sjeklocha D, Brodersen B, Grotelueschen DM, **Petersen JL**. 2020. Upregulation of the type I interferon pathway in feedlot cattle persistently infected with bovine viral diarrhea virus. Virus Research. 278:197862. doi.org/10.1016/j.virusres.2020.197862.
44. **Petersen JL**, Kalbfleisch TS, Parris M[ǂ], Tietze SM[ł], Cruickshank J. 2020. *MC1R* and *KIT* haplotypes associate with coat color in North American yak (*Bos grunniens*). Journal of Heredity. 111:169-181. doi.org/10.1093/jhered/esz070.

45. Kingsley NB, Kern C, Creppe C, Hales EN, Zhou H, Kalbfleisch TS, MacLeod JN, **Petersen JL**, Finno CJ, Bellone RR. 2020. Functionally annotating regulatory elements in the equine genome using histone mark ChIP-Seq. Genes. 11:3. doi.org/10.3390/genes11010003.
46. Burrack RM[‡], Duffy EM[‡], Yates DT, Schmidt TB, **Petersen JL**. 2020. Whole blood transcriptome analysis in feedlot cattle after 35-days of supplementation with a β1-adrenergic agonist. Journal of Applied Genetics. 61:117-121. do.org/10.1007/s13353-019-00527-6.
47. Cadaret CN, Merrick EM, Barnes TL[‡], Beede KA, Posont RJ, **Petersen JL**, Yates DT. 2019. Sustained maternal inflammation during the early third trimester yields intrauterine growth restriction, impaired skeletal muscle glucose metabolism, and diminished β cell function in fetal sheep. Journal of Animal Science. 97:4822-4833. doi.org/10.1093/jas/skz321.
48. Raudsepp T, Finno CJ, Bellone RR, **Petersen JL**. 2019. Ten years of the horse reference genome: insights into equine biology, domestication and population dynamics in the post-genome era. Animal Genetics. 50:569-597. doi.org/10.1111/age.12857.
49. Barnes TB[‡], Cadaret C, Beede K, Schmidt TB, **Petersen JL***, Yates DT*. 2019. Hypertrophic muscle growth and metabolic efficiency were impaired by chronic heat stress, improved by zilpaterol supplementation, and not affected by ractopamine supplementation in feedlot lambs. Journal of Animal Science. 97:4101-4113. doi:10/1093/jas/skz271. *authors contributed equally
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51. **Petersen JL**, Lewis RM, Embertson RM, Valberg SJ, Holcombe SJ. 2019. Heritability of ≥ 360° large colon volvulus in Thoroughbred broodmares. Veterinary Record. 185:269. doi:10.1136/vr.105323.
52. Tozaki T, Kikuchi M, Kakoi H, Hirota K, Nagata S, Yamashita D, Ohnuma T, Takasu M, Kobayashi I, Hobo S, Manglai D, **Petersen JL**. 2019. Genetic diversity and relationships among native Japanese horse breeds, the Japanese Thoroughbred, and horses outside of Japan using genome-wide SNP data. Animal Genetics. 50:449-459. doi.org/10.1111/age.12819.
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56. Kalbfleisch TS, Rice ES, DePriest Jr MS, Walenz BP, Hestand MS, Vermeesch JR, O'Connell BL, Fiddes IT, Vershinina AO, **Petersen JL**, Finno JC, Bellone RR, McCue ME, Brooks SA, Bailey E, Orlando L, Green RE, Miller DC, Antczak DF, MacLeod JN. 2018. Improved reference genome for the domestic horse increases assembly contiguity and composition. Communications Biology 1:197. doi: 10.1038/s42003-018-0199-z.
57. Burns EN, Bordbari M, Mienaltowski MJ, Affolter VK, Barro MV, Gianino F, Gianino G, Giulotto E, Kalbfleisch TS, Katzman SA, Lassaline M, Leeb T, Mack M, Müller EJ, MacLeod JN, Ming-Whitfield B, Alanis CR, Raudsepp T, Scott E, Vig S, Zhou H, **Petersen JL**, Bellone RR, Finno CJ. 2018. Generation of an equine functional annotation of animal genomes biobank. Animal Genetics. 49(6):564-570. doi: 10.1111/age.12717.

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67. McCoy AM, Schaefer R, **Petersen JL**, Morrell PL, Slamka MA, Mickelson JR, Valberg SJ, McCue ME. 2014. Evidence of positive selection for a Glycogen Synthase (*GYS1*) mutation in domestic horse populations. Journal of Heredity. 105:163-172.
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diversity, and phylogeny studies. PLoS Genetics. 8(1): e1002451. doi:10.1371/journal.pgen.1002451.

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76. **Petersen JL**, Ibarra AM, May BP. 2009. Thirty-seven additional microsatellite loci in the Pacific lion-paw scallop, *Nodipecten subnodosus*, and cross-amplification in other Pectinids. Con Gen Res. 1:101-105.
77. Fisch KM, **Petersen JL,** Baerwald MR, Pedroia JK, May B. 2009. Characterization of 24 microsatellite loci in delta smelt, *Hypomesus transpacificus*, and their cross-species amplification in two other smelt species of the Osmeridae family. Molecular Ecology Resources. 9:405-408.
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In Review

- Heath HH, Peng SC, Szmatola T, Bellone RR, Kalbfleisch T, **Petersen JL**, Finno CJ. A comprehensive allele specific expression resource for the equine transcriptome.
- Bailey E, Finno CJ, Cullen J, Kalbfleisch T, **Petersen JL**[1]. Analyses of whole-genome sequences from 185 North American Thoroughbred horses, spanning 2-6 generations. [1]Corresponding author
- Finno CJ, Rogers S-L, Donnelly C, Affolter VK, Woolard K, Miller A, Bellone RR, **Petersen JL**. Spatial transcriptomics defines the cell-specific RNA landscape of equine dorsal root ganglia.
- Nilson SN[‡], Burke JM, Becker GM, Murdoch BM, **Petersen JL**, Lewis RM. Genomic diversity of US Katahdin hair sheep.

Textbook

Evans JW, Hoffman RM, **Petersen JL**, VanVleck LD. 2021. The Horse, 3rd ed. Waveland Press, Inc. ISBN 1-4786-3947-4. 620 pg.

Book Chapter

Petersen JL. Horse Breeding. 2023. *In* Encyclopedia of Sustainability Science and Technology, Meyers RA (ed). p279-296. Springer, New York, NY. doi.org/10.1007/978-1-4939-2493-6_1120-1.

Referred Proceedings Papers ([ǂ]-mentored student/post-doc, [λ]-grad committee member, [ł]-lab manager)

1. Barber AM[ǂ], Helms A, Thompson R, Whitlock BK, Steffen DJ, **Petersen JL**. 2021. Whole-genome sequencing to investigate a possible genetic basis of perosomus elumbis in a calf resulting from a consanguineous mating. Translational Animal Science. 5(S1):S1-5. doi.org/10/1093/tas/txab171.
2. Reith RR[ǂ], Sieck RL[ǂ], Grijalva PC[λ], Swanson RM[λ], Diaz DE, Schmidt TB, Yates DT, **Petersen JL**. Supplementing zilpaterol hydrochloride to heat-stressed beef cattle for 21 d alters the adipose transcriptome and is predicted to alter stress response pathways. Translational Animal Science. 5(S1):S56-60. doi.org/10/1093/tas/txab158.
3. Sieck RL[ǂ], Reith RR[ǂ], Fuller AM[ł], Grijalva PC[λ], Treffer LK[ǂ], Swanson RM[λ], Ponte Viana M, Khalimonchuk O, Diaz DE, Schmidt TB, Yates DT, **Petersen JL**. 2021. Beta-adrenergic agonists and heat stress impact skeletal muscle gene expression and mitochondrial function in beef cattle. Translational Animal Science. 5(S1):S164-169. doi.org/10/1093/tas/txab157.
4. Beer HN, Lacey TA[λ], Gibbs RL, Most MS[λ], Hicks ZM, Grijalva PC[λ], **Petersen JL**, Yates DT. 2021. Placental insufficiency improves when intrauterine growth-restricted fetal sheep are administered daily ω-3 polyunsaturated fatty acid infusions. Translational Animal Science. 5(S1):S6-10. doi.org/10/1093/tas/txab166.
5. Lacey TA[λ], Gibbs RL, Most MS[λ], Beer HN, Hicks ZM, Grijalva PC[λ], **Petersen JL**, Yates DT. 2021. Decreased fetal biometrics and impaired β-cell function in IUGR fetal sheep are improved by daily ω-3 PUFA infusion. Translational Animal Science. 5(S1):S41-45. doi.org/10/1093/tas/txab168.
6. Grijalva PC[λ], Most MS, Gibbs RL, Hicks ZM, Lacey TA[λ], Beer HN, Schmidt TB, **Petersen JL**, Yates DT. 2021. Fish oil and dexamethasone administration partially mitigates heat stress-induced changes in circulating leukocytes and metabolic indicators in feedlot wethers. Translational Animal Science. 5(S1):S30-33. doi.org/10/1093/tas/txab167.
7. Gibbs RL, Swanson RM[λ], Beard JK, Schmidt TB, **Petersen JL**, Yates DT. 2021. Deficits in skeletal muscle glucose metabolism and whole-body oxidative metabolism in the intrauterine growth-restricted juvenile lamb are improved by daily treatment with clenbuterol. Translational Animal Science. 5(S1):S20-24. doi.org/10.1093/tas/txab187.
8. Most MS, Grijalva PC, Beer HN, Gibbs RL, Hicks ZM, Lacey TA, Schmidt TB, **Petersen JL**, Yates DT. 2021. Dexamethasone and fish oil improve average daily gain but not muscle mass or protein content in feedlot wethers after chronic heat stress. Translational Animal Science. 5(S1):S46-50. doi.org/10.1093/tas/txab163.
9. Reith RR, Sieck RL, Grijalva PC, Diaz DE, Schmidt TB, Yates DT, **Petersen JL**. 2021. Abstract: Zilpaterol hydrochloride and heat stress each alter the cattle adipose transcriptome and are predicted to alter molecular pathways after 21 days. Journal of Animal Science. 99(S1)17-18. doi.org/10.1093/jas/skab054.031.
10. Gibbs R, Swanson RM[λ], Beard J, Schmidt TB, **Petersen JL**, Yates DT. 2020. Deficits in growth, muscle mass, and body composition following intrauterine growth restriction persisted in lambs at 60 d of age but were improved by daily clenbuterol supplementation. Translational Animal Science. 4(S1):S53-57. doi.org/10.1093/tas/txaa097
11. Reith RR[ǂ], Duffy EM[ǂ], Swanson RM[λ], Fuller AM[ł], Schmidt TB, Yates DT, **Petersen JL**. 2020. Heat stress and β-adrenergic agonists alter the adipose transcriptome and fatty acid mobilization in ruminant livestock. Translational Animal Science. 4(S1):S141-144. doi.org/10.1093/tas/txaa122

12. Sieck RL[ǂ], Treffer L[ǂ], Ponte Viana M, Khalimonchuk O, Schmidt TS, Yates DT, **Petersen JL**. 2020. Beta-adrenergic agonists increase maximal output of oxidative phosphorylation in bovine satellite cells. Translational Animal Science. 4(S1):S94-97. doi.org/10.1093/tas/txaa112
13. Duffy EM[ǂ], Hamilton HC, Schmidt TB, Yates DT, **Petersen JL**. 2019. Effect of environmental temperature and β adrenergic agonist supplementation on rumen volatile fatty acid production. Translational Animal Science. 3(S1):1744-1748. doi.org/10.1093/tas/txz079
14. Cadaret CN, Posont RJ[λ], Swanson RM[λ], Beard JK, Barnes TL[ǂ], Beede KA, **Petersen JL**, Yates DT. 2019. Intermittent maternofetal O_2 supplementation during late gestation rescues placental insufficiency-induced intrauterine growth restriction and metabolic pathologies in the neonatal lamb. Translational Animal Science. 3(S1):1696-1700. doi.org/10.1093/tas/txz060
15. Gibbs RL, Cadaret CN, Swanson RM[λ], Beede KA, Posont RJ[λ], Schmidt TB, **Petersen JL**, Yates DT. 2019. Body composition estimated by bioelectrical impedance analyses (BIA) is diminished by prenatal stress in neonatal lambs and by heat stress in feedlot wethers. Translational Animal Science. 3(S1):1691-1695. doi.org/10.1093/tas/txz059
16. Posont RJ[λ], Cadaret CN, Beede KA, Beard JK, Swanson RM[λ], Gibbs RM, **Petersen JL**, Yates DT. 2019. Maternal inflammation at 0.7 gestation in ewes leads to intrauterine growth restriction and impaired glucose metabolism in offspring at 30d of age. Translational Animal Science. 3(S1):1673-1677. doi.org/10.1093/tas/txz055
17. Swanson RM[λ], Beede KA, Freeman MD, Eggleston ML, Schmidt TB, **Petersen JL**, Yates DT. 2019. Ractopamine HCl improved cardiac hypertrophy but not poor growth, metabolic inefficiency, or greater white blood cells associated with heat stress in concentrate-fed lambs. Translational Animal Science. 3(S1):1786-1791. doi.org/10.1093/tas/txz098
18. Kubik RM[ǂ], Tietze SM[ǂ], Schmidt TB, Yates DT, **Petersen JL**. 2018. Investigation of the skeletal muscle transcriptome in lambs fed β adrenergic agonists and subjected to heat stress for 21 d. Translational Animal Science. 2:S53-S56. doi:10.1093/1093/tas/txy053.
19. Duffy EM[ǂ], Tietze SM[ǂ], Knoell AL, Aluthge ND, Fernando SC, Schmidt TS, Yates DT, **Petersen JL**. 2018. Rumen bacterial composition in lambs is affected by β adrenergic agonist supplementation and heat stress at the phylum level. Translational Animal Science. 2:S145-S148. doi:10.1093/tas/txy052.
20. Cadaret CN, Merrick EM, Barnes TL[ǂ], Beede KA, Posont RJ[λ], **Petersen JL**, Yates DT. 2018. Sustained maternal inflammation during the early third trimester yields fetal adaptations that impair subsequent skeletal muscle growth and glucose metabolism in sheep. Oral Presentation. Translational Animal Science. 2:S14-S18. doi: 10.1093/tas/txy047 *Awarded best graduate student presentation
21. Barnes TL[ǂ], Kubik RM[ǂ], Cadaret CN, Beede KA, Merrick EM, Chung S, Schmidt TS, **Petersen JL**, Yates DT. 2017. Identifying hyperthermia in heat-stressed lambs and its effects on β agonist-stimulated glucose oxidation in muscle. Oral presentation. Proceedings Western Section American Society of Animal Science. 63:25-29. doi: 10.2527/asasws.2017.0038 *second place in the graduate student competition (of 31 entries).

Other Specialized Publications/Materials

Article: Reith RR, **Petersen JL**. UNL contributes to the identification of new genetic defects in cattle. 2024. UNL BeefWatch. https://beef.unl.edu/beefwatch/2024/unl-contributes-identification-new-genetic-defects-cattle

Interviewed in: Western Ag Reporter, The Science Behind Genetic Defects. 2024. https://www.westernagreporter.com/articles/the-science-behind-genetic-defects/

Webinar: Developing Genetic Tests for Unwanted Traits. 2023. Scientific Knowledge Advancement for Yaks (SKAY) Webinar Series. https://www.skayresearchgroup.com/

Webinar: Using Genomics to Connect Novel Defects to Their Origin. 2023. National Beef Cattle Evaluation Consortium, Brown Bagger Series. https://www.nbcec.org/index.html

Article: Bailey E, Kalbfleisch T, **Petersen JL.** 2022. Genome Sequencing. Equine Disease Quarterly. Vol 31, no 1.

Article: Grijalva PC, Diaz DE, Garcia SR, Schmidt TB, **Petersen JL**, Yates DT. Zilpaterol supplementation improved indicators of well-being but not growth in heat-stressed Red Angus steers. 2021. UNL Beef Cattle Report.

Article: Gibbs RL, Swanson RM, Beard JK, Schmidt TB, **Petersen JL**, Yates DT. Growth performance in livestock with stress-induced low birthweight is recovered by clenbuterol administration. 2021. UNL Beef Cattle Report.

Interviewed in Equine Innovators: Horse Breeds and Genetic Variation. Podcast by *The Horse*. June 2021. https://thehorse.com/1101127/equine-innovators-horse-breeds-and-genetic-variation/

Appearance (scientific expert) in: Clydesdale, Saving the Greatest Horse. 2020. BBC Scotland, Canada/UK Co-Produced Documentary. Infield Fly Productions. https://www.savingthegreatesthorse.com/

Interviewed in: Genetic influences behind today's Quarter Horses, by Sally Scholle. Tri-State Livestock News. December 2020.

Webinar: Horse Color Genetics. 2020. Nebraska Equine Webinar Series. Available: https://www.youtube.com/watch?v=lS1nuP3x3lE

Article: Bailey E, Kalbflesich TS, **Petersen JL.** 2020. Inbreeding and Genomics. Equine Disease Quarterly. Vol 29, no 1.

Article: Genomics helps scientist and producers understand and manage emerging disease. 2019. UNL BeefWatch.

White Paper: Current Genetics and Genomics in Yak. 2019. International Yak Association.

Article: Assistance sought in identifying novel, abnormal traits in calves. 2018. UNL BeefWatch.

Webinar: Genetics Diseases. Nebraska Equine Webinar Series. 2018. Available: https://www.youtube.com/watch?v=crEwjNAX-MI&feature=youtu.be

Equine Genetics lessons for an on-line Introduction to Horse Management course with Michigan State University through the Michigan Alliance for Animal Agriculture grant (MAAA). 2016.

Current Mentored Students

Post-doctoral Scholars

Sara Nilson (Aug 2022 – current)
Co-advised with Dr. Ron Lewis

Nandhini Palaniappan Balasubramaniam (March 2024 – current)
Collaboration with Drs. Bailey and Kalbfleisch, University of Kentucky

Graduate Students (PhD) – Primary Advisor

Rachel Reith (Aug 2021 – current)
MS from UNL. Animal Breeding and Genetics
Awards: UNL Arthaud Graduate Student Oral Presentation (PhD) – 1st place (2023); Larrick Student Travel Award (2024)

Mackenzie Batt (May 2024 – current)
Project: Elucidating the role of mtDNA genotype on cellular efficiency in beef cattle.
Award: Larrick Student Travel Award (2024)

Graduate Student (MS) – Primary Advisor
Lauren Seier (June 2023 – current)
Project: Understanding the role of mtDNA variation in animal performance and a study of heritable hydrops in Simmental cattle.
Award: 2024 Margrave Agricultural Fellowship ($5,000)

Undergraduate Students

Caroline Miller (spring 2023 – current), animal science major at UNL
Project: study of chronic progressive lymphedema in draft horses

Abigail Webb (fall 2023 – current), biology major at UNL
Project: assays of mitochondrial function in beef cattle

Greg Treffer (fall 2023 – current), animal science major at UNL
Project: study of chronic progressive lymphedema in draft horses

Addison Hillman (fall 2022 – current), animal science major at UNL
Project: identifying de novo variation in cattle
UCARE project: Investigating the genetics of a hairless Angus calf

Ashley Llewellyn (fall 2022 – current),
Project: identifying de novo variation in cattle
UCARE Project: understanding the genetics of "golden" coat color in yak

Graduate committee member (MS)
Mackenzie Stohlmann (fall 2023 – current)
Reproductive Physiology
Primary advisor: Andrea Cupp
Project: Identifying genetic variation in heifers with delayed puberty

Graduate committee member (PhD)

Hilal Yazar Gunez (fall 2022 – current)
Animal Breeding and Genetics
Primary advisor: Ron Lewis
Project: resilience in sheep enrolled in NSIP

Alison Ermisch (fall 2019 – current)
Reproductive Physiology
Primary advisor: Jennifer Wood

Previous Mentored Students & Post-Doc

Post-doctoral Researcher

Edward Rice (fall 2018 – June 2019)
PhD from the University of California-Santa Cruz
Project: Bioinformatics and Genome Annotation
Subsequent position: Senior Scientist, University of Missouri

Graduate Students

Mackenzie Batt (June 2022 – Aug 2024)
Project: Investigation of mtDNA diversity and enzyme activities; Understanding the genetic and functional basis of a skeletomuscular condition in crossbred calves
Subsequent Position: PhD student

Tiffany Hegdahl (fall 2020 – Aug 2022)
Primary advisor: James Wilson (UNO)
Research advisor: Jessica Petersen
Subsequent position: lab technician at UNO

Alexa Barber (Summer 2020 – May 2022)
BS from UNL. Major: animal science
Project: functional annotation of the equine genome
Awards: International Plant and Animal Genome NRSP8 Travel Award (2022)
Subsequent position: lab technician at UNMC

Rachel Reith (MS: Summer 2019 – August 2021)
BS from Kansas State University. Major: animal science
Project: Identification of changes in adipose in livestock housed in heat stress and fed β-adrenergic agonist supplements; identification of de novo mutations associated with phenotypic variation in livestock.

Renae Sieck (Summer 2019 – May 2021)
BS from UNL. Major: animal science
Project: Quantifying mitochondrial function of animals supplemented with β-adrenergic agonists; identification of de novo mutations associated with phenotypic variation in livestock.
Awards: UNL Dean's Graduate Student Fellowship (2020), UNL ARD Widaman Distinguished Graduate Fellowship (2020), Nebraska Cattlemen's Foundation Beef State Scholarship (2020), Winner – Midwest Section of the American Society of Animal Sciences Graduate Competition (MS, 2021), Western Section of the American Society of Animal Sciences Young Scholar Award (2021).

Erin Duffy (Fall 2017 – Aug 2019)
BS from University of Illinois – Champaign. Major: animal science
Project: Understanding host response to heat stress and β-adrenergic agonist supplementation: focus on the microbiome and GI tract.
Subsequent Position: Research technologist, Medical College of Wisconsin

Rachel Burrack (Kubik) (fall 2016 – Aug 2018)
BS from Nebraska Wesleyan University. Major: biology
Project: Impact of heat stress and supplementation with β-adrenergic agonists on gene expression
Current: Laboratory Research Technologist, UNL Virology

Taylor Barnes (co-advisor with Dustin Yates; summer 2016 – Aug 2018)
BS from University of Nebraska – Lincoln. Major: biology
Project: Impact of maternal stress on growth and development
Current: PhD student at Texas A&M University

Sara Nilson (Fall 2014 – Aug 2016)
BS from Oklahoma State University. Major: pre-veterinary
Project: Identifying genetic factors for susceptibility/resistance to persistent infection by bovine viral diarrhea virus
Current: PhD student at the University of Missouri

Post-bachelor's Student

Kelsey Roberts (March 2022 – July 2023), BS in Animal Science (UNL) May 2022
Projects: Investigating variation in candidate loci for behavior in dogs (with Dr. Jeff Stevens, Psychology Department); genome-wide association study of Shivers in Clydesdale horses
Subsequent position: PhD student at UC Davis

Graduate committee member (MS)

Micah Most (fall 2020 – May 2022)
Primary advisor: Dustin Yates
Project: Mitigating inflammation in heat stressed wether lambs using omega-3 PUFA supplementation
Subsequent position: University of Wyoming extension agent

Taylor Lacey (fall 2020 – Dec 2021)
Primary advisor: Dustin Yates
Project: The effects of omega-3 PUFA infusion during late gestation on developmental pathologies in the intrauterine growth restricted fetus

Rebecca Swanson (fall 2018 – May 2020)
Primary advisor: Dustin Yates
Subsequent position: PhD student, Mississippi State University

Robert Posont (fall 2017 – May 2019)
Project: The Role of Inflammatory Pathways in Development, Growth, and Metabolism of Skeletal Muscle in IUGR Offspring; Blood Gene Expression of Inflammatory Factors as Novel Biomarkers for Assessing Stress and Wellbeing in Exotic Species
Primary advisor: Dustin Yates
Subsequent position: PhD student at George Mason University and Research Fellow of the Smithsonian Conservation Biology Institute

Lauren Kett (fall 2016 – Aug 2018)
Primary advisor: Ty Schmidt
Project: Impact of heat stress and β-adrenergic agonist supplementation on carcass composition and performance

Emily Hillburger (fall 2015 – August 2017)
Primary advisor: Ron Lewis
Project: Use of wax markers in plants to investigate pasture foraging behavior
Current: DVM student at Penn State University

Elena Merrick (spring 2016 – August 2017)
Primary advisor: Dustin Yates
Project: The impact of maternal stress on fetal programming
Subsequent position: Swine manager at the Maschhoffs
Current position: Extension Educator – Harlan County Nebraska

Graduate committee member (PhD)

Pablo Grijalva (spring 2021 – Dec 2023)
Stress Physiology
Primary advisor: Dustin Yates
Project: Tame the flame: identifying targetable physiological mechanisms that are altered by heat-induced systemic inflammation in sheep

Zena Hicks Herrera (spring 2021 – Aug 2023)

Stress Physiology
Primary advisor: Dustin Yates
Project: Mid-gestation maternofetal inflammation impacts growth, skeletal muscle glucose metabolism, and inflammatory tone in the ovine fetus during late gestation.

Rudolfo Villegas (fall 2016 – Aug 2023)
Biological Sciences: Ecology, Evolution and Behavior
Primary advisor: Colin Meiklejohn
Project: Unveiling the complexity of hybrid male sterility: from identification to cytological analyses and genetic rescue

Anteneh Mersha (spring 2022 – exited 2023 prior to completing program)
Reproductive Physiology
Primary advisor: Andrea Cupp
Project: understanding androgen-based subfertility in cattle

Katie Bidne (fall 2017 – May 2021)
Reproductive Physiology
Primary advisor: Jennifer Wood

Undergraduate students

Belle Turk (summer 2023), student at UNK (INBRE Scholar)
Project: examining a candidate gene for chronic progressive lymphedema in draft horses

Emily Schutz (spring 2020 – May 2023), animal science major at UNL
Project: genetic diversity of the US Rambouillet; gene expression analysis of cardiac muscle in lambs born to ewes subject to maternal stress
Subsequent Position: DVM/PhD student at the University of Illinois

Sophie Korytowski (spring 2020, experiential learning), animal science major at UNL
Projects: association of genotype with fiber characteristics in yak; analysis of candidate genes for deafness in yak.

Mackenzie Batt (spring 2020 – June 2022), biology major at Nebraska Wesleyan University
Project: Understanding the genetic basis of a skeletomuscular condition in crossbred calves; RNA-seq analysis of tissue treated with lidocaine
Subsequent Position: MS student at UNL

Ibrahim Hussain (fall 2019 – fall 2021), biology major at UNO (with Dr. James Wilson)
Project: Characterizing introgression of coat color loci between fox and grey squirrels

Leah Treffer (summers, 2018 – May 2021), biology major at Nebraska Wesleyan University
Projects: Understanding the mtDNA diversity and function in North American yak; characterizing the response of the bovine mitochondria to beta adrenergic agonists
Presentation: INBRE Scholar Program (2019); Western Section of the American Society of Animal Sciences (2020)
Award: 2nd place – Undergraduate Poster Competition, Western Section of the American Society of Animal Sciences (2020); 1st place – Undergraduate Poster Competition, Western Section of the American Society of Animal Sciences (2021).
Subsequent Position: Researcher with the Land Institute prior to becoming a PhD student at Cornell

Joshua Franzen (fall 2019 – May 2021), biology major at UNO (with Dr. James Wilson)
Project: Identifying regions of genome introgression in grey squirrels

Alexa Barber (Kapla) (summer 2019 – May 2020), animal science major at UNL
Project: Understanding the inheritance of white markings in draft horses
Subsequent Position: MS student at UNL then lab technician at UNMC

Charlet Reebenaker (fall 2018 – Dec 2020), animal science major at UNL
Project: Investigation of changes in fatty acid mobilization due to heat stress and beta agonist supplementation

Devon Lockman (spring 2017 – fall 2018), animal science major at UNL
Projects: Investigation of hydrocephalus and dwarfism in beef cattle
Subsequent Position: DVM student in the UNL/Iowa State program

Emma Winters (fall 2017 – summer 2018), animal science major at UNL. Honors option for ASCI 330.
Project: Examination of variation in *LCN1* across "hypoallergenic" dog breeds
Subsequent Position: English tutor for AmeriCorps

Isabel Grazian (spring 2017 – spring 2019), animal science major at UNL (pre-veterinary option)
Projects: Quantifying expression of beta adrenergic agonist receptors in skeletal muscle of market lambs fed a beta-adrenergic agonist supplement; characterization of diversity in the Clydesdale horse
Subsequent Position: DVM student at Louisiana State University

Cassandra Brassard (summer 2016 – Dec 2016), animal science major at UNL
Project: Sequencing a candidate gene for hypotrichosis with anadontia in Black Angus cattle
Subsequent Position: DVM student at the Western College of Veterinary Medicine

Morgan Parris (spring 2016 – fall 2018), animal science major at UNL
Projects: Sequencing candidate genes for phenotypes of interest in yak and horse; investigation of the genetic basis of a novel dwarfism in Black Angus cattle
Presentation: UNL Undergraduate Research Fair (April 2017) *Junior class winner of the poster competition
Subsequent Position: Graduated and employed full-time at Neogen Geneseek

Caleb Kemnitz (spring 2016 – 2017), animal science major at UNL (pre-veterinary option)
Project: RNA isolation to identify altered expression in yak skin; allele-specific expression of an inherited myopathy in horses
Subsequent Position: DVM student in the UNL/Iowa State program

Maci Lienenmann (fall 2014 – spring 2016), animal science major at UNL
UCARE competitive fellowship award (2015-16*; Honors Program)
Project: investigating genetic variants under cross-breed selection in beef cattle
Presentation: UNL Undergraduate Research Fair (April 2015)
Subsequent Position: MS Student at the University of California – Davis
*removed from UCARE program, April 2016

Michele Gibbens (summer – fall 2014), senior animal science major at UNL
Project: Sequencing of a candidate gene for yak coat color
Presentation: University of Nebraska Animal Breeding and Genetics group
Subsequent Position: Employed in companion animal care/training

Ryan Hagenson (summer 2014), senior biology major at Nebraska Wesleyan University
Project: Detecting signatures of selection in beef cattle using genome-wide SNP data
Presentation: University of Nebraska Animal Breeding and Genetics group
Subsequent Position: MS Student in Bioinformatics at the University of Nebraska – Omaha
Current Position: Bioinformatics Specialist, Henry Doorly Zoo, Omaha, NE

Leah Freilich (2012-2013), senior biology major at Macalester College
Project: Candidate gene sequencing of potential predictors of racing performance in equines.
Presentations: University of Minnesota life science summer undergraduate research program, and to

Maccalester College biology students
Subsequent Position: DVM student at Kansas State University

Kristen Cleary (2011-2013), Juris Doctorate and University of Minnesota veterinary student
Projects: Identification of population structure within the American Quarter Horse; candidate gene sequencing for loci involved in gaitedness in Standardbreds
Presentation: October 2011 poster presentation, "Candidate genes underlying locomotion in the Standardbred and Thoroughbred." University of Minnesota Points of Pride Research Day
Subsequent Position: Practicing clinical veterinary medicine

Megan Slamka (2010), University of Minnesota veterinary student
Project: Evidence of selection for the *GYS1* mutation in the horse
Presentation: October 2010 poster presentation, "Evidence of positive selection for the *GYS1* mutation in equine polysaccharide storage myopathy." University of Minnesota Points of Pride Research Day
Subsequent Position: Practicing clinical veterinary medicine

Grants/Awards Received (role noted)

2024 American Simmental Association: Continued genomic investigation of hydrops in Simmental cattle: embryo transfer (**PD**) $32,000

USDA Agriculture and Food Research Initiative – Blueprint Grant, Animal Breeding, Genetics, and Genomics (A1201): Functionally Annotated Equine Pan Genome with Infrastructure for an Accessible, Integrative, Community Genomics Resource (**co-PD**, PD – Kalbfleisch)
$800,000, UNL Sub: $46,051

USDA Agriculture and Food Research Initiative – Welfare of Agricultural Animals (A1251): Inflammatory mediation of poor welfare in heat-stressed feedlot animals (**co-PD**, PD – Yates) $650,000

2023 IANR ARD Hatch Multistate Enhanced Research Award: Equine genomics for the management of breed diversity, health, and performance. (**PD**) $200,000

American Simmental Association: Genomic investigation of hydrops in Simmental cattle (**PD**) $13,600

USDA Agriculture and Food Research Initiative – Animal Nutrition, Growth and Lactation (A1231): Improving the efficiency of beef production by understanding the untapped potential of mitochondrial variation (**PD**) $650,000

2022 UNL Research Council Interdisciplinary Research Grant: Integrating psychology and genetics to identify markers predicting training outcomes in pet dogs (**PD**, co-PD Stevens) $22,000

IANR ARD Undergraduate Student Research Program (written and awarded to undergraduate student Emily Schulz, **Mentor**) $2,500

2021 UNL ARD Hatch Multistate Enhanced Research Award: Elucidating epigenomic, physiological and behavioral targets to improve well-being and performance outcomes of acute heat stress in beef cattle (**PD** (2021-2023; co-PD 2023-2026) $250,000

University of Nebraska Collaboration Initiative Team Seed Grant: Pathway mediators of Ovarian microenvironment and their contributions to female fertility (**co-PD**, PD – Cupp) $150,000

2020 American Quarter Horse Foundation: Diagnosis of type 2 polysaccharide storage myopathy in Quarter Horses (**co-PD**, PD – Valberg) $47,749

USDA Agriculture and Food Research Initiative – Animal Nutrition, Growth and Lactation (A1231): Abatement of inflammation as a means to combat heat stress in finishing livestock (**co-PD**, PD - Yates) $499,999

National Sheep Industry Improvement Center: A foundation for sheep genomics. (**co-PD**, PD – Lewis) $25,946

2019 USDA Agriculture and Food Research Initiative – Functional Annotation of Agricultural Animal Genomes (A1201): Annotation of Functional Regulatory Regions in the Horse (**PD**) $500,000

USDA Agriculture and Food Research Initiative – Animal Nutrition, Growth, and Lactation (A1231): Recovering growth in IUGR animals (**Co-PD**, PD – Yates) $500,000

American Hereford Association. Molecular basis for two possible genetic conditions - hydrocephalus and chondrodystropy in Hereford cattle (**PD**, co-PD Steffen) $13,450

2019 IANR ARD Undergraduate Student Research Program: Investigating the Genetic Basis of White Markings in Horses. (written and awarded by undergraduate student Alexa Barber (Kapla), **Mentor**)) $2,500

2018 Grayson-Jockey Club Research Foundation Continuum Grant: Unraveling complex traits by defining genome function. (**Co-PI** w/Finno and Bellone) $199,990

UNL ARD Strategic/Miscellaneous Funding. Functional analysis of 'omics data – Ingenuity Pathway Analysis (**PI**) $8,000

2017 IANR ARD Enhanced Research Collaboration with USDA MARC – 3rd year extension: Genetic susceptibility of cattle to persistent infection by bovine viral diarrhea virus (**PI**) $19,200

2016 Food for Health Collaboration Initiative: The interaction of prenatal programming and gene variants on altered metabolic, immune and reproductive function resulting in reduced SHBG (**Co-I**, PI – Cupp) $220,000

ARD Hatch Multistate Enhanced Research: A physiological, molecular, and whole-animal evaluation of the impact of stress on animal well-being and performance (**PI**) $500,000

ARD Hatch Multistate Enhanced Research: Developmental origins of impaired muscle growth in food animals (**Co-I**, PI – Yates) $400,000

ARD Hatch Multistate Enhanced Research: Effect of excess androgen on metabolic, immune and reproductive function in beef cows (**Co-I**, PI – Cupp) $450,000

UNL – Layman Award: Defining genetic pathways altered by beta-agonist supplementation in livestock production $10,000

UNL – ARD Strategic Funding (Miscellaneous): Elucidating the impact of beta-adrenergic agonist supplementation on the muscle transcriptome and physiology of ruminant livestock $27,970

Grayson-Jockey Club Research Foundation: Unraveling complex traits by defining genome function. (**Co-PI** w/Finno and Bellone) $199,177

Food for Health Collaborative Initiative Planning Grant: Adaptive programming of childhood diseases and disorders (**Co-I**, PI – Wood) $18,578

Michigan State University Endowed Research Funds Project Grant: Genetic risk factors for large colon volvulus in Thoroughbred brood mares (**Co-I**, PI – Holcombe) $9,083

2015 NPOD Seed Grant. The role of chronic inflammation in fetal origins of obesity and metabolic dysfunction. (**Co-I**; PI-Yates) $100,000

UNL ARD Strategic/Miscellaneous Funding. Modernization of PCR Technology and capabilities for the Department of Animal Science (**Co-PI**, PI-Yates) $55,477

University of Minnesota Equine Center Grant. Determining the genetic basis of Shivers. (**Co-I**, PI - Valberg) $23,619

2014 IANR Research Travel Award $500

IANR ARD Enhanced Research Collaboration with USDA MARC $76,695
Genetic susceptibility of cattle to persistent infection by bovine viral diarrhea virus

Teaching

University of Nebraska – Lincoln

Animal Science 330 – Animal Breeding and Genetics	fall 2021 - current
Animal Science 330 (with Dr. Ron Lewis) – Animal Breeding	fall 2016 - 2020
Animal Science 399 – Companion Animal Genetics	spring 2016
Animal Science/Agronomy 931 (w/Dr. Jinliang Yang) – Population Genetics	fall 2018 - 2020
Animal Science/Agronomy 931 (w/Dr. Matt Spangler) – Population Genetics	fall 2015-2017
Animal Science/Agronomy 931 (w/Dr. Aaron Lorenz) – Population Genetics	fall 2014

Oral Presentations (Guest Lectures/Seminars/Conference)

May 2024. Dorothy Russell Havemeyer 14th International Horse Genome Workshop. A survey of genetic variation in today's US Thoroughbred with application to predicting the diversity of tomorrow. Caen, Normandy France.

January 2024. International Plant and Animal Genome 31. Contributions of equine FAANG to the research community. San Diego, CA.

October 2023. University of California-Davis Horse Day. Thoroughbreds – History Written in DNA.

July 2023. University of Kentucky Gluck Equine Research Center Seminar Series. Genomic diversity measures in Thoroughbreds. (with Ernie Bailey and Ted Kalbfleisch)

April 2023. Invited – University of Kentucky Gluck Equine Research Center Seminar Series. Using genetic information to understand and inform the management of horse breeds.

March 2023. American Shire Association Annual Meeting. Equine Genetics: A focus on the Shire.

March 2023. Invited – Midwest Section of the American Society of Animal Sciences. Functional annotation of the equine genome: from sample collection to FAIR data.

January 2023. Invited - International Plant and Animal Genome Conference. The equine FAANG project: A portal to connect genome to phenotype. San Diego, CA.

September 2022. UNL Animal Breeding and Genetics Seminar. Genetic diversity and its implications in the management of domestic populations: the case of the Clydesdale horse.

June 2022. Invited – Presentation to Metropolitan Community College Upward Bound Math and Science STEM Scholars (Omaha Northwest 9-12 graders) on my career as an Animal Geneticist.

April 2022. Invited – Presentation to the Iowa State University Animal Breeding and Genetics Seminar Series. Genetic diversity and its implications in the management of domestic populations: the case of the Clydesdale horse.

July 2021. Invited – Presentation and Virtual Tour for the Iowa Illinois Nebraska STEM Partnership for Innovation in Research and Education (LSAMP INSPIRE) Program. Outreach to undergraduate students in STEM disciplines from 16 Universities.

April 2021. Invited – Dorothy Russell Havemeyer Equine Genomics Virtual Conference. FAANG – Where are we now?

October 2020**.** Invited - University of Kentucky Gluck Equine Research Center Seminar Series. A Study of Thoroughbred Genetics with Ernie Bailey and Ted Kalbfleisch. Available at: https://www.youtube.com/watch?v=9jD2RxsKhX4

January 2020. Invited – International Plant and Animal Genome Conference, Animal Epigenetics Workshop. Discovery of regions of genome regulation in the horse.

Nov 2019. Nebraska Wesleyan University Liberal Arts Seminar. How humans shaped the horse genome.

October 2019. Symposium on the Evolutionary Genomics of Adaptation. Genetic diversity and relationships among populations of the domestic horse: applications for management and in understanding the genetic basis of various traits

March 2019. Invited - Midwest Section of the American Society of Animal Sciences. Efforts toward functional annotation of the equine genome

January 2019. Invited - American Sheep Industries Annual Meeting. Update on genomics

Nov 2018. Horse management (UNL, ASCI 450). Horse genetics for breeders, manages, and enthusiasts.

April 2018. VA, NWIHCS Friday Research Seminar, invited presentation. Working toward a refined understanding of how heat stress and β-agonist supplementation impact animal growth and wellbeing.

Dec 2017. Introduction to horse industry and management (UNL, ASCI 252). Equine color genetics

Nov 2017. Horse management (UNL, ASCI 450). Horse genetics for breeders, manages, and enthusiasts.

Aug 2017. W3171 Multistate Hatch Meeting, UNL Station Report - A physiological, molecular, and whole-animal evaluation of the impact of stress on animal well-being and performance.

July 2017. International Society of Animal Genetics. Progress toward functional annotation of the equine genome.

March 2017. UNL Institute of Animal Care Seminar. A physiological, molecular, and whole-animal evaluation of the impact of stress on animal well-being and performance.

Nov 2016. Introduction to horse industry and management (UNL, ASCI 252). Equine color genetics

Oct 2016. NC1184 Multistate Meeting (Manhattan, KS). A physiological, molecular, and whole-animal evaluation of the impact of stress on animal well-being and performance

Oct 2016. Horse management (UNL, ASCI 450). Horse genetics for breeders, manages, and enthusiasts.

July 2016. Havemeyer equine workshop at the 35th International Society for Animal Genetics Conference. Recap: Functional Annotation in the Horse.

April 2016. School of Biological Sciences Seminar (UNL). Using genomics to understand relationships among horse populations and the basis of complex traits.

March 2016. Animal Biological Systems Seminar (UNL). Hold your horses – the cost and benefit(?) of a gain-of-function variant in *GYS1*.

Dec 2015. Introduction to horse industry and management (UNL, ASCI 252). Equine color genetics

Nov 2015. ARD/USMARC Project Update: Genetic susceptibility of cattle to persistent infection by bovine viral diarrhea virus.

Nov 2015. Gluck Equine Research Center, University of Kentucky, invited seminar. Genetic differences among horse populations and the basis for unique traits.

Nov 2015. Horse management (UNL, ASCI 450). Horse genetics for breeders, manages, and enthusiasts.

July 2015. Dorothy Russell Havemeyer Foundation International Equine Genome Mapping Workshop, Hannover, Germany. An investigation of shivers in Clydesdale horses using whole-genome sequence.

Oct 2014. Horse management (UNL, ASCI 450). Horse genetics for breeders, managers, and enthusiasts

Nov 2014. Introduction to horse industry and management (UNL, ASCI 252). Equine color genetics

Nov 2014. Nebraska Wesleyan University Tri-Beta Honor Society Seminar. From breed histories to specific mutations: Explaining the incredible diversity of horses using genomics

March 2012. University of Minnesota College of Veterinary Medicine Research Seminar. A survey of genetic diversity and population structure in the modern horse.

Nov 2011. University of Minnesota Department of Animal Science Seminar. Genetic diversity within and among modern horse breeds: Evidence for inbreeding, admixture, and selection.

July 2011. Dorthy Russell Havemeyer Foundation International Equine Genome Mapping Workshop. The Equine Genetic Diversity Consortium: An international collaboration to describe genetic variation in horse breeds.

Jan 2011. Plant and Animal Genome XIX, San Diego, CA. The Identification of Signatures of Selection in Modern Horse Breeds Using Genome-Wide SNP Data.

Mar 2010. Aquaculture 2010, San Diego, CA. A Genetic Linkage Map of the Pacific Lion-paw Scallop – Steps toward Marker Assisted Selection in Aquaculture.

Conference Abstracts/Proceedings (not formally published)

(as co-author; *-presentor, ǂ-mentored student/post-doc, ɬ-lab manager)

Bannasch D*, Finno CJ, **Petersen JL**, Leeb T. 2024. Standards and guidelines for equine genetics research. Workshop. 14th Dorothy Russell Havemeyer Equine Genome Workshop. Caen Normandy, France.

Cullen JN, Cieslak J, **Petersen JL**, Finno CJ, Kalbfleisch T, Mickelson JR, McCue ME. 2024. Charting the equine miRNA landscape: and integrated pipeline and browser for annotating, quantifying, and visualizing expression. Oral Presentation. 14th Dorothy Russell Havemeyer Equine Genome Workshop. Caen Normandy, France.

Stroupe S*, Millar T, Raudsepp T, Andersson L, **Petersen JL**, Kalbfleisch T, Davis BW. 2024. Equine pangenome graph identifies novel structural and single nucleotide variants. Oral Presentation. 14th Dorothy Russell Havemeyer Equine Genome Workshop. Caen Normandy, France.

Li K*, Miller D, Antczak D, AbouEl Ela NA, Johnson L, Ciosek JL, Walenz BP, Pickett B, Koren S, Phillippy AM, Loux SC, Hudson E, Laird-Smith M, Davis B, Durward-Akhurst SA, McCue ME, **Petersen JL**, Kalbflesich T. 2024. A Thoroughbred T2T Reference Genome. Oral Presentation. 14th Dorothy Russell Havemeyer Equine Genome Workshop. Caen Normandy, France.

Valberg SJ*, Williams ZJ, **Petersen JL**, Schott M, Finno CJ. 2024. Exon-specific expression of *RYR1* occurs in Thoroughbreds susceptible to recurrent exertional rhabdomyolysis an dis mitigated by treatment with dantrolene. Poster Presentation. 14th Dorothy Russell Havemeyer Equine Genome Workshop. Caen Normandy, France.

Ciosek JL*, AbouEl Ela NH, Li K, Johnson L, Hudson E, Laird-Smith M, Loux SC, Petersen JL, Kalbfleisch T. 2024. Reference quality genomes for Egyptian Arabian and Shire horses and future applications. Poster Presentation. 14th Dorothy Russell Havemeyer Equine Genome Workshop. Caen Normandy, France.

AbouEl Ela NH*, Bailey E, **Petersen JL**, Kalbfleisch T. 2024. Skim sequencing: a high-throughput technique for Thoroughbred horses genotyping. Poster Presentation. 14th Dorothy Russell Havemeyer Equine Genome Workshop. Caen Normandy, France.

Zabek T*, Semik-Gurgul E, Szmatola T, Donnelly CG, **Petersen JL**, Bellone RR, Finno CJ, Kalbfleisch T. 2024. Differential DNA methylation across ten tissue types of Thoroughbred stallions within the equine FAANG initiative. Poster Presentation. 14th Dorothy Russell Havemeyer Equine Genome Workshop. Caen Normandy, France.

Reith RR*‡, Seick RL‡, Grijalva P, Swanson RM, Fuller AM‡, Diaz DE, Schmidt TB, Yates DT, **Petersen JL**. 2024. RRBS analysis of bovine skeletal muscle in a 21-day heat stress trial. Poster presentation. AGBT-Ag Conference Phoenix AZ.

Nilson SM*‡, Burke JM, Becker GM, Murdoch BM, **Petersen JL**, Lewis RM. 2024. Genomic and pedigree diversity of Katahdin sheep: the impacts of breeding and selection. Oral and Poster Presentation. International Plant and Animal Genome 31. San Diego, CA.

Ciosek JL*, AbouEl Ela NH, Johnson L, Li K, Hudson E, Laird-Smith M, Loux SC, **Petersen JL**, Kalbfleisch T. 2024. A comparison of Thoroughbred, Egyptian Arabian, and Shire reference quality genomes. Poster Presentation. International Plant and Animal Genome 31. San Diego, CA.

AbouEl Ela NH*, Bailey E, **Petersen JL**, Kalbfleisch T. 2024. An effort to develop capacity for whole genome genotyping via low pass sequencing for North American Thoroughbreds and North American yak. Poster Presentation. International Plant and Animal Genome 31. San Diego, CA.

Li K*, Miler D, Antczak D, Abou El Ela NA, Johnson L, Ciosek JL, Walenz BP, Pickett B, Koren S, Phillppy AM, Loux SC, Hudson E, Laird-Smith M, Davis B, Durward-Akhurst SA, McCue ME, **Petersen JL**, Kalbfleisch T. 2024. A T2T Thoroughbred reference genome. Poster presentation. International Plant and Animal Genome 31. San Diego, CA.

Reith RR*‡, Rios AP, Fuller AM‡, Diaz DE, Schmidt TB, Yates DT, **Petersen JL**. 2023. Heat stress and beta agonist supplementation for 10d altered metabolic and oxidative stress pathways in skeletal muscle from Brahman steers. Poster presentation. International Plant and Animal Genome Conference XXX. San Diego, CA.

Li K*, Hussien N, **Petersen JL**, Loux SC, Laird-Smith M, Bailey E, Kalbfleisch T. 2023. A comparison of trio binned horse and donkey assemblies with current reference assemblies. Poster presentation. International Plant and Animal Genome Conference XXX. San Diego, CA.

Batt MC*‡, Gibbs RL, Reith RR‡, Fuller AM‡, Yates DT, **Petersen JL**. 2023. Changes in the skeletal muscle transcriptome of wether lambs due to the intramuscular administration of lidocaine. Poster presentation. International Plant and Animal Genome Conference XXX. San Diego, CA.

Schulz EJ*‡, Lewis RM, **Petersen JL**. Genetic diversity of Rambouillet sheep in the National Sheep Improvement Program. Poster presentation. International Plant and Animal Genome Conference XXX. San Diego, CA.

Arias X*, Janes JG, Hagen DE, **Petersen JL**, Murdoch BM, Steffen DJ, Norton E, McCarthy FM, Kalbfleisch T. 2023. A genetic data portal to enable discovery of deleterious genetic variants in farmed animals. Poster presentation. International Plant and Animal Genome Conference XXX. San Diego, CA.

Piras FM*, Cappelletti E, Sola L, Abdelgadir WA, **Petersen JL**, Bellone RR, Finno CJ, Kalbfleisch TS, Nergadze SG, Giulotto E. 2022. Position and transcriptional status of horse centromeric domains in

different tissues and individuals from the FAANG equine consortium. Oral Presentation. 13th Dorothy Russell Havemeyer International Horse Genome Workshop. Cornell University.

Peng SC*, Kalbfleisch T, Bellone RR, **Petersen JL**, Finno CJ. 2022. Using Long-Read Technology to Improve the Transcriptome for the Horse Genome. Oral Presentation. 13th Dorothy Russell Havemeyer International Horse Genome Workshop. Cornell University.

Barber AM‡, Kingsley NB, Peng SC, Giulotto E, Bellone RR, Finno CJ, Kalbfleisch T, **Petersen JL***. 2022. Normalization of ChIP-seq data from the equine FAANG project improves identification of tissue-specific regulatory elements between sexes. Poster Presentation. 13th Dorothy Russell Havemeyer International Horse Genome Workshop. Cornell University.

Li K, Hussien N, **Petersen JL**, Loux S, Laird-Smith M, Bailey E, Kalbfleisch T*. 2022. Trio Binning Assembly of a Shire x Arabian F1 to Build Genome Resources for Non-Thoroughbred Breeds. Poster Presentation. 13th Dorothy Russell Havemeyer International Horse Genome Workshop. Cornell University.

Petersen JL*, Grazian I‡. 2022. Using genetics to understand and inform breed management – the case of the Clydesdale in Scotland and North America. Poster Presentation. 13th Dorothy Russell Havemeyer International Horse Genome Workshop. Cornell University.

Grijalva PC*, Yates DT, Most MS, Gibbs RL, Hicks ZM, Lacey T, Beer HN, **Petersen JL**, Schmidt TB. 2022. American Society of Animal Science Conference. Administering Anti-Inflammatory Dexamethasone or Fish oil Mitigated Components of the Inflammatory Response to Chronic Heat Stress and Improved Average Daily Gain in Whether Lambs. J Anim Sci. 100(S3):297. https://doi.org/10.1093/jas/skac247.540

Rios A*, Grijalva P, Garcia S, Webster C, Beard J, **Petersen JL**, Yates DT, Schmidt TB, Diaz DE. 2022. American Society of Animal Science Conference. Growth Performance, Physiology, and Carcass Merit of Supplementing Brahman Steers with Zilpaterol Hydrochloride Under Heat Stress Conditions. J Anim Sci. 100(S4):6-7. https://doi.org/10.1093/jas/skac313.008

Valberg SJ*, Henry ML, Herrick K, Velez-Irizarry D, Finno CJ, **Petersen JL**. 2022. Lack of association between commercial genetic tests and myopathies in Quarter Horses. International Conference on Equine Exercise Physiology. Uppsala, Sweden.1

Barber AM‡, Kingsley NB, Peng SC, Giulotto E, Bellone RR, Finno CJ, Kalbfleisch T, **Petersen JL***. Annotation of regulatory elements of the equine genome. 2022. Poster Presentation. AGBT-Ag, Coronado, CA.

Kalbfleisch T*, Antczak D, Castaneda C, Davis BW, Durward-Akhurst SA, Raudsepp T, Tozaki T, McCue MM, Bellone RR, Finno CJ, **Petersen JL**. 2022. Equine FAANG Data Portal: Interoperable and reusable derived datasets. Poster Presentation. AGBT-Ag, Coronado, CA.

Cappelletti E, Piras FM, Sola L, Ahmed WAA, **Petersen JL**, Bellone RR, Finno CJ, Kalbfleisch TS, Bailey E, Nergadze SG, Giulotto E. 2022. Epigenetic characterization of horse centromeric domains in different tissues and individuals from the FAANG equine consortium. Oral and Poster Presentation: FAANG Workshop. Plant and Animal Genome XXIX, Virtual Meeting.

Barber AM*‡, Kingsley NB, Peng SC, Giulotto E, Bellone RR, Finno CJ, Kalbfleisch T, **Petersen JL**. 2022. Identifying tissue-specific regulatory regions in two Thoroughbred stallions for the Functional Annotation of Animal Genomes project. Oral and Poster Presentation: Equine Workshop. Plant and Animal Genome XXIX, Virtual Meeting.

Peng SC*, Kalbfleisch TS, Bellone RR, Finno CJ, **Petersen JL**. 2022. Improved transcriptome for the equine genome. Oral and Poster Presentation: Equine Workshop. Plant and Animal Genome XXIX, Virtual Meeting.

Kalbfleisch T*, Antczak D, Davis BW, Raudsepp T, Castaneda C, Durward-Akhurst SA, Tozaki T, McCue MM, Bellone RR, Finno CJ, **Petersen JL**. 2022. Data portal for mapped equine FAANG datasets: what data is there, how you can get it, and how you can add yours. Oral and Poster Presentation: Equine Workshop. Plant and Animal Genome XXIX, Virtual Meeting.

Li K*, **Petersen JL**, Laird-Smith M, Bailey E, Kalbfleisch T. 2022. Trio binning assembly of a Shire x Arabian F1 to build genome resources for non-Thoroughbred breeds. Poster Presentation: Equine Workshop. Plant and Animal Genome XXIX, Virtual Meeting.

Herrick K*, Henry M, **Petersen JL**, Velez-Irizarry, Finno CJ, Valberg SJ. 2021. Lack of correspondence between commercial genetic test variants for type 2 polysaccharide storage myopathy and a histopathologic diagnosis in Quarter Horses.
Oral presentation at the Equine Science Society Meeting. Virtual Meeting.

Grijalva PC*, Reith RR ‡, Sieck RL‡, Swanson RM, Schmidt TB, Petersen JL, Yates DT, Diaz DE (2020). Feeding β-agonists under heat stress conditions in feedlot cattle. Journal of Animal Science, 98(S4):266.
Poster presentation at: American Society of Animal Sciences. Virtual Meeting.

Treffer LK*‡, Rice ES, Fuller AM, Cutler S, **Petersen JL**. 2020. Two mitochondrial lineages revealed in North American yak. Poster Presentation. Western Section of the American Society of Animal Sciences. Virtual Meeting.

Reith RR*‡, Duffy EM‡, Swanson RM, Fuller AM ‡, Schmidt TB, Yates DT, **Petersen JL**. 2020. Effect of heat stress and beta adrenergic agonist supplementation on the adipose transcriptome of lambs. Poster Presentation. Plant and Animal Genome XXVIII, San Diego, CA.

Barber A*‡, Treffer L‡, Sieck RL‡, Grazian I‡, Fuller AM ‡, **Petersen JL**. 2020. Genome-wide association study of roan coat color in Clydesdales. Poster Presentation. Plant and Animal Genome XXVIII, San Diego, CA.

Dahlgren AR, Scott E, Mansour TA, Burns EN, Ross PJ, Kalbfleisch TS, MacLeod JN, **Petersen JL**, Bellone RR, Finno CJ. 2020. Comparison of poly-A^+ selection and rRNA depletion in detection of lncRNA in two equine tissues using RNA-seq. Poster Presentation. Plant and Animal Genome XXVIII, San Diego, CA.

Williams ZJ, Velez-Irizarry D, **Petersen JL**, Finno CJ, Valberg SJ. 2020. Differential gene expression provides translational evidence for the basis of equine myofibrillar myopathy. Poster Presentation. Plant and Animal Genome XXVIII, San Diego, CA.

Peng S*, Creppe C, FAANG Consortium, Hales EN, **Petersen JL**, Bellone RR, Finno CJ. 2020. Mapping CTCF binding regions in the equine genome. Oral Presentation. Functional Annotation of Animal Genomes Workshop – Plant and Animal Genome XXVIII, San Diego, CA.

Kingsley NB*, Kern C, Creppe C, Hales EN, Zhou Huaijun, Kalbflesich TS, MacLeod JN, **Petersen JL**, Finno CJ, Bellone RR. 2020. Functionally annotating regulatory elements in the equine genome using histone mark ChIP-Seq. Oral Presentation. Functional Annotation of Animal Genomes Workshop – Plant and Animal Genome XXVIII, San Diego, CA.

Finno CJ*, Bellone RR, Kalbfleisch TS, **Petersen JL**. 2020. Equine FAANG: Off to the races. Oral Presentation. Functional Annotation of Animal Genomes Workshop – Plant and Animal Genome XXVIII, San Diego, CA.

Hollender A-C, Refsal K, Petroff B, Bassiouny E, Finno CJ, **Petersen JL**, Valberg SJ. 2019. Plasma and cerebrospinal fluid concentrations of insulin-like growth factor in horses with the neurodegenerative movement disorder Shivers. National Veterinary Scholar Symposium, Worcester State University, MA.

Williams Z, Velez-Irizarry D, **Petersen JL**, Finno CJ, Valberg SJ. 2019. Myofibrillar myopathy in horses provides translational clues to understanding complex disease. National Veterinary Scholar Symposium, Worcester State University, MA.

Tozaki T, Kikuchi M, Kakoi H, Hirota K-I, Nagata S-I, Yamashita D, Ohnuma T, Takasu M, Kobayashi I, Hobo S, Manglai D, **Petersen JL**. 2019. Genetic diversity and relationship among native Japanese horse breeds and horses outside of Japan using genome-wide SNP data. Invited Oral Presentation. International Society for Animal Genetics Conference. Lleida, Spain.

Yousdfi Mashouf N, **Petersen JL**, Yeganeh HM, Javaremai AN, Kalbfleisch TS, Zandi MB, Bailey E. 2019. Population structure analysis of the Persian horse breeds and their comparison to worldwide populations using genome-wide SNP genotypes. Invited Oral Presentation. International Society for Animal Genetics Conference. Lleida, Spain.

Bellone RR, **Petersen JL**, Kingsley NB, Creppe C, Peng S, Burns EN, Kalbfleisch T, Kern C, Zhou H, MacLeod JN, Finno CJ. 2019. Update on the functional annotation of the equine genome project with a focus on histone modification across tissues. Invited Oral Presentation. International Society for Animal Genetics Conference. Lleida, Spain.

Rice ES*ǂ, Koren S, Heaton MP, Petersen JL, Kalbfleisch TS, Hardy T, Hackett PH, Vander Ley BL, Bickhart DM, Rosen BD, Phillippy AM, Smith TPL. 2019. Chromosome-length haplotigs for cattle and yak from trio-binning assembly of an F1 hybrid. Invited Oral Presentation. Advances in Genome Biology and Technology (ABGT), Ft. Meyer, FL.

Rice ES*ǂ, Koren S, Heaton MP, Petersen JL, Kalbfleisch TS, Hardy T, Hackett PH, Vander Ley BL, Bickhart DM, Rosen BD, Phillippy AM, Smith TPL. 2019. Chromosome-length haplotigs for cattle and yak from trio-binning assembly of an F1 hybrid. Invited Oral Presentation. Cattle/Sheep/Goat Workshop – Plant and Animal Genome XXVII, San Diego, CA.

Koren S, Rhie A, Walenz BP, Kingan SB, Rice ES*ǂ, Bickhart DM, Rosen BD, Hiendleder S, **Petersen JL**, Williams J, Ware D, Smith TPL, Phillipy AM. 2019. Genome assembly gone wrong: lessons from the veterbrate genome project (VGP). Invited Oral Presentation. Analysis of Complex Genomes Workshop – Plant and Animal Genome XXVII, San Diego, CA.

Duffy EM*ǂ, Fernando SC, Schmidt TB, Yates DT, **Petersen JL**. 2019. Rumen bacterial composition in lambs is affected by β-adrenergic agonist supplementation and heat stress. Poster Presentation. – Plant and Animal Genome XXVII, San Diego, CA.

Kingsley NB*, Creppe C, Kern C, Burns EN, Zhou H, Kalbefleisch T, **Petersen JL**, Finno CJ, Bellone RR. 2019. Visualizing tissue-specific regulation of the equine genome using histone modification ChIP-seq. Poster Presentation. – Plant and Animal Genome XXVII, San Diego, CA.

Peng S*, Burns EN, **Petersen JL**, Bellone RR, Finno CJ. 2019. Mapping open chromatin regions in the equine genome. Oral and Poster Presentation. – Plant and Animal Genome XXVII, San Diego, CA.

Antczak DF*, Miller DC, **Petersen JL**, Finno CJ, Bellone RR, Burns EN, Kingsley NB, Rice EJ, Dando CG. 2019. Global run-on sequencing and computational pipelines for FAANG. Oral Presentation. FAANG Workshop – Plant and Animal Genome XXVII, San Diego, CA.

Yousefi Mashouf N*, Bailey E, **Petersen JL**, Yeganeh HM, Javaremi AN. 2019. Genomic comparisons of the Persian Kurdish horse to Persian Arabian and American Thoroughbred populations. Oral Presentation. Equine Workshop – Plant and Animal Genome XXVII, San Diego, CA.

Tozaki T*, Kikuchi M, Kakoi H, Hirota K, Nagata S, **Petersen JL***. 2018. Genetic diversity and phylogenetic analyses of the Japanese native breeds using genome-wide SNP. Poster Presentation – Dorothy Russell Havemeyer 12th International Horse Genome Workshop. Pavia, Italy.

Burns EN, Kalbfleisch TS, **Petersen JL**, Bellone RR, Finno CJ. 2018. Update on the equine FAANG initiative: RNA-sequencing. Oral Presentation – Dorothy Russell Havemeyer 12th International Horse Genome Workshop. Pavia, Italy.

Dahlgren AR*, Scott EY, Mansour T, Burns EN, Kalbfleisch TS, **Petersen JL**, Bellone RR, Finno CJ. 2018. Comparison of poly-A^+ selection and rRNA-depletion in detection of lncRNA in horse RNA-seq. Oral Presentation – Dorothy Russell Havemeyer 12th International Horse Genome Workshop. Pavia, Italy.

Kingsley NB*, Finno CJ, Creppe C, Schvartzman S, Kern C, Zhou H, Kalbfleisch TS, **Petersen JL**, Bellone RR. 2018. An update on the functional annotation of the equine genome using ChIP-seq. Oral Presentation – Dorothy Russell Havemeyer 12th International Horse Genome Workshop. Pavia, Italy.

Ząbek T*, Szmatoła T, Semik-Gurgul E, Gurgul A, **Petersen JL**, Bellone RR, Finno CJ, Burns EN, Bugno-Poniewierska M. 2018. Methylome chracteristics of eight tissue types of Thoroughbred mares – initial data of horse FAANG initiative. Oral Presentation – Dorothy Russell Havemeyer 12th International Horse Genome Workshop. Pavia, Italy.

Finno CF*, **Petersen JL**, Bellone RR, Kalbfleisch TS, MacLeod JN. 2018. Update on the UCD/UNL equine FAANG initiatve. 2018. Oral Presentation – Dorothy Russell Havemeyer 12th International Horse Genome Workshop. Pavia, Italy.

Thompson RE, Lawton S, **Petersen JL**, Helms AB, Watson A, Sula M-J, Steffen D, Whitlock BK. 2018. Dystocia because of uterine torsion complicated by perosomus elumbis in a stillborn Angus calf resulting from a consanguineous mating. Society for Theriogenology, Therio Conference. Milwaukee, WI.

Burns EN, Kalbfleisch TS, **Petersen JL**, Bellone RR, Finno CJ. 2018. Update on the equine FAANG initiative: how the community is using the biobank. Oral Presentation. Equine Workshop – Plant and Animal Genome XXVI, San Diego, CA.

Kingsley NB*, Finno CJ, Berguet G, Wesselinik JJ, Tammoh M, Creppe C, Schvartzman S, Sabatel C, Kern C, Burns E, Zhou H, **Petersen JL**, Bellone RR. 2018. Optimization of equine ChIP-seq for the functional annotation of animal genomes project. Poster Presentation. Plant and Animal Genome XXVI, San Diego, CA.

Kubik RM*‡, Yates DT, Schmidt TB, **Petersen JL**. 2018. Investigation of differentially expressed transcripts in cattle supplemented with β-adrenergic agonists. Poster Presentation. Plant and Animal Genome XXVI, San Diego, CA.

Tietze SM*ǂ, Bellone RR, Finno CJ, **Petersen JL**. 2018. Refined phenotypes associated with the equine FAANG biobank: microbiome sequencing. Poster Presentation. Plant and Animal Genome XXVI, San Diego, CA.

Tozaki T*, Kikuchi M, Kakoi H, Hirota K, Nagata S, **Petersen JL**. 2017. The differences in genetic structure among Japanese, UK, and USA Thoroughbreds. Oral Presentation – 18th Japanese Society of Animal Breeding and Genetics.

Tozaki T*, Kikuchi M., Kakoi H, Hirota K, Nagata S, Yamashita D, Ohnuma T, Takasu M, Kobayashi I, Hobo S, Manglai S, **Petersen JL**. 2017. Phylogenetic and structure analyses of Japanese native horses based on genome-wide SNPs. Oral Presentation – 30th Japanese Society of Equine Science. *Awarded best oral presentation

Petersen JL*, Burns E, Bordbari M, Scott E, Ming-Whitfield B, Affolter V, Ramirez Alanis C, Barro M, Mack M, Gianino G, Gianino F, Giulotto E, Hilburger K, Kalbfleisch T, MacLeod J, Mienaltowski M, Katzman S, Leeb T, Raudsep T, Saelao P, Vig S, Zhou H, Bellone R, Finno C. 2017. Progress toward functional annotation of the equine genome. International Society of Animal Genetics, Dublin, Ireland.

Wanner N*, Williams Z, **Petersen JL**, Finno CJ, Heyden J, Valberg SJ. 2017. Impact of Paternal Inheritance of an Allele for Type I Polysaccharide Storage Myopathy on Exertional Rhabdomyoloysis and Muscle Glycogen Concentration. Oral and Poster Presentation – Equine Workshop, Plant and Animal Genome XXIV, San Diego, CA.

Burns E*, Bordban M, Mienaltowski MJ, Affolter V, Barro M, Gianino F, Gianino G, Giulotto E, Hilburger K, Kalbfleisch TS, Katzman S, Leeb T, Mack M, Muller EJ, MacLeod JN, Ming-Whitfield B, Alanis CR, Raudsepp T, Scott E, Vig S, Zhou H, **Petersen JL**, Bellone RR, Finno CJ. 2017. Generatinon of an Equine Tissue Biobank for Functional Annotation. Oral and Poster Presentation – Equine Workshop, Plant and Animal Genome XXIV, San Diego, CA.

Kalbfleisch TS*, **Petersen JL**, Hackett P, Basnayake V, Qiu J, Simpson EB, Heaton MP. 2017. Triallelic SNPs for Estimating Cattle Introgression, Inbreeding, and Determining Parentage in North American Yak. Poster Presentation – Plant and Animal Genome XXV, San Diego, CA

Bellone RR*, Liu J, Vig S, Michau TM, Reilly CM, Bentley E, **Petersen JL**, Lassaline M. 2016. Investigating a Single Nucleotide Polymorphism in *DDB2* as a Risk Factor for Squamous Cell Carcinomas of the Nictitans in the Haflinger and Belgian Horse Breeds. Poster Presentation – 35th International Society for Animal Genetics Conference, Salt Lake City, UT.

Finno CJ*, **Petersen JL**, Bellone RR, MacLeod JN. 2016. Functional Annotation of the Equine Genome. 35th International Society for Animal Genetics Conference, Salt Lake City, UT. Oral presentation followed by panel discussion.

Nilson SM*†, Workman AM, Heaton MP, Grotelueschen DM, **Petersen JL**. 2016. Whole transcriptome sequencing analyses of beef calves persistently infected by bovine viral diarrhea virus. Poster Presentation – Plant and Animal Genome XXIV, San Diego, CA.

Bellone RR*, Liu J, **Petersen JL**, Drizin S, Drögmüller C, Penedo MC, Lassaline M. 2016. A single nucleotide polymorphism in *DDB2* likely confers risk for ocular squamous cell carcinoma in the Haflinger and related horse breeds. Plant and Animal Genome XXIV, San Diego, CA.

Petersen JL*, Finno CJ, Valberg SJ. 2015. Genome-wide association study of shivers in Clydesdale horses. Poster Presentation – Plant and Animal Genome XXIII, San Diego, CA.

Avila F*, **Petersen JL**, Mickelson JR, McCue ME. 2015. Genomic signatures of selection in the American Quarter Horse. Oral Presentation – Equine workshop, Plant and Animal Genome XXIII, San Diego, CA.

Trenhaile MD*, **Petersen JL**, Lucot KL, Kachman SD, Johnson RK, Ciobanu DC. 2014. Long-term selection for litter size results in significant shifts in allele frequency in regions involved in reproductive processes. Proceedings, 10th World Congress of Genetics Applied to Livestock Production, Vancouver, BC, Canada.

Mickelson JR*, **Petersen JL**, Valberg SJ, McCue ME. 2014. Genomic signatures of selection in the modern horse. Oral Presentation – Proceedings, 10th World Congress of Genetics Applied to Livestock Production, Vancouver, BC, Canada.

Trenhaile MD*, **Petersen JL**, Lucot KL, Kachman SD, Johnson RK, Ciobanu DC. 2014. Long-term selection for litter size results in significant shifts in allelic frequency in regions involved in reproductive processes. Poster Presentation – Proceedings, 10th World Congress of Genetics Applied to Livestock Production, Vancouver, BC, Canada.

McCoy AM*, Beeson SK, **Petersen JL**, Mickelson JR, Piercy RJ, Isgren CM, Lykkjen S, McCue ME. 2014. Investigation of putative modifying variants associated with pacing in Standardbreds. Poster Presentation – Plant and Animal Genome XXII, San Diego, CA.

McCue ME*, **Petersen JL**, Mickelson JR. 2014. Genomic selection in the horse. Domestication Genomics workshop. Oral presentation – Plant and Animal Genome XXII, San Diego, CA.

Petersen JL*, Mickelson JR, McCue ME. 2013. The use of targeted capture to identify variants associated with signatures of selection. Oral Presentation – 10th Dorothy Russell Havemeyer Foundation International Equine Genome Mapping Workshop. Furnas, Azores, Portugal.

Petersen JL*, Mickelson JR, McCue ME. 2013. Evidence of subpopulation structure and selection within the American Quarter Horse. Poster Presentation – 10th Dorothy Russell Havemeyer Foundation International Equine Genome Mapping Workshop. Furnas, Azores, Portugal.

McCoy AM*, **Petersen** JL, Mickelson JR, Piercy RJ, Lykkjen S, McCue ME. 2013. Identification of modifying loci associated with pacing in Standardbreds. Poster Presentation – 10th Dorothy Russell Havemeyer Foundation International Equine Genome Mapping Workshop. Furnas, Azores, Portugal.

Petersen JL*, Mickelson JR, Cleary KD, McCue ME. 2013. Genetic diversity and divergence among six performance groups of the American Quarter Horse. Poster Presentation – Plant and Animal Genome (PAG) XXI. San Diego, CA.

Finno CJ*, Valberg SJ, **Petersen JL,** Draper A, Livesey L, Brock K, Baird J, McCue ME, Firshman A, Mickelson JR. 2013. Genome-wide association analysis of shivers in Belgian horses. Poster Presentation – Plant and Animal Genome (PAG) XXI. San Diego, CA.

Petersen JL, Mickelson JR*, McCue ME. 2012. Poster Presentation – Genomic signatures of selection in the horse. International Society of Animal Genetics (ISAG). Cairns, Australia.

Petersen JL*, EGDC, McCue ME. 2012. Identification of ancestry informative markers in the domestic horse. Poster Presentation – Plant and Animal Genome (PAG) XX. San Diego, CA.

Petersen JL* *and 29 others.* 2011. The Equine Genetic Diversity Consortium: An International Collaboration To Describe Genetic Variation In Modern Horse Breeds. Poster Presentation – Plant and Animal Genome (PAG) XIX. San Diego, CA.

McCoy AM*, **Petersen JL**, Mickelson JR, Valberg SJ, McCue ME. 2011. Evidence of positive selection for the GYS1 mutation in equine polysaccharide storage myopathy. Poster Presentation – Plant and Animal Genome XIX. San Diego, CA.

Baerwald MR*, **Petersen JL**, Hedrick RP, Schisler GJ, May BP. 2011. Are we stocking resistance? Genetic detection of a resistant rainbow trout lineage in whirling disease infected rivers. Oral Presentation – Plant and Animal Genome XIX. San Diego, CA.

Petersen JL*, Rendahl AK, Ralston SL, McCue ME. 2010. Genome-wide association analyses for susceptibility to osteochondrosis dissecans (OCD) in Standardbred trotters. January 2010. Poster Presentation – Plant and Animal Genome XVIV. San Diego, CA.

Petersen JL*, M.R. Baerwald, A.M. Ibarra, and B.P. May. 2009. Discovering QTL underlying growth traits in the Pacific lion-paw scallop using a first-generation microsatellite and AFLP linkage map. Poster Presentation – Plant and Animal Genome XVIII. San Diego, CA.

Petersen JL*, A.M. Ibarra and B. May. 2008. Culturing diversity? Contrasting genetic diversity between wild and cultured populations of Pacific lion-paw scallop. Poster Presentation – International Society for Animal Genetics, Amsterdam, The Netherlands.

Petersen JL*, A.M. Ibarra, and B. May. 2006. A mass spawn of lion-paw scallop: Contribution of spawners to the progeny and allelic inheritance. Oral Presentation – Plant and Animal Genome XV, San Diego, CA.

Petersen JL, A.M. Ibarra*, and B. May. 2006. Genetic consequences of a mass spawning event in the lion-paw scallop, *Nodipecten subnodosus*. Oral Presentation – International Association for Genetics in Aquaculture (IAGA) IX, Montpellier, France.

Co-Authored Oral Presentations (no associated abstract; * - presenter, ǂ - mentored student)

Batt MB*‡. 2022. Impact of lidocaine on the skeletal muscle transcriptome of lambs. Biological Sciences Seminar Series, UNL.

Kubik RM*‡, Barnes TL*‡, Tietze SM, Yates DT, Schmidt TB, **Petersen JL**. 2018. Genomic investigation of beta agonist supplementation and heat stress in livestock species. Beef Committee Meeting, Ogallala, NE

Barnes TL*‡, Kubik RM*‡, Cadaret CN, Beede KA, Merrick EM, Chung S, Schmidt TS, **Petersen JL**, Yates DT. Identifying hyperthermia in heat-stressed lambs and its effect on β agonist-stimulated glucose oxidation in muscle. Beef Committee Meeting, Ogallala, NE.

Kett L*, **Petersen JL**, Schmidt TS. 2018. Growth performance and lean mass associated with supplementation of a β1- and β2-adrenergic agonist to wether lambs during a controlled heat stress challenge. Beef Committee Meeting, Ogallala, NE.

Duffy E*‡, Kubik RM, Barnes TL, Kett L, Schmidt TB, Yates DT, Fernando S, **Petersen JL**. 2018. Effects of heat stress and β-adrenergic agonist supplementation on the rumen gut microbiome. Beef Committee Meeting, Ogallala, NE.

Kubik R*‡. May 2017. Genomic investigation of beta agonist supplementation and heat stress on livestock species. Beef Committee Meeting, North Platte, NE.

Kubik R*‡. Nov 2016. Characterization of alkaline phosphatase in mice lacking the haptocyte asialoglycoprotein receptor during inflammatory livery injury. UNL Biological Systems Seminar.

Yates DY*, Petersen JL, Schmidt TB. July 2016. "A physiological, molecular, and whole-animal evaluation of the impact of stress on animal well-being and performance" W2173 Multistate Meeting. Tuscon, AZ.

Nilson SM*‡. March 2016. "Transcript Analysis of Calves Persistently Infected with Bovine Viral Diarrhea Virus." Animal Breeding and Genetics Seminar. Lincoln, NE.

Other Poster Presentations (no abstract/proceedings) (* - presenter; ‡ - mentored student)

Duffy EM*‡, Fernando SC, Schmidt TB, Yates DT, **Petersen JL**. 2019. Rumen bacterial composition in lambs is affected by β-adrenergic agonist supplementation and heat stress. UNL graduate student spring research fair.

Parris M*‡, Steffen DJ, **Petersen JL**. 2017. Genomic investigation of dwarfism in black Angus calves. UNL Undergraduate Research Fair, Lincoln, NE. *Junior class winner – poster competition.

Burns EN*, Bordbari MH, Mienaltowski M, Affolter V, Barro M, Gianino F, Gianino G, Giuloto E, Hilburger K, Kalbfleisch TS, Katzman S, Leeb T, Mack M, Müller EJ, MacLeod JN, Ming-Whitfield B, Ramirez Alanis C, Raudsep T, Scott E, Vig S, **Petersen JL**, Bellone RR, Finno CJ. 2016. Generation of an Equine FAANG Biobank. UC Davis ABGG Colloquium, Davis, CA.

Wanner NM*, Williams Z, Finno CJ, **Petersen JL**, Valberg SJ. 2016. Impact of a paternally inherited allele for polysaccharide storage myopathy on muscle pain and myodegeneration. Michigan State University Veterinary Summer Scholars Symposium. East Lansing, MI.

Nilson SM*‡, Workman AM, Heaton MP, Grotelueschen DM, **Petersen JL**. 2016. Transcriptome analyses of beef calves persistently infected by bovine viral diarrhea virus. UNL Spring Graduate Research Fair, Lincoln, NE.

Lienemann MM*‡, Gibbens M, Nilson S, **Petersen JL**. 2015. Genomic investigation of coat color in domestic yak. UNL Research Fair. Lincoln, NE.

Petersen JL*, Mickelson JR, McCue ME. 2012. Genomic signatures of selection in the horse. University of Minnesota Points of Pride Research Day **Best post-doctoral poster award**

McCoy AM*, **Petersen JL**, Ralston SL, Mickelson JR, McCue ME. 2012. Investigation of genetic risk factors in tarsal osteochondrosis of Standardbred horses. University of Minnesota Points of Pride Research Day

Petersen JL*, Mickelson JR, Valberg SJ, McCue ME. 2012. An association of muscle fiber type proportions with variants in the equine myostatin gene. Minnesota Muscle Symposium, Minneapolis, MN.

Petersen JL*, Baerwald MR, Ibarra AM, May BP. 2009. Linkage and QTL mapping in the Pacific lion-paw scallop. Gordon Research Conference on Quantitative Genetics, Galveston, TX.

Awards & Honors

- Nominated for the UNL IANR Omtvedt Innovation Award in Research (2022)
- Inducted into Gamma Sigma Delta Agricultural Honor Society (2015)
- Nominated for UNL ARD Junior Faculty Excellence in Research Award (2016 and 2017)
- Nominated for the Midwest Section of the American Society of Animal Science Outstanding Young Researcher Award (2018)
- UNL Parent's Recognition Award (2020)
- Nominated for the Council on Undergraduate Research (CUR) Biology Division Mentor Award (2020)

Service

UNL Animal Science Department Curriculum Committee (2021-present)

UNL Animal Science Internal Advisory Committee Member (2017-present)

Committee Member – Department Head 5-year Review (2022)

UNL Search committees – Genetics and Metabolic Disease (2015-2016); NIBS Research Associate (2021); Meat Biochemist (2021-2022); Theoretical Quantitative Geneticist (Animal Science 2022); Theoretical Quantitative Geneticist (Agronomy, 2022)

Committee member and judge of oral presentations – 2022 Academic Quadrathlon

UNL Animal Science Departmental Review, Animal Biology Section co-chair, writer and presenter (2017-2018)

Contributed to the "Grand Challenges" writing activity in the subject of "Climate Resilience" (2020)

Judge – graduate poster competition, UNL Spring Research Fair (2019)

"Skype With A Scientist" outreach participant (2017, 2018) Skyped with a 7th and 8th grade science class in Unitah, Utah, and Hot Springs, Arkansas, respectively. Discussed and answered questions about Animal Genetics

Attendee – Women in Science Banquet. Represented the department at the annual dinner held for high school girls interested in STEM careers (2018).

Presenter/Project leader – Viking Discover Program, Waverly Public Schools, "DNA, coding style" (2017)

Reviewer – UNL GSA, Graduate Travel Awards Program (2016, 2017)

Sr. Faculty Advisor – UNL Animal Science Graduate Student Association (2016-2017)

Jr. Faculty Advisor – UNL Animal Science Graduate Student Association (2015-2016; 2019-2021)

Book Reviewer – Preparation for the 2nd edition of "Horse Genetics," CABI (2016)

Judge – UNL Graduate Research and Creative Activities Research Fair (2014)

Professional Activities

Journal Reviewer (2014 to present)

Animals, Animal Genetics, Aquaculture, Biotechnology and Biotechnological Equipment, BMC Genetics, BMC Genomics, Canadian Journal of Animal Science, Equine Veterinary Journal, G3, Iranian Journal of Animal Science, Mitochondrial DNA Part B, Journal of Agricultural Science and Technology, Journal of Animal Breeding and Genetics, Journal of Animal Science, Journal of Equine Veterinary Science, Journal of Heredity, Journal of Veterinary Internal Medicine, Livestock Science, Mammalian Genome, PLoS One, Scientific Reports

International Plant and Animal Genome Organizing Committee. 2024-present.

Review panel member: Flanders Research Organization (FWO), Belgium. 2023-present.

Scientific Advisory Committee, American Paint Horse Association (APHA). 2024-present.

Genome Committee Member, USYAKS Association. 2018-present.

Contributed to "Genomic characterization of animal genetic resources." Ajmone-Marsan et al. FAO Animal Production and Health Guidelines No 32. Rome. https://doi.org/10.4060/cc3079en

Nebraska Governance and Technology Fellow (2021-2022)

USDA-NIFA Proposal Review Panels (2019, 2020, 2021)

W3173 Multistate Research Group – led annual meeting and the renewal application for the group (W4173) (2020-2021); co-chair of 2022 meeting in St. Paul, MN

Member – UNL #NCLUDE; participated in September 2022.

Organizing committee – 13th International Dorothy Russell Havemeyer Horse Genome Workshop; moderator of session; chair of two Research Interest Group Workshops (Annotation/FAANG, and Pangenomes/Evolution) (2022)

Proposal Reviewer: Genome Quebec (2015), Horse Racing Levy Board (2015, 2022), Hong Kong Jockey Club Equine Welfare Research Foundation (2021, 2022)

International Society of Animal Genetics/FAO Domestic Animal Genetic Diversity Standing Committee, Equine representative. (2018-present)

Equine Science Society – Member, Genetics Committee (2014-present); Judge for Genetics Graduate competition (2021 Conference).

Member – American Society of Animal Science (2017-present)

Participant – Teaching and Learning Symposium. Nebraska Innovation Campus, Feb 2019.

Chair of workshop session, "Population Genomics" at the Dorothy Russell Havemeyer 12th International Horse Genome Workshop. Pavia, Italy.

Chair of the equine workshop for the Plant and Animal Genome Conference (2017-2018)

Co-chair of the equine workshop for the Plant and Animal Genome Conference (2016-2017)

Member/contributor to the FAANG (functional annotation of animal genomes) Initiative (FAANG.org). 2015-present – active in E-FAANG (equine section), attended GO-FAANG, international organizational meeting (October 2015)

UNL ARISE program participant (NSF-funded Widening Implementation and Demonstration of Evidence-Based Reforms Program)

2015 – Learning by Design
2014 – Planning Assessment for Learning
2014 – Research Based Instructional Strategies

Science Communications Workshop – Alan Alda Center for Communicating Science. (participant) – 2016

Leadership Resources, Effective Personal Productivity Training (participant) – 2014

American Genetic Association (AGA) – member (2008-present)

International Society of Animal Genetics (ISAG) – member (2008-present)

Member: Gamma Sigma Delta Agricultural Honor Society (2015-present)