

## Publications

Rosales, C., R. Ehrhardt, A. Mantey, B. Makela, T. Byrem, A. Veiga-Lopez. 2020. Preconceptional diet manipulation can influence placenta endocrine function in sheep. *Domestic Animal Endocrinology* 74: 1-13.

Posbergh, C.J. and Huson, H.J. (2021), All sheeps and sizes: a genetic investigation of mature body size across sheep breeds reveals a polygenic nature. *Anim. Genet.*, 52: 99-107.  
<https://doi.org/10.1111/age.13016>

Salavati M, Caulton A, Clark R, Gazova I, Smith TPL, Worley KC, Cockett NE, Archablad AL, Clarke SM, Murdoch BM, Clark EL. on behalf of the Ovine FAANG Project Consortium. Global analysis of transcription start sites in the new ovine reference genome (Oar rambouillet v1.0). *Frontiers in Genetics* (2020).

Henslee D, Murdoch B, Yelich, Taylor BJ and Ellison M. Comparative genomics of sheep Tas2r repertoire in cattle, goat, human, dog and mice. *Animal Gene* (2020) Oct 22.

Davenport KM, Hiemke C, McKay SD, Thorne JW, Lewis RM, Taylor T, Murdoch BM. Genetic structure and admixture from terminal breeds in the United States. *Animal Genetics* (2020) Jan 23.

Becker GM, Job RJ, Davenport KM, Burke JM, Lewis RM, Miller JE, Morgan JL, Notter DR, and Murdoch BM. Genome-wide association study to identify loci associated with gastrointestinal nematode resistance in Katahdin. *Animal Genetics* (2020) Jan 3.

Stewart, W. C., J. D. Scasta, J. B. Taylor, T. W. Murphy, and A. A. M. Julian. 2021. Invited review: Sheep mineral nutrition considerations for extensive production systems. *App. Anim. Sci.* 37:256-272. doi:10.15232/aas.2021-02143

Knuth, R. M., W. C. Stewart, J. B. Taylor, B. Bisha, C. J. Yeoman, M. L. Van Emon, and T. W. Murphy. 2021. Relationships among intramammary health, udder and teat characteristics, and productivity of extensively managed ewes. *J. Anim. Sci.* (in press). doi:10.1093/jas/skab059

Stewart, W. C., D. M. Scott, S. B. Howell, R. M. Kaplan, B. L. Roeder, and T. W. Murphy. 2021. Anthelmintic resistance in gastrointestinal nematodes and associated management factors in Intermountain West sheep flocks. *Sheep & Goat Res. J.* (in press).

Stewart, W. C., T. W. Murphy, C. M. Page, D. C. Rule, J. B. Taylor, K. Austin, and C. Pankey. 2020. Effect of increasing dietary zinc sulfate fed to primiparous ewes: I Effects on serum metabolites, mineral transfer efficiency, and animal performance. *Appl. Anim. Sci.* 36:839-850. doi:10.15232/aas.2020-02057.

R. McGregor, J. G. P. Bowman, C. M. Page, A. R. Hubbard, M. Manoukian, W. C. Stewart, and M. L. Van Emon. 2020. The effect of ensiling sugar beets on preservation characteristics, nutrient profile, and in situ disappearance. *J. Agric. Studies.* <https://doi.org/10.5296/jas.v8i4.17165>

J. D. Scasta, T. Jorns, J. D. Derner, B. Stam, M. McClaren, Craig Calkins, W. C. Stewart. 2020. Technical Note: Toxic plants in sheep diets grazing extensive landscapes: Insights from Fecal DNA metabarcoding. *Livestock Sci.*

Acharya, M., Burke, J.M., Miller, J.E., Terrill, T.H., Wood, E.L., Muir, J.P., 2020. Quebracho tannins aid in the control of *Eimeria* spp. in lambs and goat kids. *Vet. Parasitol.* 288, 1-8 (accepted October 23, 2020, published Dec 2020).

Chai, J., Alrashedi, S., Coffey, K., Burke, J., Feye, K., Ricke, S.C., Park, S.H., Edwards, J.L., Zhao, J., 2020. Endophyte-infected tall fescue affects rumen microbiome in grazing ewes at gestation and lactation. *Front. Vet. Sci.* 7, 1-13, Article 544707 (accepted 9/9/20, published 10/14/20).

Acharya, M., Burke, J.M., Ashworth, A.J., Rorie, R.W., 2020. Relationship of anti-Mullerian hormone to reproductive traits in Katahdin ewes bred in late spring or fall. *Adv. Repro. Sci.* 8, 48-56.

Burke, J.M., Miller, J.E. 2020. Sustainable approaches to parasite control in ruminant livestock. *Vet. Clin. Food Anim.* 36, 89-107.

Acharya, M., Burke, J.M., Rorie, R., 2020. Semen extension in Katahdin rams. *Adv. Reprod. Sci.* 8, 14-30.

Becker, G.M., Davenport, K.M., Burke, J.M., Lewis, R.M., Miller, J.E., Morgan, J.L., Notter, D.L., Murdoch, B.M., 2020. Genome-wide association study to identify genetic loci associated with gastrointestinal nematode resistance in Katahdin sheep. *Anim. Gen.* 51, 330-335. doi:10.1111/age.12895.

Freking, B. A. and T. W. Murphy. 2020. Comparison of performance of F1 Romanov crossbred ewes with wool and hair breeds during spring lambing under intensive and extensive production systems. *J. Anim. Sci.* doi:10.1093/jas/skaa397.

Li, H., X. Wu, R. G. Tait Jr., S. Bauck, D. L. Thomas, T. W. Murphy, and G. J. M. Rosa. 2020. Genome-wide association study of milk production traits in a crossbred dairy sheep population using three statistical models. *Anim. Genet.* 51:624-628. doi:10.1111/age.12956.

Murphy, T. W., and B. A. Freking. 2020. Comparison of performance of F1 Romanov crossbred ewes with wool and hair breeds during fall lambing and body weight and longevity through 6 production years. *J. Anim. Sci.* doi:10.1093/jas/skaa400.

Murphy, T. W., J. W. Keele, and B. A. Freking. 2020. Genetic and non-genetic factors influencing ewe prolificacy and lamb body weight in a closed Romanov flock. *J. Anim. Sci.* doi:10.1093/jas/skaa283.

Lonngren, K., Barone, C., Zajac, A., Brown, R., Reed, J, Krueger, C., Petersson, K. (2020) Effect of birdsfoot trefoil cultivars on exsheathment of *Haemonchus contortus* in fistulated sheep. *Veterinary Parasitology* 287:109271

Sanders, J., Xie, Y., Gazzola, D., Li, H., Abraham, A., Flanagan, K., Rus, F., Miller, M., Huc, Y., Guynn, S., Draper, A., Vakalapudi, S., Petersson, K., Zarlenga, D., Li, R., Urban Jr., J., Ostroff, G., Zajac, A., Aroian, R. (2020). A New Paraprobiotic-based Treatment for Control of *Haemonchus contortus* in Sheep. *International Journal of Parasitology: Drugs and Drug Resistance* 14:230-236.

## Extension publications

Recktenwald, E.B and R. A. Ehrhardt. 2020. Methodology for evaluating the environmental footprint of four types of U.S. sheep operations. Presented to the American Lamb Board. November 2020.

Recktenwald, E.B and Ehrhardt, R.A. 2020. Benefits and considerations in using terminal sires. *Michigan Shepherd News*

Ehrhardt, R.A. and B. Makela. 2020. "How to administer dewormer orally to sheep and goats." Instructional video for MSU ANS 262 introductory sheep management and MSU Small ruminant extension parasite management program.

Ehrhardt, R.A. and B. Makela. 2020. "How to perform a quantitative fecal egg count." Instructional video for MSU ANS 262 introductory sheep management and MSU Small ruminant extension parasite management program.

Ehrhardt, R.A. and B. Makela. 2020. "How to screen sheep and goats for parasite infection using the FAMACHA system." Instructional video for MSU ANS 262 introductory sheep management and MSU Small ruminant extension parasite management program.

D. O'Brien and S. Wildeus. 2020. Enhancing Reproductive Performance in Small Ruminants: Part II. Puberty and Estrous Cycles.  
<http://digitalpubs.ext.vt.edu/vcedigitalpubs/9333817745874164/MobilePagedReplica.action?pm=2&folio=1#pg1>

Ehrhardt, R.A. "Application of ultrasound technology in the management of reproduction in small ruminants." Webinar prepared for American Association of Small Ruminant Practitioners Webinar Series. June 16, 2021.

Ehrhardt, R.A. "Nutritional management of ewes in late pregnancy to prevent metabolic disease." Webinar prepared for Centre d'expertise en production ovine du Québec (CEPOQ). April 29, 2021.

Ehrhardt, R.A. and Thorne, J "Winter Ewe Nutrition Podcast". American Sheep Industry Podcast series. Feb. 16, 2021.

Ehrhardt, R.A. "Managing coccidiosis." Webinar prepared for the Ontario Master Shepherd course. Jan. 21, 2021.

Ehrhardt, R.A. "Ovine Progressive Pneumonia Eradication in 2020: What has worked and has it been worth it? Michigan Shepherds Weekend. January 10, 2021.

Ehrhardt, R.A. and K. Cassida. "Cover crop grazing with sheep in Michigan: Results of a 2-year study. Part 1: Cover crop choices and management options." Michigan Shepherds Weekend. January 10, 2021.

C. Macaluso, K. Cassida and R. A. Ehrhardt, "Cover crop grazing with sheep production in Michigan. Part 2: Lamb performance and carcass quality on cover crop grazing systems." Michigan Shepherds Weekend. January 10, 2021.

E.B. Recktenwald and R.A. Ehrhardt "Evaluating the environmental footprint of US lamb production: Why it matters and opportunities for improvement." Michigan Shepherds Weekend. January 10, 2021.

Ehrhardt, R.A. "Grazing cover crops." Cover Crop Strategies Magazine Podcast. December 2020.

Ehrhardt, R.A. "Strategic nutritional management to optimize reproductive success in sheep. Sheep and Goat Webinar Series from the University of Idaho and the University of Wyoming. September 24, 2020.

Ehrhardt, R.A. "Grazing annuals as part of a crop/pasture rotation or as cover crops with sheep." Missouri sheep and goat conference. Sept. 18, 2020.

Ehrhardt, R.A. "Optimizing forage and grazing management for small ruminant health and productivity. American Association of Small Ruminant Practitioners (AASRP) Webinar series. Sept. 9, 2020.

Recktenwald, E. and R. Ehrhardt "Evaluating the environmental footprint of the US sheep industry." Presentation to the American Lamb Board Summer Meeting. July 20, 2020.

Ehrhardt, R.A. "Lamb production: providing a year-round supply of lamb with accelerated lambing." University of Georgia Extension Small Ruminant Webinar, June 9, 2020.

Ehrhardt, R.A. "Strategies to manage forage quality limitation when feeding sheep and goats." 2020 Purdue University and University of Kentucky sheep and goat education series. Jan 2020.  
<https://ag.purdue.edu/ansc/sheep-site/Pages/SheepVidArchives.aspx>  
[https://www.youtube.com/watch?v=TD4Mzn\\_q-lw](https://www.youtube.com/watch?v=TD4Mzn_q-lw)