

**WHIT C. STEWART**

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Email: [whit.stewart@uwyo.edu](mailto:whit.stewart@uwyo.edu); Office: 307.766.5374University of Wyoming Website: <http://www.uwyo.edu/anisci/faculty-and-staff/whit-stewart.html>Google Scholar: <https://scholar.google.com/citations?user=B2NmPOsAAAAJ&hl=en>**ACADEMIC BACKGROUND**

Ph. D.	Animal Science	New Mexico State University	May 2015
	Dissertation: <i>Utilization of ground juniper in small ruminant diets.</i>		
	Advisor(s): Dr. E. J. Scholljegerdes and Dr. T. R. Whitney		
M.S.	Animal Science	Oregon State University	Dec 2010
	Thesis: <i>Effect of selenium source and supplementation rate in ewes on selenium status, passive immunity, and growth performance of their lambs.</i>		
	Advisor: Dr. Jean R. Hall		
B.S.	Agricultural Education	Brigham Young University - Idaho	Dec 2008

**PROFESSIONAL EXPERIENCE**

7/2017 – Present	Assistant Professor/ Extension Sheep Specialist, University of Wyoming; Laramie WY (50% Extension, 30% Research, 15% Teaching, 5% Service)
7/2017 – 9/2019	Affiliate Graduate Faculty, Montana State University; Bozeman, MT.
6/2015 – 6/2017	Assistant Professor/ Extension Sheep Specialist Director- Montana Wool Lab Montana State University; Bozeman, MT. (77% Extension, 13% Research, 10% Service)
9/2013 – 5/2015	Graduate Assistant, New Mexico State University; Las Cruces, NM.
9/2013 – 5/2015	New Mexico State Univ. Intercollegiate Wool Judging Coach; Las Cruces, NM.
1/2012 – 8/2013	Research Associate, Texas A&M AgriLife Research; San Angelo, TX.
1/2011 – 1/2012	Area Extension Educator, University of Wyoming Extension; Gillette, WY.
1/2009 – 12/2010	Graduate Research Assistant, Oregon State University; Corvallis, OR.

**REFEREED JOURNAL PUBLICATIONS** (student authors underlined, # indicates corresponding author)

24. #**Stewart W. C.**, T. R. Whitney, E. J. Scholljegerdes, J. A. Brady, D. L. Waldron, J. W. Walker, R. P. Adams, and J. M. B. Musser. 2019. Ruminal fermentation characteristics of goats selectively bred to have greater consumption of *Juniperus Pinchotii* foliage. *Animal Feed Sci. and Tech.* <https://doi.org/10.1016/j.anifeedsci.2019.114240>
23. Scasta J. D., K. Koepke, **W. C. Stewart**. 2019. Nutrition of dissimilar sheep breeds based on fecal NIRS predictions and vegetation responses in a targeted grazing experiment. *Applied Anim. Sci.* 35:441-453. DOI: <https://doi.org/10.15232/aas.2019-01844>
22. C. M. Page, M. L. Van Emon, T. W. Murphy, C. K. Larson, J. G. Berardinelli, I. R. McGregor, and #**W. C. Stewart**. 2019. Effects of zinc source and dietary concentration on zinc serum concentrations, growth performance, wool traits, and reproductive characteristics in developing rams. *Animal*. 1-9. Doi:10.1017/S1751731119002180
21. Kerth, C. R., K. R. Wall, R. K. Miller, T. R. Whitney, **W. C. Stewart**, J. A. Boles, T. W. Murphy. 2019. Effects of plant secondary compounds found in *Juniperus spp.* on yearling Rambouillet wethers feedlot performance, carcass characteristics, adipose fatty acid composition, and sensory panel traits. *J. Anim. Sci.* DOI:10.1093/jas/skz174
20. T. W. Murphy, **W. C. Stewart**, D. R. Notter, M. R. Mousel, G. S. Lewis, K. A. Leymaster, and J. B. Taylor. 2019. Evaluation of Rambouillet, Polypay, and Romanov–White Dorper x Rambouillet ewes mated to terminal sires in an extensive rangeland production system: Body weight and wool characteristics *J. Anim. Sci.* DOI:10.1093/jas/skz070
19. Ishaq S. I., C. M. Page, C. Yoeman, T. W. Murphy, M. L. Van Emon, #**W. C. Stewart**. 2018. Zinc-amino-acid supplementation alters yearling ram rumen bacterial communities, but zinc sulfate supplementation does not. *J. Anim. Sci.* DOI:10.1093/jas/sky456
18. Naumann, H. D., #**W. C. Stewart**, and T. R. Whitney. 2018. Juniperus species and stage of maturity affect concentration and biological activity of protein precipitable polyphenols. *Animal Feed Sci. and Tech.* 246:11-17. DOI: 10.1016/j.anifeedsci.2018.09.013
17. McGregor, I. R., C. M. Page, **W. C. Stewart**, and M. L. Van Emon. 2018. Effects of sugar beets on steer backgrounding performance, sheep nutrient metabolism, and rumen fermentation characteristics. *J. Agric. Studies.* 6:190-205. DOI: 10.5296/jas.v6i3.13464
16. Murphy, T. W., **W. C. Stewart**, C. G. Smith, and J. B. Taylor. 2018. Effects of late gestation shearing on body weight gain, feed intake, and serum metabolite concentrations in Rambouillet ewes housed outdoors during winter. *Animal*.1-6. doi:10.1017/S175173111800191X
15. Page, C. M., M. L. Van Emon, T. W. Murphy, J. G. P. Bowman, S. A. Wyffels, and #**W. C. Stewart**. 2018. Blood serum mineral element concentrations of weaned Montana ram lambs and their relationship with water quality characteristics. *Prof. Anim. Sci.* 34:410-420. Doi:10.15232/pas.2018-01747 (Awarded Editor's Choice)
14. J. L. Glasscock, T. R. Whitney, J. R. Roper, A. R. Holmes, S. G. Marrs, **W. C. Stewart**, and E. J. Scholljegerdes. 2018. Substituting ground woody plants for cottonseed hulls in kid goat feedlot diets: growth performance and blood serum chemistry. *J. Anim. Sci.*
13. Walker, J. W., **W. C. Stewart**, R. Pope, S. Spear, M. Ebert, T. W. Murphy. 2018. Evaluation of mean fiber diameter measurements by FibreLux micron meter and OFDA 2000 in Texas and Intermountain West wool. *Small Rumin. Res.* 159:31-37. Doi: 10.1016/j.smallrumres.2017.12.008
12. T. R. Whitney, J. L. Glasscock, J. P. Muir, **W. C. Stewart**, E. J. Scholljegerdes. 2017. Substituting ground woody plants for cottonseed hulls in lamb feedlot diets: growth performance, blood serum chemistry, and rumen fluid parameters. *J. Anim. Sci.* 0. Doi:10.2527/jas.2017.1649
11. **Stewart W. C.**, T. R. Whitney, E. J. Scholljegerdes, D. M. Hallford, J. W. Walker, R. P. Adams, and H. D. Naumann. 2017. Effects of feeding ground redberry juniper (*Juniperus pinchotii*) to gestating ewes

- on pre- and postpartum performance, serum metabolites and hormones, milk fatty acid composition, and progeny pre-weaning performance. *J. Anim. Sci.* 0. doi:10.2527/jas.2016.1090
10. **Stewart, W. C.**, T. R. Whitney, E. J. Scholljegerdes, H. D. Naumann, N. M. Cherry, J. P. Muir, B. D. Lambert, J. W. Walker, R. P. Adams, K. D. Welch, D. R. Gardner, and R. E. Estell. 2015. Effects of *Juniperus* species and stage of maturity on nutritional, in vitro digestibility and plant secondary compound characteristics. *J. Anim. Sci.* 93:4034- 4047
  9. Whitney, T. R., C. J. Lupton, J. P. Muir, R. P. Adams, and **W. C. Stewart**. 2014. Effects of using ground redberry juniper and dried distillers grains with solubles in lamb feedlot diets: Growth, blood serum, feces, and wool characteristics. *J. Anim. Sci.* 92:1119-1132.
  8. Hall, J. A., W. R. Vorachek, **W. C. Stewart**, M. E. Gorman, W. D. Mosher, G. J. Pirelli, G. Bobe. 2013. Selenium supplementation restores innate and humoral immune responses in footrot-affected sheep. *PLOS ONE* 8: e82572. doi:10.1371/journal.pone.0082572
  7. Adams, R. P., C. A. Taylor, T. R. Whitney, **W. C. Stewart**, and J.P. Muir. 2013. Goats and deer do not use terpenoids to select or avoid browsing on *Juniperus pinchotti* Sudw. Trees. *Phytologia.* 95:238-245.
  6. Hall, J. A., G. Bobe, J. K. Hunter, W. R. Vorachek, **W. C. Stewart**, J. A. Vanegas, C. T. Estill, W. D. Mosher, G. J. Pirelli. 2013. Effect of feeding selenium-fertilized alfalfa hay on performance of weaned beef calves. *PLOS One.* 8:e58188.
  5. **Stewart, W. C.**, G. Bobe, W. R. Vorachek, B. V. Stang, G. J. Pirelli, W. D. Mosher, J. A. Hall. 2012. Organic and inorganic selenium: IV. Passive transfer of immunoglobulin from ewe to lamb. *J. Anim. Sci.* 91:1791-1800
  4. **Stewart, W. C.**, G. Bobe, G. J. Pirelli, W. D. Mosher, J. A. Hall. 2012. Organic and inorganic selenium: III. Ewe and progeny performance. *J. Anim. Sci.* 90:4536-4543.
  3. **Stewart, W. C.**, G. Bobe, W. R. Vorachek, G. J. Pirelli, W. D. Mosher, T. Nichols, R. J. Van Saun, N. E. Forsberg, J. A. Hall. 2011. Organic and inorganic selenium: II. Transfer efficiency from ewes to lambs. *J. Anim. Sci.* 90: 577-584.
  2. Hall, J. A., R. J. Van Saun, G. Bobe, **W. C. Stewart**, W. R. Vorachek, W. D. Mosher, T. Nichols, N. E. Forsberg, G. J. Pirelli. 2011. Organic and inorganic selenium: I. Oral Bioavailability in ewes. *J. Anim. Sci.* 90: 568-576.
  1. Hall, J. A., A. M. Harwell, R. J. Van Saun, W. R. Vorachek, **W. C. Stewart**, M. L. Galbraith, K. J. Hooper, J. K. Hunter, W. D. Mosher, G. J. Pirelli. 2011. Agronomic biofortification with selenium: Effects on whole blood selenium and humoral immunity in beef cattle. *Animal Feed Sci. and Tech.* 164:184–190.

**IN-PREPARTION** (student authors underlined, # indicates corresponding author)

1. C. M. Page, T. W. Murphy, J. B. Taylor, D. C. Rule, K. Austin, C. Pankey, and #**W. C. Stewart**. Effect of increasing dietary zinc sulfate concentrations fed to gestating Rambouillet and Hampshire ewes on performance, serum metabolites, serum mineral element transfer efficiency ratios, and progeny performance. *Animal*
2. R. McGregor, J. G. P. Bowman, C. M. Page, A. R. Hubbard, M. Manoukian, **W. C. Stewart**, and M. L. Van Emon. The effect of ensiling sugar beets on preservation characteristics, nutrient profile, and in situ disappearance. *Animal Feed Sci. and Tech.* (Co-Author Review)
3. J. D. Scasta, T. Jorns, J. D. Derner, B. Stam, M. McClaren, Craig Calkins, **W. C. Stewart**. Technical Note: Toxic plants in sheep diets grazing extensive landscapes: Insights from Fecal DNA metabarcoding. *Livestock Sci.* (Co-Author Review)

4. McKibben, H. N., D. R. Notter, **W. C. Stewart**, W. J. Means, N. L. Pierce, and J. B. Taylor. Comparison of new composite breeds with the Suffolk breed as terminal sires in an extensive production system: Carcass characteristics. *J. Anim. Sci.*
5. **#Stewart, W.C.**, T. W. Murphy, D. Scott, S. Howell, R. Kaplan. Survey of anthelmintic resistance in Montana and Wyoming. *Sheep and Goat Research Journal*.

**REVIEWED PROCEEDINGS** (student authors underlined, # indicates corresponding author)

1. Whaley J.R., W.J. Means, J.P. Ritten, H. Cunningham-Hollinger, C.M. Page, H.N. McKibben, **#W.C. Stewart**. 2019. A survey of lamb carcass characteristics in the Intermountain West during periods of seasonally constrained supply. *Transl. Anim. Sci.*
2. McKibben, H. N., D. R. Notter, **W. C. Stewart**, W. J. Means, N. L. Pierce, and J. B. Taylor. 2019. Comparison of new composite breeds with the Suffolk breed as terminal sires in an extensive production system: Carcass characteristics. *Transl. Anim. Sci.*
3. Knuth, R. M., **W. C. Stewart**, J. B. Taylor, C. J. Yoeman, B. Bisha, C. M. Page, B. C. Lindsey, M. L. Van Emon, T.W. Murphy. 2019. Subclinical mastitis in sheep: etiology and association with milk somatic cell count and ewe productivity in three research flocks in the Western U.S. *Transl. Anim. Sci.*
4. Murphy, T. W., **W. C. Stewart**, and J. B. Taylor. 2018. Factors affecting ewe somatic cell count and its relationship with lamb weaning weight in extensively managed flocks. *Transl. Anim. Sci.* 2018.2:s159-S162. doi:10.1093/tas/txy031
5. Knuth, R. M., **W. C. Stewart**, J. A. Boles, C. M. Page, A. F. Williams, and T. W. Murphy. 2018. Evaluating the effect of South African Meat Merino breeding on pre- and post-weaning growth, feedlot performance, carcass traits, and wool characteristics in an extensive production setting. *Transl. Anim. Sci.* 2018.2:S163-S166. doi:10.1093/tas/txy036
6. McKibben, H. N., D. R. Notter, **#W. C. Stewart**, W. J. Means, N. L. Pierce, and J. B. Taylor. 2018. Evaluation of Suffolk, Siremax, and a test composite breed as terminal sires in an extensive production system: prefabrication carcass traits. *Transl. Anim. Sci.* 2018.2:S155-S158. doi:10.1093/tas/txy042
7. Meyerhoff, B., **W. C. Stewart**, S. H. Cox, R. L. Dunlap, N. P. Miller, R. Pope, and E. J. Scholljegerdes. 2017. Comparison of growth, feed efficiency, and wool characteristics of commercial Rambouillet × South African Meat Merino crossbred rams to purebred Rambouillet rams. *Translational Animal Science* 1(Suppl1):231-234. doi:10.2527/asasws.2017.0056
8. **#Stewart, W. C.**, T. W. Murphy, D. R. Notter, M. R. Mousel, G. S. Lewis, K. A. Leymaster, and J. B. Taylor. 2017. Wool characteristics of Rambouillet, Polypay, and Romanov-White Dorper x Rambouillet ewes in an extensive rangeland production system. *Translational Animal Science* 1(Suppl1):165-169. doi:10.2527/asasws.2017.0057
9. Page, C. M., I. McGregor, M. L. Van Emon, T. W. Murphy, C. K. Larson, J. G. Berardinelli, and **#W. C. Stewart**. 2017. Effects of zinc source and dietary concentration on zinc status, growth performance, and wool characteristics in developing rams1. *Translational Animal Science* 1(Suppl1):127-131. doi:10.2527/asasws.2017.0053
10. McGregor, I., C.M. Page, C. Ryan, A.R. Hubbard, M. Manoukian, **W.C. Stewart**, and M.L. Van Emon. 2017. The effects of shredded sugar beets on sheep nutrient metabolism and ruminal characteristics1. *Translational Animal Science* 1(Suppl1):75-80. doi:10.2527/asasws.2017.0026
11. I. McGregor, C.M. Page, **W.C. Stewart**, and M.L. Van Emon. 2016. Effects of increasing sugar beets on steer backgrounding performance. *Proc. West. Sect. Am. Soc. Anim. Sci.* 67: 176–179.
12. C. M. Page, M. L. Van Emon, S. Spear, T. W. Murphy, J. G. Bowman, and **#W. C. Stewart**. 2016. Survey of serum trace mineral concentrations in weaned Montana ram lambs. *Proc. West. Sect. Am. Soc. Anim. Sci.* 67: 13–16.

13. **Stewart W. C.**, T. R. Whitney, E. J. Scholljegerdes, D. M. Hallford, S. S. Soto-Navarro, and H. D. Naumann. Effects of feeding ground juniper to gestating ewes on pre- and postpartum ewe performance, serum biochemistry and hormones, milk fatty acid composition and progeny preweaning performance. 2015. Proc. West. Sect. Am. Soc. Anim. Sci. 65:10–16.
14. Glasscock J. L., T. R. Whitney, R. Roper, A. R. Holmes, S. G. Marrs, N. M. Cherry, J. P. Muir, **W. C. Stewart**, and E. J. Scholljegerdes Effects of using ground woody plants in kid goat feedlot diets on growth performance. 2015. Proc. West. Sect. Am. Soc. Anim. Sci. 65: 204– 207.
15. **Stewart, W. C.**, E. J. Scholljegerdes, S. Cox, T. T. Ross, M. Coleson, D. Fellwock, R. Pope, and F. Pfeiffer. Commercial Rambouillet and South African meat merino (SAMM) crossbred rams: post-weaning growth, feed efficiency, wool, and ultrasound carcass characteristics. 2014. Proc. Triennial NMSU- Corona Range and Livestock Research Center Conference.
16. **Stewart W. C.**, T. R. Whitney, E. J. Scholljegerdes, H. D. Naumann, N. M. Cherry, J. P. Muir, B. D. Lambert, R. P. Adams, K. D. Welch, and D. R. Gardner. Effects of juniper species and stage of maturity on nutritional, digestive, and plant secondary compound characteristics. 2014. Proc. West. Sect. Am. Soc. Anim. Sci. 65: 59- 63.
17. Whitney, T. R. and **W. C. Stewart**. Alternative feeds for a temporary crisis or permanent problem. 2013. WERA- 39 Sheep Symposium Proc. West. Sect. Am. Soc. Anim. Sci. pp. 26- 30.
18. **Stewart W. C.**, G. Bohe, W. R. Vorachek, W. D. Mosher, G. Pirelli, J. A. Hall. The effect of selenium source and supplementation rate in ewes on selenium transfer from ewe to lamb and on lamb growth. 2011. Proc. West. Sect. Am. Soc. Anim. Sci. 62: 35-39
19. Hall, J. A., R. J. Van Saun, **W. C. Stewart**, W. R. Vorachek, W. Mosher, G. J. Pirelli. 2010. Bioavailability of oral selenium supplements in sheep. 2010. ACVIM Forum Annual Meeting. Anaheim, CA. pp 271.

#### **ABSTRACTS/POSTERS** (student authors underlined)

1. G. M. Becker, K. M. Davenport, A. L. Davis, M. Duan, L. Eidman, C. S. Schauer, **W. C. Stewart**, B. M. Murdoch. 2019. Identifying Novel Variants in Economically Important Genes Through the Flock54 Low-Density Sheep Genotype Panel. Plant and Animal Genome Conference
2. C. M. Page, T. W. Murphy, J. B. Taylor, D. C. Rule, H. N. McKibben, J. R. Whaley, **W. C. Stewart**. 2019. Effects of increasing dietary zinc concentration during late gestation on ewe and lamb performance. Mountain States Cooperative Summer Meeting-2019
3. C. M. Page, T. W. Murphy, J. B. Taylor, D. C. Rule, H. N. McKibben, J. R. Whaley, **W. C. Stewart**. 2019. Effects of increasing dietary zinc concentration during late gestation on ewe and lamb performance. American Lamb Board Lamb Summit-2019
4. J.R. Whaley, W.J. Means, J.P. Ritten , **W.C . Stewart**. 2019. Industry impacts of excessively fat lambs. Mountain States Cooperative Summer Meeting-2019
5. J.R. Whaley, W.J. Means, J.P. Ritten , **W.C . Stewart**. 2019. A historic overview of excessively finished lamb carcasses. American Lamb Board Lamb Summit-2019
6. A. A. M. Julian, J. D. Scasta, B. M. Sebade, B. R. Stam, **W. C. Stewart**. 2019. Trace mineral concentrations in common forage and shrub species on sheep winter range throughout Wyoming: Preliminary results. American Lamb Board Lamb Summit-2019
7. A. A. M. Julian, J. D. Scasta, B. M. Sebade, B. R. Stam, **W. C. Stewart**. 2019. Quantification of trace mineral concentrations in common forage and shrub species on sheep winter range throughout Wyoming. Mountain States Cooperative meeting- 2019
8. C. M. Page, D. C. Rule **W. C. Stewart**. 2019. Effects of dietary zinc concentrations on milk fatty acid composition in Rambouillet and Hampshire ewes. WSASAS-2019

9. Julian, A. A. M., C. M. Page, **W. C. Stewart**. 2019. Non-target consumption of Rambouillet and Hampshire feeder lambs with the Super SmartFeeder™ in a dry lot setting. WSASAS-2019
10. Davis, A. L., C. Schauer, **W. C. Stewart**, G. M. Becker, K. M. Davenport, B. M. Murdoch. 2019 Flock54 genotyping panel to explore autosomal mutation for rickets in Rambouillet sheep. WSASAS-2019
11. Kerth, C. R., T. W. Murphy, **W. C. Stewart**, J. A. Boles, T. R. Whitney, R. K. Miller. 2018. Effects of plant secondary compounds found in *Juniperus spp.* on yearling Rambouillet wethers feedlot performance, carcass characteristics, adipose fatty acid composition, and sensory panel traits. ASAS-JAM 2018.
12. Brady, J. A., **W. C. Stewart**, T. R. Whitney, E. J. Scholljegerdes, C. J. Yeoman, R. P. Adams, D. L. Waldron, J. W. Walker, and J. M. B. Musser. 2018. Rumen microbial characteristics of goats selectively bred to have greater consumption of *Juniperus pinchotii* forage. ASAS-JAM 2018.
13. Manoukian, M., I. McGregor, C. M. Page, A. R. Hubbard, **W. C. Stewart**, and M. L. Van Emon. 2017. Impact of ensiling sugar beets with or without a mold inhibitor on internal temperature, nutrient composition, digestibility, and pH. Translational Animal Science 1(Suppl1):306-306. doi:10.2527/asasws.2017.0020
14. **Stewart, W. C.**, T. R. Whitney, E. J. Scolljegerdes, D. F. Waldron, J. W. Walker, and J. M. B. Musser. 2016. 1677 Effects of selection for high and low juniper-consuming goats on rumen fermentation characteristics.. J. Anim. Sci. 94(Suppl5):817-817. doi:10.2527/jam2016-1677
15. Page, C. M., M. Van Emon, S. Spear, T. W. Murphy, J. G. P. Bowman, and **W. C. Stewart**. 2016. 0579 S survey of serum trace mineral concentrations in weaned Montana ram lambs.. J. Anim. Sci. 94(Suppl5):274-274. doi:10.2527/jam2016-0579
16. Perz, K. A., J. G. Berardinelli, L. N. Park, R. K. Pollard, C. M. Page, **W. C. Stewart**, and J. M. Thomson. 2016. Repeatability of residual feed intake and indices of body composition in growing Columbia ewes fed the same diet.. J. Anim. Sci. 94(Suppl5):373-374. doi:10.2527/jam2016-0777
17. **Stewart, W. C.**, E. J. Scholljegerdes, S. Cox, T. T. Ross, M. Coleson, D. Fellwock, R. Pope, and F. Pfeiffer. Commercial Rambouillet and South African meat merino (SAMM) crossbred rams: Growth, feed efficiency, wool, and ultrasound carcass characteristics. New Mexico Cattle growers/Wool growers Joint Annual Meeting. June 8, 2014.
18. Whitney, T. R., J. W. Walker, **W. C. Stewart**, R. J. Ansley, B. D. Lambert, A. F. Cibils, C. B. Scott, J. L. Johnson, T. Bader, W. Winters, L. O. Tedeschi, G. E. Carstens, and J. P. Muir. Wood to Feed: Diversifying Income opportunities by increasing the livestock feeding value of woody plant species. American Society of Animal Science Joint Annual Meeting. July 15-19 2012.
19. Whitney, T.R., C.D. Swening, J. P. Muir, C. J. Lupton, and **W. C. Stewart**. Substituting ground redberry juniper leaves and stems for oat hay in lamb feedlot diets: Growth performance, serum urea nitrogen, serum insulin-like growth factor-1, and wool characteristics. American Society of Animal Science Joint Annual Meeting. July 15-19, 2012.

## **TECHNICAL REPORTS**

### *University of Wyoming*

**Stewart, W. C.**, K. Koepke. 2018. Ram test field day: Ram test performance data, individual and sire trait leaders. Wyoming Ag Exp. Station. April 2019.

**Stewart, W. C.**, K. Koepke, C. M. Page, B. Sebade, J. D. Scasta, H. Hollinger. 2018. Producer Summary: University of Wyoming (Pilot) Pasture Based Ram Test. September 2018.

**Stewart, W. C.**, J. Whaley, W. Means, J. R. Ritten. 2018. Progress Report: Quantifying the economic impact of excessively fat lambs in the U.S. processing sector. National Sheep Industry Improvement Center. August 2018.

**Stewart, W. C.**, J. Whaley, W. Means, J. R. Ritten. 2018. Preliminary Report: Quantifying the economic impact of excessively fat lambs in the U.S. processing sector. The American Lamb Board. August 2018.

**Stewart, W. C.**, K. Koepke. 2018. Ram test field day: Ram test performance data, individual and sire trait leaders. Wyoming Ag Exp. Station. March 2018.

**Stewart, W. C.**, T.W. Murphy, D. Scott., S. Howell. 2018. Gastrointestinal nematode resistance to anthelmintic treatment in Montana and Wyoming sheep flocks: Preliminary results (Year 1 of 2). Western-SARE. January 2018

### ***Montana State University***

**Stewart, W. C.** 2017 (PI). Progress Report: Quantifying trace mineral status in weaned Montana ram lambs. National Sheep Industry Improvement Center

**Stewart, W. C.** 2017 (PI). Progress Report: Wool research and education initiative. National Sheep Industry Improvement Center

**Stewart, W. C.** 2016 (PI). Progress Report: Does classing and skirting wool reduce fiber contamination. Bair Ranch Foundation

**Stewart, W. C.** 2016 (PI). Progress Report: Wool research and education initiative. National Sheep Industry Improvement Center

## **EXTRAMURAL AND INTRAMURAL FUNDING**

### ***University of Wyoming***

Feuz, B., H. Hill, **W. Stewart**, R. Larsen. 2019. Training Ag loan professionals in the use of Wyoming ranch tools for sheep and cattle producers in Idaho, Montana and Utah. Western-SARE \$55,165 (pending)

Cunningham-Hollinger, H. C., **W. C. Stewart**, S. Lake, R. Yeatts, Investigations into the impact of biochar on production efficiency in ruminant livestock. Western-SARE \$326,199 (pending)

Bangoura, B., **W. C. Stewart**. 2019. Impact of sheep coccidiosis and it's targeted control on sustainable lamb production. Wyoming Agricultural Experiment Station. \$9,996 (Funded)

Knuth, R., H. Cunningham-Hollinger, B. Bisha, **W. C. Stewart**. 2019. Investigating the main mastitis causing pathogens plaguing Westerns sheep flocks. National Sheep Industry Improvement Center \$26,333.20 (Funded)

**Stewart, W. C.** 2019 (PI). Y Cross Foundation Graduate Student Tuition and Fee Award. University of Wyoming College of Agriculture. \$ 9,000 (Funded)

**Stewart, W. C.**, H. Cunningham-Hollinger, S. L. Lake, C. Gifford, C. M. Page, A. Julian. 2019 Effects of dietary zinc concentrations on lamb feedlot performance, rumen fluid parameters, and carcass characteristics. ADM Animal Nutrition. \$1,300 (Funded)

Bangoura, B., **W. C. Stewart**, A. Piccorelli, J. D. Scasta. 2019. Intestinal parasite burden in changing climate conditions – Impact on sheep production and animal-based food resources. University of Wyoming Faculty Innovation Seed Grant Program. \$90,000 (Not-Funded)

**Stewart, W. C.**, J. D. Scasta, B. Stam. 2019. Trace mineral concentrations in common Wyoming range plants on sheep winter range. National Sheep Industry Improvement Center \$15,099.45. (Funded)

Feuz, B. H. Hill, B. Stam, **W. Stewart**. 2019-2020. “Risk management strategies for livestock production-targeting women, beginning, and traditional producers in RMA’s Topeka region. \$99,999 (Funded)

**Stewart, W. C.** 2018 (PI). Global Perspectives Grant. University of Wyoming College of Agriculture and

Natural Resources. \$4,140 (Funded)

**Stewart W. C.**, B. Bisha. 2018. (Co-PI) The prevalence and impact of mastitis in Western sheep flocks and cost-effective strategies to diagnose, treat, and avoid its occurrence. National Sheep Industry Improvement Center. \$20,000. (Funded)

G.B. Paige, J.P. Ritten, J. Beck, **W. C. Stewart**, J.D. Scasta, B. Meador, M. Murphy, S. Lake, S. Paisley, K. Vaughn, R. Coupal, T. Collier, A. Latchinisky. 2018. (Co-PI) Center of Excellence: Sustainable Extensive Rangeland Agricultural Systems in High Altitude Headwater Areas. USDA NIFA. (4/20/2018 - 9/30/2022). *Wyoming Agricultural Experiment Station through USDA NIFA, McIntire-Stennis: project.* \$50,000/year. (Funded)

**Stewart, W. C.** 2018 (PI). Y Cross Foundation Graduate Student Tuition and Fee Award. University of Wyoming College of Agriculture. \$18,000 (Funded)

**Stewart, W. C.**, J. D. Scasta, M. B. Stephenson. 2018 (PI) Evaluation of forage kochia varieties with cool season grasses to enhance late-season grazing. Range Changer Seeds. \$1,100 (Funded)

Gitthens R. J., A. Hendrickson, W. J. Means, **W. C. Stewart**. 2018. (Co-PI) Rail to Plate: Lamb Industry Education for Chefs. American Lamb Board. \$7,840.21(Funded)

Murphy, T., and **W. C. Stewart**. 2017. (Co-PI) Evaluating livestock feed value of lentil screenings sampled throughout the Northern Great Plains. U.S. Dry Pea and Lentil Council. \$10,320 (Pending). (Co-PI) (Not Funded)

**Stewart, W.C.**, W. Means, J. Ritten. 2018. (PI) Quantifying the economic impact of excessively fat lambs in the U.S. processing sector. The American Lamb Board. \$49,000. (Funded).

**Stewart, W.C.**, W. Means, J. Ritten. 2018. (PI) Quantifying the economic impact of excessively fat lambs in the U.S. processing sector. National Sheep Industry Improvement Center. \$21,000. (Funded).

Feuz, B. H. Hill, B. Stam, **W. Stewart**. 2017- 2018. “Risk Management Education for Livestock, Beginning and Traditional Producers in RMA’s Topeka Region. \$99,999 (Funded)

Murphy, T., **W. C. Stewart**, M. Van Emon. 2017. (Co-PI) Quantifying trace mineral status of Western ewes during critical production periods. National Sheep Industry Improvement Center, \$24,129. (Funded).

Murphy, T., **W. C. Stewart**, C. J. Yoeman, D. Bimczok. (Co-PI) 2017 Mastitis In Sheep: Determining Its Prevalence, Quantifying Its Risk Factors, And Evaluating Non-Antibiotic Treatments To Reduce Its Impacts. NIFA-AFRI, \$451,555. (Not Funded).

***Montana State University (\$453,968 monies awarded as PI or Co-PI)***

Murphy, T., **W. C. Stewart**, M. Van Emon, and C. Schauer. 2017. Quantifying trace mineral status of Western ewes during critical production periods. American Sheep Industry Association “Let’s Grow”, \$29,000. Not Funded.

Feuz, B. H. Hill, B. Stam, **W. Stewart**. “Risk Management Education for Livestock, Beginning, Traditional, Women and Native American Producers in RMA’s Spokane Region. 2016-17 USDA RMA RMEPP-Spokane, \$99,999

Scott, D., **W. C. Stewart**, T. W. Murphy. 2016. (Co-PI) “Integrated Parasite Management in Small Ruminants: Train the Trainer”. Western Sustainable Agriculture Research and Education Grant. \$74,189. Funded.

Murphy, T. W., **W. C. Stewart**, J. B. Taylor, C. Yoeman. 2016. “The prevalence and impact of mastitis in Western sheep flocks and cost effective strategies to diagnose, treat, and avoid its occurrence.” American Sheep Industry Association. Fall 2016. \$26,895. Funded.



- Van Emon, M.L., C. M. Buck, R. Endecott, E. Glunk, T. W. Murphy, **W. C. Stewart**. “Livestock Pocketbook Guides and Web App”. Western Center for Risk Management Education. Fall 2016. \$39,773.16. Not Funded.
- Stewart, W. C.**, and J. Tusick., 2016. (PI) “Wool pool software for greater marketability of wool clips”. Montana Department of Agriculture. \$4,500. Funded.
- Thomson, J. M., J. A. Boles, T. W. Murphy, **W. C. Stewart**. 2016. “Enhancing graduate education in applied animal and range production”. USDA Food and Agricultural Sciences National Needs Graduate and Postgraduate Fellowship (NNF) Grants Program. \$237,000. Not Funded.
- Stewart, W. C.**, T. W. Murphy. 2016. (Principal) “Gravity oven for determination of clean wool fiber present in samples of raw wool”. Montana Agricultural Experiment Station Equipment Grant. \$4,000. Funded.
- Murphy, T. W., **W. C. Stewart**. 2016. “Milk analyzers to determine mastitis prevalence in range ewes”. Montana Agricultural Experiment Station Equipment Grant. \$6,419. Funded.
- Stewart, W. C.**, R. Pope, J. W. Walker, and T. W. Murphy. (Principal), 2016. "State of U.S. wool industry: national audit". National Sheep Improvement Center. \$40,000. Funded.
- Murphy, T. W., **W. C. Stewart**, J. A. Boles. 2016. (Co-Principal) “Sire breed, harvest age, and diet effects on the flavor profile and consumer acceptance of American lamb. National Sheep Industry Improvement Center. \$46,565. Funded.
- Stewart, W. C.**, C. M. Page, M. L. Van Emon. (Principal), “Effects zinc source (inorganic vs. organic) fed to developing rams on zinc status, growth performance, wool, and reproductive characteristics,” Zinpro Corporation. (May 2016- April 2017) \$8,600. Funded.
- Stewart, W. C.**, J. Wallawein. (Principal), “Next Generation Wool Grower Program,” American Sheep Industry Association “Lets Grow”. (May 2016 - December 2017) \$10,500. Funded
- Stewart, W. C.**, J. B. Taylor. (Co-Principal), "Genetic Improvement of U.S. Wool-type Breeds-Cooperative Agreement," US Department Of Agriculture. (September 9, 2015 - September 30, 2017) \$20,000. Funded.
- Stewart W.C.**, S. Spear. (Principal), “Validation of the FibreLux Micron Meter against the OFDA 2000”, MSU Undergraduate Scholar Research Program. (September 2015 – September 2016) \$3,000. Funded.
- Stewart, W. C.**, R. Pope, J. W. Walker. (Principal), "Wool Education and Research," National Sheep Improvement Center. (January 1, 2016 - December 30, 2016) \$40,000. Funded.
- Stewart, W. C.**, P. G. Hatfield. (Principal), “Laserscan for rapid fiber diameter analysis,” 2015-16 Montana Ag. Exp. Station Research Grant. (October 1, 2015) \$37,000. Funded
- Stewart, W. C.**, C. M. Page, M. L. Van Emon. (Principal), "Survey of trace mineral status in ram lambs, and producer implications for ram development”, National Sheep Improvement Center. (August 10, 2015 - August 10, 2016) \$14,000. Funded
- L. M. Surber, **W. C. Stewart**, (Co-Principal), "Does wool harvest preparation method impact presence of hair contamination in fleece wool?," Bair Ranch Foundation. (September 1, 2015 - January 31, 2016) \$6,700. Funded
- Stewart, W. C.**, M. Schuldt, B. Roeder. (Principal) Montana Ram Sale Sheep Symposium. American Sheep Industry Association “Lets Grow”. (May 2015 - January 2016) \$12,500. Funded
- Stewart, W. C.**, M. Schuldt. (Principal) Immerging Entrepreneurs Producer Group. American Sheep Industry Association “Lets Grow”. (May 2015- January 2017) \$35,500. Not Funded
- New Mexico State University***
- Stewart, W.C.**, T. R. Whitney, and E. J. Scholljegerdes. Addressing knowledge and outreach gaps in the utilization of woody plants in livestock diets. USDA NIFA-AFRI Predoctoral Fellowship. 8/2013- 8/2015; \$79, 500. “High Priority” Review Designation. Not Funded

Stewart, W.C., E. J. Scholljegerdes, M. Ward. Southwest sheep symposium. USDA- National Sheep Industry Improvement Center. 8/2013- 8/2015; \$36,000. Not Funded

### ***University of Wyoming Extension***

Stewart, W. C., Rotating high plains sheep symposium. UW-CES programing enhancement grant. 10/2011-10/2013; \$10,000. (sub-award= \$4,000 received from UW-CES, CCCD, Farmers Cooperative).

Stewart, W. C., S. L. Lake, K.C. Olson, A. Islam. Suitability of *Kochia prostrata* for enhancement of forage-based sheep production in northeast Wyoming. Wyoming Agricultural Experiment Station Competitive Grant Program 3/2011- 3/2012; \$22, 200. (sub-award= \$2,500 received from UW-CES for establishment of test plots).

## **TEACHING EXPERIENCE**

### ***University of Wyoming***

#### **Lead Instruction**

<u>Year</u>	<u>Semester</u>	<u>Course</u>	<u>Credits</u>	<u>Enrollment</u>
2019	Fall	ANSC 3535 Intro to Wool Evaluation	2	10
2019	Summer	ANSC 4500 Spec. Prob Range Sheep Nutr	2	1
2019	Spring	ANSC 4230 Advanced Sheep Prod. & Mgmt.	3	28
2019	Spring	ANSC 5550 Investigations in Lamb Feeding	2	1
2018	Fall	ANSC 4500 Spec. Prob. Wool Evaluation	1-2	13
2018	Spring	ANSC 4230 Advanced Sheep Prod. & Mgmt.	3	25
2018	Spring	ANSC 5550 Investigations in Anim. Nutrition	2	2
2018	Spring	ANSC 5900 Practicum College Teaching	2	2
2018	Spring	HP 4975 Honors Program Research	3	1

#### **Co-Instruction**

ANSC 1009 4-H in Animal Science, Co-Instructor (Spring 2018- Present)

ANSC 1010, Introduction to Animal Science-Sheep Section, Co-Instructor (Fall 2017-Present)

### ***Montana State University***

ANSC 432, Sheep Production and Management, Montana State University (Spring 2016)

### ***New Mexico State University***

ANSC 350, Special Topics: Sheep Research Methods (Instructor), (Spring 2015)

ANSC 100, Introduction to Animal Science Lab (TA), Fall 2014 and Spring 2015)

ANSC 303, Livestock, Meat and Wool Evaluation (TA), (Spring 2014)

### ***Oregon State University***

ANSC (100) Introduction to Animal Science Lab (TA), (Fall 2010)

## **GRADUATE STUDENT/UNDERGRADUATE STUDENTS**

### ***University of Wyoming***

- Craig Caulkins, Ph.D. Committee Member (6/19- present)
- Ryan Knuth, Ph.D. Committee Member (7/19- present)
- Alexis Julian, M.S. Committee Chair (1/3- present)
- Jaelyn Whaley, M.S. Committee Chair (6/18- present)

- 2019 M.S. student J. Whaley awarded ASI's Heritage Memorial Scholarship
- Nicole McKibben, M.S. Committee Chair (9/17- 8/19; Mountain States Lamb Cooperative)
- Chad Page, PhD Committee Chair (1/18- present; Assistant Professor Utah State University)
  - 2018 (Page et al., 2018) received "Editor's Choice" by The Professional Animal Scientist
  - 2018 Ph.D. student C. M. Page awarded ASI's Heritage Memorial Scholarship
- Kelly Thompson Carpenter, PhD Committee Co-Chair (8/17- present)
- Melanie Whitmore, Undergraduate Honors Student (10/17- 5/18; Ph.D. Oklahoma State University)

### ***Michigan State University***

- Jordan Moody, M.S. Committee Member (1/19- present)

### ***Montana State University***

- Ryan Knuth, M.S. Committee Member (9/17- 7/19; Ph.D. candidate University of Wyoming)
- Chad Page, M.S. Committee Co-Chair (9/15- 11/17; Ph.D. candidate University of Wyoming)
- Ian McGregor, M.S. Committee Member (9/15- 11/17; Extension Educator Oregon State University)
- Ashton Hubbard, M.S. Committee Member (1/16- 10/17; 4-H Educator UC Extension)
- Sarah Spear, Undergraduate Scholar Research Program (9/15- 7/17; MSU Extension Phillips County)

## **KEY EXTENSION INITIATIVES**

- Regional sheep seminars throughout Wyoming in collaboration with extension field educators. Programs combine classroom and hands-on instruction covering sheep production and management topics
- Conduct educational programs and symposia at the Wyoming Wool Growers summer meeting and West Central States combined woolgrower meeting (ID, WY, UT, NV-Wool Grower Organizations)
- Coordination of Wyoming ram tests and field days (whiteface (fall), terminal sire (spring). Coordinate test protocols, diets, and summarize data for ranchers to aid in selection information
- Coordination of Wyoming 4-H wool judging competition. Efforts include acquiring fleeces, conducting wool judging clinic, and officiating the state competition
- Co-Advisor for University of Wyoming Collegiate Wool Growers RSO (Jan 2018)
- Wyoming State Fair wool exhibition judge and educator. Evaluating and placing wool classes and educating public regarding wool quality characteristics and end point uses
- On-ranch research for needs assessment in research and extension. Data collection on cooperating ranches throughout Wyoming to identify problems and potential production improvements. Current efforts include field surveys of anthelmintic resistance, sub-clinical mastitis, and trace mineral supplementation strategies

## **EXTENSION, POPULAR-PRESS PUBLICATIONS**

### ***University of Wyoming***

**2019**

**Stewart, W. C.**, Strategies for breeding ewe lambs. In: WY Livestock Roundup. September 2019

**Stewart, W. C.**, C. M. Page. Sheep require Zinc. In: The Shepherd Magazine. August 2019

**Stewart, W. C.**, Sheep lice prevention and treatment. In: The Shepherd Magazine. July 2019

**Stewart, W. C.**, Old sheep industry talking points and new norms. In: WY Livestock Roundup. June 2019

**Stewart, W. C.**, Vaccinating is key in controlling Clostridial organisms. In: WY Livestock Roundup. April 2019

**Stewart, W. C.**, Body Condition Scoring technique helps assess nutritional needs, determine feed costs of the small acreage sheep flock. In: WY Livestock Roundup (Barnyards & Backyards Insert). Spring 2019

- Stewart, W. C.**, Exhibiting fleeces supports 4-H and inter-collegiate wool judging. In: Wyoming Wool Growers Magazine. February 2019.
- Stewart, W.C.**, Involving the next generation in their industry organization In: Wyoming Wool Growers Magazine. February 2019.
- Stewart, W.C.**, Minimizing the adverse effects of ammonia in the lambing shed. In: Wyoming Wool Growers Magazine. February 2019.
- Schell, S., and **W. C. Stewart**, The common fluke parasite is becoming more common. In: WY Livestock Roundup (Barnyards & Backyards Insert). Spring 2019
- 2018**
- Stewart, W. C. and **C. M. Page**. 2018. Tailoring sheep nutrition to Wyoming's unique production environment. Wyoming Reflections article.
- Stewart, W.C., Winter weather considerations for the ewe flock. In: WY Livestock Roundup. December 8th, 2018.
- Stewart, W.C., Summary of the 2018 WY Woolgrower summer meeting in Laramie. In: Wyoming Wool Growers Magazine. September 8th, 2018.
- Stewart, W.C., Objective selection, ram test and the 2018 ram purchasing. In: WY Livestock Roundup. September 8th, 2018
- Stewart, W.C., Trace minerals; essential to sheep, lambs, and profits. In: WY Livestock Roundup. July 15th, 2018
- Stewart, W.C., Economic impact of mastitis in Western sheep production systems In: Wyoming Wool Growers Magazine. April 2018.
- Stewart, W.C., Capturing maximum value in the 2018 wool clip. In: WY Livestock Roundup. Feb 2018
- Stewart, W.C., Is My De-Wormer Still Effective? In: WY Livestock Roundup (Barnyards & Backyards Insert). March 2018.
- Stewart, W.C., University of Wyoming On-Ranch Performance Testing Program In: Wyoming Wool Growers Magazine. January 2018.
- Stewart, W.C., Lambing Time FAQ's. In: Wyoming Wool Growers Magazine. January 2018.

### **2017**

- Stewart, W.C., Ram Management Considerations Part Two. In: WY Livestock Roundup. Oct 21, 2017
- Stewart, W.C., Ram Management Considerations Part One. In: WY Livestock Roundup. Oct 14, 2017
- Stewart, W.C., Terminal sire test takes the guess work out of ram buying. In: WY Livestock Roundup. Sept

### **Montana State University**

- Stewart, W. C., Cold weather considerations for sheep. In: The Shepherd Magazine. November 2016.
- Stewart, W. C., Sheep selection considerations. In: Montana Wool Grower. Ram Sale Edition 2016.
- Stewart, W. C., Asking the right selection questions. In: The Shepherd Magazine. August 2016.
- Stewart, W. C., MSU ram test purpose and results. In: Montana Wool Grower. Summer 2016.
- Stewart, W. C., Historical reflections. In: The Shepherd Magazine. July 2016.
- Stewart, W. C., Phosphorus in sheep mineral. In: The Shepherd Magazine. May 2016.
- Stewart, W.C., Choosing the right breed of sheep. In: Big Sky Small Acres. Spring 2016.
- Stewart, W.C., Costly mineral assumptions. In: The Shepherd Magazine. Feb 2016.
- Stewart, W.C., Heritability estimates of undesirable fiber types. In: The Shepherd Magazine. Jan 2016.
- Stewart, W. C. Mastitis in sheep production systems. In: The Shepherd Magazine. August 2015.
- Stewart, W.C., Per Capita Lamb Consumption: Fact or Fiction? In: The Shepherd Magazine. June 2015.
- Stewart, W.C., New Mexico SAMM Composite Study. In: The Shepherd Magazine. April 2015.

### **Texas A&M AgriLife Research/ New Mexico State University**

- Stewart, W.C., U.S. Sheep Inventory: Decline or Transition? In: The Shepherd Magazine. June 2014.
- Stewart, W.C., Wool Selection Decision Making. In: The Shepherd Magazine. May 2014.
- Stewart, W.C., Carbon Foot printing the U.S. sheep industry. In: The Shepherd Magazine. March 2013.
- Stewart, W.C., Genotype Environment Interaction. In: The Shepherd Magazine. January 2013.
- Stewart, W.C., San Angelo Research: A Legacy of Service. In: The Shepherd Magazine. December 2012.
- Stewart, W.C., South African Mutton Merinos. In: The Shepherd Magazine. November 2012.
- Stewart, W.C., Innovation at the Feed Bunk. In: The Shepherd Magazine. October 2012.
- Stewart, W.C., Waiting for the Rain. In: The Shepherd Magazine. September 2012.
- Stewart, W.C., Terminal Sire Selection: More Black than White? In: The Shepherd Magazine. August 2012.
- Stewart, W.C., Selenium 101. In: The Shepherd Magazine. July 2012.
- Stewart, W.C., Forage Kochia: A Novice's Perspective. In: The Shepherd Magazine. June 2012.
- Stewart, W.C., Sheep Programs: An Investment in our Future. In: The Shepherd Magazine. May, 2012.
- Stewart, W.C., Wood to Feed. In: The Shepherd Magazine. April 2012.
- Stewart, W.C., Making Sense of Carcass Ultrasound in Sheep. In: WY Livestock Roundup. October, 2011

### **SELECTED PRESENTATIONS (selected from 109)**

#### ***University of Wyoming*** **2019**

- Wyoming Stock Stockgrowers Progressive Ranching Workshop. Flexible herd management. Co-presented w/ J. D. Scasta. December 9<sup>th</sup>, 2019 40 attendees
- UWYO, K-State, and 4-H Wool Judging practice contest and clinic. Grading rail decision making. Laramie, WY. (December 7<sup>th</sup>, 2019) 30 attendees
- West Central States (UT, ID, WY) Wool Grower Meeting. Building bridges with extension to expand sheep specific programming in UT, ID, and WY. Evanston, WY (November 7<sup>th</sup>, 2019) 27 attendees
- West Central States (UT, ID, WY) Wool Grower Meeting. Precision sheep health and nutritional management. Evanston, WY (November 7<sup>th</sup>, 2019) 57 attendees
- Wyoming Wool Growers Association. Lessons in sheep production systems from Argentina and Uruguay. Evanston, WY (November 7<sup>th</sup>, 2019) 27 attendees
- Collegiate Wool Growers Meeting. Global perspectives on sheep production in Argentina and Uruguay. Laramie, WY (October 24<sup>th</sup>, 2019) 10 attendees
- Instituto Nacional de Tecnologia Agropecuaria- Bariloche Research Center. Challenges and opportunities in the U.S. sheep industry: solutions through international collaborations UW and INTA . Bariloche, Argentina (October 18<sup>th</sup>, 2019). 10 attendees
- Universidad de la Republica, Department of Animal Production. Challenges and opportunities in the U.S. sheep industry: solutions through applied research and extension. Montevideo, Uruguay (October 11<sup>th</sup>, 2019). 47 attendees
- Universidad de la Republica, Veterinary Department. Challenges and opportunities in the U.S. sheep industry: solutions through applied research and extension. Montevideo, Uruguay (October 7<sup>th</sup>, 2019). 13 attendees
- UW Extension/WWGA Emerging Entrepreneurs Field Day. Growing lamb and finishing diet considerations. Kinnear WY (September 27<sup>th</sup>, 2019). 25 attendees

UW Extension/WWGA Emerging Entrepreneurs Field Day. Management and pricing considerations for short-term ewes. Kinnear WY (September 27<sup>th</sup>, 2019). 24 attendees

Wyoming Ram Sale Seminar, Preparing for breeding season: ewe nutrition and phenotypic selection. Douglas, WY (September 9<sup>th</sup>, 2019). 21 attendees

Wyoming Wool Growers Summer Meeting. FAMACHA to guide deworming decision making. Laramie, Wyoming. (August 10<sup>th</sup>, 2019) 20 attendees.

Wyoming Wool Growers Summer Meeting. Resistance to anthelmintic in Wyoming and Montana. Laramie, Wyoming. (August 10<sup>th</sup>, 2019) 40 attendees.

Wyoming Wool Growers Summer Meeting. Evaluating sheep udders and body condition scores in cull keep scenarios. Laramie, Wyoming. (August 9<sup>th</sup>, 2019) 40 attendees.

Colorado Wool Growers Summer Meeting. Strategic mineral supplementation: preventing production losses in sheep production systems. Montrose, Colorado. (July 18<sup>th</sup>, 2019) 27 attendees.

Mountain States Lamb Cooperative: Producer Education Program. Mastitis in sheep: A Western perspective to what it costs and how to mitigate it's effects. Buffalo, Wyoming. (July 16<sup>th</sup>, 2019) 50 attendees.

Mountain States Lamb Cooperative: Producer Education Program. Pre- and post- breeding ram management strategies. Buffalo, Wyoming. (July 16<sup>th</sup>, 2019) 50 attendees.

Wyoming Association for Career and Technical Education Summer Meeting. Utilizing wool evaluation in CDE and post-secondary curriculum. Casper, Wyoming. (June 21<sup>st</sup>, 2019) 13 attendees.

NCERA-214 Multi-State Research and Extension Meeting. Lamb feeding and processing industry infrastructure tour. Laramie, WY. (June 5<sup>th</sup>, 2019) 10 attendees.

NCERA-214 Multi-State Research and Extension Meeting. Sheep research and extension initiatives at the University of Wyoming. Laramie, WY. (June 4<sup>th</sup>, 2019) 15 attendees.

New Mexico Indian Livestock Days. Getting more for your wool through ram selection and clip preparation. Albuquerque, New Mexico (May 9<sup>th</sup>, 2019) 64 attendees.

New Mexico Indian Livestock Days. Sheep health considerations. Albuquerque, New Mexico (May 9<sup>th</sup>, 2019) 64 attendees.

University of Wyoming Ram Test Field Day. How to use ram test data to select for greater productivity. Laramie, Wyoming (April 13<sup>th</sup>, 2019) 33 attendees.

ANSC 1009 4-H in Animal Science. Sheep Health and Housing Considerations (Zoom Presentation). (March 20<sup>th</sup>, 2019), 68 attendees.

High Plains Organic Farming Conference, Maximizing production within narrow framework. Cheyenne, WY (February 28<sup>th</sup>, 2019), 10 attendees.

Pipestone Sheep Management Program Webinar. MN, IA, SD (Zoom Presentation). (February 21<sup>st</sup>, 2019), 49 webinar participants.

Fremont County Ag Days, Making more from your wool clip. Riverton, WY (February 7<sup>th</sup>, 2019), 21 attendees.

Wyoming Utah Ag Days, Sheep management strategies that pencil. Evanston, WY (January 31<sup>th</sup>, 2019), 17 attendees.

American Sheep Industry Association: PERC Council. Sheep and Goat Research Journal Update. New Orleans, LA. (January 24<sup>th</sup>, 2019)

**2018**

Cowboy Classic Collegiate Wool Judging Contest and 4-H Coaches Clinic. Principles of wool evaluation grading rail, commercial and breed classes. Laramie, WY. (December 8<sup>th</sup>, 2018). 52 attendees

Front Range Wool Pool Seminar. Targeted trace mineral supplementation strategies. Conrad, MT (Zoom Meeting). (December 4<sup>th</sup>, 2018). 35 attendees

Collegiate Wool Grower End-of Semester Meeting. Raw wool evaluation and end-point use. Laramie, WY (November 26<sup>th</sup>, 2018). 12 attendees

West Central States Wool Grower Meeting- Production Symposium. Sheep management strategies that pencil: revisiting what's often overlooked. Casper, WY. (November 10<sup>th</sup>, 2018). 53 attendees

West Central States Wool Grower Meeting- Production Symposium. Parasite Resistance in the Intermountain West. Casper, WY. (November 10<sup>th</sup>, 2018). 87 attendees

Rail to Plate: Lamb Industry Education for Chefs. Sheep production systems birth to plate. Laramie, WY. (October 29<sup>th</sup>, 2018). 10 attendees

North Dakota Lamb and Wool Producers Annual Meeting, Practical internal and external parasite management strategies, Medora, ND (October 13<sup>th</sup>, 2018). 51 attendees

Wyoming Ram Sale Seminar, Fundamentals of selection and ram nutritional management for optimal longevity, Douglas, WY (September 10<sup>th</sup>, 2018). 46 attendees

Multi-State Cooperative Sheep Meeting USMARC, Managing internal parasites McMaster to DrenchRite. Clay Center, NE (September 8<sup>th</sup>, 2018). 31 attendees

Nebraska Sheep and Goat Producer Association, Integrated parasite management in sheep. Hays Springs, NE (September 6<sup>th</sup>, 2018). 39 attendees

Wyoming State Fair, Wool judging basics. Douglas, WY (August 8<sup>th</sup>, 2018). 12 attendees

Colorado Wool Growers Annual Meeting. Practical internal and external parasite, and trace mineral management. Montrose, Colorado (July 12<sup>th</sup>, 2018). 61 attendees

Colorado Wool Growers Annual Meeting. Sheep management strategies that pencil: revisiting what's often overlooked. Montrose, Colorado (July 12<sup>th</sup>, 2018). 57 attendees

Colorado Wool Growers Annual Meeting- Young Entrepreneurs Meeting. Insights for leadership development within the sheep industry. Montrose, Colorado (July 11<sup>th</sup>, 2018) 12 attendees

Integrated Parasite Management-FAMACHA Training. Using fecal egg counts to guide decision making. Tremonton, Utah. (June 19<sup>th</sup>, 2018) 10 attendees.

Carcass Ultrasound Scanning at National Columbia Show and Sale. Gillette, WY (June 13<sup>th</sup>, 2018) 15 attendees.

Missouri Sheep Producers Annual Meeting. Nutritional management. Spickard, Missouri (June 9<sup>th</sup>, 2018) 35 attendees.

Missouri Sheep Producers Annual Meeting. Internal parasite management. Spickard, Missouri (June 9<sup>th</sup>, 2018) 30 attendees.

Wyoming State 4-H Wool Judging Competition. Setup, explanation, and officiating of contest. Laramie, Wyoming (April 27<sup>th</sup>, 2018) 75 attendees.

Youth and Coach Wool Judging Clinic. Principles of wool evaluation for selection and competition. Laramie, Wyoming (April 23<sup>rd</sup>, 2018) 10 attendees.

Wright Sheep Seminar. Ewe body condition scoring, mouthing, and udder evaluation. Wright, Wyoming (April 19<sup>th</sup>, 2018) 15 attendees.

Wright Sheep Seminar. Sheep parasite management: external to internal. Wright, Wyoming (April 19<sup>th</sup>, 2018) 15 attendees.

Wright Sheep Seminar. Sheep trace mineral supplementation insights. Wright, Wyoming (April 19<sup>th</sup>, 2018) 15 attendees.

WY-MT Sheep Seminar. Management strategies to reduce economic impact of internal and external parasites. Broadus, Montana (April 18<sup>th</sup>, 2018) 21 attendees.

University of Wyoming Ram Test Field Day. Performance Testing Basics: purpose, advantages, and limitations. Laramie, Wyoming (April 7<sup>th</sup>, 2018) 20 attendees.

Ag Extravaganza: Evening Session, Evaluation of external and internal parasites and management options. Basin, Wyoming. (March 15<sup>th</sup>, 2018) 23 attendees.

Ag Extravaganza: Morning Session, Unique qualities of different wool types and end-point uses. Basin, Wyoming (March 15<sup>th</sup>, 2018) 200 youth attendees.

Youth and Coach Wool Judging Clinic, Principles of wool evaluation and competition considerations. Laramie Wyoming, (March 14<sup>th</sup>, 2018) 12 attendees.

High Plains Organic Farming Conference, Challenges and Opportunities to Organic Sheep Production. Cheyenne, WY (February 28<sup>th</sup>, 2018) 25 attendees.

Johnson-Campbell County Wool Judging Clinic. Buffalo, WY (February 8<sup>th</sup>, 2018), 23 attendees

Fremont County Ag Days, Practical Parasite Control Strategies: Internal to External. Evanston, WY (February 7<sup>th</sup>, 2018), 12 attendees.

Wyoming Utah Ag Days, Practical Parasite Control Strategies: Internal to External. Evanston, WY (January 25<sup>th</sup>, 2018), 58 attendees.

Johnson County Wool Growers, Breakfast Q&A with the UW Sheep Specialist. Kaycee, WY (January 17<sup>th</sup>, 2018), 8 attendees.

Johnson County 4-H, Market lamb feeding management and lamb quality characteristics. Buffalo, WY (January 16<sup>th</sup>, 2018), 45 attendees.

Johnson County Wool Growers, Practical Parasite Control Strategies: Internal and External. Buffalo, WY (January 15<sup>th</sup>, 2018), 33 attendees.

### **RADIO INTERVIEWS, NEWSPAPER INTERVIEWS AND MEDIA RELEASES**

“Flock preparations heading into winter”, Radio Interview with Northern Ag Network, October

Spin Off Magazine Interview “As the Whorl Spins- Making the Grade: The University of Wyoming Fleece Judging Team, May 2019

“Importance of Wyoming Ram Test”, Radio Interview with Russell Nemetz, Northern Ag Network, May 1st, 2018

“Wyoming Ram Sale Update”, Radio Interview with Lane Nordlund, Northern Ag Network, September 12<sup>th</sup>, 2017

“UWYO Sheep Program Preview”, Radio Interview with Russell Nemetz, Northern Ag Network, August 15<sup>th</sup>, 2017

“Stewart Optimistic about Wyoming Sheep Industry”, Interview with Saige Albert in Wyoming Livestock Roundup September 2017

### **LANGUAGES**

- English – Fluent



- Spanish – Fluent

## **AWARDS**

- 2019 International Sheep Industry Ambassador to New Zealand, American Lamb Board
- 2018 Wyoming Agricultural Experiment Station *Reflections Magazine* Article Award
- 2015 Young Scholar Award- Western Section American Society of Animal Science
- 2015 New Mexico State University Dean's Graduate Award of Distinction
- 2014 American Sheep Industry Association Heritage Memorial Scholarship
- 2013-14 New Mexico State Univ. Joe D. Wallace Endowed Graduate Scholarship
- 2009-12 Oregon State University. Graduate Research Assistantship
- 2005 BYU-Idaho Returned Missionary Scholarship

## **SERVICE & PROFESSIONAL ACTIVITIES**

### ***University of Wyoming***

- Search Committee Member, Animal Science Department Head (December 2019-present)
- Graduate Studies Committee Member. (March 2018-present)
- Intercollegiate Wool Judging Coach/Coordinator (September 2018-present)
  - 2019 National Western Stock Show Overall Champion Team
- Search Committee Member, Meat Scientist Faculty Position. (July 2018-present)
- Search Committee Member, Veterinary Pathologist Faculty Position. (December 2017- March 2018)
- Ram Test Coordinator, (July 2017-present)
- UW-LREC Sheep Operations Committee. (July 2017-present)
- Advisor UW Collegiate Wool Growers (RSO). (January 2018-present)

### ***Montana State University***

- Committee Member, Sheep Research and Teaching Faculty Search. (June 2015 - December 2015).
- Committee Chair, Wool Lab Manager/ Research Associate Position. (June 2015 - October 2015)
- Committee Chair, Wool Lab 10 Year Economic Analysis Business Plan. (May 2015 - March 2016)
- Committee Member, College of Agriculture Animal Operations Committee. (September 2015 – July 2017).

### ***Professional Service***

- USDA-ARS Meat Animal Research Center- Sheep Advisory Council Member (2019- Present)
- National Wool Judging Advisory Board (2019- Present)
- WSASAS Advising and Coordinating Committee (2017- Present)
- WSASAS Graduate Student Paper Competition Committee member (2015- 2017)
- American Sheep Industry Association- Wool Roundtable Committee member (2015-2017)
- American Sheep Industry Association- Production, Education, and Research Council (2015- Present)
- Wyoming Ram Sale Committee- *Ex Officio* (2017- Present)
- Wyoming Ram Sale Sifting Committee- *Ex Officio* (2017- Present)
- Wyoming Wool Growers Association Executive Board- *Ex Officio* (2018- Present)
- Wool Judge (State Fairs and Livestock Expositions)
- American Society of Animal Science member

- American Sheep Industry Association member

#### ***Ad-Hoc Journal Reviewer***

- Sheep and Goat Research Journal, Editor (January 2019-present)
- Applied Animal Science (2- 2019)
- Animal Reproduction Science (1-2019)
- Journal of Animal Science (1- 2016; 2- 2017. 4- 2018)
- Animal Production Science (1- 2016)
- Rangeland Ecology and Management (1- 2016; 1-2017)
- Sheep and Goat Research Journal (1- 2016)
- NM State University Extension Publications (2- 2016, 2- 2018)

#### ***Grant Proposal Reviewer***

- Kuwait Foundation for the Advancement of Science (3- 2017; 1- 2019)
- Israel Binational Agricultural Research & Development Fund (1- 2019)
- Texas A&M AgriLife Research (2-2017)

#### ***Certifications/Professional Development***

- FAMACHA Certified Instructor
- Texas A&M Sheep Shearing School Alumnus
- ASI Wool Classing School: Certified Level 1 Classer
- NSIP Carcass Ultrasound School; Certified Scanner
- Howard Wyman Sheep Industry Leadership School
- Management Intensive Grazing School Alumnus
- Willamette Valley Grazing and Nutrition Group
- Summer Sustainability Series Ag and Food Systems Alumnus