

## **CURRICULUM VITAE**

### **NAME**

Thomas, Milton

### **ADDRESS**

Animal Sciences  
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### **EDUCATION**

1994 Ph D, Texas A&M University

1990 MS, University of Missouri

1988 BS, University of Missouri

### **ACADEMIC POSITIONS**

1984 - 1988 Student Laboratory Worker, University of Missouri.

### **SABBATICALS**

(2006) USDA-NRI and University California, Davis, Animal Genomics

(2011) CSIRO-McMasters Program, Animal Genomics

### **OTHER POSITIONS**

2011 - Present Professor, Colorado State University.

September 22, 2015 - June 30, 2018 Joint Professor in Department of Biomedical Sciences, CVMBS.

2008 - 2011 Professor, New Mexico State University.

May 1, 1997 - December 15, 2011 Assistant to Full Professor and Gerald Thomas Endowed Chair, New Mexico State University.

2003 - 2008 Associate Professor, New Mexico State University.

1997 - 2003 Assistant Professor, New Mexico State University.

March 1, 1995 - April 30, 1997 Postdoc, University of Missouri.

March 1, 1994 - February 28, 1995 Postdoc, University of Texas Institute of Biotechnology and Health Science Center, San Antonio.

## **PUBLISHED WORKS**

### **Refereed Journal Articles**

- Tizioto, P., Thomas, M., Enns, R. M. (2015). Immunological response to single pathogen challenge with agents of the bovine respiratory disease complex: an RNA-seq analysis of the bronchial lymph node transcriptome. *PLoS One*, 21.
- Oberbauer, A. M., Belanger, J. M., Rincon, G., Canovas, A., Islas-Trejo, A., Gularte-Merida, R., Thomas, M., Medrano, J. F. (2014). Bovine and murine tissue expression of insulin like growth factor-I. *Gene*, 535(2), 101-5. <http://www.ncbi.nlm.nih.gov/pubmed/24333269>
- McDaneld, T. G., Kuehn, L. A., Thomas, M., Pollak, E. J., Keele, J. W. (2014). Deletion on chromosome 5 associated with decreased reproductive efficiency in female cattle. *J Anim Sci*, 92(4), 1378-84. <http://www.ncbi.nlm.nih.gov/pubmed/24492568>
- McDaneld, T. G., Kuehn, L. A., Thomas, M., Snelling, W. M., Smith, T. P., Pollak, E. J., Cole, J. B., Keele, J. W. (2014). Genome-wide association study of reproductive efficiency in female cattle,5. *J Anim Sci*. <http://www.ncbi.nlm.nih.gov/pubmed/24671577>
- McDaneld, T. G., Kuehn, L. A., Thomas, M., Snelling, W. M., Smith, T. P., Pollak, E. J., Cole, J. B., Keele, J. W. (2014). Genomewide association study of reproductive efficiency in female cattle. *J Anim Sci*, 92(5), 1945-57. <http://www.ncbi.nlm.nih.gov/pubmed/24782394>
- Elzo, M.A., Thomas, M.G., Martinez, C.A., Lamb, G.C., Johnson, D.D., Rae, D.O., Wasdin, J.G., Driver, J.D. (2014). Genomic-polygenic evaluation of multibreed Angus-Brahman cattle for postweaning feed efficiency and growth using actual and imputed Illumina50K SNP genotypes. *Livestock Sci*, 159, 1-10.
- Canovas, A., Reverter, A., DeAtley, K. L., Ashley, R. L., Colgrave, M. L., Fortes, M. R., Islas-Trejo, A., Lehnert, S., Porto-Neto, L., Rincon, G., Silver, G. A., Snelling, W. M., Medrano, J. F., Thomas, M. (2014). Multi-tissue omics analyses reveal molecular regulatory networks for puberty in composite beef cattle. *PLoS One*, 9(7), e102551. <http://www.ncbi.nlm.nih.gov/pubmed/25048735>
- Fortes, M.R.S., Suhaimi, A.H.M.S., Porto-Neto, L.R., McWilliam, S.M., Flatscher-Bader, T., Moore, S.S., D'Occhio, M.J., Meira, C.T., Thomas, M.G., Snelling, W.M., Reverter, A., Lehnert, S. (2014). Post-partum anoestrous in tropical beef cattle: a systems approach combining gene expression and genome-wide association results. *Livestock Sci*, 166, 158-166.
- Thomas, M. (2013). Characterizing the neuropetidome of pre- and post-pubertal heifers. *Peptidomics*.
- Peters, S. O., Thomas, M. (2013). Comparison of probit, robit, and logit models in genome-wide association study of fertility traits of first service conception and heifer pregnancy in Brangus heifers. *J Anim Sci*.
- Thomas, M., Canovas, A. (2013). Complementary omics analyses reveal molecular regulatory networks for the onset of puberty in composite beef cattle. *PLoS One*.
- McDaneld, T. G., Thomas, M. (2013). Copy number variation deletion on BTA 5 associated with decreased reproductive efficiency in female cattle. *J Anim Sci*.
- Thomas, M., Holechek, J. L. (2013). Fifteen years of Brangus Cow-calf Performance Under Two Stocking Levels on Chihuahuan Desert Rangeland. *Range Ecol Mgt*.
- McDaneld, T. G., Thomas, M. (2013). Genome-wide association study of reproductive efficiency in female cattle. *J Anim Sci*.

- Thomas, M. (2013). Genomic regions associated with fertility traits in male and female cattle: advances from microsatellites to high-density chips. *Anim Reprod Sci*, submitted November 22, 141, 1-19.
- Thomas, M. (2013). Genomic-polygenic evaluation for ultrasound and weight traits in Angus-Brahman multibreed cattle with the Illumina3k chip. *Livestock Sci.*, 153(39-49).
- Peters, P. O., Thomas, M. (2013). Heritability and Bayesian genome-wide association study of first service conception and pregnancy in Brangus heifers. *J Anim Sci* (doi:10.2527/jas.2012-5580), 91, 605-612.
- Thomas, M. (2013). Networks and pathways to guide genomic selection. *J Anim Sci* (E-2012-5784-R1), 91(537-552).
- Fortes, M. R., Thomas, M. (2013). Postpartum anestrus in tropical beef cattle: a meta-analysis combining gene expression and genome wide association results. *Livestock Sci.*
- Thomas, M. (2012). Genomic-polygenic evaluation of Angus-Brahman multibreed cattle for feed efficiency and postweaning growth using the Illumina3k chip. *J Anim Sci*, 90, 2488-2497.
- Thomas, M. (2012). Grazing distribution and diet quality of Angus, Brangus, and Brahman cows in the Chihuahuan Desert. *Range Ecol Mgt*, 65, 371-381.
- Thomas, M. (2012). How SNP chips will advance our knowledge of factors controlling puberty and aid in selecting replacement females. *J Anim Sci*, 90, 1152-1165.
- Thomas, M. (2012). Identificación de un polimorfismo del gen PAPP-A2 asociado a la fertilidad en vaquillas de la Raza Romosinuano criadas bajo un ambiente subtropical. *Rev Mex Ciencia Pecur*, 3, 185-200.

### Refereed Proceedings or Transactions

- Cockrum, R.R., Zeng, X., Berge, N.F., Neary, J.M., Garry, F.B., Holt, T. N., Blackburn, H.D., Thomas, S. P., Speidel, S.E., Garrick, D.J., Enns, R.M., Thomas, M.G. (2014). Angus cattle at high altitude: genetic relationships and initial genome wide association analyses of pulmonary arterial pressure. *10th World Congr. Appl. Livestock Prod.* WCGALP. [https://asas.org/docs/default-source/wcgalp-proceedings-oral/236\\_paper\\_9105\\_manuscript\\_427\\_0.pdf?sfvrsn=2](https://asas.org/docs/default-source/wcgalp-proceedings-oral/236_paper_9105_manuscript_427_0.pdf?sfvrsn=2)
- Culbertson, M.M., Speidel, S. E., Thomas, M.G., Keenan, L., Enns, R.M. (2014). Effect of genetics level of beef cow milk production on longevity in diverse environments. *10th World Congr. Appl. Livestock Prod.* WCGALP. [https://asas.org/docs/default-source/wcgalp-posters/766\\_paper\\_9935\\_manuscript\\_1097\\_0.pdf?sfvrsn=2](https://asas.org/docs/default-source/wcgalp-posters/766_paper_9935_manuscript_1097_0.pdf?sfvrsn=2)
- Speidel, S. E., S., Cockrum, R., Salak-Johnson, J. L., Chase, C. C. L., Thomas, M., Peel, R. K., Enns, R. M. (2014). Genetic analysis of receiving weight, ultrasound back fat, ultrasound rib eye area, ultrasound percent intramuscular fat, and bovine respiratory disease in feedlot cattle. *10th World Congr. Appl. Livestock Prod.* WCGALP. [https://asas.org/docs/default-source/wcgalp-posters/519\\_paper\\_8807\\_manuscript\\_253\\_0.pdf?sfvrsn=2](https://asas.org/docs/default-source/wcgalp-posters/519_paper_8807_manuscript_253_0.pdf?sfvrsn=2)
- Zeng, X., Cockrum, R.R., Berge, N.F., Neary, J.M., Garry, F.B., Holt, T. N., Blackburn, H.D., Speidel, S.E., Garrick, D.J., Enns, R.M., Thomas, M.G. (2014). Genetic correlation and genome wide association study of pulmonary arterial pressure and post weaning growth traits in Angus heifers from a high altitude breeding program. *10th World Congr. Appl. Livestock Prod.* WCGALP. [https://asas.org/docs/default-source/wcgalp-posters/428\\_paper\\_9752\\_manuscript\\_1034\\_0.pdf?sfvrsn=2](https://asas.org/docs/default-source/wcgalp-posters/428_paper_9752_manuscript_1034_0.pdf?sfvrsn=2)
- Fortes, M.R.S., Porto-Neto, L. R., DeAtley, K.L., Reverter, A., Thomas, M.G., Moore, S.S., Lehnert, S.A., Snelling, W.M. (2014). Genetic markers in transcription factors of differentially expressed genes associated

with post-partum anoestrous predict pregnancy outcome in an independent population of beef cattle. *10th World Congr. Appl. Livestock Prod.* WCGALP. [https://asas.org/docs/default-source/wcgalp-proceedings-oral/250\\_paper\\_10277\\_manuscript\\_1281\\_0.pdf?sfvrsn=2](https://asas.org/docs/default-source/wcgalp-proceedings-oral/250_paper_10277_manuscript_1281_0.pdf?sfvrsn=2)

Berge, N.F., Speidel, S.E., Zeng, X., Culbertson, M.M., Thomas, M.G., Enns, R.M. (2014). Genetic relationships between pulmonary arterial pressure and performance traits in Colorado State University Beef Improvement Center Angus herd. *10th World Congr. Appl. Livestock Prod.* WCGALP. [https://asas.org/docs/default-source/wcgalp-posters/430\\_paper\\_9946\\_manuscript\\_1110\\_0.pdf?sfvrsn=2](https://asas.org/docs/default-source/wcgalp-posters/430_paper_9946_manuscript_1110_0.pdf?sfvrsn=2)

Peters, S., Kizilkaya, K., Garrick, D., Fernando, R., Reecy, J., Imumorin, I., Thomas, M. (2014). Genome-wide association study of first service conception rate in Brangus heifers using probit, robit, and logit models. *10th World Congr. Appl. Livestock Prod.* WCGALP. [https://asas.org/docs/default-source/wcgalp-posters/643\\_paper\\_9759\\_manuscript\\_927\\_0.pdf?sfvrsn=2](https://asas.org/docs/default-source/wcgalp-posters/643_paper_9759_manuscript_927_0.pdf?sfvrsn=2)

Elzo, M.A., Thomas, M.G., Johnson, D.D., Martinez, C.A., Lamb, G.C., Rae, D.O., Wasdin, J.G., Driver, J.D. (2014). Genomic-polygenic evaluation of multibreed Angus-Brahman cattle for postweaning ultrasound and weight traits with actual and imputed Illumina50K SNP genotypes. *10th World Congr. Appl. Livestock Prod.* WCGALP. [https://asas.org/docs/default-source/wcgalp-posters/709\\_paper\\_3312\\_manuscript\\_21\\_03F97AEB52F72.pdf?sfvrsn=2](https://asas.org/docs/default-source/wcgalp-posters/709_paper_3312_manuscript_21_03F97AEB52F72.pdf?sfvrsn=2)

Boldt, R.J., Culbertson, M.M., Berge, N.F., Thomas, M.G., Holt, T. N., Speidel, S.E., Enns, R.M. (2014). Phenotypic analysis of pulmonary arterial pressure and feed intake data in cattle. *10th World Congr. Appl. Livestock Prod.* WCGALP. [https://asas.org/docs/default-source/wcgalp-proceedings-oral/031\\_paper\\_9870\\_manuscript\\_1040\\_0.pdf?sfvrsn=2](https://asas.org/docs/default-source/wcgalp-proceedings-oral/031_paper_9870_manuscript_1040_0.pdf?sfvrsn=2)

Hernandez, P. R., Luna-Nevarez, Rincon, G., Medrano, J.F., Enns, R.M., Thomas, M.G. (2014). Relationships of endocrine pathway SNP and molecular breeding value with milk production traits in heat stressed Holstein cows. *Proc. 10th World Congr. Appl. Livestock Prod.* WCGALP. [https://asas.org/docs/default-source/wcgalp-posters/429\\_paper\\_9851\\_manuscript\\_1029\\_0.pdf?sfvrsn=2](https://asas.org/docs/default-source/wcgalp-posters/429_paper_9851_manuscript_1029_0.pdf?sfvrsn=2)

Thomas, M.G., Berge, N.F., Enns, R.M., Hagevoort, G.R., Eenennaam, A.L. V., Neibergs, H.L., Neibergs, J.S., Womack, J. E. (2014). Research trainee participation is a bonus to teaching aims in the Bovine Respiratory Disease Complex Coordinated Agricultural Project. *10th World Congr. Appl. Livestock Prod.* WCGALP. [https://asas.org/docs/default-source/wcgalp-proceedings-oral/225\\_paper\\_8756\\_manuscript\\_234\\_0.pdf?sfvrsn=2](https://asas.org/docs/default-source/wcgalp-proceedings-oral/225_paper_8756_manuscript_234_0.pdf?sfvrsn=2)

Berge, N. F., Thomas, M. (2013). *Factors influencing selection for pulmonary arterial pressure in cattle at high elevations.* (vol. 64, pp. 178-179). Proc. West Sect. Am. Soc. Anim. Sci..

### Non-Refereed Journal Articles

Riddle, S., Poth, J., Li, M., Zhang, H., Brown, D., Frid, M., Flockton, A., McKeon, B. A., Canovas, A., Islas-Trejo, A., Medrano, J.F., Thomas, M., Davis, B., Serkova, N., Kasmi, K.C. E., Stenmark, K. (2015). Aerobic glycolysis is a critical metabolic adaptation to drive the pro-inflammatory phenotype of adventitial fibroblasts isolated from the remodeled pulmonary artery from animals with pulmonary hypertension. *Am. J. Respir. Crit. Care Med.*, 191, A5466.

Liebig, B.E., Thomas, M., McSweeney, K.D., Van Campen, H., Bishop, J. V., Hansen, T. (2015). Fertility may depend on conceptus-derived signals in lactating dairy cows. *J. Anim. Sci.*, 93(Suppl. s3), i.

Bailey, D.W., Lunt, S., Lipka, A., Thomas, M., Medrano, J.F., Canovas, A., Rincon, G., Stephenson, M.B., Jensen, D. G. (2015). Genetic influence on cattle grazing distribution: association of genetic markers with

terrain use in beef cows. *Range Ecol. Mgt.*, 68, 142-149.

- Elzo, M.A., Thomas, M., Johnson, D.D., Martinez, C.A., Lamb, G.C., Rae, D.O., Wasdin, J.G., Driver, J.D. (2015). Genetic parameters and predictions for direct and maternal growth traits in a multibreed Angus-Brahman cattle population using genomic-polygenic and polygenic models. *Livest. Sci.*, 175, 18-26.
- Elzo, M., Thomas, M., Johnson, D., Martinez, C. M. R., Lamb, C., Rae, O., Wasdin, J., Driver, J. (2015). Genomic-polygenic predictions of direct and maternal effects for growth traits in a multi-breed Angus-Brahman cattle population. *J. Anim. Sci.*, 93(Suppl. s3), 643.
- Newman, J.H., Holt, T. N., Cogan, J., Womack, B., Phillips, J.A., Li, C., Kendall, Z., Stenmark, K.R., Thomas, M., Brown, R.D., Riddle, S.R., West, J.D., Hamid, R. (2015). Increased prevalence of an EPAS1 (HIF2 $\alpha$ ) variant haplotype in cattle with high altitude pulmonary hypertension: brisket disease gene? *Nat. Commun.*, 6, 6863.
- Thomas, M., Mohamed, A. H., Sawalhah, M.N., Holechek, J.L., Bailey, D.W., Hawkes, J.M., Luna-Nevarez, P., Molinar, F., Khumalo, G. (2015). Long-term forage, cow-calf, and economic performance of two stocking levels on Chihuahuan Desert Rangeland. *Range Ecol. Mgt.*, 68, 158-165.
- Neary, J.M., Garry, F. B., Holt, T. N., Thomas, M., Enns, R. M. (2015). Mean pulmonary arterial pressures in Angus steers increase from cow-calf to feedlot-finishing phases. *J. Anim. Sci.*, 93, 3854-3861.
- Krafsur, G. M., Brown, R.D., Neary, J.M., Holt, T. N., Gould, D. H., Riddle, S., Canovas, A., Medrano, J., Enns, R. M., Cockrum, R., Thomas, M., Stenmark, K.R. (2015). Natural history of pulmonary hypertension: adaptive versus maladaptive physiologic responses and cardiopulmonary remodeling in beef cattle exposed to chronic hypoxia. *Am. J. Respir. Crit. Care Med.*, 191, A5535.
- Brown, R.D., Canovas, A., Riddle, S., Neary, J.M., Islas-Trejo, A., Krafsur, G. M., Cockrum, R., Enns, R. M., Medrano, J., Thomas, M., Stenmark, K.R. (2015). Natural history of pulmonary hypertension: transcriptome analysis of right ventricular remodeling and failure in beef cattle exposed to chronic hypoxia. *Am. J. Respir. Crit. Care Med.*, 191, A1041.
- Culbertson, M. M., Speidel, S. E., Peel, R. K., Cockrum, R., Thomas, M., Enns, R. M. (2015). Optimum measurement period for evaluating feed intake traits in beef cattle. *J. Anim. Sci.*, 93, 1-9.
- Neary, J.M., Garry, F. B., Holt, T. N., Brown, R.D., Stenmark, K.R., Enns, R. M., Thomas, M. (2015). The altitude at which a calf is born and raised determines the rate at which mPAP increases with age. *J. Anim. Sci.*, 93, 1-7.
- Peters, S.O., Kizilkaya, K., Garrick, D.J., Fernando, R.L., Imumorin, I.G., Thomas, M. (2015). Use of a robust Bayesian regression model in genome-wide association study of growth traits in Brangus heifers. *J. Anim. Sci.*, 93(Suppl. s3), 342.
- Cockrum, R. R., Speidel, S. E., Salak-Johnson, J., Chase, C., Peel, R. K., Weaber, R. L., Loneragan, G. H., Wagner, J. J., Boddhireddy, P., Thomas, M., Prayaga, K., DeNise, S., Enns, R. M. Genetic parameters estimated at receiving for circulating cortisol, immunoglobulin G, interleukin 8, and incidence of bovine respiratory disease in feedlot beef steers. *Journal of Animal Science*.
- Oberbauer, A. M., Thomas, M. (2013). Bovine and murine tissue expression of insulin-like growth factor-1. *Gene*, GENE-D-13-02359.
- Elzo, M. A., Thomas, M. (2013). Genomic-polygenic evaluation of multibreed Angus-Brahman cattle for postweaning feed efficiency and growth using actual and imputed Illumina50K SNP genotypes. *Livestock Sci.*, 157:LIVSCI-D-13-432R1.

## Non-Refereed Proceedings or Transactions

- Zeng, X., Speidel, S. E., Thomas, M., Enns, R. M. *Estimating Economic Values of Traits Belonging to Cattle in Maternal Beef Production. Proc. West. Sect. Am. Soc. Anim. Sci.*. American Society of Animal Science.
- Blackburn, H., Thomas, M., Enns, R. M., Speidel, S. E., Paiva, S. (2015). A livestock database for long term storage and use of genomic and other associated information. *Plant and Animal Genome XXIII* (pp. Abstract W142). Plant and Animal Genome XXIII.
- Zeng, X., Holt, T. N., Enns, R. M., Speidel, S. E., Thomas, M. (2015). Angus cattle at high altitude: Relationship between age and pulmonary arterial pressure. *Proc. West. Sect. Am. Soc. Anim. Sci.* (vol. 66, pp. 119-121). Proc. West. Sect. Am. Soc. Anim. Sci..
- Zamorano-Algandar, R., Correa-Calderon, A., Sanchez-Castro, M., Rincon, G., Medrano, J.F., Hernandez, A., Luna-Nevarez, G., Speidel, S. E., Enns, R. M., Thomas, M., Luna-Nevarez, P. (2015). Candidate gene molecular breeding value prediction of reproductive performance in Holstein dairy cows managed under heat stress conditions from southern Sonora in Mexico. *Proc. West. Sect. Am. Soc. Anim. Sci.* (vol. 66, pp. 249-252). Proc. West. Sect. Am. Soc. Anim. Sci..
- Culbertson, M. M., Speidel, S. E., Thomas, M., Enns, R. M. (2015). Effects of beef cow milk production levels on longevity from Colorado State University's Beef Improvement Center. *Proc. West. Sect. Am. Soc. Anim. Sci.* (vol. 66, pp. 111-113). Proc. West. Sect. Am. Soc. Anim. Sci..
- Hernandez, A., Sanchez-Castro, M., Zamorano-Algandar, R., Luna-Nevarez, P., Rincon, G., Medrano, J.F., Speidel, S. E., Enns, R. M., Thomas, M. (2015). Genotypes within the prolactin and GH-IGF1 pathways association with 305 d milk yield in heat stressed lactating Holstein cows. *Proc. West. Sect. Am. Soc. Anim. Sci.* (vol. 66, pp. 114-118). Proc. West. Sect. Am. Soc. Anim. Sci..
- Neary, J.M., Garry, F. B., Holt, T. N., Morley, P.S., Krafur, G. M., Brown, R.D., Stenmark, K.R., Enns, R. M., Thomas, M. (2015). High altitude disease, PAP, feedlot hypertension and respiratory issues: are they linked? *Proc. Range Beef Cow Symp. XXIV* (pp. 141-146). Proc. Range Beef Cow Symp. XXIV.
- Cockrum, R., Holloway, C., Zeng, X., Crawford, N. F., Neary, J.M., Holt, T. N., Blackburn, H., Speidel, S. E., Enns, R. M., Thomas, M. (2015). Intrinsic response to hypoxic stress associated with cellular metabolism and inflammation in beef cattle. *Plant and Animal Genome XXIII* (pp. Abstract P0169). Plant and Animal Genome XXIII.
- Crawford, N. F., Speidel, S. E., Zeng, X., Holt, T. N., Thomas, M., Enns, R. M. (2015). Multivariate analysis of genetic relationships between pulmonary arterial pressure and performance traits in an Angus herd at high elevation. *Proc. West. Sect. Am. Soc. Anim. Sci.* (vol. 66, pp. 126-128). Proc. West. Sect. Am. Soc. Anim. Sci..
- Krafur, G. M., Brown, D., Neary, J., Holt, T. N., Gould, D. H., Riddle, S., Canovas, A., Medrano, J., Enns, R. M., Thomas, M., Stenmark, K. (2015). Natural history of pulmonary hypertension: adaptive versus maladaptive physiologic responses in beef cattle exposed to chronic hypoxia and the role of inflammation in the progression of pulmonary hypertension. *50th Am. Assoc. Vet. Lab. Diagn. Mtg* (pp. p. 81). 50th Am. Assoc. Vet. Lab. Diagn. Mtg.
- Saad, H.M., Enns, R. M., Thomas, M., Speidel, S. E. (2015). Performance losses due to selection for low birth weight versus calving ease: a simulation study in beef cattle. *Proc. West. Sect. Am. Soc. Anim. Sci.* (vol. 66, pp. 129-132). Proc. West. Sect. Am. Soc. Anim. Sci..
- Canovas, A.A., Cockrum, R., Brown, R.D., Riddle, S.K., Neary, J.M., Holt, T. N., Krafur, G. M., Medrano, J.F., Islas-Trejo, A., Enns, R. M., Speidel, S. E., Stenmark, K.R., Thomas, M. (2015). Polymorphisms and splice variants in a polygenic disease induced by high-altitude in Angus cattle using RNA-Sequencing and systems

biology. *Abstr. Soc. Españ. Genética.*. Abstr. Soc. Españ. Genética..

- Bailey, D.W., Thomas, M., Holt, T. N., Stephenson, M.B., Enns, R. M., Speidel, S. E. (2015). Relationships of pulmonary arterial pressure and terrain use of beef cows grazing high-altitude foothills rangeland. *Proc. West. Sect. Am. Soc. Anim. Sci.* (vol. 66, pp. 99-103). Proc. West. Sect. Am. Soc. Anim. Sci..
- Liebig, B.E., Thomas, M., McSweeney, K.D., Van Campen, H., Bishop, J. V., Hansen, T. (2015). Selection for high fertility may be dependent on conceptus-derived signals in dairy cows. *Proc. Rocky Mount. Repro. Sci. Symp.* (pp. p. 26). Proc. Rocky Mount. Repro. Sci. Symp..
- Dias, M.M., Canovas, A., Mantilla-Rojas, C., Medrano, J.F., Thomas, M., Speidel, S. E., Enns, R. M., Rivera-Acuna, F., Luna-Nevarez, P., Riley, D.G. (2015). Single nucleotide polymorphisms associated with growth, fertility, and first-calf survival traits in Brangus heifers managed under semi-desert extensive conditions in southern Sonora. *Tex. A&M University CONACYT (MX) Symposium*. Tex. A&M University CONACYT (MX) Symposium.
- Dias, M.M., Canovas, A., Mantilla-Rojas, C., Riley, D.G., Luna-Nevarez, P., Speidel, S. E., Enns, R. M., Dias, I.S.D.P., Souza, F.R.P., Medrano, J.F., Oliveira, H.N., Thomas, M. (2015). SNP query in candidate genes that affect puberty in *Bos indicus*-influenced heifers. *Proc. West. Sect. Am. Soc. Anim. Sci.* (vol. 66, pp. 104-107). Proc. West. Sect. Am. Soc. Anim. Sci..
- Canovas, A., Cockrum, R., Brown, R.D., Riddle, S.K., Neary, J.M., Holt, T. N., Krafur, G. M., Garry, F. B., Medrano, J.F., Islas-Trejo, A., Enns, R. M., Speidel, S. E., Stenmark, K.R., Thomas, M. (2015). Transcriptomics and systems biology of high altitude disease in Angus cattle. *Plant and Animal Genome XXIII* (pp. Abstract P0310). Plant and Animal Genome XXIII.
- Boldt, R. J., Speidel, S. E., Thomas, M., Enns, R. M. (2015). Variance components for genetic evaluation of body condition score in beef cattle. *Proc. West. Sect. Am. Soc. Anim. Sci.* (vol. 66, pp. 108-110). Proc. West. Sect. Am. Soc. Anim. Sci..
- DeAtley, K. L., Thomas, M. (2013). *Analysis of six neuropeptides detected in hypothalamus and pituitary gland of pre- and post-pubertal heifers.* (vol. 64, pp. 359-363). Proc. West Sect. Am. Soc. Anim. Sci..
- Luna, P., Thomas, M. (2013). *Association of STAT2 SNP genotypes and growth phenotypes in heifers from an Angus, Brahman, and RomoSinuano diallele population.* (vol. 64, pp. 194-197). Proc. West Sect. Am. Soc. Anim. Sci..
- Zeng, X., Speidel, S. E., Thomas, M., Enns, R. M. (2013). *Estimating Economic Values of Traits Belonging to Cattle in Maternal Beef Production.* *Proc. West. Sect. Am. Soc. An. Sci.*. American Society of Animal Science.
- Thomas, M. (2013). *Estimating economic values of traits for maternal beef production system.* (vol. 64, pp. 165-168). Proc. West Sect. Am. Soc. Anim. Sci..
- Thomas, M., Bailey, D. W. (2013). *Manipulation of the spatial grazing behavior of cattle in extensive and mountainous rangelands.*. Proceedings of the 17th International Meeting of the FAO-CIHEAM Mountain Pasture Network; June 5 – 7, 2013, Trivero, Italy, p. 95 – 98..
- Bailey, D. W., Thomas, M. (2013). *Manipulation of the spatial grazing behavior of livestock in extensive grassland systems.*. Proceedings of the XXII International Grasslands Congress, September 15–19, 2013, Sydney, Australia.
- Neary, J., Thomas, M. (2013). *Mean pulmonary arterial pressure in beef calves is positively associated with mixed venous CO<sub>2</sub> tension and oxygen extraction ration when controlling for alveolar oxygen tension.* (vol. 64, pp. 67-70). Proc. West Sect. Am. Soc. Anim. Sci..

Thomas, M. (2013). *Sorting through the science, marketing, and realities of DNA tools for genetic prediction* (pp. 99- 102). Proc Range Beef Cow Symp XXII.

Thomas, M. (2013). *Meta-analysis: finding markers associated with reproductive performance across cattle breeds*. Int Plant Anim Genome Conf XX:PO544.

Thomas, M. (2012). *Integrated program for reducing bovine respiratory disease complex (BRDC) in beef and dairy cattle, coordinated agricultural project (CAP): overview of the teaching program* (E-Suppl 3 ed., vol. 90, pp. 498). J Anim Sci.

Thomas, M. (2012). *Lactation and physiology performances in Holstein dairy cows managed under summer heat stress conditions in northwest Mexico* (E-Suppl 3 ed., vol. 90, pp. 317-318). J Anim Sci.

## Abstract

Klohonatz, K. M., Canovas, A., Medrano, J. F., Hess, A. M., Coleman, S. J., Thomas, M., Bouma, G. J., Bruemmer, J. E. (2016). *RNA Sequencing of equine endometrium during maternal recognition of pregnancy* (vol. 2016). Plant and Animal Genome Conference XXIV.

Torres, J. F., Bo, G. A., Thomas, M., Lares, F., Pena, C., Luna, P. (2014). *348 anti-mullerian hormone and superovulatory response in donor cows managed in 2 semiarid environments in northwest Mexico* (1st ed., vol. 27, pp. 262). Reprod Fertil Dev. <http://www.ncbi.nlm.nih.gov/pubmed/25472396>

Luna-Nevarez, P., Leyva-Corona, J.C., Rivera-Acuna, F., Medrano, J.F., Rincon, G., Silver, G.A., Hallford, D.M., Ashley, R.L., Thomas, M.G. (2014). *A polymorphism in the prolactin pathway is associated with milk production in Holstein dairy cows managed under summer heat stress conditions in northwest Mexico* (vol. 92, pp. (E-Suppl. 2):474). J. Anim. Sci.

Trejo, C.M. A., Rubio, J.A. R., Nevarez, P. L., Thomas, M., Enns, M. (2014). Abstract #162 in Identification de cerados (*Sus scrofa domestica*): resistencia a la infeccion del PRRS a traves de selection genomica en el sur de Sonora, Mexico. *2nd Encuentro de Jovenes Investigadores en el Estado de Sinaloa*. Mexican Agricultural Sciences.

Cockrum, R., Austin, K.J., Stobart, R.H., Pickering, N.K., Thomas, M.G., McEwan, J.C., Cammack, K.M. (2014). *Abstract P151 - Genotypes within cellular growth and cell cycle processes associated with feed efficiency in sheep*. Plant and Animal Genome.

Canovas, Islas-Trejo, A., Stenmark, K., Brown, D., Thomas, M.G., Cockrum, R., Medrano, J.F. (2014). *Abstract P547 - Transcriptomics of high altitude disease in Holstein calves*. Plant and Animal Genome.

Brown, R.D., Riddle, S.R., Cockrum, R.R., Thomas, M.G., Stenmark, K.R. (2014). *Genomic signatures of right ventricular remodeling in neonatal calves with severe pulmonary hypertension: implications for human pediatrics* (vol. 189, pp. A2345). Am. J. Respir. Crit. Care Med.

Brown, R. D., Thomas, M. (2014). *Genomic signatures of right ventricular remodeling in neonatal calves with severe pulmonary hypertension: implications for human pediatrics..* Am. Thor. Soc..

DeAtley, K. L., Thomas, M. (2013). *Analysis of six neuropeptides detected in hypothalamus and pituitary gland of pre- and post-pubertal heifers*. (vol. 91(E-Suppl 3):in press). J Anim Sci.

Luna, P., Thomas, M. (2013). *Association of STAT2 SNP genotypes and growth phenotypes in heifers from an Angus, Brahman, and RomoSinuano diallele population* (vol. 91(E-Suppl 3):in press). J Anim Sci.



- Speidel, S. E., Thomas, M. (2013). *Cortisol, interleukin 8, and immunoglobulin G ratios predict treatment for bovine respiratory disease in feedlot cattle.* (vol. 91(E-Suppl. 2):486). J Anim Sci.
- Zeng, X., Thomas, M. (2013). *Estimating economic values of traits for maternal beef production system.* (vol. J. Anim. Sci. (E-Suppl 3):in press). J Anim Sci.
- Berge, N. F., Thomas, M. (2013). *Factors influencing selection for pulmonary arterial pressure in cattle at high elevations.* (vol. 91(E-Suppl 3):in press). J Anim Sci.
- McDanel, T. G., Thomas, M. (2013). *Genome-wide association study of reproductive efficiency in female cattle.* (vol. 91(E-Suppl. 2):392). J Anim Sci.
- Thomas, M., Peters, S. O. (2013). *Genome-wide linkage disequilibrium patterns in 10 beef cattle breeds.* (pp. Abstract P530). Plant and Anim. Genome XXI.
- Thomas, M. (2013). *Genomic-polygenic evaluation of Angus-Brahman cattle for carcass traits with Illumina 3K chip* (E-Suppl 3 ed., vol. 90, pp. 523). J Anim Sci.
- Thomas, M. (2013). *Genomic-polygenic evaluation of multi-breed Angus-Brahman cattle for feed efficiency and postweaning growth using actual and imputed Illumina 50K genotypes.* (vol. 91(E-Suppl. 2):72-73). J Anim Sci.
- Thomas, M. (2013). *Genomic-polygenic evaluation of postweaning weight and ultrasound carcass traits in an Angus-Brahman multibreed population* (E-Suppl 3 ed., vol. 90, pp. 522). J Anim Sci.
- Cockrum, R., Thomas, M. (2013). *Heritability and correlations of immune response parameters in cattle treated for bovine respiratory disease.* (vol. 91(E-Suppl. 2):70). J Anim Sci.
- Thomas, M. (2013). *Integrated program for reducing bovine respiratory disease complex (BRDC) in cattle, coordinated Agricultural Project (CAP): translation of research into teaching programs in 2013* (vol. 91(E-Suppl. 2), pp. 421). J Anim Sci.
- Neary, J., Thomas, M. (2013). *Mean pulmonary arterial pressure in beef calves is positively associated with mixed venous CO<sub>2</sub> tension and oxygen extraction ratio when controlling for alveolar oxygen tension.* (vol. 91(E-Suppl 3):in press). J Anim Sci.
- Peters, S. O., Thomas, M. (2013). *Model comparison in genome-wide association and heifer pregnancy in Brangus cattle.* (vol. 91(E-Suppl. 2):393). J Anim Sci.
- Thomas, M. (2013). *Networks and pathways to guide genomic selection* (vol. 90, pp. 162). J Anim Sci.
- DeAtley, K. L., Thomas, M. (2013). *Neuropeptidome of hypothalamus and pituitary gland of pre- and post-pubertal Brangus heifers.* (pp. Abstract P562). Plant and Anim. Genome XXI.
- Ross, P. J., Thomas, M. (2013). *Re-annotation of the bovine genome using RNA sequencing data.* (pp. Abstract W143). Plant and Anim. Genome XXI.
- Thomas, M. (2013). *Selection of cattle for sustainable rugged rangelands: Part 2 – What we can learn from Genotype.* (pp. 47). Society of Range Mgt.
- Thomas, M. (2013). *Transcriptome of hypothalamus and pituitary gland of pre- and post-pubertal Brangus heifers.* (pp. Abstract P563). Plant and Anim. Genome XXI.
- DeAtley, K. L., Thomas, M. (2013). *X marks the spot: region of bovine chromosome associated with heifer fertility traits in Brangus cattle.* (vol. 91(E-Suppl. 2), pp. 535). J Anim Sci.

Thomas, M. (2013). *X marks the spot: region of bovine chromosome X associated with heifer fertility traits identified with complementary-omics analyses*. (pp. 21). Rocky Mount. Repro. Sci. Symp.

### **Conference Paper**

Krehbiel, B.C., Paiva, S., Wilson, C., Ericsson, S., Boatright, J., Thomas, M., Blackburn, H.D. (2015). *Untapped genetic variability in Herefords: implications for climate change* (vol. 66, pp. 122-125).

### **Supporting Author BRDC-CAP grant publication by H.L. Neibergs et al.**

Thomas, M. G., Enns, R. M. (2014). *Susceptibility loci revealed for bovine respiratory disease complex in pre-weaned Holstein calves* (vol. 15, pp. 1164). BMC Genomics.

### **Technical Report**

Boldt, R. J., Enns, R. M., Thomas, M., Speidel, S. E. (2015). *Report to the Red Angus Association of America. Research Update: Red Angus Next Generation Fertility genetic evaluation*. Red Angus Association of America.

## **PAPERS PRESENTED/SYMPOSIA/INVITED LECTURES/PROFESSIONAL MEETINGS/WORKSHOPS**

November 2015, "Bull Pen Session Moderator for Genetics", Range Beef Cow Symposium, CSU and RBCS, Ranch.

October 8, 2015, "Genomics and Dairy Breeding in the US", Symposium for visiting Chinese dairy producers, Cochran Fellowship, CSU.

September 11, 2015, "Next Generation Red Angus Fertility Evaluation Research Update", Red Angus Association of America National Convention, Red Angus Association of America, (Presenter) Boldt, R. J.

June 25, 2015, "Angus cattle at high altitude: Relationship between age and pulmonary arterial pressure", Western Section American Society of Animal Science, American Society of Animal Science, (Presenter) Zeng, X.

June 25, 2015, "Effects of beef cow milk production levels on longevity from Colorado State University's Beef Improvement Center", Western Section American Society of Animal Science, American Society of Animal Science, (Presenter) Culbertson, M. M.

June 25, 2015, "Genotypes within the prolactin and GH-IGF1 pathways association with 305 d milk yield in heat stressed lactating Holstein cows", Western Section American Society of Animal Science, American Society of Animal Science, (Presenter) Hernandez, A.

June 25, 2015, "Multivariate analysis of genetic relationships between pulmonary arterial pressure and performance traits in an Angus herd at high elevation.", western Section American Society of Animal Science, american Society of Animal Science, (Presenter) Crawford, N. F.

June 25, 2015, "Performance losses due to selection for low birth weight versus calving ease: a simulation study in beef cattle.", western Section American Society of Animal Science, American Society of Animal Science, (Presenter) Saad, H.

June 25, 2015, "Variance components for genetic evaluation of body condition score in beef cattle.", Western Section American Society of Animal Science, American Society of Animal Science, (Presenter) Boldt, R. J.

February 6, 2015, "Sorting through the science: marketing and realities of DNA tools for genetic prediction in beef cattle.", Nick Petry Workshop, Nick Petry Foundation and NWSS, NWSS.

January 2015, "Distance Graduate Education", Annual Meeting of PIs for BRD Coordinated Agricultural Project, USDA-NIFA.

August 20, 2014, "Effect of genetic level of beef cow milk production on longevity in diverse environments.", 10th World Congress of Genetics Applied to Livestock Production, (Presenter) Culbertson, M., Vancouver, British Columbia, Canada, peer-reviewed/refereed.

August 20, 2014, "Genetic Correlation and genome wide association study of pulmonary arterial pressure and post weaning growth traits in Angus heifers from a high altitude breeding program.", 10th World Congress of Genetics Applied to Livestock Production, (Presenter) Zeng, X., Vancouver, British Columbia, Canada, peer-reviewed/refereed.

August 20, 2014, "Genetic relationships between pulmonary arterial pressure and performance traits in Colorado State University's Beef Improvement Center cowherd.", 10th World Congress of Genetics Applied to Livestock Production, (Presenter) Berge, N., Vancouver, British Columbia, Canada, peer-reviewed/refereed.

August 20, 2014, "Phenotypic analysis of pulmonary arterial pressure and feed intake data in cattle.", 10th World Congress of Genetics Applied to Livestock Production, (Presenter) Boldt, R., Vancouver, British Columbia, Canada, peer-reviewed/refereed.

August 18, 2014, "Angus cattle at high altitude: genetic relationships and initial genome wide association analyses of pulmonary arterial pressure.", 10th World Congress of Genetics Applied to Livestock Production, (Presenter) Cockrum, R., Vancouver, British Columbia, Canada, peer-reviewed/refereed.

August 18, 2014, "Genetic Analysis of receiving weight, ultrasound back fat, ultrasound rib eye area, ultrasound percent intramuscular fat, and bovine respiratory disease in feedlot cattle.", 10th World Congress of Genetics Applied to Livestock Production, (Presenter) Speidel, S. E., Vancouver, British Columbia, Canada, peer-reviewed/refereed.

July 7, 2013, "Cortisol, interleukin 8, and immunoglobulin G ratios predict treatment for bovine respiratory disease in feedlot cattle.", Joint Annual meetings, American Society of Animal Science, (Presenter) Speidel, S. E., Indianapolis, IN, peer-reviewed/refereed.

July 7, 2013, "Heritability and correlations of immune response parameters in cattle treated for bovine respiratory disease.", Joint Annual meetings, American Society of Animal Science, (Presenter) Cockrum, R. R., Indianapolis, IN, peer-reviewed/refereed.

2012, "ERT for Reproduction, examples from study of cow size and fertility, Beef Improvement Federation Meeting, Houston, TX, 2012."

2012, "Gene network analyses of first service conception in Brangus heifers: use of genome and trait associations, hypothalamic-transcriptome information, and transcription factors. Int. Plant Anim. Genome Conf. Section for Cattle, Sheep and Goats, San Diego, CA, 2012."

2012, "Genetics of Carcass Traits. Colorado Ranch Practicum, CSU, Fort Collins, CO, 2012."

2012, "Networks of genes and people. Animal Science seminar, University of Wyoming, Laramie, 2012."

2012, "Use of genomics to aid genetic improvement: emphasis on livestock health and adaptability traits. Primer Simposium Internacional de Mejoramiento Animal" held at the Instituto Technological de Sonora in Obregon, Mexico, 2012."

2012, "Using molecular and quantitative genetic approaches for greater livestock adaptation to environmental challenges. Workshop on Genetic Resources and Climate Change, USDA-ARS, Emprapa-Labex of Brasil, and CSU".

2012, "What's new in Beef Cattle Genomics, Uruguay Beef Production Tour, CSU, Fort Collins, CO, 2012."

#### **OTHER ACTIVITIES/ACCOMPLISHMENTS – PUBLICATIONS/SCHOLARLY RECORD**

Thomas, M. "Genetic markers indicative of beef cattle tolerance to high altitude." (Submitted: December 6, 2013).

#### **TEACHING:**

<b><u>Year</u></b>	<b><u>Semester</u></b>	<b><u>Course No./Title</u></b>	<b><u>Cr. Hrs.</u></b>	<b><u>Enrollment</u></b>
2016	Spring	ANEQ799 - Dissertation	18	11
2016	Spring	ANEQ328 - Foundations in Animal Genetics	3	148
2016	Spring	ANEQ580A4 - Markers to Gene Function--Functional Change	1	1
2016	Spring	ANEQ580A4 - Markers to Gene Function--Functional Change	1	1
2016	Spring	ANEQ784 - Supervised College Teaching	18	31
2016	Spring	ANEQ699 - Thesis	18	9
2015	Fall	ANEQ495 - Independent Study	18	15
2015	Spring	ANEQ328 - Foundations in Animal Genetics	3	142
2015	Spring	500 - Genetic Markers and Functional Change, for the Distance Graduate Education Program for Breeding and Genetics	1	8
2015	Spring	ANEQ495 - Independent Study	18	13
2015	Spring	ANEQ334 - Principles of Equine Genetics	3	78
2015	Spring	ANEQ792B - Seminar-Breeding/Genetics	1	12
2015	Spring	ANEQ784 - Supervised College Teaching	18	28
2014	Summer	ANEQ487A - Internship: Animal	6	36
2014	Spring	ANEQ328 - Foundations in Animal Genetics	3	81
2014	Spring	500 - Marker assisted selection and functional changes	1	8
2014	Spring	ANEQ334 - Principles of Equine Genetics	3	89
2014	Spring	ANEQ784 - Supervised College Teaching	18	23
2014	Spring	ANEQ699 - Thesis	18	8
2013	Fall	ANEQ792B - B&G Graduate Seminar	1	6
2013	Fall	ANEQ792B - Seminar-Breeding/Genetics	1	6

2013	Spring	ANeq328 - Foundations in Animal Genetics	3	73
2013	Spring	ANeq495 - Independent Study	18	11
2013	Spring	ANeq792B - Seminar-Breeding/Genetics	1	5
2013	Spring	ANeq784 - Supervised College Teaching	18	22
2012	Fall	ANeq575 - Computational Biology in Animal Breeding	3	3

### Guest Lectures:

<u>Year</u>	<u>Semester</u>	<u>Course No./Title</u>	<u># of Guest Lectures</u>	<u>Delivery Mode</u>
2015	Fall	ANeq300 - Seedstock Merchandising	1	Face to Face
2015	Spring	ANeq330 - Animal Breeding	1	Face to Face
2015	Spring	ANeq334 - Equine Genetics	5	
2014	Fall	ANeq300 - Beef Production and SeedStock Management	1	Face to Face
2014	Spring	ANeq330 - Animal Breeding	1	Face to Face

### Evidence of Teaching Effectiveness (Annual Input)

#### Peer Evaluations of Teaching

Spring 2014 500–Marker assisted selection and functional changes  
They loved it.

### EXTENSION/ENGAGEMENT ACTIVITIES/ACCOMPLISHMENTS

#### AGA Selection Index Committee

Selection Index Committee. Number of times program was made: 5. Total number of participants: 10. Percent Responsible: 100%. 2012.

#### IBBA Committee Service

IBBA Breed Improvement Committee; DNA Technology. Number of times program was made: 5. Total number of participants: 10. Percent Responsible: 100%. 2012.

#### Presentation

Beyond 50K, genomic data of the future. Loveland, CO. Number of times program was made: 1. Total number of participants: 100. Percent Responsible: 100%. 2012.

Genomics and EPD. Fort Collins, CO. Number of times program was made: 1. Total number of participants: 35. Percent Responsible: 100%. 2012.

Overview of the 50K molecular genetics project. Houston, TX. Number of times program was made: 1. Total number of participants: 50. Percent Responsible: 100%. 2012.

Selection indexes and their use in beef industry. Fort Collins, CO. Number of times program was made: 1. Total number of participants: 100. Percent Responsible: 100%. 2012.

Sorting through the science and realities of DNA tools for Genetic Prediction. Rapid City, SD. Number of times program was made: 1. Total number of participants: 300. Percent Responsible: 100%. 2012.

### COMMITTEES

Faculty Council, (August 1, 2012 - May 30, 2015).

Search Committee for ARDEC Research Technician, (March 2015 - May 2015).

Graduate Student Recruitment, (2015 - Present).

Honors Research in Breeding and Genetics, (2015 - Present).

Strategic Planning and Tactics, (June 1, 2014 - Present).

Acting Department Head, (2014 - Present).

Department Head Admin Assitant, signature, (January 2014 - Present).

CSU-Beef Improvement Steering Committee, (January 2012 - Present).

Invited Lectures, (January 2012 - Present).

Letters of Recommendation, (January 2012 - Present).

Promotion and Tenure, (2012 - Present).

Promotion and Tenure, (January 2012 - Present).

Search Committee for Animal Microbiome Position, (October 2015 - 2016).

Search Committee Beef Extension Faculty Position, (September 2015 - December 2015).

Y-Cross Graduate Teaching Fellowship, (2015).

Supervisor of B&G Computing Support, (January 2014 - December 2014).

Tenure and Promotion, (January 2014 - December 2014).

Graduate Student Recruitment, (January 1, 2013 - December 31, 2013).

### **PROFESSIONAL AFFILIATIONS AND ACTIVITIES**

American Registry of Professional Animal Scientist.

American Society of Animal Science.

NRSP-8 Cattle Sheep and Goat Genome Section.

Breed Improvement Committee, International Brangus Breeders Association. (January 2004 - December 2014).

International Society of Animal Genetics. (January 2004 - December 2014).

Editorial Review Board Member, Theriogenology. (December 2015 - Present).

Member, International Society of Animal Genetics. (January 2000 - Present).

Member, American Registry of Professional Animal Scientist. (January 1997 - Present).

Member, American Society of Animal Science. (January 1995 - Present).

Committee Chair, USDA-ARS, NAGP, Beef Species. (January 2013 - December 2017).

Committee Chair, Bovine Respiratory Disease Coordinated Ag Project. (January 2011 - April 2017).

Reviewer, Grant Proposal, Indo-US Science and Technology Forum. (October 2015 - December 2015).

Reviewer, Ad Hoc Reviewer, New Mexico State University. (2015).

Editorial Review Board Member, Domestic Animal Endocrinology. (January 2008 - December 2015).

Reviewer, Journal Article, BMC Genomics. (July 2015).

Chairperson, Breeding and Genetics Section of Western Section of American Society of Animal Science. (June 2015).

Reviewer, Journal Article, Reproduction, Fertility, and Development. (April 2015).

Reviewer, Ad Hoc Reviewer, Binational Agricultural research and Development Fund. (December 1, 2014 - December 31, 2014).

Reviewer, Ad Hoc Reviewer, Meta Gene Journal. (July 1, 2014 - December 31, 2014).

Interview for Drover's Journal, efficiency and the cow-size dilemma. 2012. (January 2013 - December 2014).

Interview for Western Farmer-Stockman, Colorado State U professor hopes new tools will ID fittest cattle. (January 2013 - December 2014).

Reviewer, Ad Hoc Reviewer, Journal of Dairy Science. (January 2013 - December 2014).

Committee Member, Breed Improvement Committee, International Brangus Breeders Association. (January 2004 - December 2014).

Attendee, Meeting, WCGLP: World Congress of Genetics Applied to Livestock, Vancouver. (August 12, 2014 - August 17, 2014).

Reviewer, Ad Hoc Reviewer, USDA-ARS. (July 1, 2014 - August 1, 2014).

Attendee, Meeting, Beef Improvement Federation, Lincoln, Nebraska. (June 10, 2014 - June 14, 2014).

Committee Chair, NRSP-8 Cattle Sheep and Goat Genome Section. (January 2013 - January 2014).

Reviewer, Ad Hoc Reviewer, Biology of Reproduction. (January 2013 - December 2013).

Reviewer, Ad Hoc Reviewer, Biomed Central. (January 2013 - December 2013).

Interview for the Rocky Mountain Collegian, CSU animal science professor leads brisket disease study. (January 2013 - December 2013).

Reviewer, Journal Article, Journal of Animal Science. (January 2013 - December 2013).

Reviewer, Ad Hoc Reviewer, Promotion and Tenure Review. (January 2013 - December 2013).

Reviewer, Ad Hoc Reviewer, Frontiers in Animal Genomics. (January 2010 - December 2013).

University of Wyoming, Animal Science. (January 2012 - December 2012).

**OTHER ACTIVITIES/ACCOMPLISHMENTS – SERVICE/OUTREACH**

Faculty Mentor, Dr. R. Cockrum, Virginia Tech University. (2015 - Present).

Expert Testimony, Letters of recommendation. (2015).

letters of reference for post graduate, DVM, and assistant professors., Graduate study. (January 1, 2014 - December 31, 2014).

Provided expert opinion for dairy production, McCarty Family Farms. (November 30, 2015 - Present).

Guest Speaker, Grass Fed Network. (January 2015).

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