

# James C. MacDonald, Ph.D., PAS

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## EDUCATION

**Doctor of Philosophy**, May, 2006  
University of Nebraska, Lincoln  
**Master of Science**, May 2002  
University of Nebraska, Lincoln  
**Bachelor of Science**, May 1999  
North Dakota State University, Fargo

## EXPERIENCE

**Professor of Animal Science**, July, 2019 to present.  
University of Nebraska – Lincoln (60% research, 40% teaching)  
**Associate Professor of Animal Science**, August, 2012 to June 2019.  
University of Nebraska – Lincoln (60% research, 40% teaching)  
**Associate Professor of Animal Nutrition**, September, 2011 to July, 2012.  
75% Texas A&M AgriLife Research, Amarillo (100% research)  
25% West Texas A&M University  
**Assistant Professor of Animal Nutrition**, April, 2006 to August, 2011  
75% Texas A&M AgriLife Research, Amarillo (100% research)  
25% West Texas A&M University

## PROFESSIONAL AWARDS

UNL Parents Association, recognition for contributing to student excellence, 2017, 2018  
Nebraska Beef Industry Endowment Award, recipient, 2015, 2019  
William G. Whitmore Memorial Travel Award, recipient, 2005  
Holling Family Excellence in Teaching Award, recipient, 2004

## PROFESSIONAL SERVICE

ASAS Pastures and Forages Symposium Committee (2023-2026)  
UNL Animal Science Graduate Committee Chair (2023-2026)  
UNL Animal Science Promotion and Tenure Committee, 2020-2023 (2023 chair)  
UNL IANR Agricultural Research Division Advisory Council, 2017-2023  
UNL Animal Science Curriculum Committee, 2016-present  
UNL Animal Science Scholarship Committee, 2015-present  
ASAS Midwestern Section Ruminant Nutrition Committee, 2017-2021  
Texas A&M University Adjunct Faculty Member, 2012-2017  
West Texas A&M University Adjunct Faculty Member, 2012-2017  
TX Beef Worker's Group Executive Committee, 2009-2011  
Plains Nutrition Council Executive Committee, 2008-2012  
Texas A&M University Graduate Faculty Member, 2007-2012  
West Texas A&M University Graduate Faculty Member, 2006-2012  
Texas Tech University Adjunct Professor, 2007-2012

Journal of Animal Science Editorial Board, member, 2007-2011

### **PROFESSIONAL MEMBERSHIPS**

Gamma Sigma Delta, 2018  
Plains Nutrition Council, 2007  
American Registry of Professional Animal Scientists, 2005  
American Society of Animal Science, 1998

### **PROFESSIONAL METRICS IN BRIEF**

30 graduate student committees chaired  
95 refereed journal articles published  
> \$12 million in grant funding garnered

### **TEACHING RESPONSIBILITIES**

ASCI 181: Beef Industry Scholars – Freshman Seminar. Introduction to the Nebraska and United States beef industry. Discussion of issues by invited beef industry leaders and on-site visits of industry organizations. (2021-2023)

ASCI 481: Beef Industry Scholars Beef Summit: Identification of a major issue confronting the Nebraska beef industry. Students organize a Nebraska summit meeting for Nebraska beef producers to discuss and bring the identified issue to resolution. (2013-2022)

ASCI 485: Animal Systems Analysis: Senior capstone course for majors in the College of Agricultural Sciences and Natural Resources with an interest in careers in livestock production units, the meat industry, or related agribusiness. The course includes: goal setting, information gathering, and application of problem solving methods in animal science and develops ability to analyze and solve problems in all segments of animal science by integration of information from all pertinent disciplines and sources. (2013 – 2024)

ASCI 421/821: Advanced Animal Nutrition: An advanced course dealing with the nutrition of domestic animals. In-depth coverage of nutrients, nutrient metabolism and nutrient requirements. Biochemical and physiological functions of nutrients in life processes. (2013 – current)

ASCI 820: Feedlot Nutrition and Management: Nutritional requirements of and complete ration formulation for feedlot cattle. Management practices needed for successful feedlot operation. Team taught. (2013 – current)

ASCI 924: Forage Evaluation: Analytic procedures and research methods used in evaluating biochemical components and nutritive value of forages. An evaluation of the impact of forage quality on forage breeding and animal performance. Team taught. (2015 – current)

ASCI 490a: Feedlot Internship Program: Management internship in a beef feedlot. Organizational and financial structure of the beef feedlot and experience in making decisions related to: animal production, marketing, business management, and personnel management. Team taught. (2013 – current).

### **GRADUATE TRAINING** (student name, degree, graduation date, my role, last known employment)

Tate Johnson, MS, Advisor, Current student

Paige Madison, MS, Advisor, Current student

Emily Hoefling, MS, Advisor, Current student

Anna Kobza, Co-advisor, current student

Debora Sousa, PhD, Advisor, current student

Mitch Norman, PhD, Advisor, current student

Sydney Vanderhoff, MS – August, 2023. Advisor. Extension Field Specialist, South Dakota State University

Cindy Mansfield, MS – May, 2023. Advisor. Great Plains Livestock Consulting

Kelton Adair, MS – December, 2022. Advisor. CTS Liquid Feed.

Kylie Butterfield, MAS – December, 2022. Advisor. Agriculture and 4-H Development Agent, Montana State University, Carbon County Extension.

Sam Wagner, MS – August, 2022. Co-advisor. Research Technician, University of Nebraska - Lincoln

Selby Boerman – August, 2022. Co-advisor. Research Technician, Oregon State University

Rebecca Sjostrand, MS – May, 2022. Advisor. PhD Student. University of Nebraska

Devin Jakub, MS – December, 2021. Advisor. Technical Consultant, ADM Nutrition.

Zachary Carlson, MS – May, 2017. PhD, 2021, Advisor. Assistant Professor. North Dakota State University.

Tasha King, MS – May. 2017. Advisor. PhD 2020 Co-Advisor. Assistant Professor. Arkansas Tech University

Haley Linder, MS – December 2020. Co-Advisor. PhD student at University of Illinois

Rob Ziegler, MS – May 2020. Co-advisor. Data manager, Feedlot Health Management Services, Okotoks, AB, Canada.

Hannah Wilson, MS – August 2016; PhD – May 2020. Advisor. Technical Service Manager, AGP, Omaha, NE.

McKay Erickson, MS – August, 2019. Co-Advisor. Biological Science Technician. USDA-ARS, Dubois, ID.

Devin Broadhead, MS – August, 2019. Co-Advisor. Procurement at J. R. Simplot Company, Moses Lake, WA.

McKenna Brinton, MS – August, 2019. Advisor. 4-H/Youth Extension Educator, Evanston, WY.

Janessa Updike, MAS – May 2018. Advisor. Sales Nutritionist. Central Plains Milling, Columbus, NE.

Melissa Jolly-Breithaupt, PhD – May 2018. Co-Advisor. Technical Services Manager, POET Nutrition, Sioux Falls, SD.

Benjamin Hansen, MS – December 2017. Advisor. Beef Producer, Chappell NE.

Robert Jones, MS – December 2017. Co-Advisor. Nutritionist, Great Plains Livestock Consulting, Eagle, NE.

Cody Welchons, PhD – August 2017. Advisor. Nutritionist, Livestock Nutrition Center, Chichasha, OK.

Robby Bondurant, MS – May 2011; PhD – May 2017. Advisor. Technical Consultant, Westway Feed Products, Macon, GA.

Hannah Greenwell, MS – December, 2016. Co-Advisor. UNL Extension Educator, Ainsworth, Nebraska.

Kristen Ulmer, MS – December, 2016. Co-Advisor. UNL Extension Educator, Saunders County, Nebraska.

Jana Gramkow, PhD – August 2016. Advisor. Nutritionist. Great Plains Livestock Consulting, Eagle, Nebraska.

Benjamin Tibbitts, MS – May 2016. Co-Advisor. Cattle Manager at Deseret Ranch, Evanston, Utah.

Cassandra Row, MS – May 2015. Co-Advisor. Research Technician at US MARC, Clay Center, NE.

Amanda Burken, MS – August 2014. Advisor. Currently resides in Houston, TX.

Kelby Sudbeck, MS – May 2014. Advisor. Feedlot Manager, Triple T Farms, Ord NE

Sarah Peterson, MS – May 2014. Co-Advisor. Cattle Sales Coordinator, Adams Land and Cattle Company, Broken Bow, NE.

## **PUBLICATIONS**

### **Refereed Publications (97 published)**

98. Ferrari, V. B., R. G. Bondurant, G. E. Erickson, K. H. Wilke, and J. C. MacDonald. 2024. Effects of displacing modified distillers grains with dry-rolled corn on the

performance of growing beef steers consuming cornstalk residue from different harvest methods. *Applied Animal Science*. Submitted.

97. Burhoop, J. E., J. L. Sperber, C. J. Bittner, F. H. Hilscher, J. C. MacDonald, and G. E. Erickson. 2024. Impact of partial oil removal on energy content of distillers grains plus solubles for finishing cattle. *Animals*. 14, 2329. <https://doi.org/10.3390/ani1416232>
96. Tibbits, B., R. Jones, C. Welchons, R. Ziegler, R. Funston, K. Wilke, and J. C. MacDonald. 2024. Effects of supplemental rumen degradable protein and energy on performance of growing steers grazing corn residue. *Applied Animal Science* 40:526-534. <https://doi.org/10.15232/aas.2023-02522>.
95. Sperber, J. L., R. G. Bondurant, G. E. Erickson, K. Bruns, R. N. Funston, and J. C. MacDonald. 2024. Effect of extended days on carcass gain, efficiency, and quality of individually fed beef steers. *Translational Animal Science*. <https://doi.org/10.1093/tas/txae081>
94. McDermott, R. L., B. C. Troyer, M. E. Youngers, R. A. Stock, G. E. Erickson, and J. C. MacDonald. 2024. Interaction of Sweet Bran inclusion and corn processing method in beef finishing diets. *Translational Animal Science*. <https://doi.org/10.1093/tas/txae023>.
93. King, T. M., J. A. Musgrave, J. K. Beard, R. L. Ziegler, N. M. Woita, S. L. Boerman, J. L. Nollette, J. C. MacDonald, and J. T. Mulliniks. 2023. Effect of glucogenic feed additive on reproductive performance in young postpartum range cows. *Applied Animal Science*. 39:502-509. <https://doi.org/10.15232/aas.2023-02416>
92. Burken, A. J., D. B. Burken, R. G. Bondurant, A. K. Watson, K. Brooks, G. E. Erickson, K. H. Wilke, and J. C. MacDonald. 2023. Distillers based commercial supplement tubs for calves grazing corn residue. *Applied Animal Science*. 39:363-370. <https://doi.org/10.15232/aas.2023-02389>.
91. Watson, A. K., T. J. McEvers, L. J. Walters, N. D. May, J. A. Reed, J. C. MacDonald, G. E. Erickson, N. A. Cole, J. P. Hutcheson, and T. E. Lawrence. 2023. Mineral composition of serially slaughtered Holstein steers supplemented with zilpaterol hydrochloride. *J. Anim. Sci.* 101:1-11. <https://doi.org/10.1093/jas/skad209>.
90. Winders, T. M., B. A. Melton, B. M. Boyd, C. N. Macken, A. K. Watson, J. C. MacDonald, and G. E. Erickson. 2023. Impact of shade in beef feedyards on performance, ear temperature, and heats stress measures. *J. Anim. Sci.* 101: 1-10. <https://doi.org/10.1093/jas/skad004>.
89. Grabau, M. T., MacDonald, J. C., Carlson, Z. E., and Drewnoski, M. E. 2023. Impact of cattle grazing corn residue in spring on soil and subsequent soybean yield. *Agronomy Journal*, 115:2395–24039. <https://doi.org/10.1002/agj2.21407>.
88. Guretzky, J. A., H. Hillhouse, and J. C. MacDonald. 2023. Vegetation dynamics in nitrogen-fertilized versus mixed legume-smooth bromegrass pastures interseeded with sorghum-sudangrass. *Agronomy Journal*. 115:674-686. <https://doi.org/10.1002/agj2.21252>.

87. Wilson, H. C., L. J. McPhillips, B. M. Boyd, A. K. Watson, J. C. MacDonald, and G. E. Erickson. 2023. Effect of increasing corn silage inclusion in finishing cattle diets with or without tylosin on performance and liver abscesses. *J. Anim. Sci.* 101:1-12. <https://doi.org/10.1093/jas/skac380>.
86. Carlson, Z. E., L. J. McPhillips, R. R. Stowell, G. E. Erickson, M. E. Drenowski, and J. C. MacDonald. 2023. Evaluation of growth performance, carcass characteristics, and methane and CO<sub>2</sub> emissions of growing and finishing cattle raised in extensive or partial-intensive cow-calf production systems. *J. Anim. Sci.* 101:1-10. <https://doi.org/10.1093/jas/skac368>.
85. Hilscher, F. H., C. J. Bittner, J. L. Gramkow, M. L. Jolly-Breithaupt, M. M. Norman, H. C. Wilson, A. K. Watson, J. C. MacDonald, J. N. Anderson, and G. E. Erickson. 2022. The effect of corn silage hybrid and inclusion on performance of finishing steers and silage hybrid effects on digestibility and performance of growing steers. *Trans. Anim. Sci.* 6:1-10. <https://doi.org/10.1093/tas/txac147>.
84. Carlson, Z. E., L. J. McPhillips, G. E. Erickson, M. E. Drenowski, and J. C. MacDonald. 2022. Production cow-calf responses from perennial forage-based and integrated beef-cropping systems. *Trans. Anim. Sci.* <https://doi.org/10.1093/tas/txac090>
83. Linder, H. F., J. E. Sebade, Z. E. Carlson, H. C. Wilson, T. J. Spore, M. E. Drenowski, and J. C. MacDonald. 2022. Interaction of urea with frequency and amount of distillers grains supplementation for growing steers on a high forage diet. *Trans. Anim. Sci.* <https://doi.org/10.1093/tas/txac076>.
82. King, T. M., J. K. Beard, M. M. Norman, H. C. Wilson, J. MacDonald, and J. T. Mulliniks. 2022. Effect of protein and glucogenic precursor supplementation on forage digestibility, serum metabolites, energy utilization, and rumen parameters in sheep. *Trans. Anim. Sci.* <https://doi.org/10.1093/tas/txab229>
81. Lima Jr., A. S., M. A.P. Meschiatti, V. N. Gouvea, J. C. MacDonald, G. E. Erickson, V. G.V. Dantas, and F. A.P. Santos. 2022. Effects of wet distillers bran plus solubles and corn oil in diets containing flint corn grain and citrus pulp for finishing Nellore bulls. *Livestock Science.* 225:104774. <https://doi.org/10.1016/j.livsci.2021.104774>.
80. Anderson, L. K., H. Blanco-Canqui, M. E. Drenowski, J. C. MacDonald, Z. Carlson, B. H. Hansen, M. M. Brinton, K. M. Ulmer, and K. J. Calus. 2022. Cover crop grazing impacts on soil properties and crop yields under irrigated no-till corn-soybean management. *Soil Sci. Soc. Am. J.* 86:118-133. <https://doi.org/10.1002/saj2.20358>
79. Ohnoutka, C. A., R. G. Bondurant, B. M. Boyd, F. H. Hilscher, B. L. Nuttelman, G. I. Crawford, M. N. Streeter, M. K. Luebbe, J. C. MacDonald, Z. K. Smith, B. J. Johnson, and G. E. Erickson. 2021. Evaluation of coated steroidal combination implants on feedlot performance and carcass characteristics of beef heifers fed for constant or varying days on feed. *Applied Animal Science.* 37:41-51. <https://doi.org/10.15232/aas.2020-02013>.
78. Spore, T. J., Z. E. Carlson, K. H. Wilke, G. E. Erickson, T. J. Klopfenstein, J. C. MacDonald, and A. K. Watson. 2021. Effects of replacing wet distillers grains with

supplemental SoyPass in forage-based growing cattle. *Trans. Anim. Sci.*  
<https://doi.org/10.1093/tas/txab117>

77. King, T. M., J. K. Beard, M. M. Norman, H. C. Wilson, J. C. MacDonald, and J. T. Mulliniks. 2021. Effect of protein and gluconeogenic precursor supplementation on forage digestibility, serum metabolites, energy utilization, and rumen parameters in sheep. *Trans. Anim. Sci.* <https://doi.org/10.1093/tas/txab229>.
76. Hillhouse, H., W. Schacht, B. Anderson, J. MacDonald, J. M. Soper, and K. Brink. 2021. Forage production and steer performance in fertilized smooth bromegrass and smooth bromegrass-legume pastures. *Crop, Forage, & Turfgrass Management*. e201124. <https://doi.org/10.1002/cft2.20124>.
75. Volk, S.M., H. C. Wilson, K. J. Hanford, J. C. MacDonald, and G. E. Erickson. Impact of feeding Syngenta Enogen® Feed Corn compared to control corn in different diet scenarios to finishing beef cattle. *Animals*. 2021; 11(10):2940. <https://doi.org/10.3390/ani11102940>
74. Wilson, H. C., V. R. Bremer, G. E. Erickson, T. P. Carr, K. J. Hanford, A. K. Watson, T. J. Klopfenstein, and J. C. MacDonald. 2021. Digestion characteristics and prediction of digestible energy and total digestible nutrients in diets containing traditional and byproduct lipid sources. *Applied Animal Science*. 37:377-387. DOI: [10.15232/aas.2020-02131](https://doi.org/10.15232/aas.2020-02131)
73. Rukundo, I. R., M. C. Danao, J. C. MacDonald, R. L. Wehling, and C. L. Weller. 2021. Performance of two handheld NIR spectrometers to quantify crude protein of composite animal forage and feedstuff. *AIMS Agriculture and Food*. 6(2):463-478. DOI: [10.3934/agrfood.202127](https://doi.org/10.3934/agrfood.202127).
72. Welchons, C. A., R. G. Bondurant, T. J. Klopfenstein, A. K. Watson, J. Parsons, and J. C. MacDonald. 2021. Performance and economics of backgrounding yearling beef steers on smooth bromegrass pastures. *Applied Animal Science*. 37:68-76. <https://doi.org/10.15232/aas.2020-02064>.
71. Crawford, G. I., J. C. MacDonald, A. K. Watson, G. E. Erickson, and T. J. Klopfenstein. 2020. Diurnal and dietary impacts on estimating microbial protein flow from urinary purine derivative excretion in beef cattle. *Trans. Anim. Sci.* <https://doi.org/10.1093/tas/txaa140>.
70. Ziegler, R. L., J. A. Musgrave, T. L. Meyer, R. N. Funston, E. J. Dennis, K. J. Hanford, J. C. MacDonald, and J. T. Mulliniks. 2020. The impact of cow size and cow-calf and postweaning progeny performance in the Nebraska Sandhills. *Trans. Anim. Sci.* <https://doi.org/10.1093/tas/txaa194>.
69. Conway, A., Z. Carlson, J. C. MacDonald, T. J. Klopfenstein, and M. Drewnoski. 2020. Effect of ammoniation and harvest method on waste and consumption of corn residue bales fed to cows in a round bale feeder. *Trans. Anim. Sci.* <https://doi.org/10.1093/tas/txaa047>.
68. Wilson, H. C., F. H. Hilscher, L. J. McPhillips, B. M. Boyd, A. K. Watson, G. E. Erickson, and J. C. MacDonald. 2020. Impact of a fumeric acid and palm oil additive

on beef cattle performance and carcass characteristics in diets containing increasing concentrations of corn silage. *Trans. Anim. Sci.* <https://doi.org/10.1093/tas/txaa043>.

67. Oney, C. R., J. K. Gramkow, F. H. Hilscher, G. E. Erickson, J. C. MacDonald, T. J. Klopfenstein, and A. K. Watson. 2019. Corn silage rumen undegradable protein content and response of growing calves to rumen undegradable protein supplement. *Transl. Anim. Sci.* <https://doi.org/10.1093/tas/txz014>
66. Hilscher, F. H., D. B. Burken, C. J. Bittner, J. L. Gramkow, R. G. Bondurant, M. L. Jolly-Breithaupt, A. K. Watson, J. C. MacDonald, T. J. Klopfenstein, and G. E. Erickson. 2019. Impact of corn silage moisture at harvest on performance of growing steers with supplemental rumen undegradable protein, finishing steer performance, and nutrient digestibility by lambs. *Transl. Anim. Sci.* <https://doi.org/10.1093/tas/txz011>
65. Winders, T. M., M. L. Jolly-Breithaupt, H. C. Wilson, J. C. MacDonald, G. E. Erickson, and A. K. Watson. 2019. Evaluation of the effects of biochar on diet digestibility and methane production from growing and finishing steers. *Transl. Anim. Sci.* doi: [10.1093/tas/txz027](https://doi.org/10.1093/tas/txz027)
64. Conway, A. C., T. M. King, M. L. Jolly-Breithaupt, J. C. MacDonald, T. J. Klopfenstein, and M. E. Drewnoski. 2019. Effect of harvest method and ammoniation of bale corn residue on intake and digestibility in lambs. *Transl. Anim. Sci.* doi: 10.1093/tas/txz013.
63. Redfearn, D., J. Parsons, M. Drewnoski, M. Schmer, R. Mitchell, J. MacDonald, J. Farney, and A. Smart. 2019. Assessing the value of grazed corn residue for crop and cattle producers. *Agric. Environ. Lett.* 4:180066. doi:10.2134/aes2018.12.0066
62. Jolly-Breithaupt, M. L., M. E. Harris, B. L. Nuttleman, D. B. Burken, J. C. MacDonald, M. K. Luebke, T. K. Iragavarapu, and G. E. Erickson. 2019. Effects of Syngenta Enogen Feed Corn containing an alpha-amylase trait on finishing cattle performance and carcass characteristics. *Transl. Anim. Sci.* <https://doi.org/10.1093/tas/txy121>
61. Greenwell, H. L., J. L. Gramkow, M. L. Jolly-Breithaupt, J. C. MacDonald, and K. H. Jenkins. 2018. Effects of field pea supplementation on digestibility and rumen volatile fatty acid concentration of diets containing high and low quality forage. *The Professional Animal Scientist.* 34:631-641 doi:10.15232/pas.2018-01730
60. Drewnoski, M., J. Parsons, H. Blanco, D. Redfearn, K. Hales, and J. MacDonald. 2018. Forages and pastures symposium: cover crops in livestock production: whole-system approach. Can cover crops pull double duty: conservation and profitable forage production in the Midwestern United States? *J. Anim. Sci.* 96:3503-3512. doi: 10.1093/jas/sky026.
59. Ulmer, K., R. Rasby, J. Cox-O'Neill, K. Jenkins, J. MacDonald M. Rakkar, H. Blanco, and M. Drewnoski. 2018. Baling or Grazing of Corn Residue does not Reduce Crop Production in Central United States. *Agron. J.* 111:122-127. doi: 10.2134/agronj2018.04.0226



58. Jolly-Breithaupt, M. L., B. L. Nuttelman, C. J. Schneider, D. B. Burken, J. L. Gramkow, A. L. Shreck, J. C. MacDonald, T. J. Klopfenstein, and G. E. Erickson. 2018. Finishing performance and diet digestibility for feedlot steers fed corn distillers grains plus solubles and distillers solubles with and without oil extraction. *J. Anim. Sci.* 96:1996-2011. Doi:10.1093/jas/sky061.
57. Greenwell, H. L., K. H. Jenkins, and J. C. MacDonald. 2018. Evaluating field peas as an energy source for growing and finishing beef cattle. *Prof. Anim. Sci.* 34:202-209. doi:10.15232/pas.2017-01666.
56. King, T. M., R. G. Bondurant, M. L. Jolly-Breithaupt, J. L. Gramkow, T. J. Klopfenstein, and J. C. MacDonald. 2017. Effect of corn residue harvest method with ruminally undegradable protein supplementation on performance of growing calves and fiber digestibility. *J. Anim. Sci.* 95:5290-5300. Doi:10.2527/jas2017.1926.
55. Cox-O'Neill, J. L., K. M. Ulmer, M. Rakkar, L. Franzen-Castle, H. Blanco-Canqui, M. E. Drewnoski, J. C. MacDonald, and R. J. Rasby. 2017. Perceptions of crop consultants and crop producers on grazing corn residue in Nebraska. *Journal of Extension* 55(5):5RIB2.
54. Rakkar, M. K., H. Blanco-Canqui, R. A. Drijber, M. E. Drewnoski, J. C. MacDonald, and T. Klopfenstein. 2017. Impacts of cattle grazing of corn residues on soil properties after 16 years. *Soil Sci. Soc. Am. J.* 81:414–424. doi:10.2136/sssaj2016.07.0227
53. Cleveland, B. D., J. O. Buntyn, A. L. Gronli, J. C. MacDonald, and G. A. Sullivan. 2017. Effect of feeding distillers grains during different phases of production and addition of postmortem antioxidants on shelf life of ground beef. *Prof. Anim. Sci.* 33:555-566. doi: 10.15232/pas.2016-0160
52. Watson, A. K., T. J. Klopfenstein, G. E. Erickson, J. C. MacDonald, and V. A. Wilkerson. 2017. Impact of microbial efficiency to predict MP supply when estimating protein requirements of growing beef cattle from performance. *J. Anim. Sci.* 95:3184-3191. doi:10.2527/jas2016.1124.
51. Burken, D. B., B. L. Nuttelman, M. J. Jolly-Breithaupt, J. L. Gramkow, S. E. Gardine, T. J. Klopfenstein, J. C. MacDonald, and G. E. Erickson. 2017. Digestibility and performance of steers fed varying inclusions of corn silage and modified distillers grains with solubles to partially replace corn in finishing diets. *Transl. Anim. Sci.* doi:10.2527/tas2017.0046
50. Bittner C. J., M. A. Greenquist, D. B. Burken, A. L. Shreck, J. C. MacDonald, T. J. Klopfenstein, W. J. Platter, M. T. Van Koevinger, N. A. Pyatt, and G. E. Erickson. 2017. Evaluation of ractopamine hydrochloride (Optaflexx) on growth performance and carcass characteristics of finishing steers across different feeding durations. *J. Anim. Sci.* 95:485-498. doi:10.2527/jas2016.0806
49. Ahern, N. A., B. L. Nuttelman, T. J. Klopfenstein, J. C. MacDonald, G. E. Erickson, and A. K. Watson. 2016. Comparison of wet and dry distillers grains plus solubles to corn as an energy source in forage-based diets. *Prof. Anim. Sci.* 32:758-767. doi: 10.15232/pas2016-01528.

48. Buttrey, E. K., K. H. Jenkins, F. T. McCollum III, N. A. Cole, L. O. Tedeschi, and J. C. MacDonald. 2016. Effects of sorghum wet distillers grains plus solubles in steam-flaked corn-based diets on steer performance, carcass characteristics, and digestibility characteristics. *Prof. Anim. Sci.* 32:768-776. doi: 10.15232/pas.2016-0153.
47. Gramkow, J. L., C. J. Bittner, M. L. Jolly-Breithaupt, D. B. Burken, G. E. Erickson, and J. C. MacDonald. 2016. Effects of processing treated corn stover and distillers grains on performance and total tract digestion of finishing cattle. *J. Anim. Sci.* doi: 10.2527/jas.2016-0546.
46. Dewnoski, M. E., J. C. MacDonald, G. E. Erickson, K. J. Hanford, and T. J. Klopfenstein. 2016. Long-term corn residue grazing improves subsequent soybean yields in a corn-soybean rotation. *Crop, Forage, and Turfgrass Management*. Vol. 2. DOI: 10.2134/cftm2015.0192
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25. Harding, J. L., G. E. Erickson, and J. C. MacDonald. 2014. Using Enspira to improve fiber digestion. *Nebr. Beef Cattle Rep. MP 99*. Pp. 59-61.
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1. MacDonald, JC, TJ Klopfenstein, GE Erickson, CN Macken, and JD Folmer. 2003. Relationship of chute-side measurements to carcass measurements. Nebr. Beef Cattle Rep. MP 80-A: 61-65.

2. MacDonald, JC, TJ Klopfenstein, GE Erickson, CN Macken, JD Folmer, and MP Blackford. 2003. Sorting strategies for yearlings. Nebr. Beef Cattle Rep. MP 80-A: 65-68.
3. MacDonald, JC, TJ Klopfenstein, GE Erickson, CN Macken, JD Folmer, and MP Blackford. 2002. Sorting strategies in an extensive forage utilization beef production system. Nebr. Beef Cattle Rep. MP 79-A: 36-39.

### **Beef Cattle Research in Texas Reports**

4. Buttrey, EK, FT McCollum III, JC MacDonald, and KH Jenkins. 2009-2010. Use of dried distiller's grains throughout a beef production system. Beef Cattle Research in Texas: 155-156. Available at:  
<http://animalscience.tamu.edu/academics/beef/research/index.htm>.
3. Buttrey, EK, FT McCollum III, JC MacDonald, and KH Jenkins. 2009-2010. Distiller's grains as a supplement for wheat pasture stockers. Beef Cattle Research in Texas: 155-156. Available at:  
<http://animalscience.tamu.edu/academics/beef/research/index.htm>.
2. MacDonald, JC, and KH Jenkins. 2009-2010. Effects of Amaferm on the performance of steers consuming steam-flaked corn-based finishing diets containing 35% wet distiller's grains. Beef Cattle Research in Texas: 131-136. Available at:  
<http://animalscience.tamu.edu/academics/beef/research/index.htm>.
1. MacDonald, JC, TC Davis, KH Jenkins, and JM Patterson. 2009-2010. Effects of sodium bisulfate on in situ digestibility and ruminal characteristics of steers fed a receiving diet. Beef Cattle Research in Texas: 127-130. Available at:  
<http://animalscience.tamu.edu/academics/beef/research/index.htm>.

### **Experiment Station Reports, North Plains Field Ag Day Reports:**

MacDonald, JC and DR Smith. 2006. Evaluation of ProTernative Stress Formula in Receiving Diets. North Plains 2006 Ag Field Day. Texas A&M Res. and Ext. Publ. No. AREC 06-32:37.

### **Ph.D. Dissertation:**

MacDonald, JC. 2006. Use of dried distillers grains and protein sources in high forage diets. University of Nebraska – Lincoln

### **M.S. Thesis:**

MacDonald, JC. 2002. Sorting strategies in an extensive forage utilization beef production system. University of Nebraska – Lincoln

**GRANTS: Lifetime Total (2006-2023) = \$12,797,499**

- Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), UNL-0066723, Impact of frequency of variation in distillers in feedlot diets on performance. Ne Corn Board. 2024. \$73,693. Pending
- Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), Sperber, J. (Investigator). UNL-00065755. The Impact of Housing System on Feedlot Performance, Carcass Outcomes, and Nutrient Management. Iowa Beef Industry Council. 2024. \$76,549. Funded.
- MacDonald, J. (Principal Investigator), Erickson, G. (Investigator), UNL-00066517, Characterizing the digestion aspects of bran. Cargill Inc. 2024. \$168,623. Funded.
- MacDonald, J. (Principal Investigator), Erickson, G. (Investigator), UNL-00066153, Evaluation of Supplemental Awake/Lactorn on Plasma Neutrophil and Lymphocyte Concentrations in High-Stress Receiving Cattle. Nutriquest. 2023. \$77,699. Funded.
- MacDonald, J. (Principal Investigator), Erickson, G. (Investigator), Fernando, Samodha (Investigator). UNL-0065985. Evaluation of a Proprietary Blend of 4 Bacillus sp. on Feedlot Performance and Carcass Characteristics, Methane Production, and Rumen Microbial Community Structure. Phileo by Lesaffre. 2023. \$110,586. Funded.
- MacDonald, J. (Principal Investigator). UNL-00065983. Evaluation of Lysoforte on Rumen Fermentation Parameters, Rumen and Total Tract Digestion, and Fatty Acid Digestion. Kemin Industries. 2023. \$52,899. Funded.
- Erickson, G. (Principal Investigator), Morrill, J. (Investigator), Watson, A. (Investigator), and MacDonald, J. (Investigator). UNL-00058485. Effect of Feeding Palm Oil on Finishing Cattle Performance, Carcass Characteristics, Meat Composition, and Methane Production. Bunge Inc. 2023. \$151,809. Funded.
- Erickson, G. (Principal Investigator), MacDonald, J. (Investigator). UNL-00057944. Impact of Constant Versus Variable Inclusions of Modified Distillers Grains Plus Solubles on Feedlot Cattle Performance and Carcass Characteristics. Ne Corn Board. 2023. \$67,718. Funded.
- Erickson, G. (Principal Investigator), MacDonald, J. (Investigator). UNL-00058576. Effect of Feeding Additives on Finishing Cattle Performance and Carcass Characteristics. Furst-McNess Company. 2023. 177,784. Funded.
- Drewnoski, M. (Principal Investigator), MacDonald, J. (Investigator). UNL-00057088. Impact of chopping corn residue during grain harvest on cattle performance when grazing residue. Iowa Beef Industry Council. 2022. \$41,205. Funded.
- Fernando, S. (Principal Investigator), MacDonald, J. (Investigator). UNL-00056888. Analyzing Rumen Samples and Hungate Tubes for Megasphaera elsdenii and Volatile Fatty Acids. MS Biotec. 2022. \$27,449. Funded.
- Drewnoski, M. (Principal Investigator). Parsons, Jay (Investigator), Redfearn, D. (Investigator), MacDonald, J. (Investigator), Rees, J. (Investigator), Thompson, L. (Investigator). Interseeding Cover Crops into Early Vegetative Stage Corn to Increase

- Sustainability and Grazing Potential in Corn Systems. Ne Corn Board. 2022. \$103,613. Funded.
- Erickson, G. (Principal Investigator), Watson, A. (Investigator), MacDonald, J. (Investigator), 138149, Contract, "Low Inclusion of Distillers", Ne Corn Board, State Agencies, Research, \$60,758.00, Awarded. (sub: January 15, 2021, start: July 1, 2021, end: June 30, 2022).
- Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), 137624, Contract, "Beet Pulp Lamb Study 1", Bayer CropScience, Industry, Research, \$57,023.00, Awarded. (sub: January 29, 2021, start: January 15, 2021, end: January 14, 2022).
- Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), 137724, Contract, "Beet Pulp Lamb Study 2", Bayer CropScience, Industry, Research, \$36,531.00, Awarded. (sub: January 29, 2021, start: January 15, 2021, end: January 14, 2022).
- MacDonald, J. (Principal Investigator), Erickson, G. (Investigator), 139243, Contract, "Sweet Bran Products Cattle Performance", Cargill Inc, Industry, Research, \$109,871.00, Awarded. (sub: March 10, 2021, start: March 15, 2021, end: October 31, 2022).
- Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), 137371, Contract, "Amylase for Finishing Cattle", E. I. DuPont, Industry, Research, \$145,613.00, Awarded. (sub: December 1, 2020, start: November 1, 2020, end: October 31, 2023).
- MacDonald, J. (Principal Investigator), Drewnoski, M. (Investigator), 132694, Contract, "Implants in Backgrounding Systems", Intervet dba Merck Animal Health, Industry, Research, \$407,319.00, Awarded. (sub: November 14, 2019, start: April 1, 2020, end: December 15, 2022).
- MacDonald, J. (Principal Investigator), Erickson, G. (Investigator), 143430, Contract, "Lactipro and Acidosis", MS Biotec, Industry, Research, \$423,400.00, Awarded. (start: December 1, 2020, end: December 1, 2022).
- Watson, A. K. (Principal Investigator), Erickson, G. (Investigator), MacDonald, J. (Investigator), 141871, Contract, "Smartamine ML Cattle Diets", Adisseo, Industry, Research, \$78,390.00, Awarded. (start: November 1, 2020, end: October 31, 2022).
- MacDonald, J. (Principal Investigator), Erickson, G. (Investigator), 134676, Contract, "Digestion of Bran", Cargill Inc, Industry, Research, \$255,993.00, Awarded. (sub: October 7, 2020, start: November 1, 2020, end: October 31, 2022).
- Drewnoski, M. (Principal Investigator), Jenkins, K. (Investigator), Guretzky, J. (Investigator), Parsons, J. (Investigator), Redfean, D. (Investigator), MacDonald, J. (Investigator), Volesky, J. (Investigator), Stephenson, M. (Investigator), IC-15898, Grant, "NC1181: Optimizing land use for beef cattle production", Internal, \$398,406.00, Awarded. (start: October 1, 2019, end: September 30, 2024).
- Guretzky, J. (Principal Investigator), Mamo, M. (Investigator), MacDonald, J. (Investigator), IC-15896, Grant, "NC1182: Management and Environmental Factors Affecting Nitrogen Cycling and Use Efficiency in Forage-Based Livestock Production Systems", Internal, \$150,000.00, Awarded. (start: October 1, 2019, end: September 30, 2024).

Erickson, G. (Principal Investigator), Watson, A. (Investigator), MacDonald, J. (Investigator), 131491, Grant, "LTAR Integrated Beef Cropping GHG", Dept of Agriculture-ARS, Federal, Research, \$540,000.00, Awarded. (sub: September 3, 2019, start: August 1, 2019, end: July 31, 2024).

Nobert, H. (Principal Investigator), Watson, A. (Investigator), MacDonald, J. (Investigator), Erickson, G. (Investigator), 127811, Grant, "Biochar Initiative II", Dept of Agriculture-FS, Federal, Public Service, \$250,000.00, Awarded. (start: August 1, 2019, end: July 31, 2022).

Watson, A. (Principal Investigator), Erickson, G. (Investigator), MacDonald, J. (Investigator), 131455, Contract, "CARS as Ingredient in Cattle Finish Diet", Veramaris USA LLC, Industry, Research, \$44,862.00, Awarded. (sub: August 29, 2019, start: February 1, 2019, end: August 31, 2021).

Watson, A. (Principal Investigator), Erickson, G. (Investigator), MacDonald, J. (Investigator), 126285, Grant, "Biochar and Cattle Manure", Ne Environmental Trust, State Agencies, Research, \$17,067.00, Awarded. (start: April 26, 2019, end: June 30, 2020).

Drewnoski, M. (Principal Investigator), Redfearn, D. (Investigator), Parsons, J. (Investigator), Blanco, H. (Investigator), MacDonald, J. (Investigator), 129457, Grant, "Grazing Impacts on Soil Health", Ne Environmental Trust, State Agencies, Research, \$75,467.00, Awarded. (start: April 1, 2019, end: June 30, 2020).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), 128550, Contract, "Evaluation of Corn Bran Types", Cargill Inc, Industry, Research, \$87,164.00, Awarded. (sub: April 5, 2019, start: February 25, 2019, end: June 30, 2020).

Blanco, H. (Principal Investigator), Drewnoski, M. (Investigator), MacDonald, J. (Investigator), Shapiro, C. (Investigator), Proctor, C. (Investigator), Thompson, L. (Investigator), McMechan, J. (Investigator), Ruis, S. (Investigator), 122459, Contract, "Cover Crops to Impr Wtr Qlty/Soil", Ne Corn Board, State Agencies, Research, \$56,500.00, Awarded. (start: July 1, 2018, end: June 30, 2020).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), 127605, Contract, "Eval Dry Bran Process Methods on Cattle", Cargill Inc, Industry, Research, \$41,145.00, Awarded. (sub: December 19, 2018, start: January 1, 2019, end: March 1, 2020).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), Watson, A. (Investigator), 126795, Contract, "New DGS Products for Cattle", Flint Hills Resources, Industry, Research, \$80,165.00, Awarded. (sub: October 10, 2018, start: October 1, 2018, end: September 30, 2019).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), Watson, A. (Investigator), 126794, Contract, "New DGS Products for Cattle", Flint Hills Resources, Industry, Research, \$21,858.00, Awarded. (sub: October 10, 2018, start: October 1, 2018, end: September 30, 2019).

Schacht, W. (Principal Investigator), Spangler, M. (Investigator), Funston, R. (Investigator), Stephenson, M. (Investigator), Drewnoski, M. (Investigator), MacDonald, J.



(Investigator), Parsons, J. (Investigator), Redfearn, D. (Investigator), IC-3754, Grant, "Five-year Plan for the Beef Systems Initiative", Internal, \$750,000.00, Awarded. (start: August 1, 2017, end: July 31, 2022).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), 123543, Contract, "Evaluation of Corn Bran Types", Cargill Inc, Industry, Research, \$72,183.00, Awarded. (sub: April 4, 2018, start: June 15, 2018, end: June 30, 2020).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), 123900, Contract, "Enogen Silage Digestion", Syngenta, Industry, Research, \$56,315.00, Awarded. (sub: May 9, 2018, start: March 1, 2018, end: April 1, 2020).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), Watson, A. (Investigator), 107886, Contract, "Enogen Corn/Process for Finishing", Syngenta, Industry, Research, \$107,534.00, Awarded. (sub: March 31, 2017, start: April 24, 2017, end: April 1, 2020).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), Watson, A. (Investigator), 107885, Contract, "Enogen Silage/Corn Growing", Syngenta, Industry, Research, \$96,016.00, Awarded. (sub: March 31, 2017, start: April 24, 2017, end: April 1, 2020).

MacDonald, J. (Principal Investigator), Erickson, G. (Investigator), Watson, A. (Investigator), 109855, Contract, "IDENA Essential Oils in Beef Diets", Idena Animal Nutrition, Industry, Research, \$93,747.00, Awarded. (sub: September 18, 2017, start: October 1, 2017, end: September 30, 2019).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), Drewnoski, M. (Investigator), 110390, Contract, "Organic Fed Holstien Bulls & Steers", Costco Wholesale Corporation, Industry, Research, \$100,000.00, Awarded. (sub: August 18, 2017, start: September 1, 2017, end: September 30, 2019).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), Drewnoski, M. (Investigator), 108935, Contract, "Organic Fed Holstien Bulls & Steers", Costco Wholesale Corporation, Industry, Research, \$18,051.00, Awarded. (sub: August 18, 2017, start: September 1, 2017, end: September 30, 2019).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), Watson, A. (Investigator), 92702, Contract, "Program Monitors Cattle Health", Feed Alert Systems Inc, Industry, Research, \$56,874.00, Awarded. (sub: April 27, 2016, start: June 1, 2016, end: July 1, 2019).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), 123210, Contract, "Silage Inclusion and Abscesses", Iowa Beef Industry Council, Associations/Foundation, Research, \$57,375.00, Awarded. (sub: February 15, 2018, start: November 1, 2018, end: June 30, 2019).

Drewnoski, M. (Principal Investigator), Redfearn, D. (Investigator), Parsons, J. (Investigator), Blanco, H. (Investigator), MacDonald, J. (Investigator), 110918, Grant, "Grazing Impacts on Soil Health", Ne Environmental Trust, State Agencies, Research, \$74,381.00, Awarded. (sub: September 5, 2017, start: April 26, 2018, end: June 30, 2019).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), 108418, Contract, "Revalor-200 Admin Finishing Steers", Intervet dba Merck Animal Health, Industry, Research, \$101,445.00, Awarded. (sub: March 31, 2017, start: April 28, 2017, end: May 1, 2019).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), Drewnoski, M. (Investigator), Watson, A. (Investigator), 108937, Contract, "Rumen Undegradable Protein", Costco Wholesale Corporation, Industry, Research, \$102,689.00, Awarded. (sub: August 18, 2017, start: September 1, 2017, end: February 28, 2019).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), Watson, A. (Investigator), 92498, Contract, "BMR Corn Silage Monensin Supplement", Dow AgroSciences, Industry, Research, \$52,688.00, Awarded. (sub: April 19, 2016, start: May 6, 2016, end: October 1, 2018).

Watson, A. (Principal Investigator), Erickson, G. (Investigator), MacDonald, J. (Investigator), 96808, Contract, "Soypass for Cattle", Ne Soybean Board, Associations/Foundations, Research, \$48,485.00, Awarded. (sub: January 20, 2017, start: October 1, 2017, end: September 30, 2018).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), 94977, Contract, "Liver Abscess Rate", Ne Dept Economic Development, State Agencies, Research, \$52,800.00, Awarded. (sub: September 7, 2016, start: October 1, 2016, end: September 30, 2018).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), 94970, Contract, "Liver Abscess Rate", Ramaekers Family Farm Inc, Industry, Research, \$16,877.00, Awarded. (sub: September 7, 2016, start: October 1, 2016, end: September 30, 2018).

Blanco, H. (Principal Investigator), Redfearn, D. (Investigator), Drewnoski, M. (Investigator), MacDonald, J. (Investigator), Parsons, J. (Investigator), Stalker, L. (Investigator), 76480, Grant, "Grazing/Harvesting CC Affect Soils?", Univ of Minnesota, Universities, Research, \$199,974.00, Awarded. (sub: April 9, 2015, start: October 1, 2015, end: September 30, 2018).

Fernando, S. (Principal Investigator), Spangler, M. (Co-Principal Investigator), Erickson, G. (Co-Principal Investigator), MacDonald, J. (Co-Principal Investigator), Grant, "Evaluating genotype by microbiome interactions towards identifying genetic markers to increase feed efficiency", Multistate Hatch Funds, Federal, Research, \$197,000.00, Awarded, Yes. (start: October 1, 2013, end: September 30, 2018).

Petersen, J. (Principal Investigator), Cupp, A. (Investigator), Wood, J. (Investigator), Ciobanu, D. (Investigator), Mote, B. (Investigator), MacDonald, J. (Investigator), Mulliniks, T. (Investigator), Yates, D. (Investigator), IC-14642, Grant, "Functional analysis of 'omics data - Ingenuity Pathway Analysis", Internal, \$8,000.00, Awarded. (start: February 19, 2018, end: June 30, 2018).

MacDonald, J. (Principal Investigator), Awada, T. (Investigator), Banerjee, S. (Investigator), Blanco, H. (Investigator), Drewnoski, M. (Investigator), Erickson, G. (Investigator), Okalebo, J. (Investigator), Parsons, J. (Investigator), Redfearn, D. (Investigator), Suyker, A. (Investigator), 108302, Grant, "Enhance Animal Protein Crops/Cattle", Fdn for Food & Agriculture Research, Associations/Foundations, Research, \$355,329.00, Awarded. (sub: March 31, 2017, start: July 1, 2017, end: June 30, 2018).

Blanco, H. (Principal Investigator), Drewnoski, M. (Investigator), MacDonald, J. (Investigator), Shapiro, C. (Investigator), Proctor, C. (Investigator), Thompson, L. (Investigator), McMechan, J. (Investigator), Ruis, S. (Investigator), 96954, Contract, "Cover Crops to Impr Wtr Qlty/Soil", Ne Corn Board, State Agencies, Research, \$52,880.00, Awarded. (sub: January 20, 2017, start: July 1, 2017, end: June 30, 2018).

Erickson, G. (Principal Investigator), Watson, A. (Investigator), MacDonald, J. (Investigator), 96956, Contract, "Value of Distillers Grains", Ne Corn Board, State Agencies, Research, \$73,177.00, Awarded. (sub: January 20, 2017, start: July 1, 2017, end: June 30, 2018).

Luebbe, M. (Principal Investigator), Erickson, G. (Investigator), MacDonald, J. (Investigator), Schroeder, M. (Investigator), 76570, Contract, "Syngenta Test Corn & Control Corn", Syngenta, Industry, Research, \$121,242.00, Awarded. (sub: April 10, 2015, start: April 8, 2015, end: May 31, 2018).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), Watson, A. (Investigator), 108984, Contract, "Biometric Sensing Ear Tags", Quantified Ag, Industry, Research, \$46,784.00, Awarded. (sub: May 17, 2017, start: May 1, 2017, end: May 1, 2018).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), Watson, A. (Investigator), 108983, Contract, "Biometric Sensing Ear Tags", Quantified Ag, Industry, Research, \$13,822.00, Awarded. (sub: May 17, 2017, start: May 1, 2017, end: May 1, 2018).

Guretzky, J. (Principal Investigator), Volesky, J. (Investigator), Stephenson, M. (Investigator), MacDonald, J. (Investigator), IC-2566, Grant, "Improving Forage Mass and Nutritive Value of Pastures By Interseeding Summer Annuals", Internal, \$7,740.00, Awarded. (start: February 3, 2017, end: January 31, 2018).

Blanco, H. (Principal Investigator), Drewnoski, M. (Investigator), MacDonald, J. (Investigator), Shapiro, C. (Investigator), Proctor, C. (Investigator), Thompson, L. (Investigator), McMechan, J. (Investigator), 90812, Contract, "Cover Crops to Impr Wtr Qlty/Soil", Ne Corn Board, State Agencies, Research, \$50,020.00, Awarded. (sub: January 15, 2016, start: July 1, 2016, end: December 31, 2017).

Rasby, R. (Principal Investigator), MacDonald, J. (Investigator), Blanco, H. (Investigator), Jenkins, K. (Investigator), 64021, Grant, "Crop Residue Removal", Univ of Minnesota-SARE, Universities, Public Service, \$199,059.00, Awarded. (sub: November 5, 2012, start: October 1, 2013, end: November 1, 2017).

Blanco, H. (Principal Investigator), Drewnoski, M. (Investigator), MacDonald, J. (Investigator), Shapiro, C. (Investigator), Proctor, C. (Investigator), Thompson, L. (Investigator), McMechan, J. (Investigator), Ruis, S. (Investigator), 108511, Contract, "Cover Crops to Impr Wtr Qlty/Soil", Ne Corn Board, State Agencies, Research, \$1,950.00, Awarded. (sub: April 4, 2017, start: May 30, 2017, end: June 30, 2017).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), 92493, Contract, "Impact BMR Corn Silage Kernel Proc", Dow AgroSciences, Industry, Research, \$93,876.00, Awarded. (sub: April 19, 2016, start: May 6, 2016, end: October 1, 2018).

MacDonald, J. (Principal Investigator), Rasby, R. (Investigator), Volesky, J. (Investigator), Stalker, L. (Investigator), Massengale, M. (Investigator), Jenkins, K. (Investigator), Anderson, B. (Investigator), Schacht, W. (Investigator), Guretzky, J. (Investigator), IC-342, Grant, "Enhancing resiliency of beef production under shifting forage resources", Internal, \$499,144.00, Awarded. (start: October 1, 2014, end: September 30, 2019).

Guretzky, J. (Principal Investigator), MacDonald, J. (Investigator), Schacht, W. (Investigator), IC-359, Grant, "Management and Environmental Factors Affecting Nitrogen Cycling and Use Efficiency in Forage-Based Livestock Production Systems", Internal, \$150,000.00, Awarded. (start: October 1, 2014, end: September 30, 2019).

Blanco, H. (Principal Investigator), Redfearn, D. (Investigator), Drewnoski, M. (Investigator), MacDonald, J. (Investigator), Parsons, J. (Investigator), Stalker, L. (Investigator), 76480, Grant, "Grazing/Harvesting CC Affect Soils?", Univ of Minnesota, Universities, Research, \$199,974.00, Awarded. (sub: April 9, 2015, start: October 1, 2015, end: September 30, 2018).

Fernando, S. (Principal Investigator), Spangler, M. (Co-Principal Investigator), Erickson, G. (Co-Principal Investigator), MacDonald, J. (Co-Principal Investigator), Grant, "Evaluating genotype by microbiome interactions towards identifying genetic markers to increase feed efficiency", Multistate Hatch Funds, Federal, Research, \$197,000.00, Awarded, Yes. (start: October 1, 2013, end: September 30, 2018).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), 75650, Contract, "Impact of BMR Corn Silage", Dow AgroSciences, Industry, Research, \$151,046.00, Awarded. (sub: February 24, 2015, start: March 1, 2015, end: June 30, 2017).

MacDonald, J. (Principal Investigator), Erickson, G. (Investigator), 76493, Contract, "Glycerin & Solubles to Treated Corn", Pellet Technology USA LLC, Industry, Research, \$22,240.00, Awarded. (sub: April 6, 2015, start: May 1, 2015, end: April 30, 2017).

MacDonald, J. (Principal Investigator), Erickson, G. (Investigator), Fernando, S. (Investigator), Watson, A. (Investigator), 90274, Contract, "Hammer Targeting Strep Bovis", Elanco Animal Health, Industry, Research, \$33,786.00, Awarded. (sub: November 23, 2015, start: December 1, 2015, end: December 1, 2016).

Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), 89241, Contract, "Optaflexx for Big Yearlings", Elanco Animal Health, Industry, Research, \$94,540.00, Awarded. (sub: September 17, 2015, start: October 5, 2015, end: November 1, 2016).

Rasby, R. (Principal Investigator), MacDonald, J. (Investigator), Blanco, H. (Investigator), Jenkins, K. (Investigator), 64021, Grant, "Crop Residue Removal", Univ of Minnesota-SARE, Universities, Public Service, \$199,059.00, Awarded. (sub: November 5, 2012, start: October 1, 2013, end: November 1, 2016).

Rasby, R. (Principal Investigator), MacDonald, J. (Co-Principal Investigator), Blanco, H. (Co-Principal Investigator), Jenkins, K. (Investigator), Grant, "Understanding the Impact of Grazing and Baling Corn residue on Subsequent Crop Yields Grown Across Various Soil Types with Different Erosion Potential", NC-SARE, Other Agencies, Research,

- \$199,019.00, Awarded, No. (expsub: April 15, 2013, sub: April 15, 2013, start: October 15, 2013, end: October 15, 2016).
- Schmidt, T. (Principal Investigator), MacDonald, J. (Investigator), 66001, Contract, "S. boulardii Response in Calves", Lallemand Inc, Industry, Research, \$59,998.00, Awarded. (sub: May 16, 2013, start: October 1, 2013, end: October 1, 2016).
- Luebbe, M. (Principal Investigator), Erickson, G. (Investigator), MacDonald, J. (Investigator), 89158, Contract, "Eval Distillers Grains", Ne Corn Board, State Agencies, Research, \$59,896.00, Awarded. (sub: September 11, 2015, start: August 31, 2015, end: June 30, 2016).
- Luebbe, M. (Principal Investigator), Erickson, G. (Investigator), MacDonald, J. (Investigator), 64848, Contract, "Evaluation of Syngenta Test Corn", Syngenta, Industry, Research, \$53,345.00, Awarded. (sub: February 6, 2013, start: June 20, 2013, end: June 19, 2016).
- Luebbe, M. (Principal Investigator), Erickson, G. (Investigator), MacDonald, J. (Investigator), Schroeder, M. (Investigator), 76570, Contract, "Syngenta Test Corn & Control Corn", Syngenta, Industry, Research, \$121,242.00, Awarded. (sub: April 10, 2015, start: April 8, 2015, end: May 31, 2016).
- MacDonald, J. (Principal Investigator), Erickson, G. (Investigator), 71702, Contract, "Evaluation of Pelleted Feeds", Pellet Technology USA LLC, Industry, Research, \$25,180.00, Awarded. (sub: May 14, 2014, start: June 1, 2014, end: May 31, 2016).
- MacDonald, J. (Principal Investigator), Erickson, G. (Investigator), 71308, Contract, "Eval Generation1.5 Distillers Grain", Pellet Technology USA LLC, Industry, Research, \$100,681.00, Awarded. (sub: April 23, 2014, start: May 1, 2014, end: April 30, 2016).
- Erickson, G. (Principal Investigator), Luebbe, M. (Investigator), MacDonald, J. (Investigator), Schroeder, M. (Investigator), 66163, Contract, "Syngenta Test Corn & Control Corn", Syngenta, Industry, Research, \$100,213.00, Awarded. (sub: April 12, 2013, start: April 17, 2013, end: April 16, 2016).
- MacDonald, J. (Principal Investigator), Erickson, G. (Investigator), 69762, Contract, "Eval of Pellet Tech Pelleted Feeds", Pellet Technology USA LLC, Industry, Research, \$47,243.00, Awarded. (sub: January 15, 2014, start: February 1, 2014, end: January 31, 2016).
- Stalker, L. (Principal Investigator), Blanco, H. (Investigator), Burr, C. (Investigator), Hergert, G. W. (Investigator), Jenkins, K. (Investigator), MacDonald, J. (Investigator), Schacht, W. (Investigator), Shaver, T. (Investigator), Stockton, M. (Investigator), Volesky, J. (Investigator), ICO-1345, Grant, "Integrating Grazing of Crop Residues and Cover Crops into Beef Production Systems across a Precipitation Gradient in Nebraska: Implications for Sustainability", Internal, \$150,000.00, Awarded. (start: October 1, 2013, end: September 30, 2015).
- Luebbe, M. (Principal Investigator), Erickson, G. (Investigator), MacDonald, J. (Investigator), Klopfenstein, T. (Investigator), 69933, Contract, "Feeding Value Distillers

- Grains", Ne Corn Board, State Agencies, Research, \$107,760.00, Awarded. (sub: January 23, 2014, start: July 1, 2014, end: June 30, 2015).
- MacDonald, J. (Investigator), Luebbe, M. (Investigator), Calkins, C. (Investigator), Jenkins, K. (Principal Investigator), ICO-1339, Grant, "Evaluating the Feeding Value of Field Peas for Growing and Finishing Cattle in a Western Nebraska Production System", Internal, \$196,896.00, Awarded. (start: July 1, 2013, end: June 30, 2015).
- MacDonald, J. (Principal Investigator), Erickson, G. (Investigator), 66330, Contract, "Evaluation of Pellets", Pellet Technology USA LLC, Industry, Research, \$97,366.00, Awarded. (sub: April 24, 2013, start: May 1, 2013, end: April 30, 2015).
- Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), Fernando, S. (Investigator), Drewnoski, M. (Investigator), Spangler, M. (Investigator), IC-575, Grant, "Beef growing and finishing research equipment request", Internal, \$140,345.00, Awarded. (start: July 1, 2014, end: September 30, 2014).
- Erickson, G. (Principal Investigator), Luebbe, M. (Investigator), Jenkins, K. (Investigator), MacDonald, J. (Investigator), Klopfenstein, T. (Investigator), 64851, Contract, "Eval of Dist Grains for Cattle", Ne Corn Board, State Agencies, Research, \$100,000.00, Awarded. (sub: January 18, 2013, start: July 1, 2013, end: June 30, 2014).
- Erickson, G. (Principal Investigator), MacDonald, J. (Investigator), 68281, Grant, "Antibiotic Resistant Bacteria", Dept of Agriculture-ARS, Federal, Research, \$20,000.00, Awarded. (sub: September 4, 2013, start: September 1, 2013, end: May 31, 2014).
- Sullivan, G. (Principal Investigator), Erickson, G. (Investigator), Klopfenstein, T. (Investigator), MacDonald, J. (Investigator), 62076, Contract, "Lipid Oxidation Ready-to-Eat Beef", Ne Beef Council, Industry, Research, \$40,979.00, Awarded. (sub: June 14, 2012, start: October 1, 2012, end: September 30, 2013).
- MacDonald, J. (Principal Investigator), Sullivan, G. (Investigator), Calkins, C. (Investigator), Erickson, G. (Investigator), 62146, Contract, "Long-Term Exposure Distillers Grain", Ne Beef Council, Industry, Research, \$63,718.00, Awarded. (sub: June 13, 2012, start: October 1, 2012, end: September 30, 2013).
- Erickson, G. (Principal Investigator), Klopfenstein, T. (Investigator), Luebbe, M. (Investigator), MacDonald, J. (Investigator), 62403, Contract, "Eval De-Oiled Distillers Grains", Ne Corn Board, State Agencies, Research, \$100,000.00, Awarded. (sub: June 28, 2012, start: July 1, 2012, end: June 30, 2013).
- Net energy values of DDG with different concentrations of fat. Sponsored by Poet Nutrition. MacDonald: PI. 2011-2012 \$27,000 direct to program.
- Net energy values of DDG with different concentrations of fat. Sponsored by a cooperative agreement with USDA-ARS. MacDonald: PI. 2011-2012. \$20,000 direct to program.
- Net energy values of DDG with different concentrations of fat. Sponsored by the Texas Cattle Feeder's Association. MacDonald: PI. 2011-2012. \$5,000 direct to program.

Using buffered enzymes to improve the digestibility of distillers grains. Sponsored by the Biozyme Incorporated. MacDonald: PI. 2011-2012. \$10,000 direct to program.

Improving dual wheat production through forage supplementation. Sponsored by the Texas Wheat Producer's Board. MacDonald: PI. 2011-2012. \$5,000 direct to program.

Determining the value of post-extraction algae residues as livestock and mariculture feeds. Sponsored by the National Alliance for Advanced Biofuels and Bio-products. MacDonald: Co-PI. 2011-2012. \$68,787 direct to program.

Evaluating forage sorghum yield and quality and perennial grass establishment in forage systems. Sponsored by a cooperative agreement with USDA-ARS through the Ogallala Aquifer Program. MacDonald: Co-PI. 2011-2012. \$21,240 direct to program.

Using buffered enzymes to improve the digestibility of distillers grains. Sponsored by the Texas Grain Sorghum Producers. MacDonald: PI. 2011. \$10,000 direct to program.

Using RAMP in step-up rations in Southern Plains feedlots. Sponsored by Cargill Corn Milling. MacDonald: PI. 2010-2011. \$30,000 direct to program.

Strategies to improve the digestibility of distiller's grains. Sponsored by the Texas Corn Producers Board. MacDonald : PI. 2009-2011. \$40,000 direct to program.

Using crude glycerin as a beef cattle feed ingredient. Sponsored by the Texas Department of Agriculture Food and Fibers Research Program. MacDonald: PI. 2009-2011. \$45,456 direct to program.

Using crude glycerin in high forage diets – a way to improve the profitability of biodiesel production. Sponsored by the South Central Region Sungrant Initiative. MacDonald: lead-PI. 2009-2011. \$28,000 direct to program.

Starting cattle on high levels of Sweet Bran in Southern Plains feedlots. Sponsored by Cargill Corn Milling. MacDonald: PI. 2009-2010. \$30,000 direct to program.

Effects of Amaferm on the performance of steers consuming steam-flaked corn-based finishing diets containing 35% wet distillers grains. Sponsored by Biozyme Incorporated. MacDonald: PI. 2009. \$20,250 direct to program.

Enhancing feedyard beef cattle production through efficient and sustainable utilization of ethanol coproducts. Sponsored by the Texas State Distillers Grains Initiative. MacDonald: Co-PI. 2008-2012. \$550,200 direct to program.

Effects of sodium bisulfate on in situ digestibility and ruminal characteristics in steers fed receiving diets. Sponsored by Jones Hamilton Co. MacDonald: PI. 2008. \$5,004 direct to program.

Grassland cropping systems for forage cellulosic ethanol production in the Texas High Plains. Sponsored by the Texas State Cropping Systems Initiative. MacDonald : Co-PI. 2007-2012. \$16,850 direct to program.

Air quality: odor, dust, and gaseous emissions from concentrated animal feeding operations in the Southern Great Plains. Sponsored by the Texas State Air Quality Initiative and CSREES. MacDonald: Co-PI. 2007-2012. \$81,308 direct to program.

Marbling attributes and sensory ratings of beef loins resulting from dietary distillers grains in combination with two corn processing methods. Sponsored by the National Cattlemen's Beef Association and the Texas Beef Council. MacDonald: lead-PI. 2007-2008. \$23,021 direct to program.

Effects of level of alfalfa hay in steam-flaked corn-based diets containing distillers grains. Sponsored by the Texas Corn Producer's Board. MacDonald: PI. 2007. \$10,000 direct to program.

Effects of wet distillers grains on site and extent of nutrient digestibility in steers fed finishing diets in the Southern Plains. Sponsored by a cooperative agreement with USDA-ARS. MacDonald: PI. 2006-2011. \$169,474 direct to program.

Effects of wet distillers grains source and corn processing method on performance and carcass characteristics of finishing heifers in the Southern Plains. Sponsored by the Texas Cattle Feeder's Association. MacDonald: PI 2006. \$20,000 direct to program.

Evaluation of ProTernative Stress Formula in receiving diets. Sponsored by Ivy Natural Solutions. MacDonald: PI. 2006. \$15,750 direct to program.

## INVITED PRESENTATIONS

### *International Presentations:*

MacDonald, J., Cattle Fattening Symposium, MNA of Mexico, Monterrey, Mexico, "Backgrounding systems", Outreach, Conference, International, Invited. (2019).

MacDonald, J., FPC, UNL, Lavras, Brazil "Use of Distillers Grains in Finishing Diets", Outreach, Seminar, International, Invited. (2019).

MacDonald, J., 8th Symposium on Beef Cattle: Feedlot Cattle Production, University of Sao Paulo, Piracicaba, Brazil, "Distillers Grains – Conventional and New Products Composition and Energy Value", Scholarly Service, Conference, International, published in proceedings. (2017).

MacDonald, J. C., T. Klopfenstein, G. Erickson, R. Rasby, K. Jenkins, M. Luebbe, J. Warner. Interconf 2016 pre-symposium. "Management of cow-calf pairs in confinement." Goias, Brazil. (2017).

MacDonald, J. Federal University of Goias. "Overview of US and Nebraska Beef Production Systems." (September, 2016).

MacDonald, J. and J. Gramkow. University of Sao Paulo - ESALQ, Piracicaba, Sao Paulo, Brazil. "Beef Cattle Nutrition Short Course" (May, 2016).

MacDonald, J., UNL-ESALQ Exchange, University of Sao Paulo - ESALQ, Piracicaba, Sao Paulo, Brazil, "UNL Beef Cattle Research Programs" (June 25, 2015).

MacDonald, J., UNL-ESALQ Exchange, University of Sao Paulo - ESALQ, Piracicaba, Sao Paulo, Brazil, "A systems perspective to US Beef Cattle Production" (June 24, 2015).

MacDonald, J.C. Managing BW Gain in Post-weaning Beef Production Systems. Presented to Canadian Beef Producers, Ontario CA, 11 June 2010. Hosted by Intervet Schering-Plough.



*National Presentations:*

- MacDonald, J., Kentucky Cattlemen's Association Convention, KCA, Owensboro, KY, "Integration of beef cattle into cropping systems", Outreach, Conference, Invited. (2019).
- MacDonald, J. C., M. E. Drewnoski, Z. E. Carlson, and M. Lenz. American Society of Animal Science National Meeting, Vancouver, British Columbia, Canada. "Maximizing use of Alternative Forages to Optimize Agricultural Agroecosystems." (July, 2018)
- MacDonald, J. C., and G. E. Erickson. Distillers grains technology council symposium, Distillers Grains Technology Council, Des Moines, IA, "Does Removing Nutrient Components of Distillers Grains Affect the Feeding Value for Beef Cattle?" (May, 2018)
- MacDonald, J., Erickson, G., Kononoff, P., Klopfenstein, T., ASAS/ADSA Joint Meeting, American Society of Animal Science, Kansas City, MO, "Optimizing the use of fibrous residues in beef and dairy diets" (July 2014).
- MacDonald, J., Erickson, G., Luebbe, M., Distillers grains technology council symposium, Distillers Grains Technology Council, Kansas City, MO, "Impacts of Sorghum and De-oiling on distillers grains use in beef cattle diets" (May 15, 2014).
- MacDonald, J., Florida Ruminant Nutrition Symposium, University of Florida Extension, Gainesville, FL, "Use of corn co-products in beef cattle diets". (February 2014).
- MacDonald, J., Sorghum Improvement Conference of North America, Lubbock, TX, "Improving the use of sorghum distillers grains in beef cattle diets" (August 29, 2013).
- MacDonald, J., and Erickson, G., ACE Conference, American Coalition for Ethanol, Omaha, NE, "Use of Distillers Feeds for Beef Cattle" (August 9, 2012).
- MacDonald, J.C. Grain milling by-products and fiber digestibility in grazing and finishing beef cattle. 24 February, 2011. Tempe, AZ
- MacDonald, J.C. Distiller's Grains Utilization in Beef Finishing Systems in the Southern Plains. Presented to the Distillers Grains Technology Council. 11 May 2011. Kansas City, MO.
- MacDonald, J.C. Distiller's grains, corn processing, and beef quality: Effects on marbling, shelf-life, and sensory attributes. Presented at NCBA distiller's grains webinar. Hosted by the National Cattlemen's Beef Association. 10 October 2008.
- MacDonald, J.C. Research update for Plains Nutrition Council, San Antonio, TX April 11, 2008
- MacDonald, J.C. Use of Distillers Grains in the Southern Plains. National Cattlemen's Beef Association Research Committee, Nashville, TN, February 1, 2007.

*Regional Presentations:*

- MacDonald, J., Australian Guests at North Platte, West Central Research and Extension Center, North Platte, NE, "Optimizing corn silage harvest for quality and yield", Scholarly Service, Conference, International, Invited. (2017).
- MacDonald, J., Great Plains Vet Day, Great Plains Veterinary Education Center, Clay Center, NE, "Feeding Endpoints", Scholarly Service, Conference, Regional. (2017).
- MacDonald, J., Husker Nutrition Conference, UNL Extension, UNL-ARDC, "Research Update" (November 6, 2015).
- MacDonald, J., Husker Nutrition Conference, UNL, ARDC, Ithaca, NE, "Research update on use of crop residues" (November 1, 2014).

- MacDonald, J., Feedlot Roundtable Meeting, UNL Extension, Bridgeport, NE; Lexington, NE; West Point, NE, "Changes in steer performance over the feeding period" (March 2014).
- MacDonald, J., Husker Nutrition Conference, UNL, ARDC, "Using crude glycerin in growing and finishing diets" (November 2013).
- MacDonald, J., Purina Animal Nutrition Conference, Purina Animal Nutrition, Omaha, NE, "Perspectives in beef cattle production and research", Outreach, Conference, Regional. (April 2013).
- MacDonald, J., Erickson, G., and Schrek, A. Beyond the Bunk, North Dakota Stockmen's Association, Bismarck, ND, "Using quicklime to improve feeding value of low-quality feeds for the feedyard" (December 19, 2012).
- MacDonald, J. Nebraska Cattlemen's College, Nebraska Cattlemen's Association, Kearney, NE, "Receiving, Feeding, and Management Strategies for Light-Weight Calves" (December 5, 2012).
- MacDonald, J., Erickson, G., Klopfenstein, T., Schneider, C., Rolfe, K., Husker Beef Nutrition Conference, University of Nebraska - Lincoln, ARDC, Mead, NE, "Changes in steer performance over the feeding period" (November 9, 2012).
- MacDonald, JC, N.A. Cole, and K. Hales. Technology in the industry- Where in would we, and the World be without it? Presented to the SW Beef Symposium. 18 January, 2011. Amarillo, TX
- MacDonald, JC, NA Cole, and K Hales. Use of Technology in the Beef Industry, Where Would We and the World Be Without It? Presented to the Plains Nutrition Council. 01 October, 2010.
- MacDonald, JC, NA Cole, and K Hales. Use of Technology and Implications for the Environment. Presented to the Husker Beef Nutrition Conference. Nov. 12, 2010, Hosted by the University of Nebraska.
- MacDonald, JC, MK Luebbe, KH Jenkins, EK Buttrey, JB Lewis, FT McCollum III, and NA Cole. Incorporating Distiller's Grains into Beef Cattle Production Systems in the Southern Plains. Presented to Husker Nutrition Conference 06 November 2009. Hosted by the University of Nebraska.
- MacDonald, JC. Use of Distillers Grains in the Southern Plains. High Plains Biofuels Co-Product Nutrition Conference, Garden City, KS, February 20, 2008.

*Local Presentations:*

- MacDonald, J., Central Plains Milling, Hordville, NE, "Integration of beef cattle and corn residue", Local, Invited. (2021).
- MacDonald, J., UNL, webinar, "Introduction to Nebraska and US cow/calf production", Regional, Invited. (2021).
- MacDonald, J., UNL Stocker Cattle Webinar, UNL Extension, Webinar, "Stocker Cattle Supplementation: What, When, and How Much?", State, Invited. (2021).
- MacDonald, J., UNL Ranch Practicum, UNL, North Platte, NE, "Considerations for yearling systems on a ranch", Regional, Invited. (2020).
- MacDonald, J., Lancaster County Cattlemen Meeting, Lancaster County Cattlemen affiliate of Nebraska Cattlemen, Lincoln, NE, "Integrating beef cows into cropping systems", Outreach, Seminar, Local, Invited. (2019).
- MacDonald, J., Erickson, G., Pollak, J., Spangler, M., Mulliniks, T., Nebraska Cattlemen Convention, Nebraska Cattlemen, Kearney, NE, "Sustainable Beef Systems", Outreach, Conference, State, Invited. (2019).

MacDonald, J., Husker Nutrition Conference, UNL, ENREC, "Current topics in prevention of liver abscesses in beef cattle", Outreach, Conference, Regional, published in proceedings, Invited. (2019).

MacDonald, J., ENREC Extension Day. "Overview of the Nebraska Beef Systems Research Initiative." April, 2018.

MacDonald, J., UNL Ranch Practicum. "Considerations for Yearling Systems" January, 2018.

MacDonald, J., Australian Visitors to WREC. "Optimizing corn silage harvest for quality and yield." July, 2017.

MacDonald, J., Animal Science External Advisory Committee Meeting, UNL Animal Science, Lincoln, NE, "Overview of the Ruminant Nutrition Group", Scholarly Service, Session, Local, Invited. (2017).

MacDonald, J., Beef Systems Meeting, IANR, Lincoln, NE, "Review of White Papers: Integrated Crop-Livestock Systems", Scholarly Service, Conference, Local, Invited. (2017).

MacDonald, J., Chinese Guests, IANR Global Engagement, Lincoln, NE, "Introduction to Nebraska and U.S. Beef Cattle Production", Scholarly Service, Seminar, International, Invited. (2017).

MacDonald, J., Congressional Update, IANR, Lincoln, NE, "Overview of the Nebraska Beef Systems Research Initiative", Scholarly Service, Session, State, Invited. (2017).

MacDonald, J., Cornhusker Beef Council fall meeting, Cornhusker Beef Council, Lincoln, NE, "Overview of the Nebraska Beef Systems Research Initiative", Scholarly Service, Conference, State, Invited. (2017).

MacDonald, J., FAPESP Week, IANR Global Engagement, Lincoln, NE, "Overview of UNL Beef Cattle Nutrition Management Research", Scholarly Service, Conference, International, Invited. (2017).

MacDonald, J., Grasslands Center Seminar Series, UNL Center for Grasslands Studies, Lincoln, NE, "Overview of the Nebraska Beef Systems Research Initiative", Scholarly Service, Seminar, Local, Invited. (2017).

MacDonald, J., Husker Nutrition Conference, UNL Extension, Mead, NE, "Research update", Scholarly Service, Conference, Regional. (2017).

MacDonald, J., Sukarne Training meeting, US Grains Council, Lincoln NE, "DDGS nutrient profile and variation among sources", Scholarly Service, Workshop, International, Invited. (2017).

MacDonald, J., Visitors from Argentina, IANR Global Engagement, Lincoln, NE, "Overview of the Nebraska Beef Systems Research", Scholarly Service, Seminar, International, Invited. (2017).

MacDonald, J., Grasslands Center Seminar Series, UNL Center for Grassland Studies, UNL, "Feeding the 9: Implications of a growing population on livestock, grazing, and land use in the U.S." (November 23, 2015).

MacDonald, J., Phibro Animal Health US-Brazil Tour, Phibro Animal Health, UNL, "US beef production systems" (September 30, 2015).

MacDonald, J., USDA Cochran Fellowship Program, IANR, UNL, "Feedlot nutrition for beef cattle" (September 2, 2015).

MacDonald, J., US-Mexican Tour, Zoetis, UNL, "Feedlot management for beef cattle" (July 23, 2015).

MacDonald, J., UNL Animal Science Advisory Committee Meeting, UNL Animal Science, UNL, "Residue use in beef cattle production systems" (January 8, 2015).

MacDonald, J., Research/Extension Planning: Beef Production Systems, Center for Grassland Studies, UNL, "Residue use in beef cattle production systems" (January 6, 2015).

MacDonald, J., Animal Science Departmental Seminar, UNL Animal Science, UNL, "Strategies to meet the forage needs of Nebraska" (December 2014).

MacDonald, J., Grasslands Advisory Council Meeting, Center for Grassland Studies, UNL, "Future of Forage in Nebraska" (November 1, 2014).

MacDonald, J., Mid Plains Beef Session, UNL Extension, ARDC, "Grazing cover crops in a beef production system" (December 2013).

MacDonald, J., Water planning grant meeting, ARD, UNL, "Big issues in Water - Beef" (November 8, 2013).

MacDonald, J., Discussion on use of crop residues, ARD, Lincoln, NE, "Sustainable beef production depends on sustainable use of crop residues" (October 18, 2013).

MacDonald, J., Grasslands Seminar, Center for Grasslands Studies, Lincoln, NE, "Sustainable beef production depends on sustainable use of crop residues" (October 14, 2013).

MacDonald, J., Crop Management Diagnostic Clinic, UNL Extension, ARD, "Corn silage: an efficient and economical use of corn residue" (July 2013).

MacDonald, J., Visitors from Northwest A&F University - China, UNL, UNL, "Ruminant Nutrition Research and Extension Programs" (June 2013).

MacDonald, J., Chinese guests of Nebraska, Nebraska Department of Agriculture, UNL, "Ruminant Nutrition Research and Extension Programs" (May 2013).

MacDonald, JC. Distillers grains utilization in beef finishing diets in the Southern Plains. Presented to Valero management. 29 April 2011. Amarillo, TX.

MacDonald, JC. Use of crude glycerin in beef cattle growing and finishing diets. Presented to the 2011 TAMU Beef Cattle Short Course Research Session. 01 August 2011. College Station, TX

MacDonald, JC. Panhandle Beef Production Systems. Presented to Texas A&M University at Kingsville students. 11 October 2011. Amarillo, TX.

MacDonald, JC. Incorporating Distiller's Grains into Beef Cattle Production Systems in the Southern Plains. Presented to the Kentucky Farm Bureau Tour 07 April 2010.

MacDonald, JC. Incorporating Distiller's Grains into Beef Cattle Production Systems in the Southern Plains. Presented to the Texas Beef Worker's Meeting 20 May 2010.

MacDonald, JC. Using Sweet Bran (RAMP) to Adapt Cattle in the Southern Plains. Presented to Cactus Feeder's Feed Management Training Group. 22 September 2010. Hosted by Elanco.

MacDonald, JC. Beef Cattle Research Capacity at Texas AgriLife Research at Amarillo. 30 September 2010. Hosted by West Texas A&M University.

MacDonald, JC. Panhandle Beef Production Systems. Presented to International Guests of the Texas Corn Producers Board. 05 October 2010.

MacDonald, JC. Valuing Crude Glycerin as a Beef Cattle Feed Ingredient. Presented to the Texas Food and Fibers Research Committee. 15 November, 2010.

MacDonald, JC. Post-weaning Production Systems in a Bioenergy World. Presented to Texas A&M University Animal Science Departmental Seminar 19 November, 2010.

MacDonald, JC. Panhandle Beef Production Systems and Feedlot Grain Processing. Guest Lecture to TAMU Honors Nutrition Class. 19 November, 2010.

MacDonald, JC, Distiller's grains and high quality beef production. Presented to the Korea-U.S. International Symposium. 2009. College Station, TX.

MacDonald, JC. Panhandle Beef Production Systems Presented to Texas A&M University at Kingsville Student Visit. 20 October 2009.

MacDonald, JC. Incorporating Distiller's Grains into Beef Cattle Production Systems in the Southern Plains. Presented to the Canadian Beef Tour 23 November 2009.

MacDonald, JC, MK Luebbe, KH Jenkins, EK Buttrey, JB Lewis, FT McCollum III, and NA Cole. Incorporating Distiller's Grains into Beef Cattle Production Systems in the

Southern Plains. Presented to Poet Ethanol Co. Hosted by Texas AgriLife Research, Amarillo. 19 August 2009.

MacDonald, JC. Utilization of distiller's grains in beef diets. Presented to Land O' Lakes. Hosted by Texas AgriLife Research Corporate Relations Office. 16 September 2008.

MacDonald, JC. Distiller's grains in finishing diets. Presented at: Feeding Distiller's Grains to Beef Cattle in the Southern Plains: A Research Review. Hosted by Texas AgriLife Research at Amarillo. 09 December 2008.

Pfizer Animal Health, College Station, TX 4/28/08.

Randall County Ag Day. September 24, 2007.

Comprehensive nutrient management training, Amarillo, TX, November 20, 2007.

TCFA research committee. December 5, 2007.

SW Beef Symposium, Amarillo, TX, January, 17, 2007.

Texas Grain and Feed Annual Convention, Austin, TX, April 16, 2007.

Texas Tech University Department of Animal Science, Lubbock, TX, April 24, 2007.

Texas A&M Beef Workers Group, Amarillo, TX, May 16, 2007.

Texas Cattle Feeders Association Animal Health and Care Seminar, Canyon, TX, August 7, 2007.

Cactus Feeders Mill Managers Training, Amarillo, TX, August 13, 2007.

Cactus Feeders Mill Managers Training, Hereford, TX, October 25, 2006.

Deaf Smith County Extension Meeting, Hereford, TX, October 25, 2006.