

PUBLICATIONS

Book Chapters

- **Scheffler J.M.**, D.E. Gerrard, S. Kuang, and A.L. Grant. 2008. Achievements of research in the field of animal growth and development. In: A. Rosati, A. Tewolde and C. Mosconi (eds.) Animal production and animal science worldwide WAAP book of the year. No. 4. p 67-76. Wageningen Academic Publishers, Wageningen, The Netherlands.

Manuscripts

- Nayananjalie W.A.D., K.L. Pike, T.R. Wiles, M.A. McCann, **J.M. Scheffler**, S.P. Greiner, H.H. Schramm, D.E. Gerrard, H. Jiang, and M. D. Hanigan. 2013. Effect of early grain feeding of beef steers on postabsorptive metabolism. Journal of Animal Science. Submitted.
- Zeng, C., **J.M. Scheffler**, H. Shi, S. Park, K.M. Hannon, A.L. Grant, and D.E. Gerrard. 2014. Functional expression of type IIX and IIB myosin heavy chain isoform genes are necessary for maximal β -adrenergic agonist-induced muscle hypertrophy. Physiological Reports. Submitted
- **Scheffler J.M.**, M.A. McCann, S.P. Greiner, M.D. Hanigan, G.A. Bridges, S.L. Lake, and D.E. Gerrard. 2014. Early metabolic imprinting events increase marbling scores in fed cattle. Journal of Animal Science. 92:320-324.
- Scheffler TL, S.C. Kasten, E.M. England, **J.M. Scheffler**, D.E. Gerrard. 2014. Contribution of the phosphagen system to postmortem muscle metabolism in AMP-activated protein kinase γ 3 R200Q pig Longissimus muscle. Meat Science. 96:876-883
- Kapper C., C.J. Walukonis, T.L. Scheffler, **J.M. Scheffler**, C. Don, M.T. Morgan, J.C. Forrest and D.E. Gerrard. 2014. Moisture absorption early postmortem predicts ultimate drip loss in fresh pork. Meat Science. 96:971-976.
- Fisher K.D., T.L. Scheffler, S.C. Kasten, B.M. Reinholt, G.R. van Eyk, J. Escobar, **J.M. Scheffler***, and D.E. Gerrard. 2013. Dietary manipulation causes childhood obesity-like characteristics in pigs. PLOS One. 8(8):e72320.
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- Scheffler, T.L., **J.M. Scheffler**, S. Park, S.C. Kasten, Y. Wu, R.P. McMillan, M.W. Hulver, M.I. Frisard, D.E. Gerrard. 2013. Fiber hypertrophy and increased oxidative capacity can occur simultaneously in pig glycolytic skeletal muscle. American Journal of Physiology-Cell Physiology. 306(4):C354-C363.
- Zhu H., S. Park, **J.M. Scheffler**, S. Kuang, A.L. Grant, D.E. Gerrard. 2013. Porcine satellite cells are restricted to a phenotype resembling their muscle origin. Journal of Animal Science. 91:4684-4691.
- Scheffler, T.L., A.L. Rosser, S.C. Kasten, **J.M. Scheffler**, D.E. Gerrard DE, 2013. Use of dietary supplementation with β -guanidinopropionic acid to alter the muscle phosphagen system, postmortem metabolism, and pork quality. Meat Science. 95:264-271.
- T.L. Scheffler, **J.M. Scheffler**, S.C. Kasten, A.A. Sosnicki, and D.E. Gerrard. 2012. High glycolytic potential does not predict low ultimate pH. Meat Science. 95:85-91.
- Depreux F. F. S., **J.M. Scheffler**, A.L. Grant, C.A. Bidwell and D.E. Gerrard. 2009. Molecular cloning and characterization of porcine calcineurin- α subunit δ isoform expression in skeletal muscle. Journal of Animal Science 88:562-571.
- Shi H., **J.M. Scheffler**, C. Zeng, J.M. Pleitner, K.M. Hannon, A.L. Grant and D.E. Gerrard. 2008. Mitogen-activated protein kinase signaling is necessary for the maintenance of skeletal muscle mass. American Journal of Physiology-Cell Physiology. 296:C1040-C1048.
- Shi H., **J.M. Scheffler**, J. M. Pleitner, C. Zeng, S. Park, K.M. Hannon, A.L. Grant and D.E. Gerrard. 2008. Mediation of skeletal muscle fiber type by mitogen-activated protein kinase signaling. FASEB Journal. 22: 2990-3000.

- **Scheffler J.M.**, D.D. Buskirk, S.R. Rust, J.D. Cowley and M.E. Doumit. 2003. Effect of repeated administration of combination trenbolone acetate and estradiol implants on growth, carcass traits and beef quality of long-fed Holstein steers. *Journal of Animal Science*. 2003 81:2395-2400.

Genbank Submissions

- **Scheffler J.M.**, Depreux, F.S. and Gerrard, D.E. Molecular cloning and characterization of porcine calcineurin-alpha subunit delta isoform expression in skeletal muscle. 2009. Accession number: GQ902942.

Invited Presentations

- Scheffler T.L., **J.M. Scheffler**, S. Park, A.L. Grant, and D.E. Gerrard The energy metabolism impacts that come along with muscle fiber type and its effect on postmortem metabolism. 2010. American Society of Animal Science. Denver, CO. 7/13/2010.
- **Scheffler J.M.**, and D.E. Gerrard. β -adrenergic agonist regulation of muscle protein. 2008. 6th International Congress on Farm Animal Endocrinology. Roanoke, VA. 11/16/ 2008
- Doumit M.E., N. Mesires, **J. Scheffler**, E. Helman. 2005. Satellite cell proliferation and differentiation. *Journal of Animal Science*. 83 (suppl 2): 85.

Abstracts

- McCracken, V.L., A.Y. Wood, A. L. Zezeski, J.G. Wiegert, D.W. Lugar, **J.M. Scheffler**, S.W. El-Kadi, A.D. Ealy, and M.L. Rhoads. 2014. Porcine pre-pubertal reproductive tract development is altered by consumption of high fructose but not high fat diets. Society for the Study of Reproduction. Grand Rapids, MI.
- McCracken, V.L., S.E. Deaver, G. Xie, H.F. Reeves, **J.M. Scheffler**, R.P. Rhoads, J. Escobar, and M.L. Rhoads. 2013. Reproductive tract characteristics of prepubertal female pigs consuming high fat diets with complex or simple carbohydrates. Translational Obesity Research Conference, Virginia Tech University.
- Lu T, A.F. Harper, J. Zhao, **J.M. Scheffler**, R.A. Dalloul, M.J. Estienne. 2013. Effects of a dietary blend of antioxidants on carcass characteristics and meat quality in pigs fed a diet that induces oxidative stress. American Society of Animal Science. Indianapolis, IN. 402.
- Zhang W., **J.M. Scheffler**, J. Escobar, H.F. Reeves, G.R. Van Eyk, K.D. Fisher, D.E. Gerrard, K.M. Seelenbinder, K.L. Price, T.L. Scheffler, Xiaoling Zhao, E. Gilbert. 2012. *FASEB Journal* 27:1083.1.
- Rhoads M.L., S.E. Deaver, Xie, H.F. Reeves, K.A. Dixon, **J.M. Scheffler**, R.P. Rhoads, and J. Escobar. 2012. Dietary carbohydrate source alters gene expression in the uterine and ovarian tissues of pre-pubertal female pigs. Society for the Study of Reproduction. State College, PA.
- Won G.L., G. Xie, R.L. Boddicker, J.N. Rhoades, T.L. Scheffler, **J.M. Scheffler**, M.C. Lucy, T.J. Safranski, J.T. Selsby, S. Lonergan, L.H. Baumgard, J.W. Ross, and R.P. Rhoads. 2012. Acute duration heat stress alters expression of cellular bioenergetic-associated genes in skeletal muscle of growing pigs. American Society of Animal Science. Phoenix, AZ. W211.
- Mastromano, G., M. Ashby, R. Roberson, **J.M. Scheffler**, and J. Escobar. 2012. Wheat-DDGS pig finishing diet reduces feed cost but does not improve net profit of production. American Society of Animal Science. Phoenix, AZ. 508.
- Reeves H.F., G.R. van Eyk, K.M. Seelenbinder, K.L. Price, T.L. Scheffler, D.E. Gerrard, **J.M. Scheffler**, and J. Escobar. 2012. Increased consumption of fat and simple carbohydrates results in obese prepubertal pigs of similar body weight. *Experimental Biology*. San Diego, CA. 113.3.
- van Eyk G.R., K.D. Fisher, S.C. Kasten, T.L. Scheffler, K.L. Price, H.F. Reeves, D.E. Gerrard, **J.M. Scheffler**, and J. Escobar. 2012. Dietary fat and sugar induce obesity and impair glucose tolerance in prepubertal pigs. *Experimental Biology*. San Diego, CA. 113.4.

- **Scheffler J.M.***, G.R. VanEyck, T.L. Scheffler, K.D. Fisher, S.C. Kasten, K.L. Price, B.M. Reinholt, R.C. Roberson, D.E. Gerrard, and J. Escobar. 2011. Combination of high fat and high sugar contributes to impaired glucose tolerance. Swine in Biomedical Research Conference. Chicago, IL.
**Corresponding author*
- England E.M., **Scheffler J.M.**, Park S., Kasten S.C., Scheffler T.L., Zhu H., Fisher K.D., Reinholt B.M., Van Eyk G.R., Stevenson J.M., Roberson R.C., Gerrard D.E. 2011. Proteolysis may be controlled by postmortem energy metabolism. 56th Annual International Congress of Meat Science and Technology. Ghent, Belgium. 005.
- Park S., H. Zhu, S.C. Kasten, E.M. England, B.M. Reinholt, G.R. VanEyck, R.C. Roberson, K.D. Fisher, T.L. Scheffler, **J.M. Scheffler**, and D.E. Gerrard. 2011. Myogenic progenitor cells in runt pigs. 56th Annual International Congress of Meat Science and Technology. Ghent, Belgium. P094.
- Zhu H., S. Park, **J.M. Scheffler**, E.M. England, S.C. Kasten, T.L. Scheffler, K.D. Fisher, B.M. Reinholt, G.R. VanEyck, J.M. Stevenson, R.C. Roberson, and D.E. Gerrard. 2011. Characterization of porcine satellite cells. 56th Annual International Congress of Meat Science and Technology. Ghent, Belgium. P095.
- McCann M.A., **J. M. Scheffler**, S.P. Greiner, M.D. Hanigan, G.A. Bridges, S.L. Lake, J.M. Stevenson, H. Jiang, T.L. Scheffler and D.E. Gerrard. 2011. Early metabolic imprinting events increase marbling scores in fed cattle. American Society of Animal Science. M59.
- Nayananjalie W.A.D., M. Bell, **J.M. Scheffler**, H. Jiang, M. A. McCann, D. E. Gerrard, J. Escobar and M. D. Hanigan. 2011. Effect of early grain feeding on ADG and signaling proteins for protein synthesis in the muscle tissues of beef animals. American Society of Animal Science. M307.
- Fisher K.D., T.L. Scheffler, S.C. Kasten, B.M. Reinholt, G.R. van Eyk, J.E. Escobar, **J.M. Scheffler**, and D.E. Gerrard. 2010. Pre-pubertal pigs as a model for childhood obesity. Experimental Biology. Washington D.C. 109.1.
- Park S., S.S. Rossie, E. England, H. Zhu, **J.M. Scheffler**, S.C. Kasten, T.L. Scheffler, K.D. Fisher, and D.E. Gerrard. 2011. Long-term high calcium decreases AMPK-activated protein kinase activity via activating protein phosphatase 2A. Experimental Biology. Washington D.C. LB136.
- **Scheffler J.M.**, T.L. Scheffler, S. Park, E.M. England, K.D. Fisher, S.F. Holmer, D.D. Boler, A.C. Dilger, J. Killefer, F.K. McKeith, J.M. Eggert, and D.E. Gerrard. 2010. Identification of variables useful for prediction of ultimate pH and color in pork. Proceedings of the 56th Annual International Congress of Meat Science and Technology. Jeju Island, South Korea. C0029.
- Kasten S.C., **J.M. Scheffler**, S. Park, T.L. Scheffler, and D.E. Gerrard. 2010. AMPK's inhibition of mTOR activity mediated by intracellular energy status. Proceedings of the 56th Annual International Congress of Meat Science and Technology. Jeju Island, South Korea. C0030.
- Scheffler T.L., **J.M. Scheffler**, S.C. Kasten, E.M. England, S. Park and D.E. Gerrard. 2010. Decreasing muscle phosphocreatine slows post-mortem glycolysis and improves pork quality. Proceedings of the 56th Annual International Congress of Meat Science and Technology. Jeju Island, South Korea. C0026.
- Park S., E. M. England, H. Zhu, **J. M. Scheffler**, T. L. Scheffler, S. C. Kasten, and D.E. Gerrard. 2010. Intracellular calcium regulates AMP-activated protein kinase activity in an oscillation-dependent manner. Proceedings of the 56th Annual International Congress of Meat Science and Technology. Jeju Island, South Korea. C013.
- Fisher K.D, T.L. Scheffler, S.C. Kasten, B.M. Reinholt, G.R. Van Eyk, J. Escobar, **J.M. Scheffler** and D.E. Gerrard. 2010. A model for childhood obesity: high fat, high sucrose, high fructose diet in young growing pigs. ACC Forum for Interdisciplinary Studies in the Life Sciences. Blacksburg, VA.
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- **Scheffler J.M.**, S.C. Kasten, and D.E. Gerrard. 2009. Hind limb immobilization results in muscle-specific growth inhibition in growing pigs. International Congress of Meat Science and Technology. Copenhagen, Denmark.
- **Scheffler J.M.**, and S.J. Jones. 2006. Effects of clenbuterol and serum on the activation of mitogen-activated protein kinase in cultured bovine satellite cells. Journal of Animal Science. 84 (Suppl. 1): 30.
- Johnson L.D., **J.M. Scheffler**, T.F. Jones, D.H. Beermann, S.J. Jones and M.K. Neilson. 2005. Comparison of muscle mass and muscle cell characteristics at different stages of growth in lines of mice divergently selected for heat loss. J. Anim. Sci. 83 (suppl 2): 96.
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- **Scheffler J.M.** and M.E. Doumit. 2002. Quantification of myogenin-positive satellite cells from bovine skeletal muscle. J. Anim Sci. 80 (suppl 1): 154.
- **Scheffler J.M.**, D.D. Buskirk, S.R. Rust, J.D. Cowley and M.E. Doumit. 2001. Repeated administration of implants to Holstein steers increases average daily gain, *longissimus* muscle area and the percentage of USDA Select carcasses. Journal of Animal Science. 79 (suppl 1): 275.
- Ritter M.J., C.P. Allison, S.R. DeBar, **J.M. Scheffler**, R.J. Templeman and M.E. Doumit. 2001. Evaluation of growth rate, carcass composition, and meat quality of Berkshire- and Yorkshire-sired progeny. Proceedings of the 54th Annual Reciprocal Meats Conference. Vol. II: 367.

Research Reports

- Creamer B.R., **J.M. Scheffler** and S.J. Jones. 2005. Does insulin and leucine stimulate muscle protein synthesis? Nebraska Swine Report. University of Nebraska. Pg 40-43.
- **Scheffler J.M.**, D.D. Buskirk, S.R. Rust, J.D. Cowley and M.E. Doumit. 2001. Effect of repeated administration of combination trenbolone acetate and estradiol implants on growth, carcass traits and beef quality of long-fed Holstein steers. Beef cattle, sheep and forage systems research and demonstrational report. Michigan State University. Pg 96-106.

Presentations

- Meat Color. Swine Youth Day. Presented to 24 parents of children with interests in the swine industry. 2012
- Meat Color. Virginia Tech Governor's School. Presentation to 25 high school students. 2009.
- Frontiers in Animal Growth. Presented to the Zumbrota-Mazeppa High School Biotechnology class, Zumbrota, MN. 2001.
- Satellite cell proliferation and differentiation during postnatal growth of skeletal muscle. NC-131 Regional Research Committee Meeting, Clarkston, WA. 2000.