**Collaborations as Publications**

These were selected from 2014-2018 annual reports and grouped into 6 areas of collaboration. Note some collaboration cut across multiple specific areas but are only listed in 1 area.

Year 2014 – pages 1 - 7

Year 2015 – pages 7 - 12

Year 2016 – pages 13 - 18

Year 2017 – pages 19 - 23

Year 2018 – pages 24 – 30

**Collaborations 2014**

**Boar Performance (IA, IL, IN, MO, NC, WI)**

Daigneault B, McNamara K, Purdy P, Krisher RL, Knox RV, Miller DJ. 2014. Novel and traditional traits of frozen-thawed porcine sperm related to in vitro fertilization success. Theriogenology. DOI: 10.1016/j.theriogenology.2014.04.006.

Flowers, W.L, Stewart, K.R., Gall, T., Novack, S., Dyck, M.K., Kirkwood, R.N. 2013. Boar seminal plasma proteins and their relevance to reproductive technologies. In: Control of Pig Reproduction IX, H. Rodriguez-Martinez, N. Soede, and W.L. Flowers (eds). Context Publishing, Ltd., Nottingham, U.K. pp. 33-46.

Flowers, W.L. 2013. Sperm characteristics that limit success of fertilization. J. Anim. Sci. 91, 3022-3029.

K. A. McNamara and R. V. Knox. The effect of using frozen-thawed boar sperm differing in post-thaw motility in the 1st and 2nd inseminations on pregnancy establishment, litter size and fetal paternity in relation to time of ovulation. 2013. J. Anim. Sci. 91:5637-45.

Lovercamp, K.W., Stewart, K.R., Xi, L., Flowers, W.L. 2013. Effect of dietary selenium on boar sperm quality. Anim. Reprod. Sci. 138, 268-275.

Miles EL, Sutovsky P (2014) Sperm proteasome as a putative egg coat lysin in mammals. In: *Sexual Reproduction in Animals and Plants,*  Hitoshi Sawada, Naokazu Inoue, and Megumi Iwano, Editors. Springer Science+Business Media LLC, pp. 441-463.

Parrish JJ. 2014. Quantifying sperm nuclear shape with Fourier harmonic analysis and relationship to spermatogenesis and fertility. Theriogenology (In Press).

[Ringwelski JM](http://www.ncbi.nlm.nih.gov/pubmed?term=Ringwelski%20JM%5BAuthor%5D&cauthor=true&cauthor_uid=23434057), [Beever JE](http://www.ncbi.nlm.nih.gov/pubmed?term=Beever%20JE%5BAuthor%5D&cauthor=true&cauthor_uid=23434057), [Knox RV](http://www.ncbi.nlm.nih.gov/pubmed?term=Knox%20RV%5BAuthor%5D&cauthor=true&cauthor_uid=23434057). 2013. Effect of interval between inseminations when using frozen-thawed boar sperm on fertility and fetal paternity in mature gilts. Anim. Reprod. Sci. 137: 197-204.

Rivera R.M. and Ross J.W. 2013 Epigenetics in fertilization and preimplantation embryo development. Progress in Biophysics and Molecular Biology; 113:423-32.

Yi Y-J, Sutovsky M, Song W-H, Sutovsky P (2014) Protein deubiquitination during oocyte maturation influences sperm function during fertilization, anti-polyspermy defense and embryo development. *Reprod. Fert. Dev.,* In press

Zimmerman S, Yi Y-J, Sutovsky M, van Leeuwen F, Conant G, Sutovsky P (2014) Identification and characterization of RING-finger ubiquitin ligase UBR7 in mammalian spermatozoa. *Cell Tissue Res.* 356:261-278.

**Sow and Gilt Performance (IA, IL, MO, NC, USDA-MARC)**

Canaday DC, Salak-Johnson JL, Visconti AM, Wang X, Bhalerao K, Knox RV. 2013. Effect of variability in lighting and temperature environments for mature gilts house in gestation crates on measures of reproduction and animal well-being. J. Anim. Sci. 91:1225-1236.

Johnson, J.S., R.L. Boddicker, M.V. Sanz-Fernandez, J.W. Ross, J.T. Selsby, M.C. Lucy, T.J. Safranski, R.P. Rhoads and L.H. Baumgard. 2013. Int’l J. of Hyperthermia, 29: 696-702.

Knox RV, Rodriguez Zas SL, Sloter NL, McNamara KA, Gall TJ, Levis DG, Safranski TJ, Singleton WL. 2013. An analysis of survey data by size of the breeding herd for the reproductive management practices of North American sow farms. J. Anim. Sci. 2013. 91:433-45.

Knox, R., J. Salak-Johnson, M. Hopgood, L. Greiner, and J. Connor. Effect of day of mixing gestating sows on measures of reproductive performance and animal welfare. J. Anim. Sci. 2014. 92:1698-707.

Knox, R.V., S.L. Rodriquez Zas, N.L. Sloter, K.A. McNamara, T.J. Gall, D.G. Levis, T.J. Safranski and W.L. Singleton. 2013. J. Anim. Sci., 91: 433-445.

Smith, H.M., C.C. Selby, A.M. Williams, M.R. Ellersieck, W.R. Lamberson, T.J. Safranski. 2013. Effects of Day of Farrowing Induction and Spontaneous Versus Induced Farrowings on Sow and Suckling Piglet Performance. Journal of Swine Health and Production, 21: 195-202.

Song W-H, Sutovsky P (2014) Regulation of mitochondrial inheritance by autophagy and ubiquitin-proteasome system: Implications for health, fitness and fertility. *BioMed Research International,* Special Issue on *New Advances in Reproductive Biomedicine* In press.

Tart, J.K., R.K. Johnson, J.W. Bundy, N.N. Ferdinand, A.M. McKnite, J.R. Wood, P.S. Miller, M.F. Rothschild, M.L. Spangler, D.J. Garrick, S.D. Kachman, and D.C. Ciobanu. 2013. Genome-wide prediction of age at puberty and reproductive longevity in sows. Anim. Genet. 44:387-397.

Vallet, J.L., McNeel, A.K., Johnson, G., Bazer, F.W. 2013. TRIENNIAL REPRODUCTION SYMPOSIUM: Limitations in uterine and conceptus physiology that lead to fetal losses. *Journal of Animal Science* 91(7):3030-3040.

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Williams, A.M., T. J. Safranski, D. E. Spiers, P. A. Eichen, E. A. Coate and M. C. Lucy. (2013). Effects of a controlled heat stress during late gestation, lactation, and after weaning on thermoregulation and metabolism of primiparous sows. J. Anim. sci., 91: 2700-2714.

Yuan, Y., K. Lee, K.W. Park, L. Spate, R.S. Prather, K. Wells, R. Michael Roberts. 2014. Cell cycle synchronization of leukemia inhibitory factor (LIF)-dependent porcine induced pluripotent stem cells and the generation of cloned embryos. Cell Cycle 13:1265-1276. PMID 24621508 PubMed-in process.

Zhao, M.-T., R.M. Rivera, R.S. Prather. 2013. Locus-specific DNA methylation reprogramming during early porcine embryogenesis. Biology of Reproduction 88:48 doi:10.1095biolreprod.112.104471. PMID 23303676 Free PMC Article

Zhao, M., J.J. Whyte, G.M. Hopkins, M.D. Kirk, R.S. Prather. 2014. Methylated DNA immunoprecipitation (MeDIP) by using low amounts of genomic DNA. Cellular Reprogramming (accepted 3/18/2014) PMID 24773292

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**Growth, Development, Physiology (IA, MO, SD, USDA-MARC)**

Bahls, M., Sheldon, R., Taheripour, P., Clifford, K.,Foust, K.B., Breslin, E., Marchant-Forde, J., Cabot, R., Laughlin, M.H., Bidwell, C.A., Newcomer, S.C. 2013. Mothers’ exercise during pregnancy programs vasomotor function in adult offspring. *Experimental Physiology*, in press.

Bazer, F.W., Kim, J., Song, G., Ka, H., Wu, G., Johnson, G.A., Vallet, J.L. 2013. Roles of selected nutrients in development of the porcine conceptus during pregnancy. In: Rodriquez-Martinez, H., Soede, N.M., Flowers, W.L. (Eds.) *Control of Pig Reproduction IX*. pp. 159-174. Context Products Ltd., Leicestershire, UK.

Brown-Brandl, T.M., Rohrer, G.A., Eigenberg, R.A. 2013. Analysis of feeding behavior of group housed growing-finishing pigs. *Computers and Electronics in Agriculture* 96:246-252.

Glederman, A., Clapper, J. 2013. Effects of inorganic or organic selenium on immunoglobulins in swine. J. Anim. Sci. Biotechnol. 2013, 4:47.

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Lents, C.A., Barb, C.R., Hausman, G.J., Nonneman, D., Heidorn, N.L., Cisse, R.S., Azain, M.J. 2013. Effects of nesfatin-1 on food intake and LH secretion in prepubertal gilts and genomic association of the porcine *NUCB2* gene with growth traits. *Domestic Animal Endocrinology* 45(2):89-97.

Lents, C.A., Rempel, L.A., Klindt, J., Wise, T., Nonneman, D., Freking, B.A. 2013. The relationship of plasma urea nitrogen with growth traits and age at first estrus in gilts. *Journal of Animal Science* 91(7):3137-3142.

Mani, V., Harris, A.J., Keating, A.F., Weber, T.E. Dekkers, J.C.M., and Gabler. N.K. 2013. Intestinal integrity, endotoxin transport and detoxification in pigs divergently selected for residual feed intake. Journal of Animal Science. 91(5):2141-50.

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Pearce S.C., Gabler, N.K., Ross, J.W., Escobar, J., Patience, J.F., Rhoads, R.P., Baumgard, L.H. 2013 The effects of heat stress and plane of nutrition on metabolism in growing pigs. Journal of Animal Science 91:2108-2118.

Pearce, S.C., Mani, V., Boddicker, R.L., Johnson, J.S., Weber, T.E., Ross, J.W., Baumgard, L.H., Gabler, N.K. 2013 Heat stress reduces barrier function and alters intestinal metabolism in growing pigs. Journal of Animal Science 90 Supplement 4:257-259.

Pearce, S.C., Mani, V., Boddicker, R.L., Johnson, J.S., Weber, T.E., Ross, J.W., Rhoads, R., Baumgard, L.H., Gabler, N.K. 2013 Heat stress reduces intestinal barrier integrity and favors intestinal glucose transport in growing pigs. PLOS One 8: e70215.

**Basic Science and Technology (IL, KS, MO, NE, USDA-MARC)**

Cederberg, R.A., E.A. McDonald, C. Lee, R.A. Friedrich, A.R. Cropp, and B.R. White. 2014. Activity of the porcine *Gnrhr* promoter is partially conferred by a distal gonadotrope specific element (GSE) within the swine upstream promoter enhancing region (SUPER), two proximal GSE and an RXR binding site. Biol. Reprod. (Submitted).

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Gonzalez-Pena Fundora, D., R. Knox, J. Pettigrew, and S. L. Rodriguez-Zas. Impact of pig insemination technique and semen preparation on profit. J. Anim. Sci. 92:72-84.

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McNeel, A.K., Cushman, R.A., Vallet, J.L. 2013. The plasminogen activator system in the ovine placentome during late gestation and stage-two of parturition. *Molecular Reproduction and Development* 80(6):466-473.

Miles, E., C. O’Gorman, J. Zhao, M. Samuel, E. Walters, Y.-J. Yi, M. Sutovsky, R.S. Prather, K. Wells, P. Sutovsky. 2013. Transgenic Pig Carrying Green Fluorescent Proteasomes. Proceedings of the National Academy of Sciences 110:6334-6339. PMID 23550158

Mtango NR, Latham KE, Sutovsky, P. (2014) Deubiquitinating enzymes in oocyte maturation, fertilization and preimplantation embryo development. In: Sutovsky, P., Editor, *Posttranslational Modifications in the Reproductive System,* Springer Science +Business Media LLC, In press,

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Walters, E.M., R.S. Prather. 2013. Advancing swine models for human health and disease. Missouri Medicine 110:140-143. PMID 23829105

**Genetics and Genomics (MO, USDA-MARC)**

Beaton, B.P., J. Mao, C.N. Murphy, M.S. Samuel, R.S. Prather, K.D. Wells. 2013. Use of single stranded targeting DNA or negative selection does not further increase efficiency of a *GGTA1* promoter trap. Journal of Molecular Cloning & Genetic Recombination 2:1 doi: [10.4172/2325-9787.1000101](http://dx.doi.org/10.4172/2325-9787.1000101)

Isom, S.C., J.R. Stevens, R. Li, W.G. Spollen, L. Cox, L.D. Spate, R.S. Prather. 2013. Transcriptional profiling of peri-attachment porcine embryos by RNA-Seq. Physiological Genomics PMID 23695885.

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**Teaching and Extension (NC)**

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**Collaborations 2015**

**Boar Performance (IL; MO; MS)**

Daigneault B, McNamara K, Purdy P, Krisher RL, Knox RV, Miller DJ. 2014. Novel and traditional traits of frozen-thawed porcine sperm related to in vitro fertilization success. Theriogenology 82:266-273.

Daigneault B, McNamara K, Purdy P, Krisher RL, Knox RV, Rodriguez-Zas SL, Miller DJ. 2015. Enhanced fertility prediction of cryopreserved boar sperm using novel sperm function assessment. Andrology. DOI:10.1111/andr.12035.

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**Sow and Gilt performance (IA; IL; MO; NC; SD)**

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