

## ***Curriculum Vitae***

**Laura L. Greiner, Ph.D., M.S.**

### **Professional Experience:**

- Assistant Professor – Iowa State University (2018-Present)
- Nutrition Director – Carthage Veterinary Service, Ltd. (2016-2018)
- Director of Research – Carthage Innovative Swine Solutions (2005 – 2016)
- Postdoctoral Fellowship, University of Iowa (2002 – 2004)
  - *Project:* Gene regulation of *Haemophilus influenzae* and *Neisseria gonorrhoeae* biofilms
- Graduate Research Assistant – Iowa State University (1997 – 2001)
  - *Dissertation Project:* Efficacy of antimicrobial peptide precursors as an antibiotic alternative in pigs
  - *Thesis Project:* The effect of soy isoflavones on immune function and pig growth

### **Education:**

Postdoctoral Training – Department of Study: Microbiology  
University of Iowa

Doctor of Philosophy – Animal Nutrition with emphasis on Swine Nutrition and Immunology  
Iowa State University

Master of Science – Animal Nutrition with emphasis on Swine Nutrition and Immunology  
Iowa State University

Bachelor of Science – Animal Science with emphasis on Marketing  
Iowa State University

### **Competitive Grants:**

- Greiner, L. *Effectiveness of early PRRS vaccination on improving wean to finish full value pigs.* Boehringer Ingelheim Vetmedica, Inc. Advancing Research in Respiratory Disease, 2017.
- Ochoa, L., L. Greiner, J. Connor. *Impact of health status near time of PCV2 vaccination (CircoFlex) on PCVAD prevalence and the overall growth performance of pigs.* Boehringer Ingelheim Vetmedica, Inc. Advancing Research in Respiratory Disease, 2016.
- Greiner, L. J. Lowe. *Understanding the actions and implications of people during unloading at lairage on PRRS/PEDV contamination of swine transportation equipment.* Boehringer Ingelheim Vetmedica, Inc. PRRS Research Award, 2015.
- Greiner, L., C. Hastad, B. Frederick. *Evaluation of the risk of a feed mill being contaminated with PEDv or SdCV.* National Pork Board, 2014.
- Knox, R, L. Greiner, J. Connor. *Evaluation of seasonal infertility in sows.* National

- Pork Board, 2014.
- Knox, R, L. Greiner, J. Connor. *The impact of the timing of relocation of replacement gilts from pens to stalls on gilt fertility and sow longevity*. National Pork Board, 2012.
  - Gonyou, H, J. Connor, J. Lowe, L. Greiner, F. Lang, and J. Brown; *Effects of different parity groupings on feeding behavior, welfare and productivity of sows in ESF housing*. National Pork Board, 2011.
  - Knox, R, J. Salak-Johnson, L. Greiner, and J. Connor; *Effect of day of mixing gestating sows on measures of reproduction and animal well-being*. NPB Project #C2-09-30, September 2009.
  - Lowe, J, J. Connor, and L. Greiner; *The influence of maternal PCV2 immune response on piglet infection rates at weaning and the effect of PCV2 infection at weaning on lifetime performance and vaccine efficacy*. NPB Project #09-188, September 2009.

### **Peer-Reviewed Publications:**

- Puls, C.L., J.M. Hammer, K. Eggers, A. Graham, B. Knopf, L. Greiner, S.N. Carr. Effects of two feeding periods of tiamulin fed in combination with chlortetracycline for control and treatment of swine respiratory and enteric disease and subsequent growth performance of growing-finishing pigs. *J Translational Anim Sci*. 2018.
- Greiner, L., P. Srichana, J.L. Usry, C. Neill, G.L. Allee, J. Connor, K.J. Touchette, and C.D. Knight. The use of feed-grade amino acids in lactating sow diets. *J Anim Sci Biotechnol*. 2018, 9:3.
- Greiner, L., C. Neill, G.L. Allee, K.J. Touchette, and J. Connor. Evaluation of the optimal standardized ileal digestible tryptophan:lysine ratio in lactating sow diets. *J Translational Anim Sci*. 2017, 1(4):526-532.
- Lowe, J., R. McCann, and L. Greiner. Factors that influence mechanical transmission of Porcine Reproductive and Respiratory Syndrome Virus at slaughter plant lairage. *J Swine Health and Prod*. 2017, 25(1):19-23.
- Knox, R.V., J. Shen, L.L. Greiner and J.F. Connor. Effect of timing of relocation of replacement gilts from group pens to individual stalls before breeding on fertility and well-being. *J Anim Sci*. 2016, 94(12):5114-5121.
- Song, Q., S. Stone, D. Drebes, L.L. Greiner, C.M. Dvorak, and M.P. Murtaugh. Characterization of anti-porcine epidemic diarrhea virus neutralizing activity in mammary secretions. *Virus Res*. 2016, 226:85-92.
- Greiner, L. Evaluation of the likelihood of detection of porcine epidemic diarrhea virus or porcine delta coronavirus ribonucleic acid in areas within feed mills. *J Swine Health and Prod*. 2016, 24(4):198-204.
- Greiner, L., C. Neill., G. L. Allee, X. Wang, J. Connor, K. Touchette, and J. L. Usry. The feeding of dried distillers' grain with solubles to lactating sows. *J Anim Sci* 2015, 93:1-7.
- Wedekind, K.J., J.A. Coverdale, T.R. Hampton, C.A. Atwell, R.H. Sorbet, J. Lunnemann, R.J. Harrell, L. Greiner, N.K. Keith, J.L. Evans, J. Zhao, and C.D. Knight. Efficacy of an equine joint supplement, and the synergistic effect of its active ingredients (chelated trace minerals and natural eggshell membrane), as demonstrated in equine, swine and an osteoarthritis rat model. *Open Access Animal Physiology*, 2015 (7):13-27.

- Hidalgo D.M., R.M. Friendship, L. Greiner, R. Manjarin, M.R. Amezcua, J.C. Dominguez, and R.N. Kirkwood. Influence of gonadotrophin-induced first estrus on gilt fertility when mating at a fixed breeding weight. *Repro Dom Anim*, 2014,49: 899–902.
- Hildago, D.M., R.M. Friendship, R. Manjarin, M.R. Amezcua, J. C. Dominguez, and R.N. Kirkwood. Influence of lactation length and gonadotrophins administered at weaning on fertility of primiparous sows. *Anim Repro Sci J*. 2014, 149(3-4):245-248.
- 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, 92:1698-1707.
- Greiner, Laura L., MSc, PhD; Connor, Joseph F, DVM, MSc; Jennifer L. Patterson, MSc; Audrey C. Cameron, Taylor A. Smith, Aline B. Kummer, Rydell L. Schott, George R. Foxcroft, PhD, The effect of gonadotrophin treatment at weaning on primiparous sow performance, *J. Swine Health Prod.*, 2010, (18)4:196-199.
- Patterson, J., A. Cameron, T. Smith, A. Kummer, R. Schott, L. Greiner, J. Connor, and G.R. Foxcroft. Responses to exogenous gonadotrophin treatment in contemporary weaned sows. *Soc Reprod Fertil Suppl*. 66-303-304.
- Daines, D. A., M. Bothwell, J. Furrer, W. Unrath, K. Nelson, J. Jarisch, N. Melrose, L. Greiner, M, Apicella, and A. Smith, *Haemophilus influenzae* luxS mutants form a biofilm and have increased virulence, *Microbial Pathogenesis*, 2005, 39:87-96.
- Jurcisek, J., L. Greiner, H. Watanabe, A. Zaleski, M. A. Apicella, and L. Bakaletz, Role of sialic acid and complex carbohydrate biosynthesis in biofilm formation by nontypeable *Haemophilus influenzae* in the chinchilla middle ear, *Infection and Immunity*, 2005, 73:3210-3218.
- Greiner, L. L., J. L. Edwards, J. Shao, C. Rabinak, D. Entz, and M. A. Apicella, Biofilm Formation by *Neisseria gonorrhoeae*. *Infection and Immunity*, 2004, 73:1964-1970.
- Greiner, L.L., H. Watanabe, N. J. Phillips, J. Shao, A. Morgan, A. Zaleski, B. W. Gibson and M. A. Apicella, Nontypeable *Haemophilus influenzae* strain 2019 produces a biofilm containing N-acetylneuraminic acid that may mimic sialylated O-linked glycans, *Infection and Immunity*, 2004, 72:4249-4260.
- Greiner, L.L., T.S. Stahly, and T.J. Stabel. 2001, Effect of dietary soy daidzein on pig growth and viral replication during a viral challenge, *J. Anim Sci.*, 2001, 79:3113-3119.
- Greiner, L.L., T.S. Stahly, and T.J. Stabel, Effect of dietary soy genistein on pig growth and viral replication during a viral challenge, *J. Anim Sci.*, 2000, 79:1272-1279.
- Greiner, L.L., T.S. Stahly, and T.J. Stabel, Quantitative relationship of systemic virus concentration on growth and immune response in pigs, *J. Anim Sci.*, 2000, 78:2690-2695.

### **University Research Publications:**

- Greiner, L.L., T.S. Stahly, and T. Stanton. 2000. Evaluation of the antimicrobial activity of natural animal proteins/peptides in vitro. 2000 Iowa State Swine Research Report, pp. 67-71
- Greiner, L.L., T.S. Stahly, and T.J. Stabel. 2000. Effect of dietary soy genistein on

- pig growth and viral replication during a viral challenge. 2000 Iowa State Swine Research Report, pp. 42-49
- Greiner, L.L., T.S. Stahly, and T.J. Stabel. 1998. Quantitative effect of porcine reproductive and respiratory syndrome virus on pig growth and immune response. 1998 Iowa State Swine Research Report, pp. 51-54
  - Stahly, T.S., B.T. Kremer, and L.L. Greiner. 1998. Effect of protein source (casein vs soy) on growth in antigen exposed pigs. 1998 Iowa State Swine Research Report, pp. 16-18

### **Other Publications:**

- Greiner, Laura; Zhao, Junmei; Harrell, Robert; Allee, Gary; Knight, Chris, Chelated trace minerals support sow reproduction, *Feedstuffs*, June 4, 2012.
- Greiner, Laura L., MSc, PhD, Understanding Umbilical Hernia's, *National Hog Farmer Magazine*, March 15, 2012.
- Srichana, P., J.L. Usry, C.D. Knight, L. Greiner, and G.L. Allee, Lysine requirement of lactating primiparous sows, *J. An. Sci.*, 2007, 84:Supplement 2, p. 180.
- Srichana, P., J.L. Usry, C.D. Knight, L. Greiner, and G.L. Allee, The use of crystalline amino acids in lactating primiparous sows diets, *J. An. Sci.*, 2007, 84:Supplement 2, p. 182.
- Greiner, L.L., T.S. Stahly, and T.J. Stabel, Effects of dietary soy genistein on pig growth and immune response in virally challenged pigs, *J. An. Sci.*, 1999, 77:Supplement 1, p. 46.
- Stahly, T.S., B.T. Kremer, and L.L. Greiner, Effect of dietary protein source (casein vs soy) on rate and efficiency of growth in pigs experiencing minimal and moderate exposure, *J. An. Sci.*, 1998, 76:Supplement 1, p. 181.

### **Proceedings:**

- Greiner, L. Feeding the reproductive female and using metrics to predict performance. *China Leman Conference*, October 2017.
- Greiner, L. Using nutrition as a tool during health challenges. *China Leman Conference*, October 2017.
- Greiner, L. Mycotoxins and understanding their impact. *China Leman Conference*, October 2017.
- Greiner, L. Nutritional and management challenges and solutions in ABF swine. *Canadian Nutrition Conference*, May 2017.
- Greiner, L. Feeding the reproductive female. *China Leman Conference*, October 2016.
- Greiner, L. Optimizing reproductive swine rations. *China Leman Conference*, October 2016.
- Greiner, L. Seasonal infertility mitigation. *China Leman Conference*, October 2016.
- Greiner, L. Practical approaches to managing rotavirus in suckling piglets, *Allen D. Leman Conference*. September 2016.
- Greiner, L., Nutrition concepts for early-weaned PEDV pigs and nutrition-related welfare concerns, *American Association of Swine Veterinarians Annual Meeting*, 2015, 9-10.
- Greiner, L., MSc, PhD, The Truth on Our Own Terms – Best Utilization of

- Research Barns, *American Association of Swine Veterinarians Annual Meeting*, 2011, 13-14.
- Greiner, L., MSc, PhD, Connor, J. F., DVM, MSc; J. F. Lowe, DVM, MSc, Comparison of Mycoplasma Hypopneumoniae Vaccination, *American Association of Swine Veterinarians Annual Meeting*, 2011, 245-247.
  - Greiner, Laura, Maximizing Today's Sow Performance with Nutrition, *AASV Annual Meeting*, 2010, 37-39.

**Abstracts:**

- Thompson, R., C. Boessen, B. Knopf, L. Greiner, and K. Haydon. Abstract #181. Evaluation of feeding arginine in gestation and lactation on sow and litter performance. Midwest American Society of Animal Science. March 2019.
- Thompson, R., A. Graham, B. Knopf, L. Greiner and S. Jalukar. Abstract #180. Evaluation of soluble concentrated yeast product on sow and litter performance. Midwest American Society of Animal Science. March 2019.
- Greiner, L., A. Graham, and B. Knopf. Abstract #582809. Effect of avilamycin on nursery pig performance and health. Midwest American Society of Animal Science. March 2019.
- Thompson, R., B. Knopf, L. Greiner, and J. Bergstrom. Abstract #147. Effects of added dietary Zn and Cu or an essential oils blend in a nursery feeding program. Midwest American Society of Animal Science. March 2019.
- Graham, A., B. Knopf, F.B. Sandberg, K.T. Soltwedel, M.R. Bible, and L. Greiner. Abstract #349. Evaluation of a fenugreek extract fed to sows from 90 days of gestation through lactation on sow and litter performance. Midwest American Society of Animal Science. March 2018.
- Ochoa, L. A. Graham, L. Greiner, B. Knopf, M.A.D. Goncalves, W. Cast, and U.A.D. Orlando. Abstract #344. *Evaluation of supplementation of potassium chloride and choline chloride in high feed grade amino acid finishing diets.* Midwest American Society of Animal Science. March 2018.
- Boessen, C., A. Graham, L. Greiner, B. Knopf, K.J. Touchette, M.A.D. Goncalves, and U.A.D. Orlando. Abstract #317. *The standardized ileal digestible valine:lysine requirement in lactating sows.* Midwest American Society of Animal Science. March 2018.
- Graham, A., L. Greiner, M.A.D. Goncalves, U.A.D. Orlando and K. Touchette. Abstract #312. *Lysine requirement of lactating sows-revisited.* Midwest American Society of Animal Science. March 2018.
- Graham, A., L. Greiner, B. Knopf, M.A.D. Goncalves, W. Cast, and U.A.D. Orlando. Abstract #286. *Eavluation of the lactose level and organic acid inclusion in newly weaned pigs.* Midwest American Society of Animal Science. March 2018.
- Graham, A., B. Knopf, M.A.D. Goncalves, U.A.D. Orlando and L. Greiner. Abstract #208. *Evaluation of the standardized ileal digestible total sulfur amino acid:lysine requirement for 14-27 kg PIC nursery pigs.* Midwest American Society of Animal Science. March 2018.
- Ochoa, L., L. Greiner, and T. Pacion. Abstract #119. *Feed as a vehicle for PRRS virus transmission and the effects of formaldehyde on porcine reproductive and respiratory virus in feed: proof of concept.* Midwest American Society of Animal Science. March 2018.

- Ochoa, L., Greiner, L. J. Connor, J. Waddell and E. Fano. *Short summary on the low prevalence of PCV2 on pigs at birth*. American Association of Swine Veterinarians Annual Meeting. March 2018.
- Ochoa, L., Greiner, L. J. Connor, and T. Pacion. *Effects of PICV2 viremia level of piglets at birth on the efficacy of PCV2 vaccine against exposure to PCV2-b determined by viremia levels and growth rate of pigs*. American Association of Swine Veterinarians Annual Meeting. March 2018.
- Smith, M., J. Waddell, G. Hartsook, A. Lower, L. Greiner and L. Ochoa. *Litter porcine reproductive and respiratory syndrome (PRRS) status at processing and relationship to PRRS status at weaning using different pools of sampling tissues*. American Association of Swine Veterinarians Annual Meeting. March 2018.
- Hardebeck, O., L. Ochoa, L. Greiner and J. Connor. *Understanding the impact of farrowing induction on pigs born alive*. American Association of Swine Veterinarians Annual Meeting. March 2018.
- Tarasuik, G., L. Ochoa, M. Jansen, L. Greiner and A. Farkas. *Comparison of oral fluids versus tonsil swabs to diagnose Mycoplasma hyosynoviae infection prior to onset of clinical signs*. American Association of Swine Veterinarians Annual Meeting. March 2018.
- Lawrence, B., T. Loeffler, Y. Ma, and L. Greiner. *Mineral source matters conception to market*. American Association of Swine Veterinarians Annual Meeting. March 2018.
- Greiner, L. A. Graham, K.J. Touchette, M.A.D Goncalves, U.A.D. Orlando, and J. Connor. *Abstract #240. Threonine:Lysine ratio requirement in lactating sows*. Midwest American Society of Animal Science. March 2017.
- Graham, A., T. Hall., L. Ochoa, L. Greiner, M.A.D Goncalves, U.A.D. Orlando, and J. Connor. *Abstract #239. Effect of dietary calcium inclusion rate in diets for lactating sows*. Midwest American Society of Animal Science. March 2017.
- Ochoa, L., A. Graham, Knopf, B., Greiner, L., and J. Connor. *Abstract #280. Evaluation of SID lys:ME ratios in grow-finishing pigs*. Midwest American Society of Animal Science. March 2017.
- Ochoa, L., R.J. Harrell, A. Graham, M. Bienhoff, B. Kremer, J.A. Loughmiller, and L. Greiner. *Abstract #294. Effect of feeding formaldehyde treated feed to pigs throughout the growing period on amino acid utilization from synthetic Lys or protein sources*. Midwest American Society of Animal Science. March 2017.
- Graham, A., B. Knopf, L. Greiner, M.A.D Goncalves, U.A.D. Orlando, and J. Connor. *Abstract #301. Evaluation of the lysine requirement of 11-23 kg nursery pigs*. Midwest American Society of Animal Science. March 2017.
- Knox, A., L. Ochoa, and L. Greiner. *Correlating sampling methods to porcine circovirus type w (PCV2) viremia status of sows and piglets in a sow herd with or without PCV2 revaccination during gestation*. American Association of Swine Veterinarians Annual Meeting. March 2017.
- Greiner, L., J. Connor, B. Knopf, A. Graham, L. Ochoa and R. Harrell. *Evaluation of nutrient availability when using feed disinfection in nursery diets*. American Association of Swine Veterinarians Annual Meeting. March 2017.
- Bloemer, M., E. Jablonski, L. Ochoa, A. Lower, and L. Greiner. *Impact of sow parity on the influenzae A (IAV-S) infection timing of the suckling pig in an*

- endemic herd*. American Association of Swine Veterinarians Annual Meeting. March 2017.
- Greiner, L. and J. Connor. *Abstract # 070. Evaluation of Compost Bays to Test Positive for PEDv/PDCov on Clinically Active Farms*. International Pig Veterinary Society. June 2016.
  - Lowe, J., R. McCann, L. Greiner, and B. Hollis. *Abstract #084 Factors that influence mechanical transmission of Porcine Reproductive and Respiratory Syndrome Virus at Slaughter Plant Lairage*. International Pig Veterinary Society. June 2016.
  - Munoz, R., L. Greiner, J. Connor and J. Rice. *Abstract # Auditing a cleaning and disinfection trailer-transportation protocol with AccuPoint® Advanced*. International Pig Veterinary Society. June 2016.
  - Arend, L., R. V. Knox, L. Greiner, A. Graham, and J. Connor. *Abstract #329. Effects of feeding melatonin during proestrus and early gestation in gilts and P1 sows to minimize the effects of seasonal infertility*. Midwest American Society of Animal Science. March 2016.
  - Greiner, L., A. Graham, R. Harrell, B. Knopf, and J. Connor. *Abstract #151 Evaluation of copper source addition in the grow-finish phase*. Midwest American Society of Animal Science. March 2016.
  - Greiner, L., A. Graham, K. Touchette, and C. Neill. *Abstract #261 The evaluation of increasing lysine or feed amounts in late gestation on piglet birth weights*. Midwest American Society of Animal Science. March 2016.
  - Greiner, L., A. Graham, B. Knopf, R. Harrell, and Y. Ma. *Abstract #247 Effect of feeding protease at two soybean meal inclusion rates for nursery pigs*. Midwest American Society of Animal Science. March 2016.
  - Greiner, L., A. Graham, B. Knopf, R. Harrell, and J. Connor. *Abstract #250 Evaluation of bovine plasma in early nursery pig diets*. Midwest American Society of Animal Science. March 2016.
  - Wurtz, T., L. Greiner, J. Waddell, E. Fano, and R. Edler. *Determining the prevalence of Mycoplasma hyopneumoniae colonization of weaned piglets from gilt litters*. American Association of Swine Veterinarians Annual Meeting. March 2016.
  - Greiner, L. *Evaluation of the risk of a feed mill being contaminated with PEDV or PDCoV*. American Association of Swine Veterinarians Annual Meeting. March 2016.
  - Greiner, L., A. Graham, B. Knopf, and W. Plocher. *Abstract #233 Evaluating the effects of sodium sesquicarbonate in the grow-finish phase fed during summer months*. Midwest American Society of Animal Science. March 2016.
  - Greiner, L., A. Graham, and K. J. Touchette. *Abstract 110. The tryptophan:lysine requirement of grow-finish pigs*. Midwest American Society of Animal Science. March 2015.
  - Greiner, L. A. Graham, M. Tegtmeyer, K. J. Touchette, and S., Jungst. *Abstract 153. The determination of amount of feed grade lysine usage in lactating sows*. Midwest American Society of Animal Science. March 2015.
  - Graham, A., K. J. Touchette, S. Jungst, M. Tegtmeyer, J. Connor, and L. Greiner. *Abstract 145. Impact of feeding level postweaning on wean to estrus interval,*

- conception and farrowing rates and subsequent farrowing performance.* Midwest American Society of Animal Science. March 2015.
- Shen, J., L. Greiner, J. Connor, and R. Knox. *Effect of timing and gilt relocation from group pens to individual stalls on measures of fertility and well-being.* American Association of Swine Veterinarians Annual Meeting. March 2015.
  - Greiner, L., D. Classen, N. Eddy, and J. Connor. *Abstract O163. Understanding PEDv timeline of exposure based on clinical findings.* International Pig Veterinary Society (IPVS) Congress. June 2014.
  - Greiner, L., R. Barrett, A. Graham, and J. Connor. *The evaluation of narasin in grow-finish swine diets.* International Pig Veterinary Society (IPVS) Congress. June 2014.
  - Greiner, L., J. Remus, D. D. Hall, R. D. Boyd, R. J. Harrell and J. Connor. *Abstract 146. The impact of natural betaine to lactating sows during periods of heat stress.* Midwest American Society of Animal Science. March 2014.
  - Matthews, N., L Greiner, C. R. Neill, S. Jungst, B. Fields, R. C. Johnson, and A. Sosnicki. *Abstract 335. Effect of feed form (mash vs. pellets) and ractopamine on pork fat quality.* Midwest American Society of Animal Science meeting. March 2014.
  - Greiner, L., Z. Jiang, C. Neill, J. Connor, and G. Allee. *Abstract O049. Evaluation of tryptophan to lysine ratio in sow lactation diets.* Midwest American Society of Animal Science meeting. March 2013.
  - Greiner, L., Z. Jiang, C. Neill, J. Connor, and G. Allee. *Abstract O077. Evaluation of various inclusion rates of dried distillers grain with solubles in sow lactation diets.* Midwest American Society of Animal Science meeting. March 2013.
  - Shelton, N. W., J.L. Nelsens, M. D. Tokach, S. S. Dritz, R. D. Goodband, J. M. DeRouchey, L. L. Greiner, J. Connor, and J. C. Woodworth. *Abstract P090. Effects of dietary L-carnitine and chromium picolinate on sow reproductive performance.* Midwest American Society of Animal Science meeting. March 2013.
  - Johnson, L., L. Greiner, D. King, D. Classen. *Poster 5. Two whole-herd vaccinations as mitigation of influenza virus in breed-to-wean farms.* American Association of Swine Veterinarians Annual Meeting. March 2013.
  - Fombelle, W., L. Greiner and J. Waddell. *Poster 26: Evaluating the persistence of PRRSV in prior exposed vasectomized teaser boars, mature gilts, and young sows within a breeding herd.* American Association of Swine Veterinarians Annual Meeting. March 2013.
  - Hopgood, M., L. Greiner, J. Connor, J. Salak-Johnson, R. Knox. *Abstract #656. Effect of Day of Mixing Gestating Sows on Measures of Reproduction and Animal Well-being.* National American Society of Animal Science Meetings. July 2011.
  - Zhao, J., L. Greiner, G. Allee, M. Vazquez-Anon, C. D. Knight, R. J. Harrell. *Abstract #W212. Improved Retention Rates and Reduced Culling for Lameness for Sows Fed a Chelated Trace Mineral Blend.* National American Society of Animal Science Meetings. July 2011.
  - Zhao, J., L. Greiner, G. Allee, M. Vazquez-Anon, C. D. Knight, R. J. Harrell. *Abstract #W213. A Blend of Chelated Trace Minerals Improved Sow Cumulative Reproduction and Farrowing Rate.* National American Society of Animal Science Meetings. July 2011.
  - Greiner, L.L., J.A. Soto, J.F. Connor, G.L. Allee. *Effect of increasing feeding levels*



- in sows during late gestation on piglets birth weights.* Midwest American Society of Animal Science Annual Meeting. March 2011. p. 86.
- Greiner, L.L., J. Usry, C. Neill, N. Williams, J. Soto, J. Connor, and G. Allee. *The evaluation of lysine requirements in third parity lactation sow diets.* Midwest American Society of Animal Science Annual Meeting. March 2011. p. 64.
  - Greiner, L.L., J. Usry, C. Neill, N. Williams, J. Soto, J. Connor, and G. Allee. *The use of crystalline amino acids in lactating sow diets.* Midwest American Society of Animal Science Annual Meeting. March 2011. pp. 64-65.
  - Greiner, L.L., J. Matthews, C. Neill, N. Williams, G. Allee, J. Connor, S. Jungst, and A. Sosnicki. *Determination of the SID lysine requirement of the 7 to 12 kilogram pig under commercial conditions.* Midwest American Society of Animal Science Annual Meeting. March 2011. p. 62.
  - Greiner, L., J. Lowe. *The Influence of Fetal PCV2 Infection on Lifetime Performance and Vaccine Efficacy,* CRWAD Annual Meeting. 2010.
  - Greiner, L., R. Hinson, G. Allee, A Yersin, A. Lamptey, and B. Kremer. *Effect of Chromium Propionate Supplementation of Growth Performance and Carcass Traits from Wean to Finish Pigs.* Midwest American Society of Animal Science. March 2010.
  - Zhao, J., L. Greiner, M. Vazquez-Anon, C. D. Knight, R. J. Harrell. *Abstract #W233. Improved Piglet Birth Weight by Feeding Sows an Organic Trace Mineral Blend.* National American Society of Animal Science Meetings. July 2010.
  - Zhao J, L. Greiner, N. Keith, M. Vazquez-Anon, C. D. Knight, and R. J. Harrell. *Improved Retention Rates and Reduced Culling for Lameness for Sows Fed a Chelated Trace Mineral Blend,* Allen D. Lemman Swine Conference. September 2010.
  - Connor J, J. Crenshaw, J. Campbell, L. Russell, L. Greiner, and J. Soto. *Effect of spray-dried plasma fed during gestation on pig performance at weaning.* Allen D. Lemman Swine Conference. September 2010.
  - Allee, G. L., L. Greiner, J.L. Ursy and N. Williams. *The Use of Crystalline Amino Acids in Sow Lactation Diets.* Midwest American Society of Animal Science. March 2009.
  - L. Greiner, J. Soto, J. Connor, G.L. Allee, J.L. Usry, and Noel Williams. *The Evaluation of Feeding Lactating Sows on Grams of Lysine Compared to Percent of Lysine in the Diet.* American Society of Animal Science Midwest Baker Symposium. March 2009.
  - Greiner, L. L., J. Patterson, G. Foxcroft, A. Cameron, T. Smith, A. Kummer, R. Schott, J. Connor, and C. Francisco. *The Effect of PG600 at Weaning on Sow Performance,* International Conference On Pig Reproduction (ICPR). 2009.
  - Greiner, L., K. Greiner, J. Connor, K. Erlandson, S. Wu, and J. Barban. *Suvaxyn PCV2 One Dose Field Efficacy comparison Carthage Studies 1 and 5.* Allen D. Lemman Conference. September 2009.
  - Greiner, L., K. Greiner, J. Connor, and J. Soto. *Evaluation of Standard Deviation Associated with Piglet Weaning Weights Between 18 and 21 Days of Age.* American Association of Swine Veterinarians. March 2009.
  - Greiner, L., J. Connor, J. Soto, and G. L. Allee. *Inclusion of Fat in Sow Lactation Diets Containing Dry Distillers Grain with Solubles.* American Association of Swine Veterinarians. March 2009.

- Greiner, L., J. Connor, X. Wang, and G. L. Allee. *The Feeding of Dry Distillers Grain with Solubles to Lactating Sows*. Midwest American Society of Animal Science. March 2008. J. Anim. Sci. Vol. 86, E-Suppl. 3, 97.
- Greiner, L., J. Connor, X. Wang, and G. L. Allee. *The Feeding of Dry Distillers Grain with Solubles to Lactating Sows*. American Association of Swine Veterinarians. March 2009.
- L. L. Greiner, and M. A. Apicella. *Incorporation of Sialic Acid into Nontypeable Haemophilus influenzae Biofilm*. American Society of Microbiology Meeting. 2004.
- L. L. Greiner, H. Watanabe, N. J. Phillips, J. Shao, B. W. Gibson, A. Morgan, and M. A. Apicella. *Nontypeable Haemophilus influenzae 2019 produces a biofilm containing sialic acid which may mimic mucin O-linked glycans*. Midwest Pathogenesis Meeting. 2004.
- J. Jurcisek, L. Greiner, A. Zaleski, M. A. Apicella, J. Cowan, J. Shao, and L. O. Bakaletz. *Role of sialic acid and carbohydrate biosynthesis in biofilm formation by Nontypeable Haemophilus influenzae in the microenvironment of the chinchilla middle ear*. Midwest Pathogenesis Meeting. 2004.
- M. A. Apicella, L. L. Greiner, and H. Watanabe. *Regulation and Biosynthesis of the Biofilm of Nontypeable Haemophilus influenzae*. American Society of Microbiology Meeting. 2003.
- Greiner, L.L., A. Zaleski, J. M. Cowan, and M. A. Apicella. *The role of the lipooligosaccharide synthesis gene (lsg) locus in Haemophilus influenzae airway epithelial cell adherence*. Midwest Pathogenesis Meeting. 2002.
- Greiner, L.L., A. Zaleski, J. M. Cowan, and M. A. Apicella. *The role of the lipooligosaccharide synthesis gene (lsg) locus in Haemophilus influenzae airway epithelial cell adherence*. Microbiology Departmental Meeting, University of Iowa. 2002.

## Poster Sessions

- Knox, A., L. Ochoa, L. Greiner. Correlating sampling methods to porcine circovirus type 2 (PCV2) viremia status of sows and piglets in a sow herd with or without PCV2 revaccination during gestation. Student Session presented at: 2017 AASV Annual Meeting, Denver, CO.
- Bloemer, M., E. Jablonski, L. Ochoa, A. Lower, and L. Greiner. Impact of sow parity on the influenza A (IAV-S) infection timing of the suckling pig in an endemic herd. Poster Session presented at: 2017 AASV Annual Meeting, Denver, CO.
- Greiner, J. Connor, B. Knopf, A. Graham, L. Ochoa, and B. Harrell. Evaluation of nutrient availability when using feed disinfection in nursery diets. American Association of Swine Veterinarians. Poster Session presented at: 2016 AASV Annual Meeting, New Orleans, LA.
- Wurtz, T., L. Greiner, J. Waddell, E. Fano, and R. Edler. Determining the prevalence of Mycoplasma hyopneumoniae colonization of weaned piglets from gilt litters. Poster Session presented at: 2016 AASV Annual Meeting, New Orleans, LA.
- Greiner, L. Evaluation of the risk of a feed mill being contaminated with PEDv or PDCov. Poster Session presented at: 2016 AASV Annual Meeting, New Orleans,

LA.

- Greiner, L. J. Connor, A. Graham, J. Mellor, and J. Lowe. Evaluation of a PED vaccine on piglet mortality and sow immunity. Poster Session presented at: 2015 AASV Annual Meeting, Orlando, FL.
- Drebes, D., L. Greiner, E. Nelson, M. Murtaugh, D. King, and J. Connor. The effect of translactational antibodies on preweaning mortality in a porcine epidemic diarrhea virus exposed herd. Student Poster Session presented at: 2015 AASV Annual Meeting, Orlando, FL.
- Johnson, H., L. Greiner, A. Lower, J. Prickett, J. Waddell, and J. Lowe. Evaluation of diagnostic sampling types to evaluate porcine epidemic diarrhea virus shedding status after known exposure to replacement gilts. Student Poster Session presented at: 2015 AASV Annual Meeting, Orlando, FL.
- Daniels, A., L. Greiner, and D. King. Evaluation of PRRSV contamination of drivers' boots and foot pedals during feed truck deliveries. Poster session presented at: 2014 AASV Annual Meeting, Dallas, TX.
- O'Connor, C., J. Connor, D. Classen, and L Greiner. The evaluation of PRRSV transfer via tattooing in the suckling piglet. Poster session presented at: 2014 AASV Annual Meeting, Dallas, TX.
- Cowles, B., L. L. Greiner, D. Neuberger, G. P. Nitzel, and D. M. Amodie. Comparative Evaluation of One and Two dose PCV/*M.hyo* Vaccination Protocols in Swine Challenged with PCV and *M. hyo*. Poster session presented at: 2014 AASV Annual Meeting, Dallas, TX.
- Cowles, B., L. L. Greiner, D. Neuberger, G. P. Nitzel, and D. M. Amodie. Comparative Evaluation of One and Two dose PCV/*M.hyo* Vaccination Protocols in Swine Challenged with PCV and *M. hyo*. Poster session presented at: Allen D. Lemman Swine Conference; 2013 Sep 15-17; River Centre, St. Paul, MN.
- Greiner, L., R. Barrett, and J. Connor. The impact of immunological castration on wean to finish body weight variation. Poster session presented at: Allen D. Lemman Swine Conference; 2013 Sep 15-17; River Centre, St. Paul, MN.
- Shelton, N. W., J. L. Nelssen, M. D. Tokach, S. S. Dritz, R. D. Goodband, J. M. DeRouchey, L. L. Greiner, J. Connor, and J. C. Woodworth. Effects Of Dietary L-Carnitine And Chromium Picolinate On Sow Reproductive Performance. Poster session presented at: 2013 Midwest Animal Society of Animal Science Annual Meeting, 2013 Mar 11-13, Des Moines, IA.
- Connor, J.F., L. Greiner, J. A. Soto, and G.L. Allee. Effect of increasing feeding levels in sows during late gestation on piglets birth weights. Poster session presented at: 2011 Midwest American Society of Animal Science Annual Meeting; 2011 Mar 14-16; Des Moines, IA.
- Zhao, J, L. Greiner, N. Keith, M. Vazquez-Anon, C. D. Knight, and R. J. Harrell, Improved Retention Rates and Reduced Culling for Lameness for Sows Fed a Chelated Trace Mineral Blend. Poster session presented at: Allen D. Lemman Swine Conference; 2010 Sep 18-21; River Centre, St. Paul, MN.
- Connor, J., J. Crenshaw, J. Campbell, L. Russell, L. Greiner, and J. Soto. Effect of spray-dried plasma fed during gestation on pig performance at weaning. Poster session presented at: 2010 Allen D. Lemman Swine Conference; 2010 Sep 18-21; RiverCentre, St. Paul, MN.
- Connor, J., K. Greiner, L. Greiner, and J. Lowe. Comparison of Mycoplasma

- Hypopneumoniae Vaccination Regimens in Pigs Under Mhyo Pressure. Poster session presented at: 2010 AASV Annual Meeting; 2010 Mar 6-9; Omaha, NE.
- Reiman, J., C. Folkerts, L. Greiner, J. Lowe, J. Connor, and R. White. Bacterial infection of the navel cord blood clot in neonatal piglets: prevalence and clinical outcomes. Poster session presented at: 2010 AASV Annual Meeting; 2010 Mar 6-9; Omaha, NE.
  - Connor, J., J. Patterson, A. Cameron, T. Smith, A. Kummer, A. Schott, L. Greiner, and G. Foxcroft. Responses to Exogenous Gonadotrohin Treatment in Contemporary Weaned Sows. Poster session presented at: International Exogenous Conference On Pig Production (ICPR). 2009.
  - Connor, J., J. Patterson, A. Cameron, T. Smith, A. Kummer, R. Schott, L. Greiner, and G. Foxcroft. The Effect of PG600 at Weaning on Weaned Primiparous Sow Performance. Poster session presented at: Banff Pork Seminar. 2009. University of Alberta, Canada.
  - Connor, J., E. Schilling, L. Greiner, and J. Lowe. Efficacy of Intensive Neonatal Piglet Care on Umbilical Hernias and Joint Infections; 2009 Mar 11; Dallas, TX.
  - Connor, J., K. Greiner, L. Greiner, K. Erlandson, S. Wu, and J. Barban. Suvaxyn® PCV2 One Dose Field Efficacy Comparison Carthage Study I. Poster session presented at: Allen D. Lemay Conference. 2008 Sep 20-23. Saint Paul, MN.

### **Educational Presentations and Programs:**

- Presenter to the 2017 Carthage Veterinary Service, Ltd. Twenty-sixth Annual Swine Health and Production Conference "Understanding FSMA"
- Presenter to the 2017 Carthage Veterinary Service, Ltd. Twenty-sixth Annual Swine Health and Production Conference "Ractopamine Alternatives"
- Presenter to the 2016 Novus China Swine Academy (Beijing) "Nutrition requirement and management of nursery pigs: how to get to 32 kg in 70 days", "Nutritional and management strategies to optimize feed efficiency of grow-finish swine", and "Strategies of the weaned piglet: how to balance growth and gut health".
- Presenter to the 2016 Carthage Veterinary Service, Ltd. Twenty-sixth Annual Swine Health and Production Conference "Nutritional Tools for Feed Efficiency"
- Presenter to the 2016 Eastern Canada Nutrition Conference "Sow Amino Acid Requirements During Lactation"
- Presenter to the 2015 Carthage Veterinary Service, Ltd. Twenty-fifth Annual Swine Health and Production Conference "Effect of Timing and Relocation of Replacement Gilts" and "PEDv – Shedding Duration, Immunity and Vaccine"
- Presenter to the 2014 Carthage Veterinary Service, Ltd. Twenty-fourth Annual Swine Health and Production Conference "Removing Animal Protein – Risks and Management" and "Diet Adjustments during a PRRS Outbreak"
- Presenter to the 2012 Swine Summit "Update on Sow Nutrition"
- Presenter to the 2013 Carthage Veterinary Service, Ltd. Twenty-third Annual Swine Health and Production Conference "Lactation Feeding – What's Important"
- Presenter to the 2012 American Association of Swine Veterinarians "Putting It All Together"
- Presenter to the 2012 Carthage Veterinary Service, Ltd. Twenty-second Annual Swine Health and Production Conference "Feeding for Profitability"

- Presenter to the 2012 Carthage Veterinary Service, Ltd. Twenty-second Annual Swine Health and Production Conference "Effect Day of Mixing Gestating Sows"
- Presenter to the 2011 American Association of Swine Veterinarians "The Truth on Our Own Terms – Best Utilization of Research Barns"
- Presenter to the 2011 Carthage Veterinary Service, Ltd. Twenty-first Annual Swine Health and Production Conference "Farrowing Paradigm Shift – Challenging Historical Production Practices"
- Presenter to the 2010 American Association of Swine Veterinarians "Maximizing Today's Sow Performance with Nutrition"
- Presenter to the 2010 Carthage Veterinary Service, Ltd. Twentieth Annual Swine Health and Production Conference "Montessori School: Alternative Ingredients"
- Presenter to the 2010 Lemman Swine Conference "Sow Feeding Systems: Matching the Feeding System to the Biology of the Sow"
- Presenter to the 2010 Midwest American Society of Animal Science Billy Day Symposium "Impact of Nutrition on Sow Physiology"
- Presenter to the 2010 Swine Summit "Sow Nutrition"
- Presenter to the 2009 American Association of Swine Veterinarians "Field Efficacy Comparison of Suvaxyn® PCV2 One Dose and Two Other Commercial PCV Vaccines: Carthage Trial Update"
- Presenter to the 2009 Carthage Veterinary Service, Ltd. Nineteenth Annual Swine Health and Production Conference "Go to a Cafeteria or Order in Restaurant? Which is Better for Gestating Sows?"
- Presenter to the 2009 Carthage Veterinary Service, Ltd. Nineteenth Annual Swine Health and Production Conference "When Cotton Candy and Corn Dogs Just Don't Do It: Feeding the Lactating Sow"
- Presenter to the 2009 Midwest American Society of Animal Science "The Evaluation of Feeding Lactating Sows on Grams of Lysine Compared to Percent of Lysine in the Diet"
- Presenter to the 2009 Midwest American Society of Animal Science "The Use of Crystalline Amino Acids in Sow Lactation Diets"
- Presenter to the 2009 World Pork Exposition "Value of Swine Research in Commercial Facilities"
- Presenter to the 2008 Midwest American Society of Animal Science "The Feeding of Dry Distiller Grain with Solubles to Lactating Sows"
- Presenter to the 1999 Midwest American Society of Animal Science Baker Symposium "Effects of Dietary Soy Genistein on Pig Growth and Immune Response in Virally Challenged Pigs"
- Presenter to the 1998 National American Society of Animal Science Meetings "Effect of Protein Source (Casein vs. Soy) on Growth in Antigen Exposed Pigs"

**Professional Organization Membership and Recognitions:**

- American Association of Swine Veterinarians (2009 to present)
- American Society of Animal Science (1997 to present)
- NIH Post-Doctoral Immunology Training Grant (2002-2005)
- Iowa State Research Excellence Award (Master's Thesis, 1999)
- Miller Fellowship (1997-2001)
- Iowa State University Honors Program (1994-1996)

**Skill set:**

- Feed formulation
- Statistical analysis
- Protocol development and implementation
- Problem solving
- Critical thinking
- Economic analysis
- Study design and development
- Conceptual idea studies