PHILLIP S. MILLER

Current Position: Professor of Animal Science
Appointment: 60% Research; 40% Teaching
Courtesy Appointment: University of Nebraska-Lincoln, Nutrition and Health Sciences

Research Responsibilities: Responsible for conducting swine nutrition research. Specifically, research focuses on nutrient and energy requirements of growing, finishing, and reproducing swine.

Teaching Responsibilities: Responsible for instruction of Animal Science 320 (Principles of Livestock Nutrition) fall and spring semesters, and Animal Science 925 (Energy Metabolism) fall semesters of odd-numbered calendar years.

Department Affiliation: Animal Science

Academic Rank:

Professor, Department of Animal Science, University of Nebraska, July 2003 to 2020.
Associate Professor, Department of Animal Science, University of Nebraska, July 1996 to July 2003.
Assistant Professor, Department of Animal Science, University of Nebraska, July 1990 to July 1996.
Lecturer, Department of Animal Science, University of California, January 1989 to June 1990.

Education:

B.S., 1985. University of California, Davis; Major, Animal Science
M.S., 1988. University of California, Davis; Major, Animal Science
Ph.D., 1990. University of California, Davis; Major, Nutrition
Minors: Physiological Chemistry, Biomathematics

Personal Information:

Date and place of birth: July 30, 1961; Reno Nevada
Spouse: Ginnine Marie Miller
Children: Maxwell, Abigail, and Gabriel Miller

Honors and Awards Received:

American Society of Animal Science, American Feed Ingredient Association, Nonruminant Nutrition Award, 2022

Kermit Wagner Distinguished Professorship, 2020

Gamma Sigma Delta Honor Society, Teaching Award of Merit, 2002

College of Agriculture and Natural Resources, L. K. Crowe Outstanding Undergraduate Advisor Award,

2005.

Holling Family Award Program for Teaching Excellence in Agricultural and Natural Resources, University of Nebraska, Senior Faculty Award, 2009.

Memberships in Professional Organizations:

Sigma Xi Honor Society.

Phi Beta Phi Honor Society.

Gamma Sigma Delta Honor Society.

American Society of Animal Science.

Service to Organizations:

Interim Head, Department of Animal Science, University of Nebraska, July 2016-January 2017.

Review Editor, Journal of Animal Science, 2017-present.

Division Editor, Journal of Animal Science, 2006-2009.

Associate Editor, Journal of Animal Science, 2005-2006.

Editorial Board, Journal of Animal Science, 1997-1999; 2013-present

American Society of Animal Science, Midwest Section Program Committee for Nonruminant Nutrition, 1999-2001; Chair, 2001.

American Society of Animal Science (ASAS) Midwest Board Director. ASAS Board of Directors, ASAS Executive Committee (Secretary); 2014-2017.

American Society of Animal Science (ASAS) Midwest President Elect, 2020; President, 2021

CSREES NRI Competitive Grants Program, Growth and Development Section, review panel member, 2001, 2002, and 2003.

University of Nebraska, Academic Senate, Intercollegiate Athletic Committee, 2000-2003; Chair, 2002-2003.

Steering Committee Member and Subcommittee Chair, UNL NCAA Certification Self Study, 2005.

National Academy of Science, National Research Council, Committee to Revise Swine Nutrient Requirements, Member, 2009-2012.

USDA National Animal Nutrition Program National Research Support Program-9 Coordinating Committee Chair, 2021- present; Feed Composition Committee Chair, 2012-2020; Coordinating Committee, member, 2012 – 2019.

NCCC-042 Multistate Research Project, "Committee on Swine Nutrition." Member, 2000 – present; Chair, 2005.

College of Agricultural Sciences and Natural Resources Curriculum Committee, Member, Vice-chair, and Chair, 1997-1999.

College of Agricultural Sciences and Natural Resources, Student Advising Improvement Committee, 2002-2003.

Academic Senate, Intercollegiate Athletics Committee, Member, Secretary, and Chair; 2000-2003.

Department of Animal Science, Undergraduate Teaching and Advisement Committee, 1993-1998, 1999, 2005-present; Chair, 2000-2003.

Department of Animal Science Undergraduate Scholarship Committee, 1995-2003; Chair 1996-2000.

Interdepartmental Nutrition Program, Executive Committee, 1999-2002.

Faculty Advisor, Block and Bridle Club, 1994-1996; 2002-2004.

Faculty Advisor, Animal Science Graduate Student Association, 1991-1992.

Faculty Advisor, FarmHouse Fraternity, 1993-1998.

Department of Animal Science Graduate Committee, Chair, 2009-2013.

Faculty Supervisor, Nonruminant Nutrition Laboratory, fall 2001 -2010.

Faculty Supervisor, Animal Science Feedmill, ARDC, Mead, NE; 2001- present.

Faculty Supervisor, Animal Science Swine Unit ARDC, Mead, NE; 2011 - 2021.

Faculty Chair, Department of Animal Science Promotion and Tenure Committee, 2006-2007; 2013-2014.

Department of Animal Science Promotion and Tenure Committee, 2005-2007; 2012-2014; 2017-2019.

Department of Animal Science Awards Committee, Chair, 2017-present.

Advising/mentoring (1990-2020):

Undergraduate advisees: 130
Graduate (chair and co-chair):

M.S.: 23
Ph.D.: 16

Grants related to research activities (1990-2023): PI and co-PI: $6,000,000

Publications:

Summary (1990 to 2023)

Research reports: 110
Abstracts: 165
Book chapters: 5
Invited presentations: 25
Refereed manuscripts (journal): 122

Refereed (2005 to 2023)

Hollis, G. R., S.D. Carter, T. R. Cline, T. D. Crenshaw, G. L. Cromwell, G. M. Hill, S. W. Kim, A. J. Lewis, D. C. Mahan, P. S. Miller, H. H. Stein, and T. L. Veum. 2005. Effects of replacing pharmacological levels of dietary zinc oxide with lower dietary levels of various organic zinc sources for weanling pigs. J. Anim Sci. 83:2123-2129.

Hyun, Y., G. E. Bressner, R. L. Fischer, P. S. Miller, M. Ellis, B. A. Peterson, E. P. Stanisiewski, and G. F. Hartnell. 2005. Performance of growing-finishing pigs fed diets containing YieldGard Rootworm corn (MON 863), a nontransgenic genetically similar corn, or conventional corn hybrids. J. Anim Sci. 83: 1581-1590.

Mahan, D. C., J. H. Brendemuhl, S. D. Carter, L. I. Chiba, T. D. Crenshaw, G. L. Cromwell, C. R. Dove, A. F. Harper, G. M. Hill, G. R. Hollis, S. W. Kim, M.D. Lindemann, C. V. Maxwell, P. S. Miller, J. L. Nelssen, B. T. Richert, L. L. Southern, T. S. Stahly, H. H. Stein, E. van Heugten, and J. T. Yen. 2005. Comparison of dietary selenium fed to grower-finisher pigs from various regions of the United States on resulting tissue Se and loin mineral concentrations. J. Anim Sci. 83: 852-857.

Mahan, D. C., S.D. Catter, T. R. Cline, G. M. Hill, S. K. Kim, P. S. Miller, J. L. Nelssen, H. H. Stein, T. L. Veun, and the North Central Coordinating Committee on Swine Nutrition (NCCC-42). 2007. Evaluating the effects of supplemental B vitamins in practical swine diets during the starter and grower-finisher periods-A regional study. J. Anim. Sci. 85:2190-2197.

Stein, H. H., C. T. Kadzere, S. W. Kim, and P. S. Miller. 2008. Influence of dietary phosphorus concentration on the digestibility of phosphorus in monocalcium phosphate by growing pigs. J. Anim. Sci. 86:1861-1867.

Colina, J. J., P. S. Miller, A. J. Lewis, R. L. Fischer, and R. M. Diedrichsen. 2010. Growth, body composition, and tissue deposition rates of nursery pigs fed crystalline or protein-bound lysine. Prof. Anim. Sci. 26:230-238.

Kerr, B. J, T. E. Weber, P. S. Miller, and L. L. Southern. 2010. Effect of phytase on apparent total tract digestibility of phosphorus in com-soybean meal diets fed to finishing pigs. J. Anim. Sci. 88: 238-247.

Cromwell, C. L., M. J. Azain, O. Adeola, S. K. Baidoo, S.D. Carter, T. D. Crenshaw, S. W. Kim, D. C. Mahan, P. S. Miller, and M. C. Shannon. 2011. Corn distillers dried grains with solubles in diets for growing-finishing pigs: A cooperative study. J. Anim. Sci. 89:2801-2811.

Miller, P. S, R. Moreno, and R. K. Johnson. 2011. Effects of restricting energy during the gilt developmental period on growth and reproduction of lines differing in lean growth rate: Responses in feed intake, growth, and age at puberty. J. Anim. Sci.89: 342-354.

Stein, H. H., O. Adeola, G. L. Cromwell, S. W. Kim, D. C. Mahan, and P. S. Miller. 2011. Concentration of dietary calcium supplied by calcium carbonate does not affect the apparent total tract digestibility of calcium, but reduces digestibility of phosphorus by growing pigs. J. Anim. Sci. 89:2139-2144.
Tran, H., R. Moreno, E. E. Hinkle, J. W. Bundy, J. Walter, T. E. Burkey, and P. S. Miller. 2012. Effect of corn distillers with solubles on growth performance and health status indicators in weanling pigs. J. Anim. Sci. 90:790-80.

Tran, H., R. Moreno, E. E. Hinkle, J. W. Bundy, J. Walter, T. E. Burkey, and P. S. Miller. 2012. Effect of corn distillers with solubles on growth performance and health status indicators in weanling pigs. J Anim. Sci. 90:3049-3059.

Che, T. M., O. Adeola, M. J. Azain, S.D. Carter, G. L. Gromwell, G. M. Hill, D. C. Mahan, P. S. Miller, and J. E. Pettigrew. 2012. Effect of dietary acids on growth performance of nursery pigs: A cooperative study. J. Anim. Sci. 90:4408-4413.

Carney-Hinkle, E. E., H. Tran, J. W. Bundy, R. Moreno, P. S. Miller, and T. E. Burkey. 2013. Effect of dam parity on litter performance, transfer of passive immunity, and progeny microbial ecology. J. Anim. Sci. 91:2885-2893.

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. Genetics 44:387-397.

Colina, J. J., P. S. Miller, A. J., Lewis, and R. L. Fischer. 2013. Utilization or crystalline or protein-bound lysine for growth and carcass traits of barrows and gilts fed individually or in groups. J. Anim. Sci. 91:3780-3787.

Tran, H., J.W. Bundy, Y.S. Li, E.E. Carney-Hinkle, P. S. Miller, and T.E. Burkey. 2014. Effects of spray-dried porcine plasma on growth performance, immune response, total antioxidant capacity, and gut morphology of nursery pigs. J. Anim. Sci. 92:4494-4504.

Tran, H., J.W. Bundy, E.E. Carney-Hinkle, J. Walter, T.E. Burkey, and P.S. Miller. 2014. Effects of a yeast-dried milk product in creep and phase- I nursery diets on growth performance, circulating immunoglobulin A, and fecal microbiota of nursing and nursery pigs. J. Anim. Sci. 92:4518-4520.

Mahan, D. C., M. Azain, T.D. Crenshaw, G. L. Cromwell, C. R. Dove, S. W. Kim, M. D. Lindemann, P. S. Miller, J. E. Pettigrew, H. H. Stein, and E. van Heugten. 2014. Supplementation of organic an inorganic selenium to diets using grains grown in various regions of the United States with differing Se concentrations and fed to grower-finisher swine. J. Anim. Sci. 92:4991-4997.

Froth, A. J., T. Brown-Brandl, K. J. Hanford, P. S. Miller, G. Garcia Gomez, and P. J. Kononoff. 2015. Energy content of reduced-fat dried distillers grains with solubles for lactating dairy cows. J. Dairy Sci. 98:7142-7152.

White, R. R., P. S. Miller, and M. D. Hanigan. 2015. Evaluating equations estimating change in swine feed intake during heat and cold stress. J. Anim. Sci. 93:2419-2427.

Adeola, O., M. J. Azain, S. D. Carter, T. D. Crenshaw, M. J. Estienne, B. J. Kerr, M. D. Lindemann, C. V. Maxwell, P. S. Miller, M. S. Shannon, and E. van Heugten. 2015. A cooperative study on the standardized total-tract digestible phosphorus requirement of twenty-kilogram pigs. J. Anim. Sci. 93:5743-5753.

Colina, J. J., P.S. Miller, A. J. Lewis, R. L. Fischer, and R. M. Diedrichsen. 2016. Body composition, tissue deposition of barrows and gilts fed crystalline or protein-bound lysine. J. Anim. Sci. 94:1972-1981.

Li, Y. S. H. Tran, J. W. Bundy, T. E. Burkey, B. J. Kerr, M. K. Nielsen, and P.S. Miller. 2016. Evaluation of collection method and diet effects on apparent digestibility and energy values of swine diets. J. Anim. Sci. 94:2415-2424.

van Sambeek, D. M., H. Tran, S. C. Fernando, D. C. Ciobanu, P. S. Miller, and T. E. Burkey. 2016. Alteration of the pig intestinal microbiome when vaccinated against or inoculated with porcine circovirus 2 using a multivariate analysis model. J. Anim. Sci. 94:387-390.

Wijesena, H. R., C. A. Lents, J.-J. Riethoven, M. D. Trenhaile-Grannemann, J. F. Thorson, B. N. Keel, P. S. Miller, M. L. Spangler, S. D. Kachman, and D. C. Ciobanu. 2017. GENOMICS SYMPOSIUM: Using genomic approaches to uncover sources of variation in age at puberty and reproductive longevity in sows. J. Anim. Sci. 95:4196-4205.

Winkel, S.M., M.D. Trenhaile-Grannemann, D.M. Van Sambeek, P.S. Miller, J. Salcedo, D. Barile, and T.E. Burkey. 2018. Effects of energy restriction during gilt development on milk nutrient profile, milk oligosaccharides, and progeny biomarkers. J. Anim. Sci. 96:3077-3088.

Tran, H., C.L. Anderson, J.W. Bundy, S.C. Fernando, P.S. Miller, and T.E. Burkey. 2018. Effects of spray-dried porcine plasma on fecal microbiota in nursery pigs. J. Anim. Sci. 96:1017-1031.

Drehmal, O.R., T.M. Brown-Brandl, J.V. Judy, S.C. Fernando, P.S. Miller, K.E. Hales, and P.J. Kononoff. 2018. The influence of fat and hemicellulose on methane production and energy utilization in lactating jersey cattle. J.Dairy Sci. 101:7892-7906.

Judy, J.V., G.C. Bachman, T.M. Brown-Brandl, S.C. Fernando, K.E. Hales, P.S. Miller, R.R. Stowell, and P.J. Kononoff. 2018. Energy balance and diurnal variation in methane production as affected by feeding

frequency in jersey cows in late lactation. J.Dairy Sci. 101:10899-10910.

Judy, J.V., G.C. Bachman, T.M. Brown-Brandl, S.C. Fernando, K.E. Hales, K. J. Harvatine, P.S. Miller, and P.J. Kononoff. 2019. Increasing the concentration of linolenic acid in diets fed to jersey cows in late lactation does not affect methane production. J. Dairy Sci. 102:2085-2093.

Judy, J.V., G.C. Bachman, T.M. Brown-Brandl, S.C. Fernando, K.E. Hales, P.S. Miller, R.R. Stowell, and P.J. Kononoff. 2019. Reducing methane production with corn oil and calcium sulfate: Responses on whole-animal energy and nitrogen balance in dairy cattle. J. Dairy Sci. 102:2054-2067.

San Andres, J.V., G.A. Mastromano, Y.L. Li, H.Tran, J.W. Bundy, P.S. Miller, and T.E. Burkey. 2019. The effects of prebiotics on growth performance and in vitro immune biomarkers in weaned pigs. Translational Animal Science 3:1315-1325.

Tran, H., A. Schlagater-Tello, A. Caprez, P.S. Miller, M.B. Hall, W.P. Weis, and P.J. Kononoff. 2020. Development of feed composition tables using a statistical screening procedure. J. Dairy Sci. 103:3786-3803.

Schlagater-Tello, A., G.C. Fahey, T. Freel, L. Koutsos, P.S. Miller, and W.P. Weis. 2020. ASAS-NANP Symposium: Ruminant/Nonruminant Feed Composition. Challenges and opportunities associated with creating large feed ingredient tables on large data sets. J. Anim. Sci. 98(No 8):1-13. https://doi.org/10.1093/jas/skaa240.

Aluthge, Nirosh D., Wesley A. Tom, Alison C. Bartenslager, Thomas E. Burkey, Phillip S. Miller, Kelly D. Heath, Craig Kreikemeier-Bower, Hatem Kittana, Robert J. Schmaltz, Amanda E. Ramer-Tait, and Samodha C. Fernando. Differential longitudinal establishment of human-fecal bacterial communities in germ-free porcine and murine models. COMMUNICATIONS BIOLOGY| (2020) 3:760| https://doi.org/10.1038 /s42003-020-01477-0.

Yanshuo S Li, Joice V San Andres, Melanie D Trenhaile-Grannemann, Dana M van Sambeek, Kelly C Moore, Shana M Winkel, Samodha C Fernando, Thomas E Burkey, Phillip S Miller, Effects of mannan oligosaccharides and *Lactobacillus mucosae* on growth performance, immune response, and gut health of weanling pigs challenged with *Escherichia coli* lipopolysaccharides, *Journal of Animal Science*, Volume 99, Issue 12, December 2021, skab286, https://doi.org/10.1093/jas/skab286

Rodger K Johnson, Melanie D Trenhaile-Grannemann, Roman Moreno, Daniel C Ciobanu, Phillip S Miller, Effects of restricting energy during the gilt development period on growth and reproduction of lines differing in lean growth rate: responses in reproductive performance and longevity, *Journal of Animal Science*, Volume 100, Issue 1, January 2022, skab352, https://doi.org/10.1093/jas/skab352

Hans H Stein, Olayiwola Adeola, Sung Woo Kim, Phillip S Miller, Sunday A Adedokun, North Central Coordinating Committee on Swine Nutrition (NCCC-42) , Digestibility of energy and concentrations of metabolizable energy and net energy varies among sources of bakery meal when fed to growing pigs, *Journal of Animal Science*, Volume 101, 2023, skad297, https://doi.org/10.1093/jas/skad297