Jinsu Hong

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College of Food Agricultural and Natural Resource Science, University of Minnesota
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PROFESSIONAL CAREER

2025 – present **Researcher 5**
Department of Animal Science
College of Food Agricultural and Natural Resource Science (CFANS)
University of Minnesota, Saint Pual, MN, USA
Advisor: Pedro. E. Urriola, Ph.D.

2024 – 2025 **Postdoctoral Research Associate**
Department of Animal Science
College of Food Agricultural and Natural Resource Science (CFANS)
University of Minnesota, Saint Pual, MN, USA
Advisor: Pedro. E. Urriola, Ph.D.

2021 – 2023 **Research Associate II**
Department of Animal Science
College of Agriculture, Food and Environmental Sciences
South Dakota State University, Brookings, SD, USA
Advisor: Crystal L. Levesque, Ph.D.

2018 – 2021 **Postdoctoral Associate**
Department of Animal Science
College of Agriculture, Food and Environmental Sciences.
South Dakota State University, Brookings, SD, USA
Advisor: Tofuko A. Woyengo, Ph.D.

2018 – 2018 **Lecturer**
Department of Bio Animal Care
College of Health and Welfare
Jang-An University, Hwa-Seong, South Korea.

2016 – 2018 **Guest Lecturer**
Department of Agricultural Sciences
Korea National Open University, Seoul, South Korea

2012 – 2018 **Graduate Research & Teaching Assistant**
Department of Agricultural Biotechnology
Seoul National University, Seoul, South Korea
Supervisor: Yoo Y. Kim, Ph.D.

EDUCATION

2014 – 2018 Ph.D. in Agricultural Biotechnology (Swine Nutrition and Biochemistry), Seoul National University, Seoul, South Korea. Advisor: Yoo Y. Kim, Ph.D.
Thesis: *Effects of arginine, lysine, and energy levels on physiological responses and reproductive performance in sows and growth of their progeny*

2012 – 2014 M.Sc. in Agricultural Biotechnology (Monogastric Nutrition and Biochemistry), Seoul National University, Seoul, South Korea. Advisor: Yoo Y. Kim, Ph.D.
Thesis: *Various dietary energy and protein levels on growth performance, blood profiles, carcass characteristics in growing-finishing pigs*

2006 – 2012 B.Sc. in Animal Science and Biotechnology, Seoul National University, Seoul, South Korea.

PROFESSIONAL ORGANIZATIONS:

2018 – present American Society of Animal Science, member
2021 – present Poultry Science Association, member
2024 – present Real Pork Trust Consortium
2013 – present Korean Society of Animal Sciences and Technology, member

AWARDS

2024	PDA Career Development Award, University of Minnesota	$500
2018	4th Swine Research Academic Award, Korean Society of Animal Science and Technology	$2,000
2017	Kukdam Scholarship, Kukdam Livestock Research Foundation	$4,000
2016	Graduate Student Scholarship, Seoul National University	$2,000
2015	Excellent Presentation Award for Oral Presentation, 2015 Annual Congress of KSAST	$2,000
2014	Brain Korea 21 Plus Scholarship, National Research Foundation (4 yr)	$40,000
2012	Brain Korea 21 Plus Scholarship, National Research Foundation (2 yr)	$14,000

EXTERNAL FUNDING ($1,368,211; 2021-present)

Pending research grant

2025. 3. IonE Impact Goals FY2025. Evaluating and promoting the multiple sustainability and One Health benefits of seaweed in animal feed through international collaboration. **$180,000** (2 years) **co-PI**

2025. 2. NSF-Growing Convergence Research FY2025. Sustainable drying of food residues for circular livestock feed. **$789,206** (5 years) **co-PI**

2024. 10. USDA-NIFA-Inter-Disciplinary Engagement in Animal System (IDEAS) FY2025. A system approach to zinc in swine diet: supplying what pigs need while optimizing the impact on the environment and One Health. **$995,411** (3 years) **PI**

Ongoing research grants

2024 – 2025 Sustainable Swine Resources. Pig spleen as an immune-booster feed additive for young poults. **$ 50,612.** (10 months) **PI**

2024 – 2026 United Soybean Board. Assessment of sustainability value of soybean meal in swine diet formulation through meta-analysis and life cycle assessment (LCA) modeling. **$106,247** (2 years) **co-PI**

2024 – 2025 United Soybean Board. Assessment of sustainability values in funded USB wean-to-finish pigs studies. **$25,478.** (1 year) **co-PI**

2024 – 2025 MN Soybean Research and Promotion Council. Feeding soybean co-products to improve the soy-swine feeds life cycle assessment. **$69,583** (1 year) **co-PI**

2023 – 2025 United Soybean Board. An evaluation of mash and pelleted diets with soybean meal and soy co-products. **$187,966** (1 year; extended) **co-PI**

Completed research grants

2023 – 2024 SD Corn Utilization Council. The effect of pelleted corn DDGS on nursery pig growth performance and diet acceptability. **$59,925** (1 year) **co-PI**

2023 – 2024 Northern Canola Growers Association. Alleviation of the toxic effects of high canola meal inclusion in nursery pig diet. **$56,965** (1 year) **PI**

2022 – 2024 Northern Soy Marketing. Differentiating nutritional value (energy and amino acids) of soybean meal from various origins fed to swine and poultry. **$110,400** (2 years) **co-PI**

2022 – 2023 U.S. Pork Center of Excellence. The impact of a multi-enzyme supplement on dietary energy in pigs. **$5,000** (1 year) **co-PI**

2022 – 2023 United Soybean Board. An evaluation of soybean meal inclusion rate in wean-finish. **$158,160** (1 year) **co-PI**

2022 – 2023 ND Corn Utilization Council. Determination of energy and digestible amino acid concentration of corn samples from different origins. **$18,000.** (1 year) **co-PI**

2022 – 2023 United Soybean Board. Improving soybean meal value in swine diet by alleviating antinutritional effects of SBM through commercially used feed technology**. $99,300** (1 year) **co-PI**

2022 – 2023 MN Soybean Research & Promotion Council. Impact of feeding extruded "Trusoya" soybeans on growth performance, blood profile, and carcass characteristics in broiler chickens. **$60,814** (1 year) **PI**

2022 – 2023 Kerry. An evaluation of a multi-enzyme supplement on nutrient digestibility and energy values in growing pigs. **$38,000.** (1 year) **co-PI**

2022 – 2023 SD Oilseed Council. Investigation of nutritional value of sunflower meal as an alternative to soybean meal in turkey diets. **$39,900** (1 year) **co-PI**

2021 – 2022 SAM Nutrition. Dietary inclusion of two chromium sources on sow performance and pig growth until market. **$98,800** (1 year) **co-PI**

2021 – 2023 Canadian Biosystems. Improving nutritional value of protein sources through protease supplementation in poultry diets **$100,000** (2 years) **co-PI**

2021 – 2022 MN Soybean Research & Promotion Council. Impact of feeding extruded "Trusoya" soybean meal on finishing pig performance and providing carcass for analysis. **$25,000** (1 year) **co-PI**

2021 – 2022 National Pork Board. Improving feed efficiency of growing to finishing pigs with different branched-chain amino acids to lysine ratio. **$58,061** (1 year) **co-PI**

Declined research grant proposals

2024 USDA-AFRI-Utilization of alternative feedstuffs in combination with advanced enzyme technology to improve efficiency and sustainability of turkey production. $649,999 (3 years) **PI**

2023 USDA-NIFA-Laying Hen and Turkey Research Program 2023. Utilization of alternative feedstuffs in combination with advanced enzyme technology to improve efficiency and sustainability of turkey production. $446,684 (3 years) **co-PI**

2022 USDA-NIFA-Inter-Disciplinary Engagement in Animal System (IDEAS). Development of a biomarker matrix that predicts post-weaning performance and livability in swine production system. $999,668 (4 year) **co-PI**

PUBLICATIONS

PEER-REVIEWED ARTICLES (first: 18, co-author: 39, corresponding: 1; under-review; 2)

1. McClellan, K. A., E. Fowler, J. Y. Perez-Palencia, B. St-Pierre, E. M. Weaver, C. L. Leveque, K. Koch, S. Mueller, and **J. Hong**. 2025. Alleviation of the antinutritional effects of high canola meal diets for nursery pigs by addition of acidifier and/or encapsulated butyrate. *Journal of Animal Science* (Major revision)
2. **Hong, J.**, J. Halbur, A. L. Petry, T. Doung, S. Llamas-Moya, S. Kitt, M. Bertram, and E. Weaver. 2025. Effects of a fiber-degrading enzyme on ileal digestibility of amino acids and fiber and total tract digestibility of energy and fiber in growing pigs fed diets with high level of corn distillers grains with solubles. *Journal of Animal Science* (Minor revision)
3. Atoo., A. F., J. Y. Perez-Palencia, C. L. Levesque, K. Underwood, K. Koch, S. Mueller, H. B. Krishnan, and **J. Hong**. 2025. Effects of feeding extruded high oleic soybeans on growth performance, blood profile, and carcass characteristics in broiler chickens. *Poultry Science* (Accepted)
4. Shipman, G., J. Y. Perez-Palencia, **J. Hong**, Y. Niu, A. Rogiewiez, R. Patterson, and C. L. Levesque. 2025. Effects of multienzyme supplementation on energy and nutrient digestibility in various feed ingredients for pregnant gilts. *Journal of Animal Science* (Accepted). DOI: https://doi.org/10.1093/jas/skaf017.
5. **Hong, J.**, J. C. Jang, J. H. Lee, and Y. Y. Kim. 2025. Effects of bacteriophage cocktail on reproductive performance, blood immune response, and fecal microbial composition in gestating sows. *Animal Bioscience* (Accepted)
6. **Hong, J.**, H. S. Kim, S. Adams, J. Scaria, R. Patterson, and T. A. Woyengo. 2025. Growth performance and gut health of nursery pigs fed diet containing sodium butyrate and enzymatically hydrolyzed yeast products. *Animal*, 19:101448. DOI: 10.1016/j.animal.2025.101448
7. **Hong, J.**, E. Hansel, J. Perez-Palencia, and C. L. Levesque. 2024. Growth performance, nutrient digestibility, and carcass traits of turkey toms fed high sunflower meal containing diets with enzyme supplementation. *Journal of Applied Poultry Research*, 33:100441. DOI: https://doi.org/10.1016/j.japr.2024.100441
8. **Hong, J.**, D. Clizer, P. Cline, and R. Samuel. 2023. Effects of branched-chain amino acids to lysine ratios in corn distillers dried grains with solubles containing diets on growth performance, plasma nitrogen profile, carcass traits, and economic analysis in growing-finishing pigs. *Translational Animal Science*, 7(1): txad066. DOI: https://doi.org/10.1093/tas/txad066.
9. Jung, S. W., S. Do, J. C. Jang, **J. Hong**, and Y. Y. Kim. 2023. Effect of feeding frequency on reproductive performances and stress responses in gestating sows. *Journal of Animal Science and Technology*, 66(1):135-144. DOI: https://doi.org/10.5187/jast.2023.e42.
10. Phaengphairee, P., W. Boontiam, A. Wealleans, **J. Hong**, and Y. Y. Kim. 2023. Dietary supplementation with full-fat Hermetia illucens larvae and multi-probiotics, as a substitute for antibiotics, improves the growth performance, gut health, and antioxidative capacity of weaned pigs**.** *BMC Veterinary Research*, 19(1):7. Doi: https://doi.org/10.1186/s12917-022-03550-8.

    Goh, T.W., **J. Hong**, H. J. Kim, S. W. Kang, and Y. Y. Kim. 2023. Effects of β-glucan and vitamin E diet supplementation on the physiological response, litter performance, blood profiles, immune response, and

milk composition of lactating **sows. *Animal Bioscience*,** 36(2): 264-274. DOI: http://doi.org/10.5713/ab.22.0204.

11. Boontiam, W., P. Phaengphairee, **J. Hong**, and Y. Y. Kim. 2022. Full-fatted *Hermetia illucens* larva as a protein alternative: effects on weaning pig growth performance, gut health, and antioxidant status under poor sanitary conditions. *Journal of Applied Animal Research*, 50(1):732-739. Doi: https://doi.org/10.1080/09712119.2022.2147185
12. Choi, H. S., **J. S. Hong**, G. I. Lee, and Y. Y. Kim. 2022. Effects of dietary exogenous hydrophilic emulsifier supplementation on growth performance and carcass traits in broilers. *Korean Journal of Poultry Science*, 49(2): 61-67.
13. **Hong, J.**, M. Jlali, P. Cozannet, A. Preynat, S. Adams, J. Scaria, and T. A. Woyengo. 2022. Growth performance, bone mineralization, nutrient digestibility, and fecal microbial composition of multi-enzyme-supplemented low-nutrient diets for growing-finishing pigs. *Journal of Animal Science*, 100(5): skac096. DOI: https://doi.org/10.1093/jas/skac096
14. Boontiam, W., **J. Hong**, S. Kitipongpysan, and S. Wattanachai. 2022. Full-fat field cricket (*Gryllus bimaculatus*) as a substitute for fish meal and soybean meal for weaning piglets: effects on growth performance, intestinal health, and redox status. *Journal of Animal Science*, 100(4): skac080. DOI: https://doi.org/10.1093/jas/skac080
15. Goh, T. W., **J. Hong**, D. H. You, Y. G. Han, S. O. Nam, and Y. Y. Kim. 2022. Effects of medium chain triglycerides with organic acids on growth performance, fecal score, blood profiles, intestinal morphology, and nutrient digestibility in weaning pigs. *Animal Bioscience*, 35(6): 916-926. DOI: https://doi.org/10.5713/ab.21.0469
16. Boontiam, W., **J. Hong**, and W. Jaikan. 2022. Effects of brewer grain meal with enzyme combination on growth performance, nutrient digestibility, intestinal morphology, immunity, and oxidative status in growing pigs. *Fermentation*, 8(4):172. DOI: https://doi.org/10.3390/fermentation8040172
17. Boontiam, W., **J. Hong**, and. Y. Kim. 2022. Dietary brewer grain meal with multienzymes supplementation affects growth performance, gut health, and antioxidative status of weaning pigs. *Fermentation*, 8(2):80. DOI: https://doi.org/10.3390/fermentation8020080
18. Boontiam, W., C. Bunchasak, Y. Y. Kim, S. Kitipongpysan, and **J. Hong**. 2022. Hydrolyzed yeast supplementation to newly weaned piglets: growth performance, gut health, and microbial fermentation. *Animals*, 12(3):350. DOI: https://doi.org/10.3390/ani12030350
19. **Hong, J.** and Y.Y. Kim. 2022. Insect as feed ingredients for pigs. *Animal Bioscience*, 35:347-355. DOI: https://doi.org/10.5713/ab.21.0475
20. Lee, J. W., S. Wang, T. Seefeldt, A. Donkor, B. A. Logue, H. S. Kim, **J. Hong**, and T. A. Woyengo. 2022. Porcine in vitro fermentation characteristics of canola co-products in neutral and acidic fermentation medium pH. *Animal Feed Science and Technology*, 284:115188. DOI: https://doi.org/10.1016/j.anifeedsci.2021.115188
21. Boontiam, W., S. Kitipongpysan, C. Wachirapakorn, **J. Hong**, and S. Gawborisut, and A. Saeeaw. 2022. Growth performance, nutrient digestibility, blood profiles, and gut integrity of growing pigs fed pickled fish residue with decreased salt content. *Fermentation*, 8(1):3. DOI: https://doi.org/10.3390/fermentation8010003.
22. **Hong, J.**, S. P. Ndou, S. Adams, J. Scaria, and T. A. Woyengo. 2021. Growth performance, visceral organ weights, and gut health of weaned pigs fed diets with different fiber solubility and lipid sources**. *Journal of Animal Science,*** 99(11):1-2. DOI: https://doi.org/10.1093/jas/skab292.

23. **Hong, J.**, S. Ariyibi, L. Antony, J. Scaria, S. Dilberger-Lawson, D. Francis, and T. A. Woyengo. 2021. Growth performance and gut health of Escherichia coli-challenged weaned pigs fed canola meal-containing diet. *Journal of Animal Science,* 99(8):1-14. DOI: https://doi.org/10.1093/jas/skab196.

24. **Hong, J.**, H. S. Kim, S. H. Do, H. J. Kim, S. W. Kim, S. K. Jang, and Y. Y. Kim. 2021. Effects of lysine cell mass supplementation as a substitute for L-lysine·HCl on growth performance, diarrhea incidence, and blood profiles in weaning pigs**.** *Animals,* 11(7):2092. DOI: https://doi.org/10.3390/ani11072092.

25. Jo, Y. Y., M. J. Choi, W. L. Chung, **J. S. Hong**, J. S. Lim, and Y. Y. Kim. 2021. Effects of feed form and particle size on growth performance, nutrient digestibility, carcass characteristics, and gastric health in growing-finishing pigs. *Animal Bioscience,* 34(6):1061-1069. DOI: https://doi.org/10.5713/ab.20.0777.

26. **Hong, J.**, T. Han, and Y. Y. Kim. 2020. Mealworm (*Tenebrio molitor* larvae) as an alternative protein source for monogastric animal: a review. *Animals,* 10(11):2068. DOI: https://doi.org/10.3390/ani10112068.

27. **Hong, J.**, S. P. Ndou, S. Adams, J. Scaria, and T. A. Woyengo. 2020. Canola meal in nursery pig diets: Growth performance and gut health. *Journal of Animal Science,* 98(11): skaa338. DOI: https://doi.org/10.1093/jas/skaa338.

28. Jang, J. C., D. H. Kim, **J. S. Hong**, Y. D. Jang, and Y. Y. Kim. 2020. Effects of copra meal inclusion level in growing-finishing pig diets containing β-mannanase on growth performance, apparent total tract digestibility, blood urea nitrogen concentrations and pork quality. *Animals,* 10(10):1840. DOI: https://doi.org/10.3390/ani10101840.

29. **Hong, J.**, L. H. Fang, J. H. Jeong, and Y. Y. Kim. 2020. Effects of L-arginine supplementation during late gestation on reproductive performance, piglet uniformity, blood profiles, and milk composition in high prolific sows. *Animals,* 10(8):1313. DOI: https://doi.org/10.3390/ani10081313.

30. **Hong, J.**, L. H. Fang, and Y. Y. Kim. 2020. Effects of dietary energy and lysine levels on physiological responses, reproductive performance, blood profiles, and milk composition in primiparous sows. *Journal of Animal Science and Technology,* 62(3):334-347. DOI: https://doi.org/10.5187/jast.2020.62.3.334.

31. Jang, J. C., K. H. Kim, D. H. Kim, S. K. Jang, **J. S. Hong**, P. S. Heo, and Y. Y. Kim. 2020. Effects of increasing levels of palm kernel meal containing β-mannanase to growing-finishing pig diets on growth performance, nutrient digestibility, and pork quality. *Livestock Science,* 238:104041 DOI: https://doi.org/10.1016/j.livsci.2020.104041.

32. **Hong, J.**, J. W. Lee, D. Pettersson, and T. A. Woyengo. 2019. Nutritive value of enzyme-supplemented carinata meal for growing pigs. *Translational Animal Science,* 3:1359-1369. DOI: https://doi.org/10.1093/tas/txz152.

33. Jeong, J. H., **J. S. Hong**, T. H. Han, L. H. Fang, W. L. Chung, Y. Y. Kim. 2019. Effects of dietary vitamin levels on physiological responses, blood profiles, and reproductive performance in gestating sows. *Journal of Animal Science and Technology*, 61(5):294-303. DOI: https://doi.org/10.5187/jast.2019.61.5.294.

34. Yoo, J. S., K. H. Cho, **J. S. Hong**, H. S. Jang, Y. H. Chung, G. T. Kwon, D. G. Shin, Y. Y. Kim. 2019. Nutrient ileal digestibility evaluation of dried mealworm (*Tenebrio molitor*) larvae compared to three animal protein by-products in growing pigs. *Asian-Australasian Journal of Animal Science,* 32(3):387-394. DOI: https://doi.org/10.5713/ajas.18.0647.

35. Fang, L. H., Y. H. Jin, S. H. Do, **J. S. Hong**, B. O. Kim, T. H. Han, Y. Y. Kim. 2019. Effects of dietary energy and protein levels on reproductive performance in gestating sows and growth of their progeny. *Journal of Animal Science and Technology***,** 61(3):154-162. DOI: https://doi.org/10.5187/jast.2019.61.3.154.

36. Fang, L. H., Y. H. Jin, S. H. Do, **J. S. Hong**, B. O. Kim, T. H. Han, Y. Y. Kim. 2019. Effects of dietary energy and crude protein levels on growth performance, blood profiles, and nutrient digestibility in weaning pigs. *Asian-Australasian Journal of Animal Science,* 32(4):556-563. DOI: https://doi.org/10.5713/ajas.18.0294.

37. Jin, K. Y., **J. S. Hong**, D. W. Sin, H. K. Kang, Y. Y. Jo, G. I. Lee, X. H. Jin, J. C. Jang, J. H. Jeong, Y. Y. Kim. 2019. Evaluation of barley to replace milk by-product in weaning pig's diet. *Journal of Animal Science and Technology*, 61(2):77-86. DOI: https://doi.org/10.5187/jast.2019.61.2.77.

38. Fang, L. H., Y. H. Jin, S. H. Do, **J. S. Hong**, B. O. Kim, T. H. Han, Y. Y. Kim. 2019. Effects of dietary energy and crude protein levels on growth performance, blood profiles, and carcass traits in growing-finishing pigs. *Journal of Animal Science and Technology*, 61(4):204-215. DOI: https://doi.org/10.5187/jast.2019.61.4.204.

39. Kim, H. S., **J. S. Hong**, C. W. Park, K. H. Cho, Y. Y. Kim. 2018. Evaluation of grooming behavior and apparent digestibility method in cats. *Journal of Feline Medicine and Surgery*, 21(4):373-378. DOI: https://doi.org/10.1177/1098612X18783837.

40. Kim, H. S., **J. S. Hong**, C. W. Park, K. H. Cho, Y. Y. Kim. 2018. Effects of coat length and faecal hair removal on measured nutrient digestibility in cats. *Journal of Feline Medicine and Surgery*, 21(4):379-386. doi.org/10.1177/1098612X18783844. DOI: https://doi.org/10.1177/1098612X18783844.

41. Heo, P. S., D. H. Kim, J. C. Jang, **J. S. Hong**, Y. Y. Kim. 2018. Effects of different creep feed types on pre-weaning and post-weaning performance and gut development. *Asian-Australasian Journal of Animal Science*, 31(12):1956-1962. DOI: https://doi.org/10.5713/ajas.17.0844.

42. Yoo, S. H., **J. S. Hong**, H. B. Yoo, T. H. Han, J. H. Jeong, Y. Y. Kim. 2018. Influence of various levels of milk by-products in weaner diets on growth performance, blood urea nitrogen, diarrhea incidence, and pork quality of weaning to finishing pigs. *Asian-Australasian Journal of Animal Science*, 31(5): 696-704. DOI: https://doi.org/10.5713/ajas.16.0840.

43. Fang, L. H., **J. S. Hong**, Y. G. Han, I. K. Kwon, Y. G, Hong, Y. Y. Kim. 2018. Effects of cashew nut testa levels as an alternative to wheat bran in gestating sow diets. *Asian-Australasian Journal of Animal Science*, 31(6): 881-887. DOI: https://doi.org/10.5713/ajas.17.0600.

44. Choi, H. B., **J. S. Hong**, S. S. Jin, S. W. Jung, J. C. Jang, J. H. Jeong, Y. Y. Kim. 2018. Effect of rapeseed meal supplementation to gestation diet on reproductive performance, blood profiles and milk composition of sows. ***Asian-Australasian Journal of Animal Science,*** 31(3):386-394. DOI: https://doi.org/10.5713/ajas.17.0015.

45. Jin, S. S., Y. H. Jin, J. C. Jang, **J. S. Hong**, S. W. Jung, and Y. Y. Kim. 2018. Effects of dietary energy levels on physiological parameters and reproductive performance in gestating sows over three consecutive parities. *Asian-Australasian Journal of Animal Science*, 31(3):410-420. DOI: https://doi.org/10.5713/ajas.17.0016.

46. Jang, H., Y. H. Choi, I. K. Yoo, J. S. Han, **J. S. Hong**, Y. Y. Kim, H. H. Ka. 2017. Vitamin D-metabolic enzymes and related molecules: expression at the maternal-conceptus interface and the role of vitamin D in endometrial gene expression in pigs. *Plos One*, 12(10):e0187221. DOI: https://doi.org/10.1371/journal.pone.0187221.

47. Jang, J. C., X. H. Jin, **J. S. Hong**, and Y. Y. Kim. 2017. Effects of different space allowances on growth performance, blood profiles and pork quality in a grow-to-finish production system. *Asian-Australasian Journal of Animal Science*, 30:1796-1802. DOI: https://doi.org/10.5713/ajas.17.0076.

48. Do, S. H., B. O. Kim, L. H. Fang, D. H. You, **J. S. Hong**, and Y. Y. Kim. 2017. Various levels of rapeseed meal in weaning pig diets from weaning to finishing periods. *Asian-Australasian Journal of Animal Science*, 30:1292-1302. DOI: https://doi.org/10.5713/ajas.16.0953.

49. Han, T. H., **J. S. Hong**, L. H. Fang, S. H. Do, B. O. Kim, and Y. Y. Kim. 2017. Effects of wheat supplementation levels on growth performance, blood profiles, nutrient digestibility, and pork quality in growing-finishing pigs. *Asian-Australasian Journal of Animal Science*, 30:1150-1159. DOI: https://doi.org/10.5713/ajas.16.0838.

50. Jang, J. C., **J. S. Hong**, S. S. Jin, and Y. Y. Kim. 2017. Comparing gestating sows housing between electric sow feeding system and a conventional stall over three consecutive parities. *Livestock Science*, 199:37-45. DOI: https://doi.org/10.1016/j.livsci.2017.02.023.

51. Yan, C. L., H. S. Kim, **J. S. Hong**, J. H. Lee, Y. G. Han, Y. H. Jin, S. W. Son, S. H. Ha, and Y. Y. Kim. 2017. Effect of dietary sugar beet pulp supplementation on growth performance, nutrient digestibility, fecal microflora, blood profiles and diarrhea incidence in weaning pigs. *Journal of Animal Science and Technology*, 59:18. DOI: https://doi.org/10.1186/s40781-017-0142-8.

52. Kim, H. J., S. O. Nam, J. H. Jeong, L. H. Fang, H. B. Yoo, S. H. Yoo, **J. S. Hong**, S. W. Son, S. H. Ha, and Y. Y. Kim. 2017. Various levels of copra meal supplementation with β-mannanase on growth performance, blood profile, nutrient digestibility, pork quality and economic analysis in growing-finishing pigs. *Journal of Animal Science and Technology*, 59:19. DOI: https://doi.org/10.1186/s40781-017-0144-6.

53. Jin, X. H., P. S. Heo, **J. S. Hong**, N. J. Kim, and Y. Y. Kim. 2016. Supplementation of dried mealworm (Tenebrio molitor larva) on growth performance, nutrient digestibility and blood profiles in weaning pigs. *Asian-Australasian Journal of Animal Science*, 29:979-986. DOI: https://doi.org/10.5713/ajas.15.0535.

54. **Hong, J. S.**, H. B. Yoo, S. H. Yoo, T. H. Han, L. H. Fang, J. H. Jeong, and Y. Y. Kim. 2016. Effect of mitigation frequency on growing-finishing pigs. *Annals of Animal Resource Sciences*, 27:124-132. DOI: http://dx.doi.org/10.12718/AARS.2016.27.2.124.

55. **Hong, J. S.**, S. S. Jin, S. W. Jung, L. H. Fang, and Y. Y. Kim. 2016. Evaluation of dry feeding and liquid feeding to lactating sows under high temperature environment. *Journal of Animal Science and Technology*, 58:36. DOI: https://doi.org/10.1186/s40781-016-0118-0.

56. **Hong, J. S.**, G. I. Lee, X. H. Jin, and Y. Y. Kim. 2016. Effect of dietary energy levels and phase feeding by protein levels on growth performance, blood profiles and carcass characteristics in growing-finishing pigs. *Journal of Animal Science and Technology***,** 58:37. DOI: https://doi.org/10.1186/s40781-016-0119-z.

57. Do, S. H., T. H. Han, **J. S. Hong**, L. H. Fang, H. D. Park, and Y. Y. Kim. 2016. Effect of remaining in farrowing barn after weaning on growth performance, blood profiles and diarrhea incidence in weaning pigs. *Journal of Agriculture and Life Science*, 50(6):119-125. DOI: https://doi.org/10.14397/jals.2016.50.6.119.

58. **Hong, J. S.**, S. S. Jin, L. H. Fang, and Y. Y. Kim. 2016. Effect of artificial insemination frequency on reproductive performance in sows. *Journal of Agriculture and Life Science*, 50:183-188. DOI: http://dx.doi.org/10.14397/jals.2016.50.5.183.

59. Kim, D. H., P.S. Heo, J. C. Jang, S. S. Jin, **J. S. Hong**, and Y. Y. Kim. 2015. Effect of different soybean meal type on ileal digestibility of amino acid in weaning pigs. *Journal of Animal Science and Technology*, 57:11. DOI: http://doi.org/10.1186/s40781-015-0041-9.

60. Kwak, W., J. N. Kim, D. Kim, **J. S. Hong**, J. H. Jeong, H. B. Kim, S. A, Cho, and Y. Y. Kim. 2014. Genome-wide DNA methylation profiles of small intestine and liver in fast-growing and slow-growing weaning piglets. *Asian-Australasian Journal of Animal Science*, 27:1532-1539. DOI: https://doi.org/10.5713/ajas.2014.14309

POPULAR PRESS/EXTENSION (6)

1. "Balancing act: The trade-offs of zinc supplementation in swine diets". J. Hong, C. Ramirez-Camba, and P. E. Urriola. Feb 2025. National Hog Farmer. https://www.nationalhogfarmer.com/livestock-management/balancing-act-the-trade-offs-of-zinc-supplementation-in-swine-diets

2. "Aligning company values, navigating trade-offs in swine diet formulation". C. Ramirez-Camba, J. Hong, and P. E. Urriola. Feb 2024. National Hog Farmer. https://www.nationalhogfarmer.com/livestock-management/aligning-company-values-navigating-trade-offs-in-swine-diet-formulation

3. "Balanced branched chain amino acids in high corn-distillers-dried-grains-with-solubles diets adjusted by soybean meal level". R. Samuel, **J. Hong**, P. Cline, D. Clizer. July, 2023. South Dakota State University Extension. https://extension.sdstate.edu/balanced-branched-chain-amino-acids-high-corn-distillers-dried-grains-solubles-diets-adjusted
4. "Optimizing pig performance and economics with cDDGS". J. Hong. January 2023. The Swine Nutrition Blackbelt Podcast. https://www.youtube.com/watch?v=le_EKnIMeZ4
5. "Balancing branched chain amino acids in high cDDGS diets". **J. Hong**, P. Cline, D. Clizer, and R. Samuel. National Hog Farmer. December 2022. https://www.nationalhogfarmer.com/feed/balancing-branched-chain-amino-acids-in-high-cddgs-diets
6. "Nutrition & Health: Feeding cold-press canola cake to broilers". **J. Hong**, C. Sellner, C. L. Levesque. Feedstuffs. April 2022. https://informamarkets.turtl.co/story/feedstuffs-april-2022/page/13/1

BOOK CHAPTER (3)

1. **Hong, J.**, and Y. Y. Kim. 2022. Carbohydrate, Energy metabolism. *Animal Nutrition. Third Edition.* Life Science, Inc. (In Korean).
2. **Hong, J.,** and Y. Y. Kim**.** 2021. Swine production and management (growing-finishing pigs, gestating sows). *Swine Management and Nutrition. Second Edition.* Life Science, Inc. (In Korean).
3. **Hong, J.**, and Y. Y. Kim. 2017. Carbohydrate, Energy metabolism. *Animal Nutrition. Second Edition.* Life Science, Inc. (In Korean).

CONFERENCE PAPERS (52 abstracts)

1. Fowler, E., **J. Hong**, C. Levesque, and B. St-Pierre. Analysis of cecal microbial communities in weaned pigs fed high canola meal diet without or with acidifier and their association with glucosinolate metabolism. *16th International Symposium on Digestive Physiology of Pigs*, Lake Geneva, WI, USA (Abstr.)
2. Olson, L., K. Urschel, **J. Hong**, J. Halbur, R. Samuel, R. Thaler, and E. Weaver. An evaluation of soybean meal inclusion rate in pigs fed from wean-to-market. *2025 ASAS Midwest section meeting*, Madison, WI (Abstr.)
3. **Hong**, J., S. P. Ndou, T. F. Woyengo. Interactive effects of different fiber and lipid sources on amino acid digestibility in growing pigs. *2024 ASAS-CSAS-WSASAS Annual Meeting*, Calgary, AB, Canada (Abstr.; Poster presentation).
4. McClellan, K. E. Fowler, J. Y. Perez-Palencia, B. St. Pierre, C. L. Levesque, **J. Hong**. Effects of high canola meal diet with acidifiers supplementation on cecal microbiota of nursery pigs. *2024 ASAS-CSAS-WSASAS Annual Meeting*, Calgary, AB, Canada (Abstr.; Poster presentation).
5. Atoo, A. F., J. Perez-Palencia, C. Levesque, K. Underwood, K. Koch, S. Mueller, H. B. Krishnan, **J. Hong**. Effects of feeding extruded high oleic soybeans on growth performance, blood profile, and meat fatty acid composition in broiler chickens. *2024 PSA annual meeting*, Lexington, KY (Abstr.).
6. Weaver, E., **J. Hong**, R. S. Samuel, C. L. Levesque, A. Kramer, R. C. Thaler. An evaluation of soybean meal inclusion rate in pigs fed from wean to market. *2024 ASAS Midwest section meeting***,** Madison, WI (Abstr.)
7. Shipman, G.L., J. Y. Perez-Palencia, **J. Hong**, K. J. Herrick, M. L. Jolly-Breithaupt, and C. L. Levesque. 2024. Effects of post-MSC DDGS inclusion in gestation diets on total tract nutrient and energy digestibility compared to other fiber sources**.** 2024 ASAS Midwest section meeting, Madison, WI (Abstr.)

8. McClellan, K. A., J. Y. Perez-Palencia, E. Weaver, C. L. Levesque, and **J. Hong**. 2024. Growth performance and physiological response of nursery pigs fed a high canola meal diet with acidifiers. *2024 ASAS Midwest section meeting*, Madison, WI (Abstr).

9. Halbur, J., **J. Hong**, S. Llamas-Moya, T. Duong, M. J. Bertram, A. L. Petry, and E. Weaver. 2024. Nutrient digestibility in growing pigs fed a corn distillers dried grains with soluble (cDDGS)-based diet with multi-enzyme supplementation. *2024 ASAS Midwest section meeting*, Madison, WI (Abstr).

10. Atoo, A.F., A. Bolivar-Sierra, J. Y. Perez-Palencia, R. Patterson, H. Krishnan, C. L. Levesque, and **J. Hong**. 2024. Alleviating antinutritional effects of high soybean meal diets for nursery pigs through multienzyme and acidifier supplementation. *2024 ASAS Midwest section meeting*, Madison, WI (Abstr.)

11. Shipman, G.L., J. Y. Perez-Palencia, **J. Hong**, K. J. Herrick, M. L. Jolly-Breithaupt, and C. L. Levesque. 2024. Effects of post-MSC DDGS inclusion in gestation diets compare to other fiber sources on in vitro gas and volatile fatty acid production. *2024 ASAS Midwest section meeting*, Madison, WI (Abstr.)

12. Shipman, G.L., J. Y. Perez-Palencia, **J. Hong**, K. Herrick, M. Jolly-Breithaupt, and C. L. Levesque. 2023. Effects of post-MSC DDGS inclusion in gestation diets on total tract nutrient digestibility and in vitro gas production. *27th Distillers Grains Symposium*, Des Moines, IA (Abstr.).

13. Perez-Palencia, J., **J. Hong**, R. Samuel, C. L. Levesque, C. Domenech, and A. Shah. 2023. Effects of dietary zinc source on growth performance, fecal consistency, and fecal zinc concentration of weanling pigs during the nursery period. *2023 Leman Conference*, Saint Paul, MN (Abstr.)

14. **Hong, J**., J. Perez-Palencia, R. Patterson, and C. Levesque. 2023. Effects of protease supplementation on ileal digestibility of amino acids in commonly used protein sources fed to broiler chickens. *2023 PSA Annual Meeting*, Philadelphia, PA (Abstr.; Poster presentation)

15. Perez-Palencia, J., A. Forero-Salamanca, **J. Hong**, R. Patterson, and C. Levesque. 2023. Effect of supplemental protease on growth performance and nutrient digestibility in turkey poults fed diet with and without high soybean meal inclusion as replacement for highly digestible protein sources. *2023 PSA Annual Meeting*, Philadelphia, PA (Abstr.)

16. Hansel, E., C. Levesque, J. Perez-Palencia, R. Patterson, R. Rink, and **J. Hong**. 2023. Effects of sunflower meal supplementation as an alternative to soybean meal on growth performance and carcass traits of turkey toms. *2023 PSA Annual Meeting*, Philadelphia, PA (Abstr.)

17. **Hong, J.**, D. Clizer, P. Cline, and R. Samuel. 2023. Effects of branched-chain amino acids to lysine ratios in cDDGS diets on growth performance, plasma nitrogen profile, carcass traits, and economic analysis in growing-finishing pigs. *2023 ASAS Midwest section meeting*, Madison, WI. (Abstr; Oral presentation)

18. Halbur, J., **J. Hong**, S. Llamas-Moya, T. Duong, S. Kitt, M. Bertram, and E. Weaver. 2023. Nutrient digestibility and dietary energy values in growing pigs fed a corn distillers dried grains with soluble (cDDGS)-based diet with multi-enzyme supplementation. *2023 ASAS Midwest section meeting*, Madison, WI. (Abstr.)

19. Sullivan, C., **J. Hong**, C. Levesque, and B. Thaler. 2023. Nutritional value of corn sourced from U.S. and Ukraine on growth performance, energy digestibility, and amino acid digestibility in pigs. *2023 ASAS Midwest section meeting*, Madison, WI. (Abstr.)

20. Sullivan, C., J. Jansen, **J. Hong**, J. Perez-Palencia, C. Levesque, and B. Thaler. 2023. Nutritional value of corn sourced from US, Brazil, and Argentina on growth performance, energy digestibility, and amino acid digestibility in pigs. *2023 ASAS Midwest section meeting*, Madison, WI. (Abstr.)

21. **Hong, J.**, C. Sellner, and C. L. Levesque. 2022. Physiological response of broiler chickens fed cold-pressed canola cake-based diets with soluble fiber source or feed additives. *2022 ASAS Midwest section meeting*, Omaha, NE. March 16 (Abstr.; Poster presentation)

22. Sellner, C., C. L. Levesque, and **J. Hong**. 2022. Physiological response of nursery pigs fed cold-pressed canola cake-based diets. with soluble fiber source or feed additives. *2022 ASAS Midwest section meeting*, Omaha, NE. March 14 (Abstr.)

23. **Hong, J.**, S. Ariyibi, J Scaria, S. Dilberger-Lawson, D. Francis, and T. A. Woyengo. 2021. Growth performance, fecal score, and blood immune parameters of nursery pigs challenged with Escherichia coli F18 fed canola meal-based diet. *2021 ASAS Midwest section meeting*, Omaha, NE. March 10 (Abstr.; Poster presentation)

24. **Hong, J.**, H. S. Kim, R. Pattersson, and T. A. Woyengo. 2021. Growth performance and gut integrity of nursery pigs fed diet with butyric acid and enzymatically hydrolyzed yeast product. *2021 ASAS Midwestern Section Meeting*, Omaha, NE, USA. March 10 (Abstr.; Oral presentation).

25. **Hong, J.**, J. Scaria, and T. A. Woyengo. 2020. Growth performance and blood immune parameters of nursery pigs fed canola meal-based diets. *ASAS Midwest section/ASDA Midwest Branch 2020 Joint meeting*, Omaha, NE. March 4 (Abstr.; Poster presentation)

26. **Hong, J.**, J. W. Lee, D. Pettersson, and T. A. Woyengo. 2019. Nutritive value of phytase- and multi-carbohydrase-supplemented carinata meal for growing pigs. *2019 ASAS-CSAS Annual Meeting and Trade Show*, Austin, TX. July 9 (Abstr.; Oral presentation).

27. **Hong, J.**, S. P. Ndou, and T. A. Woyengo. 2019. Growth performance and organ weights of weaned pigs fed diets with different fiber and fat sources. *2019 ASAS-CSAS Annual Meeting and Trade Show*, Austin, TX. July 10 (Abstr.; Poster presentation)

28. Jung, W. L, S. W. Jung, **J. S. Hong**, J. H. Jeong, L. H. Fang, and Y. Y. Kim. 2017. Effects of feeding frequency on their reproductive performance and stress response in gestating sows. *9th European Symposium of Porcine Health Management* (Abstr.).

29. Y. G. Han, H. S. Choi, **J. S. Hong**, J. H. Jeong, L. H. Fang, and Y. Y. Kim. 2017. Effect of emulsifier (SOMLAX®) supplementation on lactating sows and suckling piglets. *9th European Symposium of Porcine Health Management* (Abstr.).

30. **Hong, J. S.**, H. B. Choi, J. H. Jeong, L. H. Fang, and Y. Y. Kim. 2017. Effect of rapeseed meal supplementation to gestation diet on reproductive performance, blood profiles and milk composition of sows. *Journal of Animal Science* 95 (Suppl. 5). 48 (Abstr.; Oral presentation).

31. Lee, J. H., H. B. Yoo, S. H. Do, **J. S. Hong**, and Y. Y. Kim. 2017. Effect of different supplementation levels of palm kernel meal with β-mannanase on growth performance, blood profiles, pork quality, and economic analysis in growing-finishing pigs. *Journal of Animal Science* 95 (Suppl. 5). 97 (Abstr.).

32. Yoo, H. B., J. H. Jeong, T. H. Han, S. H. Yoo, **J. S. Hong**, and Y. Y. Kim. 2016. Effect of dietary palm kernel meal with β-mannanase on growth performance, blood profiles, pork quality and economic analysis in growing-finishing pigs. *24th International Pig Veterinary Society and 8th European Symposium of Porcine Health Management*. (Abstr.).

33. Yoo, S. H., T. H. Han, J. H. Jeong, H. B. Yoo, **J. S. Hong**, and Y. Y. Kim. 2016. Various levels of milk by-products in weaning pig diet on growth performance, blood profiles, carcass characteristics and economic analysis in weaning to finishing pigs. *24th International Pig Veterinary Society and 8th European Symposium of Porcine Health Management*. (Abstr.).

34. Han, T. H., L. H. Fang, **J. S. Hong**, and Y. Y. Kim. 2016. Effects of weaning age on reproductive performance of sows, growth performance and blood profiles on their progeny. The *17th AAAP Animal Science Congress*. (Abstr.)

35. Jang, J. C., L. H. Fang, Y. G. Hong, **J. S. Hong**, and Y. Y. Kim. 2016. Effects of dietary cashew nut testa levels as alternatives of wheat bran in gestating sow. The *17th AAAP Animal Science Congress*. (Abstr.)

36. **Hong, J. S.**, L. H. Fang, H. B. Yoo, and Y. Y. Kim. 2016. Evaluation of dry feeding and liquid feeding in lactating sows. *2016 Annual Congress of KSAST*. (Abstr.; Oral presentation).

37. Ji, Y. J., C. H. Lee, **J. S. Hong**, H. B. Yoo, S. O. Nam, and Y. Y. Kim. 2015. The energy (oil) sparing effect of LYSOFORTE® on the performance of growing-finishing pigs. *The 66th Annual Meeting of the European Federation of Animal Science*. (Abstr.).

38. Jin, X. H., O. S. Nam, J. H. Jeong, P. S. Heo, **J. S. Hong**, and Y. Y. Kim. 2015. Supplementation of Tenebrio molitor larva on growth performance and nutrient digestibility in pigs. *The 66th Annual Meeting of the European Federation of Animal Science*. (Abstr.).

39. Jin, S. S., J. C. Jang, S. W. Jung, **J. S. Hong**, and Y. Y. Kim. 2015. Effects of dietary energy levels on physiological response and reproductive performance of gestating gilts. *The 66th Annual Meeting of the European Federation of Animal Science*. (Abstr.).

40. Choi, H. B., S. S. Jin, P. S. Heo, W. L. Jung, S. H. Yoo, **J. S. Hong**, and Y. Y. Kim. 2015. Effect of rapeseed meal supplementation on physiological responses and reproductive performance in sows. *The 66th Annual Meeting of the European Federation of Animal Science*. (Abstr.).

41. Jung, S. W., **J. S. Hong**, S. S. Jin, J. C. Jang, and Y. Y. Kim 2015. Effects of feeding frequency on reproductive performance and stress response in gestating sows. *The 66th Annual Meeting of the European Federation of Animal Science.* (Abstr.).

42. Jang, J. C., S. S. Jin, **J. S. Hong**, S. O. Nam, H. B. Yoo, and Y. Y. Kim. 2015. Effects of gestating gilts housed in groups with ESF on physiological response and reproductive performance. *The 66th Annual Meeting of the European Federation of Animal Science*. (Abstr.).

43. **Hong, J. S.**, and Y. Y. Kim. 2015. Effect of tenebrio molitor larva supplementation on reproductive performance and piglet performance in lactating sows. *2015 Annual Congress of KSAST.* (Abstr.; Poster presentation).

44. **Hong, J. S.**, and Y. Y. Kim. 2015. Effects of tenebrio molitor larva supplementation on physiological status and reproductive performance in gestating sows. *2015 Annual Congress of KSAST*. (Abstr.; Oral presentation).

45. Fang, L. H., **J. S. Hong**, J. C. Jang, and Y. Y. Kim. 2015. Effects of organic acid supplementation on reproductive performance, lactating performance, immune response, milk quality and fecal microbes in lactating sows. *2015 Annual Congress of KSAST.* (Abstr.).

46. Jin, S. S., **J. S. Hong**, L. H. Fang, and Y. Y. Kim. 2015. The effects of artificial insemination frequency of reproductive performance of sows. *2015 Annual Congress of KSAST*. (Abstr.).

47. Lee, G. I., **J. S. Hong**, H. K. Kang, D. W. Sin, K. Y. Jin, and Y. Y. Kim. 2014. Various dietary energy and protein levels on growth performance and carcass characteristics in growing-finishing pigs. *The 16th AAAP Animal Science Congress*. (Abstr.)

48. **Hong, J. S.**, S. S. Jin, S. W. Jung, J. C. Jang, H. B. Choi, and Y. Y. Kim. 2014. Effects of dietary energy levels of gestating gilts on gestation parameters and reproductive performance. *The* 16th AAAP Animal Science Congress. (Abstr.; Poster presentation).

49. **Hong, J. S.**, J. M. Kim, H. S. Choi, and Y. Y. Kim. 2014. Effect of Gromax® (plant extract) supplementation on growth performance, carcass traits, blood profiles and secretion of IGF-1 in broiler chickens. *Asia Pacific Poultry Conference 2014*. (Abstr.; Poster presentation).

50. **Hong, J. S.**, P. S. Heo, D. H. Kim, and Y. Y. Kim. 2013. Effects of different creep feed types on pre-weaning and post-weaning performance and gut development. *2013 Annual Congress of KSAST.* (Abstr.; Poster presentation).

51. **Hong, J. S.**, G. I. Lee, H. S. Choi, X. H. Jin, and Y. Y. Kim. 2013. Effects of emulsifier supplementation on growth performance, carcass trait, nutrient digestibility, and blood profiles in broiler chickens. *2013 Annual Congress of KSAST.* (Abstr.; Poster presentation).

52. Jin, K. Y., X. H. Jin, **J. S. Hong**, and Y. Y. Kim. 2013. Evaluation of barley supplementation as an energy source in weaning pigs diet. *2013 Annual Congress of KSAST.* (Abstr.).

PRESENTATIONS (20)

1. "Sustainable swine and poultry production: balancing animal productivity, environmental health, and One health". **J. Hong.** Feb, 2025. Department of Animal Science, University of Minnesota, St-Paul, MN.
2. "Utilizing oilseed byproducts in poultry diets by addressing antinutritional factors". **J. Hong.** Sep, 2024. 85th Minnesota Nutrition Conference. Mankato, MN.
3. "High SBM inclusion in pig diets". **J. Hong.** Aug, 2024. USSEC Chinese delegation visit to MN/IA event. Saint Pual, MN.
4. "Use of Corn DDGS in Poultry Diets". **J. Hong.** Jul, 2024. U.S. Grains Council Trade Delegation-Minnesota Host Event. Saint Paul, MN.
5. "Understanding canola meal to use in swine diets". **J. Hong**. Mar, 2024. Future of Feeding Webinar. Northern Crops Institute, Fargo, ND.
6. "Utilization of biofuel coproducts with feed additives in swine diet". **J. Hong.** Dec, 2023. Easy Bio Inc., Seoul, South Korea.
7. "Alleviation of toxic effects of high canola meal inclusion in pig diets". **J. Hong**. Dec, 2023. 17th Annual Canola Research Conference, Fargo, ND.
8. "Utilization of canola meal in swine diet". **J. Hong.** Dec, 2023. 7th Precision Nutrition Symposium, Konkuk University, Seoul, South Korea.
9. "Effects of branched-chain amino acids to lysine ratios in cDDGS diets on growth performance, plasma nitrogen profile, carcass traits, and economic analysis in growing-finishing pigs". **J. Hong,** D. Clizer, P. Cline, and R. Samuel. 2023 ASAS Midwest section meeting, Madison, WI.
10. "Monogastric Animal Nutrition Research (digestibility, in vitro model, gut health)". **J. Hong**. Feb, 2023. Pet Food Nutrition Journal Club, Grain Science and Industry Department, Kansas State University, Manhattan, KS.
11. "Swine Research Projects in SDSU". **J. Hong**. Sep, 2022. Christensen Farms, Sleepy Eye, MN.
12. "Utilization of Biofuel Coproducts in Swine Diet". **J. Hong**. Feb, 2022. Chon-Nam University, Gwangju, South Korea.
13. "Growth performance and gut integrity of nursery pigs fed diet with butyric acid and enzymatically hydrolyzed yeast product". **J. Hong**, H. S. Kim, R. Pattersson, and T. A. Woyengo. Mar, 2021. 2021 ASAS Midwestern Section Meeting, Omaha, NE.
14. "Nutritive value of phytase- and multi-carbohydrase-supplemented carinata meal for growing pigs." **J. Hong**, J. W. Lee, D. Pettersson, and T. A. Woyengo. Jul, 2019. 2019 ASAS-CSAS Annual Meeting, Austin, TX.
15. "Replacing Soybean Meal with Alternative Ingredients in Swine Diet". **J. Hong.** Jan, 2021. Seoul National University, Seoul, South Korea.
16. "Feed Additives in Weaning Pigs diet for improving pig immunity and health". J. Hong. Dec, 2015. Nong-Hyup Feed, Seoul, South Korea.

17. "Effect of rapeseed meal supplementation to gestation diet on reproductive performance, blood profiles and milk composition of sows". **J. Hong**, H. B. Choi, J. H. Jeong, L. H. Fang, and Y. Y. Kim. Mar, 2017, 2017 ASAS Midwestern Section Meeting, Omaha, NE.
18. "Evaluation of dry feeding and liquid feeding in lactating sows". **J. Hong**, L. H. Fang, H. B. Yoo, and Y. Y. Kim. June, 2016. 2016 Annual Congress of KSAST, Seoul, South Korea**.**
19. "Effects of feeding frequency on reproductive performance and stress response in gestating sows." **J. Hong**, S. W. Jung, S. S. Jin, J. C. Jang, and Y. Y. Kim. Aug, 2015. The 66th Annual Meeting of the European Federation of Animal Science. Warsaw, Poland.
20. "Effects of *Tenebrio Molitor* larva supplementation on physiological status and reproductive performance in gestating sows". **J. Hong** and Y. Y. Kim. Aug, 2015. 2015 Annual Congress of KSAST. Seoul, South Korea.

TEACHING EXPERIENCE

University of Minnesota, Department of Animal Science, Saint Paul, MN, USA
Guest lecturer, Spring 2024 – Present

- Environment, Global Food Production and the Citizen (Agro/AnSc 3203W), Spring 2025, Spring 2024

South Dakota State University, Department of Animal Science, Brookings, SD, USA
Guest lecturer, Fall 2022 – Fall 2023

- Experiments in Animal Science (Graduate level class), Fall 2023
- Swine Production (undergraduate level class), Spring 2023
- Monogastric Nutrition (graduate level class), Fall 2022

Seoul National University, Department of Animal Bioscience, Seoul, Republic of Korea
Graduate Teaching Assistant, March 2014–Feb. 2018

- Animal Nutrition and Laboratory
- Animal Resource Science and Laboratory

Jang-An University, Department of Animal Bioscience, Hwa-Seong, Republic of Korea
Lecturer, March 2018–May 2018

- Animal Science Industry introduction, Spring 2018.
- Self-development Ability, Spring 2018.

Korea National Open University, Department of Agriculture Science, Republic of Korea
Invited Lecturer, March 2016–April 2018

- Animal Production, Spring and Fall, 2016 / Spring 2018.
- Animal Nutrition, Fall 2016.

STUDENT ADVISORY

Primary supervisor: 4 undergraduate students, 2 Msc graduate students.

- Xiaoning Liu, Undergraduate student, UMN (2024-present)
- Andreas Dufault, Undergraduate student, UMN (2024-present)
- Atoo Foreman Ashir, Msc, SDSU (2022-2024)

- Angie Benavides Infante, Msc, SDSU (2022-2024)
- Emma Hansel, Bsc, SDSU (2022-2023)
- Logan Frigaard, Bsc, SDSU (2022-2023)
- Courtney Sellner, Bsc, SDSU (2021-2022)

Trained/Assisted (co-advisor): 4 Msc students, 2 PhD students

- Katlyn McClellan, Msc, SDSU (2022-2024)
- Caitlyn Sullivan, Msc, SDSU (2021-2023)
- Garrin Shipman, PhD, SDSU (2021-2024)
- Shannon Dierking, PhD, SDSU (2021-2024)
- Jordan Jansen, Msc, SDSU (2020-2022)
- Analicia Swanson, Msc, SDSU (2020-2022)

PROFESSIONAL SERVICE

Peer-reviewed Journal Reviewer

- Scientific Reports, Animals, Microorganism, Italian Journal of Animal Science, Canadian Journal of Animal Science, Frontiers in Veterinary Science, Poultry, Microbiology Research, Livestock Science, Journal of Animal Science, Animal Bioscience

Peer-reviewed Journal Editor

- Frontiers in Veterinary Science, Special issue: Advances in nutritional strategies for optimizing swine growth performance and gut health, guest editor. (2025. 2. – 2025.11.)

American Society of Animal Science service

- ASAS Midwest Assistant Program Chair, 2025 ASAS Midwest, Omaha, ME.
- 16th International Symposium on Digestive Physiology of Pigs, Reviewer for program abstract, 2025 DPP-North America, Grand Geneva, WI.

Academic Conference Session Chair

- Chair, Nonruminant Nutrition XIII – Poultry Nutrition, 2025 ASAS Midwest meeting, Omaha, NE. (March, 2025).
- Chair, Nonruminant Nutrition IV - Digestibility, 2024 ASAS Midwest meeting, Madison, WI. (March, 2024).

Scientific Presentation Judge

- PhD graduate student oral presentation competition, 2024 ASAS Midwest meeting, Madison WI.
- PhD graduate student oral presentation competition, 2023 ASAS Midwest meeting, Madison WI.
- PhD graduate student oral presentation competition, 2022 ASAS Midwest meeting, Omaha NE.
- GSD Poster Competition, South Dakota State University, Brookings, SD. (April, 2022).

Thesis committee

- Msc committee, Katlyn McClellan, South Dakota State University (2024).
- Msc committee, Atoo Foreman Ashir, South Dakota State University (2024).
- Msc committee, Angie Benavides Infante, South Dakota State University (2024).

University service

- CFANS Honors & Awards Committee, University of Minnesota, Saint Pual. (July, 2024 - June, 2026).

PROFESSIONAL DEVELOPMENT

- Teaching Assistant and Postdoc Professional Development Program. Center for Education Innovation. University of Minnesota. April, 2024.
- Life Cycle Assessment (online course). University of Michigan vis Coursera. March, 2024.
- Graduate Student Feed Milling Course, Northern Crops Institute. July, 2022.
- Grant writer's seminars and workshops 2020, South Dakota State University. September, 2020.
- Pork Quality Assurance (PQA) plus certification, Pork Checkoff, US. 2018 – Current.
- Statistical data analysis with SAS Workshop, Statistical Research Institute, Seoul National University. August, 2017.
- Certificate of Citaverde College education program (swine production), Netherland. August, 2017.
- Education certificate of Hazard Analysis and Critical Control Point (HACCP): Swine farm, South Korea. 2015-2017.

Vision for Non-Ruminant Nutrition and Sustainability Research Program

Dr. Jinsu Hong

Research Background

The objective of sustainability in livestock production varies depending on the interests and perspectives of different stakeholders. For livestock producers, it involves increasing productivity and profitability to sustain their operations. Veterinarians view sustainability as enhancing animal health and mitigating the spread of antibiotic-resistant genes. Meanwhile, governments and companies focused on Environmental, Social, and Governance (ESG) initiatives prioritize addressing climate change, reducing greenhouse gas emissions, and ensuring animal welfare. Given the complexity of the animal science industry and livestock production systems, comprising numerous interconnected elements and diverse stakeholders, achieving sustainability presents a significant challenge. The varied and sometimes conflicting interests of these stakeholders make it difficult to establish a single, universal solution. Instead, sustainability in livestock production requires a dynamic and adaptable framework that considers the intricacies of the entire animal-sourced food supply chain, where stakeholder interests are deeply intertwined at every stage.

To conduct comprehensive sustainability research for non-ruminant nutrition and nutrient management in livestock production systems, it is essential to form a collaborative team of multidisciplinary experts, each contributing their unique perspectives and expertise. These experts provide crucial pieces of the sustainability puzzle, covering areas such as agronomy, animal production, food supply chain, manure management, and environmental impact within a circular agricultural-food production system. By integrating these diverse perspectives, we can develop a holistic understanding of sustainability and create comprehensive solutions to address the complex challenges facing modern livestock systems. I aim to explore these challenges using systems thinking and a system dynamics approach, in collaboration with researchers from a variety of fields. My research goal is to produce scientifically sound evidence that can be interpreted from multiple perspectives, reflecting the interests and concerns of different stakeholders. This approach will comprehensively address key issues, including animal productivity and health, environmental impacts, and public health, ensuring that all relevant factors are considered in the pursuit of sustainable solutions.

As outlined in my cover letter and CV, my research journey, from graduate studies to my current position as a Research Professional 5, has centered on swine and poultry nutrition and production. My research interests and expertise focus on the utilization of agro-industrial byproducts and sustainable ingredients in non-ruminant animal diets. I explore precision nutrition feeding strategies to optimize nutrient supplementation, aiming to enhance animal productivity while improving environmental stewardship by reducing excess nutrient excretion. Additionally, my research program seeks to improve animal health by evaluating the effects of various fiber sources and mitigating the antinutritional effects of feed ingredients in antibiotic-free production systems. Currently, building on my research foundation in non-ruminant nutrition, production, and management, I am applying a systems thinking and system dynamics approach to livestock sustainability research. This allows me to expand the scope of research, which has traditionally been limited to animal nutrition and production systems, to include environmental impact, public health, and the food supply chain.

Research Program

Based on the above research background and expertise, the Non-Ruminant Nutrition and Sustainability research program will be multidisciplinary and interdisciplinary research program with following research interests.

1) Nutrient circularity and sustainability in non-ruminant animal production system; ***Utilization of agro-industrial byproducts and sustainable ingredients in non-ruminant animal diets:*** My research plan focuses on nutrient circularity and sustainability in non-ruminant animal production systems, specifically through the utilization of agro-industrial byproducts and sustainable ingredients in poultry and swine diets. Building on my background in monogastric nutrition, my work aims to enhance the nutritional value of these byproducts through innovative feed technology. In livestock production, feed ingredients often come from crops, milling byproducts, and biofuel byproducts, while livestock generate animal protein food sources for humans. However, this animal-origin food supply system also produces waste, including manure, meat byproducts, and food waste. By effectively upcycling these byproducts and waste materials, such as soapstock from soy crushing, cranberry pomace from cranberry juice production, sow spleen from pig slaughterhouses, food waste before human consumption, and insects fed on food waste, into the food supply chain, and conventional biofuel byproducts, such as SBM and cDDGS, we can reduce nutrient loss and contribute to agricultural sustainability. To evaluate and apply test ingredients in non-ruminant animal diets, this research program will assess the nutritional value of test ingredients using: 1) in vitro digestion and fermentation assays in swine and poultry models, 2) in vivo study with animal feeding and/or digestibility trials, and 3) data-driven modeling study, including life-cycle assessment (LCA) to determine environmental footprint and sustainability value in swine and poultry production systems. This approach, grounded in a One Health perspective, will help close the nutrient loop, transforming waste into valuable resources while improving environmental stewardship and animal productivity

2) **Sustainable nutrient management for animal productivity and health, environmental sustainability, and One Health*; optimizing nutrient management and nutritional strategies for non-ruminant animals to enhance animal, environmental, and public health*:** Efficient nutrient management is crucial in modern swine and poultry production systems to enhance productivity, maintain animal health, and minimize environmental and public health concerns. While past research has primarily focused on nutrient requirements and metabolism, there is a growing need to assess the broader implications, including antimicrobial resistance, manure management, and environmental sustainability. My research program aims to integrate an interdisciplinary systems thinking approach to evaluate the effects of nutrient management strategies on animal productivity, animal health, and environmental health within the One Health initiative. The program will investigate the role of optimized nutrient management in swine and poultry production by assessing the impact of nutritional strategies on animal performance and physiological responses, particularly in nutrient utilization and overall animal health. Potential research topics include the pharmaceutical dosage of zinc oxide in nursery pig diets, low-protein diets supplemented with synthetic amino acids, and functional dietary fiber derived from agro-industrial coproducts. This research will also evaluate the environmental footprint of nutrient management practices through manure analysis and life cycle assessment, providing insights into the sustainability of current feeding strategies. Additionally, it will analyze the effects of nutrient

management on antimicrobial resistance in animals and production environments, particularly within manure systems. Ultimately, this work aims to develop a comprehensive nutrient management strategy that optimizes nutrient use while balancing productivity and sustainability goals.

A multidisciplinary approach will be employed, integrating in vitro digestion-fermentation experiments, animal trials, and modeling techniques to achieve the research objectives. The in vitro study will simulate digestive and metabolic processes to analyze nutrient utilization and excretion profiles, while also investigating microbial interactions and antimicrobial resistance mechanisms in controlled environments (e.g., pig gut, pig slurry). The animal study will involve feeding trials in swine and poultry to assess performance, health biomarkers, and nutrient digestibility, along with monitoring the effects of nutrient strategies on gut microbiota and antimicrobial resistance in collaboration with microbiologists and veterinary scientists. With these in vitro and in vivo studies, modeling work will be used to develop data-driven models predicting nutrient utilization efficiency and assessing the impacts on ecosystems and public health using life cycle assessment (LCA). The Non-Ruminant Nutrition and Sustainability research program will provide a science-based foundation for improving nutritional sustainability in non-ruminant animal production systems, which is central to the agricultural food supply system for the world population. Improved nutrient efficiency will lead to better animal performance and economic benefits for producers. Additionally, optimized nutrient management and diet formulation with advanced feed technology will enhance environmental stewardship and reduce antimicrobial resistance risks. The outcomes will also include practical, data-supported guidelines for diverse U.S. swine and poultry production systems, ensuring that producers have access to effective and sustainable solutions regarding their operational development, animal health, and environmental impacts within the One Health framework.

Securing Research Grants

The Department of Animal Sciences at Purdue University offers outstanding collaborative opportunities, with excellent faculty and research resources. This would enable me to develop an internationally recognized Nn-ruminant Nutrition and Sustainability program as part of the One Health Initiative at Purdue university. Furthermore, by collaborating with faculty at Purdue University, USDA-ARS, research institutes, and scholars from universities across the U.S. and abroad, I would commit to interdisciplinary sustainability research. I plan to work with experts from various fields, including agronomy, livestock production, the food supply chain, food waste upcycling in livestock production systems, and manure application to crop fields. This collaboration will contribute to reducing nutrient loss, enhancing nutrient circularity, and advancing the One Health. I have the ability and experience to secure research grants to build and sustain a research program at Purdue University. Since 2021, I have successfully secured extramural research grants as a PI or co-PI, supporting several innovative projects within the field of non-ruminant nutrition and sustainability. These grants have been instrumental in advancing my research in sustainable feed technologies, nutrient management strategies, and integrated systems for improving livestock production systems. I will continue to apply for competitive research grants from prominent funding bodies such as USDA, NIH, NSF, FFAR (Foundation for Food & Agriculture Research), and other agencies related to agriculture, livestock producer councils, and the broader livestock industry. Furthermore, I will seek funding

for collaborative projects that integrate cross-disciplinary expertise, ensuring that the Non-Ruminant Nutrition and Sustainability research program remains well-supported and positioned to make significant contributions to sustainability in livestock production systems.

Internationally recognized "Non-Ruminant Nutrition and Sustainability" program

By employing a systems thinking approach that integrates animal nutrition, animal health, and environmental sustainability, this research will generate actionable insights for improving nutritional sustainability in swine and poultry production systems. The findings will contribute to the development of effective and sustainable solutions, ensuring long-term productivity, ecological stewardship, and public health protection. This holistic approach will not only improve nutrient circularity in agricultural livestock system but also address critical challenges related to antimicrobial resistance and environmental impact, contributing to the One Health initiative. In the next five years, the research program in the Department of Animal Sciences at Purdue University will advance sustainable non-ruminant nutrition and production. It will also develop nutritional guidelines for upcycling agro-industrial byproducts and waste into non-ruminant animal feed. Key findings and practical guidelines will be published for academia, swine, and poultry producers, while large-scale, multi-institutional projects will be launched to reduce nutrient loss in circular agriculture-livestock systems and enhance environmental sustainability. In the ten years, the program will expand to address antibiotics and antimicrobial resistance in both animals and production environments, as well as integrated food production systems for global food security and One Health. The focus will shift to improving nutrient circularity across the food supply chain, with an emphasis on reducing environmental impacts and improving resource efficiency. These efforts will lead to significant reductions in antimicrobial resistance and climate change in livestock production.

Based on traditional and innovative research approaches, interdisciplinary collaboration, and a commitment to livestock sustainability, the Non-Ruminant Nutrition and Sustainability research program will have established as a global leader in non-ruminant animal sustainability research. The integration of systems thinking will become a standard approach in livestock production, influencing policy decisions, agricultural practices, and consumer behavior. This long-term vision will drive the broad adoption of environmentally and socially responsible practices, contributing to the creation of a resilient, sustainable, and healthy food system for future generations.

Statement of Teaching Philosophy

Dr. Jinsu Hong

As an educator, my primary goal is to equip students with accurate, applicable knowledge that extends beyond the classroom into real-world practice. Teaching is not just about delivering information; it is about fostering an environment where students can connect theoretical concepts to practical applications. To achieve this, I emphasize how fundamental knowledge is used in practice by integrating critical industry issues and recent trends into my teaching. For example, in my courses, I have discussed antibiotic-free production systems and Proposition 12 in the swine industry, helping students understand how these issues impact animal health, welfare, and production. By exposing students to real-world challenges, I encourage them to think critically and apply their knowledge beyond textbooks.

I believe that effective teaching meets students *at their understanding levels.* There is often a gap between what educators convey and what students comprehend, which is why it is essential to present complex concepts in an accessible and engaging manner. My teaching experience spans undergraduate, graduate, and public education. At Seoul National University (Seoul, Korea), I taught undergraduate laboratory courses in Animal Nutrition and Animal Resource Science and provided hands-on training in pig barn management. At South Dakota State University (Brookings, SD), I lectured on grow-finish pig nutrition, phase feeding, feed cost management using alternative ingredients, and sustainable swine production for undergraduate students in Swine Production class. Besides, I led practical training in swine diet formulation, guiding undergraduate students in the Swine Production class through ingredient nutrient information, nutrient requirements of pigs, and least-cost diet formulation strategies. For graduate students in Monogastric Nutrition, I taught protein and amino acid nutrition in poultry, as well as poultry diet formulation regarding limiting amino acids and ideal amino acid balance. These experiences have strengthened my ability to adapt my teaching methods to different audiences and ensure that students grasp fundamental and advanced concepts effectively.

At the University of Minnesota, I integrated *life-cycle assessment (LCA)* and *systems thinking* into my teaching for the Environment, Global Food Production, and the Citizen course (Agro/AnSc 3203W). To enhance student engagement, I incorporated several group activities where students mapped the life cycle of livestock products (milk, eggs, and meat) and examined the broader agricultural-livestock system through the view of systems thinking and system dynamics. This hands-on activity helped students visualize the interconnectedness of livestock production and environmental sustainability. Following this, we explored the significance of LCA in sustainability research, discussing how environmental footprints are allocated to livestock products and how life-cycle environmental impacts can be assessed and interpreted. Using soybean meal and pork production as case studies, students gained practical insights into sustainability challenges in the livestock industry. In addition, students participated in group discussions based on hypothetical case scenarios in swine production systems, including topics such as the pharmaceutical use of zinc in pig feed, the prohibition of individual stalls for sows, organic swine farming, and male pig castration methods. These scenarios were developed as Reusable Learning Objects (RLOs) in collaboration with the University of Georgia as part of a

research project. By engaging in these discussions, students were encouraged to apply systems thinking and recognize the complexity of decision-making in dynamic environments using real-world examples. This approach proved highly effective, as it ensured that every decision within the RLO decision tree had both positive and negative consequences, reinforcing critical thinking rather than leading to a single "correct" answer. By aligning these scenarios with systems constructs, students developed deeper learning and problem-solving skills, equipping them with the ability to analyze complex agricultural and sustainability challenges from multiple perspectives. In this class, these interactive teaching practices allowed students to develop a deeper understanding of sustainability challenges while engaging in critical discussions about real-world applications.

Creating a *positive learning environment* is another core aspect of my teaching philosophy. I frequently ask students questions to assess their understanding and provide constructive feedback and encouragement. Positive reinforcement fosters engagement and motivation, ensuring that students remain interested in the subject matter. For undergraduate students, I strive to encourage their curiosity and participation and engage them in animal science and its related industries while equipping them with the knowledge and skills necessary to become confident professionals in the field. Hands-on learning opportunities play a critical role in bridging the gap between introductory coursework and applied science, allowing students to gain practical experience that prepares them for future careers. For graduate students, my goal is to develop independent thinkers and problem-solvers who can conduct rigorous research. Through research projects and mentorship at SDSU and UMN, I have learned that education is not merely the accumulation of facts but the cultivation of analytical thinking. In my graduate training approach, I emphasize four key questions: What are the challenges in the field? Why is this research necessary? How should experiments be designed to ensure scientific validity? How can research findings be applied to industry and real-world scenarios? By encouraging students to engage with these questions, I prepare them to become independent researchers capable of addressing complex issues in animal science.

Through my teaching experiences, I have developed a philosophy centered on applied learning, critical thinking, and student engagement. My commitment is to provide students with the tools they need to succeed, whether in academia, research, or industry. By blending theoretical knowledge with practical applications, fostering a positive learning environment, and promoting independent inquiry, I aim to prepare the next generation of global professionals and researchers in animal science and agriculture-livestock industry.